Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

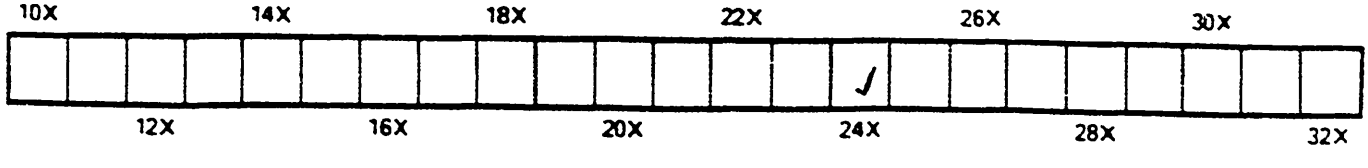
- ☐ Coloured covers/ Couverture de couleur
- ☐ Covers damaged/ Couverture endommagée
- ☐ Covers restored and/or laminated/ Couverture restaurée et/ou pelliculée
- ☐ Cover title missing/ Le titre de couverture manque
- ☐ Coloured maps/ Cartes géographiques en couleur
- ☐ Coloured ink (i.e. other than blue or black)/ Encre de couleur (i.e. autre que bleue ou noire)
- ☐ Coloured plates and/or illustrations/ Planches et/ou illustrations en couleur
- ☐ Bound with other material/ Relié avec d'autres documents
- ☐ Tight binding may cause shadows or distortion along interior margin/ La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure
- ☐ Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/ Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.

- ☐ Coloured pages/ Pages de couleur
- ☐ Pages damaged/ Pages endommagées
- ☐ Pages restored and/or laminated/ Pages restaurées et/ou pelliculées
- ☑ Pages discoloured, stained or foxed/ Pages décolorées, tachetées ou piquées
- ☑ Pages detached/ Pages détachées
- ☑ Showthrough/ Transparence
- ☑ Quality of print varies/ Qualité inégale de l'impression
- ☑ Continuous pagination/ Pagination continue
- ☐ Includes index(es)/ Comprend un (des) index

  Title on header taken from:/ Le titre de l'en-tête provient:
- ☐ Title page of issue/ Page de titre de la livraison
- ☐ Caption of issue/ Titre de départ de la livraison
- ☐ Masthead/ Générique (périodiques) de la livraison

☐ Additional comments:/ Commentaires supplémentaires:

This item is filmed at the reduction ratio checked below/
Ce document est filmé au taux de réduction indiqué ci-dessous.



THE

CANADIAN AGRICULTURAL JOURNAL.

VOL. I. MONTREAL, APRIL 1, 1844. No. 4.

Since our last number was prepared for publication we have seen a considerable portion of three States of the Union, and of the Eastern Townships of Canada, and though the season of the year was not the most favourable for observing the state of agriculture, we have seen much that was interesting. As regards climate, and the quantity of snow in both countries, we could not perceive any difference, until we arrived in the neighbourhood of Boston. There, very little snow was to be seen, and in the latter end of February, wheel carriages were in use in Boston. We would, however, prefer snow and ice in our streets until the 1st of April, rather than have them in the state of the Boston streets, so early in the season, before there is fine weather to dry them. With regard to winter roads, we found those in the United States much more easy and convenient to travel upon, than the roads of Canada, though we did not see any one employed upon them, or the mark of any work done upon them. The simple cause that they were better and more convenient than the Canadian roads, was, that suitable carriages are made use of more generally in the United States, than with us. They seldom have any other than double sleighs for every purpose, except for pleasure, and when they use single sleighs, they have the shafts so attached to the one side, that the horse travels in the track of the runner, and by this means, a ridge of snow is left in the centre of the road, that prevents the possibility of a carriage of any other construction passing upon them. When carriages meet upon these roads there is no difficulty in passing each other, by simply moving one of the runners of the sleigh out of the track and leaving a firm footing for each horse, with the centre ridge of snow between them. As a proof that this mode of attaching shafts to winter carriages is the best, we did not, in a distance of more than 400 miles, once come in contact with any other carriage in passing, notwithstanding that many of the teams we met had from 4 to 8 horses to them; some had oxen, and the carriages were in several instances very large, and wide; but when we came within the Canada lines, we found the greatest difficulty in passing other carriages, in consequence of the different state of the roads, there being few double sleighs, and all single sleighs having the shafts attached to the centre, and a great number of common trains constantly, in use upon the public roads. Good winter roads are of so much importance in this country that it is difficult to find any reasonable excuse for those who persist, contrary to law, in using carriages that make bad roads. Not only are cahots formed by our carriages, but deep furrows are cut at one side of the road, that are more disagreeable than cahots. This deep furrow is formed in consequence of the horses travelling in the middle instead of the track of the runners, which would harden the roads and prevent the runners cutting them up. If the law respecting winter carriages is a grievance, it would be better to repeal it, than suffer its open and constant breach in every part of the country. Our laws are brought into contempt when openly set at naught. We allude to this subject in order to bring the matter fairly before those who are most interested, namely, the farmers. Farmers are more interested in having good roads than any other class, because they are obliged to make use of them when other classes need not do so. We earnestly solicit the farmers to ascertain for themselves whether our statement be correct respecting the roads in the neighbouring States, and if they find that, by adopting similar carriages to those in use with our neighbours, we may have good and convenient roads to travel upon, we trust they will no longer hesitate to put an end to the use of the common trains, and adopt the plan of attaching shafts to single sleighs as they have them in the States. This change, that is so desirable, will not be any additional expense to the farmers, and the advantage of good roads would certainly be of great benefit. There cannot be a greater grievance than to inflict bad roads upon the Canadian community, by making use of unsuitable carriages, and also those that are contrary to law. It is not creditable to our judgment that we should be so prejudiced against adopting what would be manifestly for our interest only because it is new, and not our own plan. If our neighbours of the United States had been so wedded to the customs and habits of their grandfathers, they could not have made the advances in improvement which they have done. It would be very useful to our Canadian farmers were they to introduce a due proportion of the American system of "go a-head" into all their proceedings. We should not wish it to be carried to the same extent, but there cannot exist a doubt, that it would be a great advantage to feel some of the disposition to "go a-head" which appears to be the general principle in the United States.

OF THE NATURE OF SOILS.

The question which we are now about to treat, is one of the most difficult in agriculture, but as it is perhaps one of the most important, we ought to give it the greatest attention, and to direct all our researches to proving the difference existing amongst arable lands, and their various properties.

The earth furnishes support to nearly all plants; and as each species of these requires a soil suited to its particular organs, we find that different portions of the

earth differ widely amongst themselves in character An acquaintance with the nature of soils is especially necessary, as it serves to throw light upon the cultivation of vegetables, which are principally nourished by them, and upon the suitable adaptation of which most of their properties depend.

Arable soils, which are the only ones of which I shall here speak, are generally composed of silica, lime, alumina, magnesia, oxide of iron, and some saline substances. The various characters of soils arise from the different proportions in which their component parts are combined; and the name given to each is according to that of the predominating portion of earth found in it, as siliceous, calcareous, argillaceous, &c. It is necessary that they should be classed according to their nature, that the degree of fertility of each, and the kind of cultivation to which it is best suited, may be known.

Not one of these earths is by itself well adapted to cultivation, but by their mixture they correct the qualities, or supply the deficiencies of each other; the best soil is that which unites the greatest number of the properties most suited to vegetation.

There are few soils that do not contain, in addition so the above-mentioned earthy and saline principles, some portion of substances, resulting from the decomposition of animal and vegetable matter, by which, other circumstances being the same, their fertility is very considerably influenced.

OF THE FORMATION OF ARABLE LANDS.

Arable lands are almost entirely produced by the decomposition, from various causes, of the rocks which form the basis of our globe. The water, which flows in torrents from the tops of the mountains, abrades their sides, and detaches from them large portions of rock, which being afterwards swept by the force of the current, and *constantly dashed and rubbed together*, have at length their corners and edges broken off, their forms rounded, their surfaces smoothed, and their size diminished, till they form, successively, pebbles, gravel, sand, and mineral slime.

The number and magnitude of the stones found in the beds thus deposited, depend upon their distance from the mountains whence they have been brought, upon the harder or softer character of the rock whence they have been broken, and upon the force of the currents by which they have been acted upon.

Nearly all the lands of our rich valleys owe their origin to the decomposition of rocks, and we can judge of the nature of the principles which compose them, by knowing those of the mountains whence they have been brought. The deposits from granitic mountains, consisting of quartz, feldspar, and mica, form soils mixed with silica, alumina, lime, magnesia, and oxide of iron. Those from mountains of the quartzeous formation are composed, almost entirely, of siliceous earth, and give rise to soils of an analogous character; and so on of the rest.

It would, however, be erroneous to suppose that the lands formed by the waste of mountains are throughout of the same nature, or contain the same principles, in the same proportions, as the rocks from which they have been produced. Upon this supposition it would be necessary that all the substances, originally contained in any one kind of rock, should be of equal specific gravity, and possess an equal affinity for water; and this is not the case. Those, the particles of which are held in the closest union, are deposited first, whilst the others are carried on by the current; silica, and the oxides of iron, predominate in those which are first deposited; then lime, alumina, and magnesia.

It is very interesting to trace the changes which take place in alluvial soils, according to their distance from the rivers which brought them; whether we consider, in these changes, the division and mixture of the constituent principles, or the varieties which they present at different distances from the sources of their origin.

Independently of the various degrees of specific gravity and hardness which exist amongst the earthy principles, there are other causes which contribute powerfully to affect the nature of alluvial lands. Rivers receive, in their courses, many tributary streams, which, mingling the fragments that they carry with the spoils of the others, modify to an illimitable extent the soils which they produce. It frequently happens, that this mixture of the mud of two rivers, produces a soil more fertile, than would have been formed by either of them singly; the qualities of one serving to correct the deficiencies of the other. Thus the washings from mountains of the quartzeous formation, combined with the argillaceous and calcareous portions of the wrecks of other mountains, constitute a more productive soil than would be furnished by either separately.

The greatest part of those lands now appropriated to the richest culture, are but the ruins of those imposing mountains, the sides of which, rent away and carried off by torrents, are in their passage reduced to dust, and deposited in the valleys to form the basis for agriculture.

It is not possible to refer to any other causes than those I have just pointed out, the formation of the arable lands of the valleys; those which are found upon the vast table lands, which crown the tops of mountains or extend along their sides, must have had some other origin. The constant action of air and water, alone, might have produced the plains, but so gradually, that their effects would only be perceptible after a lapse of many ages, if other agents did not conspire *with them to hasten the decomposition of the rocks*, and to convert them into arable land.

The decomposition of such rocks, as are by their want of density permeable by water, must be much more rapid than that of those, in which the particles are more closely united; and rocks, of which the constituent principles possess some affinity for air and water, will yield much more readily to their action, than those in which no such affinity exists.

In order to account for the action of air and water, upon rocks, it is necessary to consider, that many among them contain lime, very imperfectly saturated, and usually some oxide of iron, at its lowest state of oxidation; the lime is constantly disposed to imbibe from the atmosphere its carbonic acid, whilst the oxide of iron combines with its oxygen; these combinations will be very rapid, if neither the lime nor the oxide of iron is united to any other substances, which, not possessing the same affinities for the constituents of the atmosphere, oppose its action upon them.

Rocks are frequently moistened by water for a considerable length of time, without being much affected by it; but when it has at length insinuated itself into their pores, and become there converted into ice by the cold, it destroys by its expansion the cohesion of their particles, producing rents and fissures, and thus giving access to the air, which combines with the lime and oxide of iron, and produces an immediate change in all the surfaces exposed to its action; from this moment the process of decomposition goes on more rapidly than before. The lichens and mosses, which fasten themselves upon the surfaces of rocks, continue and increase the change; their delicate roots are constantly enlarging the crevices caused by the water, by the effort they make to insinuate themselves into them;

and by their decay they afford light successive layers of pulverized vegetable matter.

Water, by its own action, will penetrate by degrees into the earthy principles of rocks, and produce, at length, the effect mentioned above; but its power is wonderfully increased, whilst passing from its liquid state, to that of ice.

As soon as the surface of a rock is furrowed, and the mosses and lichens have fastened themselves upon it, all the plants which require but little nourishment, take root and decay there in turn: and the product of each successive decomposition adds something to the slight bed of earth formed by the first, till in time a soil is produced, fit for cultivation.

The great stones which injured the harvests upon alluvial soils, have been removed by blasting. The soils which were too stiff have been improved by a suitable admixture of other earths; all the soils have been in turn manured by the remains of plants, or the collections of the barn-yard; and man has learned by experience what kind of culture, and what species of plants are suited to each soil. Nature has prepared the materials, man disposes of them in such a manner as to cause them to produce according to his necessities, or his tastes.

But in what does the difference of soils consist? and which are those best suited to agriculture?

In examining the nature and variety of the rocks, of which all arable lands were originally but the ruins; and which, notwithstanding all the labor of man, preserve their primitive characters, we shall find the following varieties.

Amongst rocks of the first formation, or, as they are called, primitive rocks, granite holds the first rank; it is generally formed by the aggregation, more or less compact, of several stones, differing among themselves in form, color, hardness, and composition; these stones are, most commonly, feldspar, quartz, and mica. These elements of granite, also, separately form rocks, in which only two of them are combined, as in micaceous schist, which is composed of quartz and mica, disposed in beds, sometimes curvilinear; quartz forms by itself, nearly without mixture, some of the primitive mountains.

The composition of the various stones which constitute granite, is widely different; quartz is almost entirely formed of siliceous earth; feldspar of silex, alumina, lime, potash, and the oxide of iron; mica contains besides these, magnesia. So that when granite is decomposed, it produces those lands which, upon analysis, afford all these principles; whilst the washings from the quartz mountains form only beds of siliceous earth; and the ruins of rocks of micaceous schist contain only the elements of feldspar and mica.

The calcareous mountains, composed of carbonate of lime, without any appearance of the remains of organized bodies, are ranged by naturalists amongst primitive rocks, and give rise to the formation of calcareous soils.

All the lands which are produced by the destruction of primitive rocks are of the first formation, and ought to be so designated to distinguish them from those which owe their existence to other causes, of which I am now about to speak.

Independently of those causes which I have just explained, and which have produced the formation of the greater part of the arable lands, there are others to which some lands owe their origin. The successive destructions which the whole surface of the globe appears to have suffered; the decomposition of pyritous beds, which appear to have covered a part of it; the numerous lakes which have disappeared by the hand of man, or by the accidental rupture of their natural confines; the eruptions of volcanoes; the overflowings of the sea; the bony remains of animals, and the decay of vegetables buried in the ground, have formed soils of all characters; and these have afterwards been applied by man to his own use.

PARSNIPS FOR STOCK.

Mr. Editor,—Within a few years, various and contradictory accounts have appeared in your paper, respecting the comparative value of roots as food for stock; and while every other kind has been applauded, very little has been said of the parsnip. For the last twenty years I have been a constant cultivator of this valuable root in a small way, raising from five to one hundred bushels a year. No winter vegetable, except the potato, is more used in my family than the parsnip: we seldom boil a dinner without it, from October to June. And where the soil suits, no root is more easily raised, or gives a better yield: have raised at the rate of a thousand bushels an acre.

As parsnips have generally commanded a pretty good price and a ready sale, I have considered them too valuable to feed to stock; but having raised about a hundred bushels last season, and finding that I should have more than would supply my customers, concluded to feed out the surplus. Having had but little experience in feeding parsnips, and being desirous to ascertain their worth, the inventive faculties of my imagination were put in requisition to hit on a method that would show their relative value with some other kind of roots. This, I thought required the aid of chemistry, but being ignorant of the science, concluded to submit the case to a certain cow that analysed forty bushels of carrots for me last winter. By referring to my note book, I had the time I began to feed the carrots, the quantity given each day, with the probable result. With these notes, and the cow being in the same condition, and would calve about the same time she did last spring, I thought it would be a fair way to make the trial.

Last winter, 20 lbs. of carrots were fed a day; a fair mess of milk was obtained; quite as much as I expected; and the cow held her milk till within 57 days of her calving. This winter, I commenced feeding at the same time, but being convinced that the parsnip is a richer root than the carrot, I gave but 15 lbs. a day; and after continuing this feed about a month, the cow increased her milk so much that I concluded she was farrow, until she showed signs that could not be mistaken. The milk has been nearly double what it was on carrots. The cow has now passed the time that she dried last winter, and continues to give six pounds of milk a day. I want her to dry 30 days before calving, but think she will not do it without stopping her feed. The same person has fed and milked her both winters, and the other keeping has been the same. As to her flesh, there is no perceptible difference; but think her coat looked better on carrots.

This experiment has convinced me that parsnips are worth more for milch cows than carrots, and after two months' feeding, have discovered no unpleasant taste in the milk. Parsnips that are dug in the spring, after the tops start, or if permitted to grow in the cellar and become strong, in either case will affect the milk: this I once ascertained by feeding some that had become unfit for culinary purposes.

In all my experience in the cultivation and management of the parsnip, the most difficult part is to preserve the roots after they are dug. After trying various methods, have decided that the best is to wash the dirt from the roots as soon as they are dug, before

it dries on; lay them in the sun, or an upper room till dry, and then put them in a dry bin in a cellar not too warm or too moist, so as to wither a little. In that state, they will keep a long time and improve in flavor. But if put in a damp cellar with dirt adhering to them, the tops will soon begin to start; a new set of fibres will be thrown out, and then their sweet flavor will be changed to a strong and bitter taste. Take a parsnip that has been out of the ground for some time, kept dry so as to shrivel; and another just dug, or that has been kept in a damp cellar until it has began to grow again, and cook them together, and it will not require an epicure to distinguish the difference in their flavor.

When I took up my pen, it was my intention to describe my manner of cultivating the parsnip, and to point out the soil best adapted to its growth; but discovering that it will spin my thread too long, shall conclude by saying that the parsnip, like the beet, requires a deep, rich, moist soil, with an earlier planting than the latter, and about the same after culture. It is not so great an exhauster as the beet, and may be grown several years in succession on the same spot without degenerating.—*Wickford, R. I., Feb.* 1844.

N. E. Farmer.

EXERCISE.

Many people look upon the necessity man is under of earning his bread by labor as a curse. But it is evident from the structure of the body, that exercise is not less necessary than food for the preservation of health: those who labor are not only the most healthy, but generally the most happy part of mankind. This is peculiarly the case with those who live by the culture of the soil.

The love of activity shows itself very early in man. So strong is the principle, that a healthy youth cannot be restrained from activity. Our love of motion is surely a strong proof of its utility. It seems to be a law throughout the whole animal creation, that no creature, without exercise, shall enjoy health, or be able to find subsistence.

Inactivity never fails to produce a universal relaxation of the solids, which disposes the body to innumerable diseases. When the solids are relaxed, neither the digestion nor any of the secretions can be duly performed. How can persons who loll all day on easy chairs, and sleep all night on beds of down, fail to be relaxed? Nor do those much mend the matter who never hardly stir abroad but in a coach.

Glandular obstructions generally proceed from inactivity. These are the most obstinate maladies. So long as the liver, kidneys and other glands, duly perform their functions, health is seldom much impaired; but when they fail, it is difficult to be restored.

Weak nerves are also the constant companions of inactivity. We seldom hear the laborious complain of weak nerves. This plainly points out the sources from which nervous diseases generally originate, and the means by which they may be prevented.

It is absolutely impossible to enjoy health, where the perspiration is not duly carried on; but that can never be the case where exercise is neglected. When the matter which ought to be thrown off by perspiration, is retained in the body, it vitiates the humors, and occasions the gout, rheumatism, &c.

No piece of indolence injures the health more than the custom of lying in bed too long in the morning: the morning is undoubtedly the best for exercise, as the air braces and strengthens the nerves. Custom soon renders early rising agreeable, and next to total abstinence from all intoxicating drinks, nothing contributes more to the preservation of health.

Every person should lay themselves under some sort of necessity to take exercise. Indolence, like other vices, when indulged, gains ground, and at length becomes agreeable. Hence many who were fond of exercise in the early part of life, become averse to it afterwards. This is often the case with gouty and hypocondriac persons, and frequently when their diseases are difficult to cure.

Indolence not only occasions diseases, and renders man useless to society, but promotes all manner of vice. The mind, if not engaged in some useful pursuit, is consequently in quest of some ideal pleasures. From these sources proceed most of the miseries of mankind. Certainly man was never intended to be idle. Inactivity frustrates the very design of his creation, whereas an active life is the best and greatest preservative of health.—*Oracle of Health.*

Butter from Scalded Milk.—We have seen various accounts of butter made in winter from scalded milk, but we have never put any of them to an experimental test. On Monday we called on Mr. Patten Johnson, of Framingham, and ate some of his butter. He has been feeding his cattle for some time with hay, in part, and this is very apt to give an unpleasant taste to butter. Mr. J. scalded his milk as soon as it was drawn from the cow, and then set it away in the usual manner. His butter now tastes as well, and appears as yellow and solid as any that is made in June. Mrs. Johnson tells us the churning is performed now as soon as in September, and she cannot perceive that this is inferior to any butter which she has made this season. We hope many of our friends will make trial of this mode of preparing the milk to be set away. People who have large dairies will be much assisted if they can make as good butter in November and in December as in the early part of autumn. The churning is commonly a tedious business when the milk is set away in the usual mode, and the butter, when it comes, often looks like lard. The milk must not be allowed to boil over the fire, but it should be made scalding hot; it may come near boiling.—*American paper.*

CORNWALL AGRICULTURAL ASSOCIATION.

Report of an Essay on Sub-soil Ploughing, to which a Premium was awarded by the Cornwall Agricultural Association, and read at the Annual Meeting in December, 1843. By Mr. Peters, Tehidy Farm, Illogan.

Sub-soil Ploughing.—In the essay on this subject, Mr. Peters commences by remarking that in most of the great and permanent improvements in agriculture, considerable time must elapse before the full benefits can be derived. It is only by noting the progress and development of any scheme that we can arrive at that degree of knowledge called experience; after which we may lay down as acknowledged truth, the benefits to be derived, or the period when they will become tangible.

In the greater part of the county of Cornwall, shallow ploughing was all but universal; sub-soil ploughing, therefore, came as a direct innovation here, but it had also something to recommend it, even to the advocates of shallow ploughing, as while it broke and pulverised the sub-soil, it left the same stratum uppermost.

The first object sought to be obtained by the operation was deepening the soil; *the second*, facilitating the descent of surface water where the sub-soil was retentive; and *the third*, to secure the beneficial influence of the atmosphere and manure to a greater depth.

The first object is described as mechanical, deepening the soil so as to remove obstructions for the more easy and perfect performance of all the operations necessary to correct cultivation; and the essay points out the advantages of this mode of deepening the soil, over the frequent practice of carrying on earth.

"To cover an imperial acre one inch deep with soil would require 6,272,640 cubic inches, or a fraction more than 134 cubic yards. It is well known that a cubic yard is a good cart load, and if brought from any distance at

all, with filling, spreading, &c., would not cost less than 1s. per yard; this would amount to 6*l.* 14s. 5½d., an expense sufficient to sub-soil plough the land, and leave more than 5*l.* to be applied in manure; this, at the present prices of guano and bone, would purchase 7 cwt. of the former, or 40 bushels of the latter, being double the quantities of these manures applied to an acre, and undoubtedly sufficient to manure several inches of subsoil."

The second object may also be said to be mechanical; when the sub-soil is retentive, or when "a pan or cruit" exists, this does much good, not only by facilitating the descent of water, but by equalising the supply of moisture during drought, not only by capillary attraction, but by allowing the roots of plants to penetrate freely below the parched surface into a cooler and damper medium. But besides its mechanical operation, it is intimately connected with and lays the foundation of the third and most important change, that of allowing the influence of the sun and air to penetrate, and, by the filtration of rain, to make that one of the most beneficial, which had previously been one of the most detrimental of atmospheric agencies; thus producing such remarkable changes as are often seen by the draining and deep cultivating of land, without any visible foreign chemical agent or re-agent being introduced.

Then follows a detail of a number of experiments tending to shew the advantages of the operation on various soils—on thin soils with open shelfy killas subsoil—on blue and other clay subsoils—on granite soils when the bottom is retentive—and in cases in which the actual sub-soil plough had been used, and the soil and sub-soil had been deep ploughed up by the common plough and mixed together.

In conclusion, it is stated, "that if the experiments are not held to prove the advantage of sub-soil ploughing, they prove that it is not injurious. In no case where the writer has seen either deep working with the common plough or with the sub-soil plough has it had the least possible effect; but, on the contrary, the crops have turned out beyond his expectation. And if, as will be conceded, a deep soil is better than one of a contrary character; and if it be of importance *permanently* to improve land, this appears to be one of the most feasible and necessary preliminary steps. Not that all land requires such a process; nor should a practice be condemned from having been tried without producing any good effect where it was absolutely not needed:

"In regard to the expense of the operation, it may be slightly different in different soils and situations; but where four ordinary horses draw the sub-soil plough, with two going before with the common plough, three-fourths of an acre may be a fair day's work. At this rate the cost would be per acre—

One pair of horses and a man 1½ day, at 8s.	£0	10	8
Two ditto and two ditto 1½ day, at 16s.	1	1	4
Tear and wear, say	0	2	8
	£1	14	8
The land having to be ploughed, at any rate the single plough ought not to be charged against the sub-soiling, therefore deduct	0	10	8
Leaving	£1	4	0

as the additional expense for sub-soiling an acre."

Foreign Provision Trade.—At public sale on Friday, by Messrs. Keeling and Hunt, 25 tierces Labrador salmon sold at 65s. per tierce, duty paid, about 2½d. per lb.; 50 boxes cheese, ex *Victoria*, *a* New York, sold at 48s. per cwt., duty paid; 50 ditto, ex *Prince Albert*, from the same port, realized 53s. to 54s., being the finest yet imported; 50 ditto, ex *Hendrick Hudson*, *a* New York, sold at 44s, to 45s.; 30 kegs ox tongues, ex *Gladiator*, *a* New York, sold by the keg in bond, at 20s. to 21s.—these prices are about equal to 2s. 2d. each tongue, duty paid; 20 hf-brls. sausages, ex *Wellington*, *a* New York, sold at 10d. per lb., duty paid; 100 dried American hams, ex *Mediator*, *a* New York, sold at 38s. per cwt., in bond; 30 half-barrels fine family beef, ex *Prince Albert*, *a* New York, went at 35s. to 35s. 6d. in bond—each barrel contained 100 lbs.; 5 cwt. American smoked beef sold at 35s. to 35s. 6d. per cwt. duty paid; 30 tierces prime mess beef, ex *Toronto*, *a* New York, all sold at 74s. in bond—the tierces contained 304 lbs.; 25 barrels prime mess pork, ex *Empress*, *a* New York, went at 45s. per barrel of 200 lbs. in bond; 9 tierces pork middles at 24s. per cwt. in bond; 30 kegs lard, ex *Hendrick Hudson*, *a* New York, sold at 37s. 6d. per cwt., duty paid—in selling this parcel the broker stated, that the candle then burning on the table was made from the stearine extracted from hogs' lard, and that parcels of such candles were expected in this country, and could be sold on terms to compete with the best English make; 25 tierces prime mess beef, ex *Lady Seaton*, *a* Montreal, sold at 74s. in bond—tierces contained 304 lbs. each; 30 tierces beef, ex *Ellen*, *a* Port Phillip, found no offer; 30 casks mess beef, ex *Barrys*, *a* Cape of Good Hope, was in the same predicament. The goods thus sold presented a marked improvement in their saleable quality; and an Irish curer in the room informed us, that the staple of the American provisions, as well as of the refused colonial beef, was as good as possible; but that inferior salt and too much saltpetre had been used in curing.

Foreign Provisions.—On Wednesday afternoon several influential parties connected with the provision trade met at Nicholson's Wharf, Thames-street, to inspect some foreign cured provisions, imported under the new tariff, among whom were the following:—Mr. M'Gregor, of the Board of Trade; Mr. Pattison, M. P.; Mr. Hume, M. P.; Dr. Bowring, M. P.; Mr. B. Hawes, M. P.; Mr. C. Villiers, M. P.; Mr. Young, and Mr. A. Barclay, secretary to the Hudson's Bay Company. There were also present Mr. J. Hankey, the banker, Mr. J. W. Dover, and many parties connected with the store departments of the Crown, the American and colonial trades; and Admiral Deans Dundas, M. P., and Mr. Ewart, M. P., were invited, but were prevented from attending by other engagements. Previously to the open inspection of the cured meats, samples from the stock on hand were tasted at the warehouses of Messrs. Keeling and Hunt, and the most fastidious present admitted that the beef from Canada, the Cape of Good hope, and Port Philip, the pork from Cincinnati, the tongues from America, and the salmon imported by the Hudson's Bay Company from Labrador, were excellent. Most true it is that the mode of "cutting up" cattle for curing, in the parts of the globe above mentioned, is not quite so scientific as that displayed by those connected with the provision trade on this side the Atlantic; but this is a difficulty that time and experience will soon overcome. The cured (American) beef and pork, for the India and South Sea voyages, was an exception to the objection stated. It was cut up with almost European skill, as to size and convenience of sale. The samples of cheese imported from the United States were tasted with a jealous palate by a few of our own manufactnrers, and pronounced good.—*Standard*,

---

The probable reason why Preserves don't keep.—A large supply of crushed sugar arrived at a grocery establishment in Perth, a few days ago, from Glasgow, with all the appearance of adulteration. Samples have been submitted to chemical tests, but hitherto, we understand, without detecting the peculiar ingredients of admixture. To appearance it is some mucilage or starchy substance, giving the sugar a peculiar clammy moisture, as well as smell. Suspicions of adulteration in the same commodity have been entertained here for some time, not only in crushed, but in refined or lump sugar. A large quantity of the latter having been dissolved, by a family in town, previous to being boiled with fruit for jelly, was found to contain a large portion of glutinous or starchy matter, but the exact ingredient could not be ascertained.—*Perth Courier.*

A writer in the New York Farmer says, more than half the bullocks and sheep slaughtered in New York, are unsound, or in some way diseased.

Men often act lies without speaking them. All false appearances are lies.

To Cure Wounds in Cattle.—When the animal receives the wound (if of an extensive nature, to be closed with a few stitches, not too closely put into the lips of it) a loose bandage is to be wound round it (not for the purpose of a ligature, but to retain a constant moisture,) which must be kept unceasingly wet by an application of cold clean spring-water, till the wound is quite well. This treatment is also equally efficacious for fractures: the parts must be bound together (not too tightly) with splints; the beast must not be allowed to move; and should proud flesh appear when a wound is healing, as often happens, a piece of bluestone should be rubbed on the part so affected for a few days, which will remove the excrescence.—*Farmer's Gazette.*

Cider.—In a recent number of the "Pharmaceutical Journal" we find the following useful information on cider making:—"The usual system is to filter, fine with isinglass, and rack frequently, leaving the bunghole open until fermentation has ceased. When living in a fruit country, I had placed in my cellar three pipes of cider which had been a day or two previously pressed from the fruit. I added to each cask four ounces of isinglass in solution, and one pound of coarsely-powdered charcoal. I then bunged it down, and introduced a tube through the bung of the shape of a siphon, the contrary end dipping into water for the purpose of excluding the atmospheric air, and at the same time ensuring the safety of the vessel. When it had dropped tolerably fine, I racked it as quickly as possible, adding another quantity of the solution of isinglass and charcoal, stopping it down as before. At the expiration of three weeks, fermentation having ceased, I withdrew the tube and stopped the hole in the bung, and found I had a bright, rich, and delicious beverage, which continued in the same state until it was drunk."

Subsoil Plowing.—We are highly gratified to observe an increased attention to subsoil ploughing, for we consider, if it could be generally introduced among us, it would be found one of the greatest agriculeural improvements of the age.

Five years ago, we had a piece of land containing 2 1-4 acres of a hard clay soil, which, with the best management we could bestow upon it, yielded less than 150 bushels of potatoes to the acre, while parsnips, carrots, or any long roots it would scarcely grow. We had just heard of Mr. Smith's subsoil plow in Scotland, and determined upon an experiment. We had no plow of this description, nor could we then obtain one; we accordingly took the mould-board off from a large, strong road plow, and used the point of the share alone for subsoiling. We plowed the land in the fall of the year, by taking a common plow and one yoke of cattle, and turning over a surface furrow six inches deep. We then followed directly after this in the same furrow, with three yoke of cattle attached to the road plow, stirring the soil eight inches deeper, making fourteen in all. This we then bountifully limed, and the next spring as bountifully manured and planted it with roots, and the following autumn obtained over 1100 bushels of sugar-beet to the acre from it, and other crops in proportion.

Spring.—Deep and powerful souls adjust every thing in silence, and make no noise with their doings and themselves. They go on their way like the works of God. In deep silence the sun ascends the heaven; silently sinks the night down upon the earth. What prepares itself in greater silence than the reawakening of nature, and what is more glorious than the spring?

The saps circulate in the bosom of the earth. The spirits of the elements pass over it, and nod, beckon and call to one another. They desire to bloom in an earthly shape, and each one to express their souls in their own way.—The external sun overflows all existence with a gush of warmth; towards which all buds shoot forth in order to be formed and fashioned by the spirits of the elements. Quickly do these move their glorious shapes—silently, without labour, without bustle; thus does genius form its beautiful productions. The moment is come, and nature spreads abroad its marvels. There shoots the foliage, perfect in its minutest parts, a marvel as great as the greatest in the world. Out of the bosom of the rocks springs the tender moss, and clothes them with softness. A thousand blossoms open their chalices, a mystery of beauty, for mankind is incomprehensible as their Maker. The humming insects unfold in wide space their purple wings—they are the freeborn of nature—therefore do they hum, drum, fife and sing. All is beautiful, great and small! Every individual part so perfect, and the whole—who is able to comprehend the harmony, the affluence, and the manifold forms of life?

The spring in the north is not what it is in the south, a slow awakening of nature out of a long sleep. It bursts forth at once like youthful, joyous laughter. Yesterday there lay yet a mantle of snow on the earth—to-day it is gone, and the trees are in leaf. How the snow-fowl crows in the woods, how play the grouse, how sing the throstle, how odorous are the birches! Mountain and valley adorn themselves with the gay flowers—the beavers swim in a sea of light! The sun will not go down; the night shows its countenance only for some minutes, and then again disappears. In these moments of twilight, the snowy summits of the mountains all burn in flame, and fill the valleys with a fairy light.

A deep transport vibrates through the heart of nature. Everywhere breathes life, warmth, and fragrance—an activity in every creature, from man to the smallest insect—a voluptuous joy.—*Ex. Paper.*

Setting Posts for Fence.—Bore a hole in the ground with an auger, at least one foot below freezing. Set the post top end down, so as to invert its position from that in which it stood when growing. As the particles of earth in their natural state lie flat, it is very important not to disturb the ground near the post, on account of the action of frost, which is greatly increased by shifting the particles of earth by moving it.—As the hole is bored with an auger, all the chips, or loose dirt, is taken out; the hole is then filled by the post, so that if the frost does in the winter heave the post a little, it will settle back to its place as soon as the frost is out. Unless posts are selected so as to fill the hole without crowding, augers of different sizes may be necessary. In a stiff clay soil, free from stones, a good hand will bore from forty to fifty holes, three feet deep, per day, in October. Digging post holes with a spade or shovel, or driving down posts that are sharpened, deranges the particles of earth in their natural lay, or position, and the frost is more likely to heave them out. I have set posts in this way on every kind of land found in this country, which have stood for many years without heaving in the least, except where the holes were bored too shallow. My first observations made on the utility of setting posts top downwards was about 20 years ago. It was from the following fact, viz: I had a fence on the intervale, which divided my pasture from my meadow, and in repairing the fence to make all safe, I directed my hands to cut stadles, and cross stake the fence at each corner, and lay in heavy poles for riders. These little trees, or stadles, would usually make two stakes each. As these little trees were cut in the middle, the top end of the but, and the but-end of the top stakes, were sharpened to drive into the ground. I observed in the course of two or three years, that the stakes that were sharpened in the but, or lower, largest end when growing, were decayed and broken off near the surface of the ground; while the other stakes that were driven into the ground top downwards, were sound and good. A few years previous to these observances, I had enclosed our garden, of one-third of an acre, with board fence, posts but-end down; also a barn yard, door yard, &c., all of which were so decayed that we were compelled to set new ones in their places, in 7 or 8 years; since which we have invariably set all our posts top end in the ground; and in several hundred rods of fence built as described above, I have not observed a single decayed post among those that have now been in the ground 14 years and over, up to 18 or 19 years.

John M. Weeks,

Salisbury, Vt., Dec. 1845. *Boston Cultivator.*

FARMERS' SONS.—The course pursued by farmers' sons in leaving their homes to engage in other employments, is often deprecated by writers for the agricultural press, as unwise and unnecessary. In some cases it is so. If they are led to this step principally from motives of pride, influenced by the preposterous idea that the labor of cultivating the earth is degrading, it is reprehensible and unworthy;—if, on the contrary, they leave the paternal homestead for the purpose of accumulating means in some more lucrative business, to enable them at some future day to return to their homes and settle down for life on the acres that may be apportioned them, then the motive and the measure are alike worthy and commendable, and so far from being censured should be encouraged.

It is impossible, absolutely impossible, for a young man of spirit and enterprise, to be contented with drudging all his youthful days on the farm, with no stimulus to exertion and no hope to cheer him, but the certainty of a mere living, in a state of dependency: and equally impossible is it, as a general thing, for farmers to give their sons more encouragement than this to remain at home. Few farmers, comparatively, have bank deposites to draw upon at pleasure, other than those in trust of mother earth.

It is quite impossible, where there are several sons, and the parents in humble circumstances, that they can have the prospect of "settling down in life" any thing like independently, with a partner to share their sorrows and increase their joys—it is quite impossible they can have the prospect of being thus desirably circumstanced, while they remain at home to delve on the farm, year in and year out, with no income accruing upon which they can depend for the means to give them a comfortable "setting out" in life at a future period. They leave their homes, (no doubt reluctantly,) engage in some business in the city or manufacturing village, and, after a few years, if frugal and virtuous in their habits, they return to the home of their childhood, with the means to enable them to farm it on their "own hook"—or, perhaps, they take the management of the homestead in their own hands, and give their aged parents a respite from labor, and administer to their wants and promote their comfort in their declining years. Such a course is worthy of all praise, and parents should encourage rather than discountenance it.

For other motives which sometimes (and too often) lead the sons of farmers to quit the paternal home—such as the silly "notion" that the farmer's business is *degrading*—or a desire to follow in the wake of fashion's contemptible serfs, and ape that disgusting embodiment of the ridiculous, *the city fop*—for *such* motives I have no other feelings than the most unqualified contempt and dislike,—but, as they are entertained only by those who have shallow heads or depraved hearts, it is not worth the ink-shed to expose their folly or to show their evil tendencies. Suffice it to say that, nine cases in ten, the young man who leaves his home under the influence of any such motives, turns out in the end either a penniless "loafer" or a graceless scoundrel.

Farmers, young and old, teach your sons to *depend upon themselves*—teach them that if they would be prosperous and respected, they must be virtuous,—teach them to respect labor and to honor your occupation,—and, enforcing these precepts by your own example, living you will behold your children happy, and dying you will leave them a better patrimony than the treasures of Crœsus.

J. H. D.

WAX FOR GRAFTING.—Melt three parts of rosin, two of beeswax, and one of tallow, together. Pour this, when melted, into cold water, a pound at a time. Having rubbed your hands with lard, work the wax in them till it is pliable, and when the water is forced out of it, it is ready for use, and will remain on the trees for three years. Use the wax sufficiently warmed to spread easy; cover the top of the stump about the thickness of a cent, and the slit, as far as it extends, somewhat thinner.

The time for grafting depends much upon the season; but the best is when the buds first begin to open. Scions will live set any time after the sap freely circulates, and till the apples are as large as musket balls.—*Farmers' and Gardeners' Almanac.*

MEMORIAL TO THE LATE LORD LEICESTER.—On Thursday the Committee met to decide upon the adoption of a design for the Memorial to Lord Leicester. There were 76 plans and models exhibited. One, No. 40, was chosen, subject to certain arrangements with the architect, Mr. Donthorne, of Hanover-street, London. We subjoin a description of the design:—

No. 40.—"To him whose pride it was to render the Farmer independent."

This design is composed of a pedestal, on which is erected a fluted column, surmounted by a wheat-sheaf. Three sides of the pedestal are bas reliefs. One representing the late Earl granting a lease to a tenant. The second representing the Holkham sheep-shearing, through which the great stimulus was given to agriculture. The third to indicate irrigation. The fourth side of the pedestal is left for the inscription. The four corners of the pedestal show the means by which cultivation and production were improved and increased by the late Earl. At the first corner, an ox, with the inscription under it, "Breeding in all its branches." At the second corner, Southdown sheep, with the inscription under them, "Small in size, but great in value." The third corner, the plough, with the inscription, "Live and let live." The fourth corner, the drill, with the inscription, "The improvement of agriculture."—*Essex Standard.*

PRIZE SHEEP.—MR. EDITOR.—"Small in lean, but great in tallow."—A young butcher, living not one mile from Euston Square, purchased what he fancied a superior Leicester sheep for his Christmas show at 5*l.* 15*s.* with a long pedigree about the breed, the sire of the sheep was hired for the season at 50 guineas. A great many of his neighbours came to see the high-bred, high-fed animal alive, and was struck with admiration. When slaughtered many praised him, but none purchased, for the cockneys were not to be caught with a hook baited with *pedigree* and *tallow* in the garb of mutton. At last a farmer and beast salesman from the country bought a hind quarter at 4d. per lb., to take home for his ploughboys to eat. His next customer was a half-bred cockney, who offered him 6d. per lb. if he would pare on the fat or tallow to his satisfaction, to make it decent and fit for the table. The shoulder of mutton before the butcher began to pare, weighed 32lbs., and he reduced the said shoulder of mutton by paring to 7lbs. only. The half cockney roasted it the Sunday following, and to his great surprise, a third of the weight he found in the dripping-pan. This animal had been fed until half the weight in lean was fat, and came out in the shape of dripping. The butcher sold the remainder at a tallow price, and declares that he lost 3*l.* 10*s.* by his fancy prize sheep. Experience is a dear school, but people will learn at no other. By inserting the above you will greatly oblige your humble servant.

ROBERT HOOD.

Finchley Common, Jan. 5, 1844.

FOR CROUP.—Roast an onion, slice it, and press out the juice; mix this with honey or brown sugar, forming a syrup, and a teaspoonful every fifteen minutes till your child is relieved.

COOKING SALT FISH.—Some people are yet incredulous on the subject of cooking salt fish. It should never be boiled, for boiling hardens it, but it should be kept in scalding water for two or three hours. No matter how small is the quantity of water if it covers the fish.

CURE FOR CANCERS.—A gentleman who has for years been afflicted with a cancer on his face, informs us, that after having followed the prescriptions of some of the most skilful physicans, at the expense of more than seven hundred dollars, having twice had it cut, he has been effectually cured by simply bathing it three or four times a day with brandy and salt. Those afflicted with these virulent ulcers will do well to try it.—*Maine Cult.*

A simple preventive from injury by lightning to corn and hay ricks, is that of merely putting an inverted broken

bottle on the point where the thatch terminates; instead of which a spar or spiral pinnacle of reed is placed at the summit, both of which are, with the exception of iron, the best conductors of the electric fluid, and are the general cause of the accidents which occur from lighting; whereas glass and sealing-wax are non-conductors, and, therefore, *repel the fluid instead of attracting it.*

The Canadian Agricultural Journal.

MONTREAL, APRIL 1, 1844.

In order to be able to avail ourselves of the valuable information constantly offered to our consideration, by books and the public press of the present time, it is an essential requisite that the great mass of the people should be educated sufficiently to read, and form a correct judgment of what is submitted. To be able to do this, education must be advanced far beyond the first rudiments. We humbly conceive that it is one of the first duties of a Government and Legislature to provide all that is necessary for the due instruction of the people, whatever that may be. A certain amount of useful and practical education, we would almost say, should be the birth-right of every human being of a Christian community—and this should be provided for in some way, by parents, when they are able, and by the State when parents are not able. If the agricultural class in Canada were judiciously educated, we would soon see the effects of it. Prejudice against the introduction of new improvements would be greatly diminished, and men would take the trouble to examine their true condition, and adopt the best measures for ameliorating that condition, and for augmenting their comfort and happiness. This would have a most beneficial influence upon the interests of Canada. It would make a vast difference with the inhabitants of this country, if it was possible to double her annual productions, and we have no doubt they might be doubled from the land already cultivated. The true means to obtain these results will be, by the education, and instruction of the people. These are means, if judiciously carried into effect, that would be sure to produce the most favourable and happy results.

It is the general opinion in Canada East, that a large quantity of wheat will be sown in the country next spring; we trust it will be the case, and wish the farmers all possible success, and that they may be able to raise a good and profitable crop of wheat, free from the ravages of the fly, and the effects of rust. This we hope they may be able to do, by sowing only such seed as has been proved to succeed the last two years, and sowing at the proper period. We have seen wheat in 1842 grown from new seed perfectly free from rust, and fly. It was sown late to avoid the fly, and was quite free from rust—though other wheat suffered much from the disease sown at the same period, and in the same soil. The wheat we refer to as proof against rust, is very productive, but the quality of the grain for flour, and bread, is considered inferior. We believe there has been a large quantity of this wheat raised last year in Canada, and if it has been preserved for seed it will produce vast benefit to the country. We have procured 20 bushels of this wheat from Colonel Wilgress of Lachine, and as we required it for seed for a friend and for ourselves, he would not charge more for it, than what the produce of it in flour would be worth, allowing five bushels to make a barrel of flour. We mention this circumstance, in order to induce others who hold any of this wheat, to follow the generous example of Colonel Wilgress, and dispose of it to farmers who have not any, at the moderate price of other wheat. This would induce farmers to sow it, which they may be prevented from doing, if they are obliged to pay a high price for the seed. If by any means Canada could be brought to produce again a full crop of wheat, it would be productive of certain benefit to the whole community. It is therefore of consequence that seed should be distributed to the people, if there be any means of doing so. Many farmers, disposed to sow wheat, are deterred from sowing, in consequence of the difficulty of procuring seed. If that could be furnished to them, it would be amply compensated to the Province in a very short time. We have on many former occasions recommended such a measure as this.

We had an opportunity of seeing lately in the United States, machines for taking out the roots of trees, which we own they had done effectually. The machines are of simple construction, and the owner will bring it to any farm and take out large roots at a quarter dollar each. From the large size of the stumps taken out, we think this charge very moderate indeed. We are not certain that the roots can be taken out in every soil, however strong or stony, but we were told they could. We think the machine might be usefully introduced in Canada, and that it would prove a great advantage. The cost is about fifty dollars, and it is worked by two men, and two or four horses or oxen, as may be required. We also saw an iron instrument, having four strong claws, called a "Tree and Bush Puller," described as one of the most useful and effective instruments in use, employed in clearing land of under brush and small trees." The ground is loosened around the tree or bush that is to be removed. The teeth or claws are entered on one side, a horse or oxen is then attatched by a strong chain and drawn on the opposite side. One man with a horse, or yoke of oxen, will do more work with this instrument than five men can do without it, in digging and clearing land. We can recommend this instrument as a very useful one, that should be in the possession of every farmer. In Boston they have Repositories of farming implements and seeds of the best description, and it must be a great advantage to farmers to have supplies of good implements and seeds. There is every disposition in the United States to encourage agricultu-

ral improvement, and all classes of the community appear interested in it. They have discussions on various subjects connected with agriculture, one or two nights in the week at Boston, and by these discusions much useful information is obtained by farmers. These meetings are attended by the most respectable persons, and they are open to all who please to come to them, we believe. We wish such meetings and discussions could be established in Montreal. It would, we have no doubt, do much to forward the improvement of our agriculture. We should have a room in Montreal for lectures and meetings, and an agricultural library, of a few well selected works on husbandry—to be open to farmers. We strongly recommend this subject to the consideration of the public. It is of some importance that agriculture, which must support nine-tenths of the Canadian population, should be in the most improving and flourishing condition; and every member of this community, should unite in forwarding the improvement of agriculture.

One of the most useful of agricultural implements next to the plough, is the grubber. It is formed, like the plough, of iron generally. In the centre is a coulter; and, attached to the beam, by hinges, are two bars, into each of which are inserted two coulters. The bars can be set at a greater angle to the beam, and consequently the coulters made to extend over a greater space, and till a wider interval. Near the fore-end of the beam is a wheel, the purpose of which is to steady the motion of the machine; and there is sometimes behind, another wheel, which adds to the effect, but which is not indispensable. By removing the wheels, bars, and coulters, and attaching another iron apparatus, the machine may be converted into a double mould-board plough. It would be very convenient to have this apparatus, to be made use of when required, and the one beam and handles would answer for both. The action of the grubber is subsidiary to the plough, and similar in its mode of action to the harrow. When the purpose is to stir the ground, without turning it over, as may be done in very many cases, with land that has been ploughed in the fall, previous to sowing it in the spring, the grubber may supersede the operation of the plough—and we would strongly recommend it to be employed in this way, where the land has become hard before it is sown in spring. The grubber is however more frequently used, as a substitute for the harrow in the cleaning of land; and it excels the harrow in this, that, having a heavier frame, and being fixed on wheels, it has not the starting and irregular motion of the harrow, and is not subject to be thrown out of the ground when encountered by obstacles. In using the grubber, the workman walks behind, and makes use of the handles to lift the teeth or coulters out of the ground in turning at the end of the ridges, or when otherwise necessary. Generally the grubber passes once over the ground to be tilled, but it is frequently found expedient to go twice over the ground. In this case it is proper to set the teeth at half the depth required in the first operation, and in the second to set them at the full depth, and in working the second time to cross at right angles to the direction of the first operation. The grubber with two horses, will go over six acres a-day, so that the expense of one operation is equal to one-sixth of that of the plough, or equal to a double turn of the harrows. We would be glad to see this useful implement more generally employed in Canada. Every farmer should have one, who has much land in tillage. They may be of wood, except the coulters, and would not cost much. Necessary implements should be at the command of every farmer when required, and their cost would be amply compensated in a short time.

When in Boston, we had an opportunity of seeing a well constructed cattle house belonging to Mr. Cushing, who resides about five miles from the city. Under the cattle house there are extensive cellars for the reception of manure from the cattle, and from these cellars the manure may be carted to the fields. It would be most desirable to have manure kept in this way, and we have no doubt the value of what would be produced from a given number of cattle, would be much increased over what it is worth, when exposed in the yards to melted snow, and rain. The expense of such cellars would not be great, provided the situation was favourable, and not too low and wet. The same gentleman had one of the most beautiful green-houses we have seen—indeed there was nothing wanting to it, that money, skill, and good taste could have given to it. There was a most beautiful collection of flowers in bloom on the 1st of March, when we were there—and the grapes were then a considerable size, and the gardener said they would be at maturity in May. The grapes were in several stages of succession, to come to maturity early in the summer. We were highly delighted with our visit.

We were sorry to observe in some of the Eastern Townships, several deserted houses, that appeared to have been once inhabited. This we were surprised at, when we know how many strong and healthy labourers, who are not altogether destitute of means, might obtain ample subsistence from the lands that are waste about these houses. It would be infinitely better for persons possessing sufficient means to endeavour to settle upon lands with their families, than wait upon public works for the chances of obtaining occasional employment. It appears extraordinary to see houses and lands waste, while thousands of able bodied men are seeking employment in the country. It is to be regretted that persons so circumstanced, should not be encouraged, rather to go upon lands than remain wasting their time, when they might employ it to advantage. It would be a much more indepen-

dent life to settle upon land, and bring them into production, than to be dependent upon the wages of daily labour. There is another evil, the consequence of this, that men who have means of settling upon land, instead of doing so, seek for employment, and thus diminish the amount of empolyment that is so necessary for the many who are totally destitute of means, and have no other subsistance but what they can obtain by their daily labour. We know this to be the cause of suffering to many poor emigrants. Labouring men who have money, generally possess more influence with employers and others than the poor who have no money, and the former, in consequence of this influence, are more generally employed than the poor who require it for their very existence. It is difficult to check this evil, and we scarcely know how it could be checked, but we would recommend by all means, those who have money and a family, to go upon land, endeavour to acquire independence, and leave the public works, and other sources of employment, open to the more destitute, who have no other means of getting their living. There have been a great number of poor labourers idle in Montreal and the neighbourhood the past winter and we have no doubt many of them have been subjected to severe privations. When the spring opens, however, there will be ample employment for all these men, as large contracts have been taken for widening the Lachine Canal. It is very desirable that proper shelter should be provided for the labourers. Even in the summer season they must suffer in their health from insufficient shelter. We recommend the subject to the consideration of those who have the management of these works.

We had an opportunity of seeing lately near Stanstead, the farm buildings of Colonel Kilborn, and of Eustace Lee, Esq. and found them extensive, and exceedingly well arranged. The buildings were good, the yards divided for the several kinds of stock, and, in Mr. Lee's yard, the water was brought into the stables and yards, by troughs, in a very convenient manner. We were sorry that the snow upon the ground prevented us seeing the state of cultivation of these gentlemen's farms, as we have no doubt they must have been well managed. We observed in Mr. Lee's yard, a shed for chips, with a large quantity of them stored and fit for use. He informed us, he had all the chips regularly gathered, and put under cover in this way, and found them most useful as summer wood. Chips are an injury on the surface of the land, and gathered in this way might be useful. Colonel Kilborn, and Mr. Lee, we were told, occasionally stall-fed cattle, and they have accommodation for a large number. The former gentleman had about 20 in the stalls when we were there, but the latter did not feed any this year. We would be glad to know that all farmers residing at a considerable distance from Montreal and Quebec would apply their lands chiefly to the summer fattening of cattle, to be slaughtered in the fall for exportation. The lands of the Eastern Townships are well calculated for the fattening of cattle, and we do not know any way they could be more profitably employed. For this purpose, however, there must be a constant supply of grass, to finish off the cattle before the end of September, in order that the beef may be prepared for exportation by the end of October. If we expect the exportation of beef to be a profitable trade for this Province we must have such beef as will suit the taste of our English customers, and they will not buy beef that is not sufficiently fat. The profit of keeping stock is greatly diminished when fine young cattle are brought to be slaughtered, that are not half fat, for want of sufficient grass during the summer. The additional quantity of grass that would be required to fatten an ox well, over that which will only make the same animal half fat, would not be a large expense, and when animals are brought to three or four years old, they should be made as fat as abundance of good grass could make them, before they are brought to the shambles. Cattle may certainly be made over fat by stall feeding, but never can be made so by grass feeding.

The following extract from Leibeg's Animal Chemistry is very interesting. We do not think it necessary in making selections for our Journal to confine ourselves altogether to subjects connected directly with agricultural improvement. The present extract is indirectly connected with agriculture, as it has reference to the physical powers of those employed in it, and the means of maintaining that power in healthy action:—

That condition of the body which is called *health*, includes the conception of an equilibrium among all the causes of waste and of supply; and this animal life is recognized as the mutual action of both; and appears as an alternating destruction and restoration of the state of equilibrium.

In regard to its absolute amount, the waste and supply of matter is, in the different periods of life, unequal; but in the state of health, the available vital force must always be considered as a constant quantity, corresponding to the sum of living particles.

Growth or the increase of mass, stands, at every age, in a fixed relation to the amount of vital force consumed as moving power.

The vital force, which is expended for mechanical purposes, is subtracted from the sum of the force available for the purpose of increase of mass.

The active force, which is consumed in the body in overcoming resistance (in causing increase of mass,) cannot, at the same time, be employed to produce mechanical effects.

Hence it follows necessarily, that when, as in childhood, the supply exceeds the waste of matter, the mechanical effects produced must be less in the same proportion.

With the increase of mechanical effects produced, the capacity of increase of mass, or of the supply of waste in living tissues, must diminish in the same proportion.

A perfect balance between the consumption of vital force for supply of matter and that for mechanical effects, occurs, therefore, only in the adult state. It is at once recognized in the complete supply of the matter consumed. In old age more is wasted; in childhood more is supplied than wasted.

The force available for mechanical purposes in an adult man is reckoned, in mechanics, equal to 1-5th of his own

weight, which he can move during eight hours, with a velocity of five feet in two seconds.

If the weight of a man be 150 lbs., his force is equal to a weight of 30 lbs. carried by him to a distance of 72,000 feet. For every second his momentum of force is =30+25=75 lbs.; and for the whole day's work, his momentum of motion is =30×72,000=2,160,000.

By the restoration of the original weight of his body, the man collects again a sum of force which allows him, next day, to produce, without exhaustion, the same amount of mechanical effects.

This supply of force is furnished in a seven hours sleep.

In manufactories of rolled iron it frequently happens, that the pressure of the engine, going at its ordinary rate, is not sufficient to force a rod of iron of a certain thickness to pass below the cylinders. The workman, in this case, allows the whole force of the steam to act on the revolving wheel, and not until this has acquired a great velocity does he bring the rod under the rollers; when it instantly flattened with great ease into a plate, while the wheel gradually loses the velocity it had acquired. What the wheel gained in velocity, the roller gained in force; by this process force was obviously collected, accumulated in the velocity; but in this sense force does not accumulate in the living organism.

The restoration of force is effected in the animal body, by the transformation of the separated parts, destined for the production of force, and by the expenditure of the active vital force in causing *formation of new parts;* and, with the restoration of the separated or effete parts, the organism recovers a force equal to that which has been expended.

It is plain, that the vital force manifested, during sleep, in the formation of new parts, must be equal to the whole sum of the moving power expended in the walking state in all mechanical effects whatever, *plus* a certain amount of force, which is required for carrying on those involuntary motions which continue during sleep.

From day to day, the laboring man, with sufficient food, recovers, in seven hours' sleep, the whole sum of force; and without reckoning the force necessary for the involuntary motions, which may be considered equal in all men, we may assume, that the mechanical force available for work is directly proportional to the number of hours of sleep.

The adult man sleeps seven hours and wakes seventeen hours; consequently, *if the equilibrium be restored* in 24 hours, the mechanical effects produced in 17 hours must be equal to the effects produced during seven hours in the shape of formation of new parts.

An old man sleeps only 3½ hours; and if everything else be supposed the same as in the case of the adult, he will be able, at all events, to produce half of the mechanical effects produced by an adult of equal weight; that is, he will be able to carry only 15 lbs. instead of 30 to the same distance.

The infant at the breast sleeps 20 hours, and wakes only four; the active force consumed in formation of new parts is, in this case, to that consumed in mechanical effects (in motion of the limbs,) as 20 to 4; but his limbs possess no momentum of force, for he cannot yet support his own body. If we assume, that the aged man and infant consume in mechanical effects a quantity of force corresponding to the proportion available in the adult, then the mechanical effects are proportional to the number of waking hours, the formation of new parts to the number of hours of sleep, and we shall have:

Force expanded in mechanical effects.		*Force expanded in formation of new parts.*
In the adult.....17	:	7
In the infant.....4	:	20
In the old man.....20	:	4

In the adult, a perfect equilibrium takes place between waste and supply; in the old man and the infant, waste and supply are not in equilibrium. If we make the consumption of force in the 17 waking hours equal to that required for the restoration of the equilibrium during sleep = 100,= 17 waking hours, = 7 hours of sleep, we obtain the following proportion. The mechanicol effects are those in the shape of formation of new parts:

In the adult man = 100 : 100
In the infant..... = 85 : 250
In the old man... = 125 : 50

Or the increase of mass to the diminution of waste;

In the adult man = 100 : 100
In the infant..... = 100 : 10
In the old man... = 100 : 250

It is consequently clear, that if the old man performs an amount of work proportional to the sleeping hours of the adult, the waste will be greater than the supply; that is, his body will rapidly decrease in weight, if he carry 15 lbs. to the distance of 72,000 feet with a velocity of 2½ feet in the second; but he will be able, without injury, to carry 6 lbs. to the same distance.

In the infant, the increase is to the decrease as 10 to 1, and consequently, if we, in his case, increase the expenditure of force in mechanical effects to ten times its proper amount, there will thus be established only an equilibrium between waste and supply. The child, indeed, will not grow; but neither will it lose weight.

If, in the adult man, the consumption of force for mechanical purposes in 24 hours be augmented beyond the amount restorable in seven hours of sleep, then, if the equilibrium is to be restored, less force, in the same proportion, must be expended in mechanical effects in the next 24 hours. If this be not done, the mass of the body decreases, and the state characteristic of old age more or less decidedly supervenes.

With every hour of sleep the sum of available force increases in the old man, or approaches the state of equilibrium between waste and supply which exists in the adult.

It is further evident, that if a part of the force which is available for mechanical purposes, without disturbing the equilibrium, should not be consumed in moving the limbs, in raising weights, or in other labor, it will be available for involuntary motions. If the motion of the heart, of the fluids, and of the intestines (the circulation of the blood and digestion,) are accelerated in proportion to the amount of force not consumed in voluntary motions, the weight of the body will neither increase or diminish in 24 hours. The body, therefore, can only increase in mass, if the force accumulated during sleep, and available for mechanical purposes, is employed neither for voluntary nor for involuntary motions.

The numerical values above given for the expenditure of force in the human body refer, as has been expressly stated, only to a given, uniform temperature. In a different temperature, and with deficient nourishment, all these proportions must be changed.

We observed in the Boston market that the butchers cut off the hams—and all the lean out of the pork, and sell the latter in a fresh state for present use, and then cut up the fat part of the hogs, and salt it in barrels, which it appears is readily disposed of in that state for family use, and for ships and fishermen. We believe that butchers find this a very profitable way to manage the carcase of a hog, and the lean part of the pork sells at a high price when fresh. This plan would not, however, answer for preparing pork for the English market. We must prepare it for exportation in such a way, that it will please our English customers, or we need not expect to sell to them. Pork sold in the hog, at about the same price, in Boston, that it did in Montreal, this winter—that was about five dollars the hundred. Beef, mutton, veal, lamb, and poultry, were also very nearly the same price in both markets. All the butchers in the Boston market wear either white or striped cotton frocks, and we think the same practice might be very properly introduced by the butchers in our own market.

We make the following selection from an Essay on the Manufactures of Manures, for which a prize was awarded to the author, Mr. Foote, by an Agricutural Society in New England. The Essay was given to us by a gentleman in Boston, and as it contains much useful information we shall occasionally make selections from it. We think the publication of such Essays highly instructive, and regret there is not more of public spirit in Canada to encourage Essays on useful subjects. Much good have been effected in England by this means. *There may be some theories advanced* in Essays not easy to prove, but there will also be much information given that can be made practically useful. We have not in Canada at present, we believe, any society which offers encouragment to write Essays on useful subjects—and certainly it is not because we do not require them. We are not so far advanced in useful and practical knowledge on all subjects, that we do not need any further instruction. No state is so hopeless as that is, when we imagine our knowledge so perfect that we require no further instruction—it is the best educated men only, who are aware how much they have yet to learn.

Preliminary Propositions.—That vegetation annually appropriates to itself, and thus removes from the soil, a certain amount of nutritive principles; and that the removal of a succession of crops, without some compensation in the shape of manures, will gradually impoverish, and, if carried far enough, ultimately exhaust the soil, are propositions so manifestly true, as to require no illustration. We every where see that the process last indicated is sure to be followed by a gradual change in the color and texture of the soil, and by a proportionate diminution of its vegetable products, until, if not arrested, the final result is absolute sterility.

The truth of the converse of these propositions is equally evident. Take an old field which has been reduced to barrenness by an unrelenting system of cropping without compensation, and restore to it a portion of those vegetable matters by the abstraction of which its poverty has been occasioned, and amendment is at once the consequence. Repeat the operation, and a further progress towards fertility is made; extend it sufficiently far, and the face of nature is entirely renewed, and every symptom of a full recovery exhibited.

From these and kindred considerations, readily suggested to the reflecting mind, we draw the following

Inferences.—1. That the appropriate food of vegetation is, for the most part neither more nor less than the ultimate results of vegetation itself, modified by the action of the animal organism, and the several processes of fermentation.

2. That a limited amount only of the food of vegetation is contained in any given quantity of soil.

3. That a single crop cannot be removed from the soil, without diminishing, to a certain extent, its capabilities for supporting vegetable life.

4. That an uninterrupted cropping of any given portion of soil, without remuneration, will at length infallibly reduce it to sterility.

5. That the original fertility of any given portion of soil, can only be maintained by faithfully restoring to it, in the shape of manures, an amount of vegetable matter equal to that which is annually abstracted from it.

6. That an *impoverished* soil can only be *restored* to its original fertility, by the application to it, of an amount of vegetable matter, *greater* than that which is annually taken from it.

7. That the most exhausted lands can not only be regenerated, by sufficiently increasing the proportion of vegetable matter in the soil, but raised above the highest point of their original fertility.

8. That the deteriorated condition of the major part of our cultivated soil, is proof conclusive, that all the resources of the farmer have not, in general, been put in requisition.

9. That the secret of all good farming, lies in the skilful management, and judicious application of the common *home-made manures.*

10. That it is of the highest importance to the agriculturist, to study more carefully the nature of soil, the wants of vegetable life, and the mutual relations and dependencies of the soil and vegetation; and above all, to cast about him and explore the sources of those animal, vegetable, and mineral substances, the proper application of which to his cultivated fields, is not only an indispensable prerequisite to their increased fertility, but the certain harbinger, if coupled with economy, of competence at least, if not of affluence.

Definition of Manure.—Manure is a term of almost unlimited application—embracing an immense number and variety of substances—including, indeed, whatever can be named in the animal, vegetable, and mineral kingdoms, capable of improving and fertilizing the soil. Says the author of British husbandry, 'Any thing whatever may be called manure, which, when applied to the soil, rectifies its defects, corrects any bad quality, or either stimulates it to yield, or stores it with nutriment.' Any classification of so heterogeneous a mass of substances, which should at once prove satisfactory to the agricultural chemist, and intelligible to the merely practical farmer, cannot, in the present state of agricultural science, be attempted with any prospect of success. A practical classification alone, however, would seem to be called for on the present occasion, and that which is regarded as the simplest will be chosen.

Classification of Manures.—'From the earliest speculations on the nature of manures, down to a very recent period, manures have been divided into two classes, nutritive and stimulative, or such as furnish the direct food of plants, and those which act as stimulants, or excite plants to take up and assimilate such kinds of food as is presented to them. In the first class have been placed all decayed vegetable matter, farm-yard manures, animal excrements, night-soil, and such other matters, as having been derived from plants, are considered as capable of being reconverted into vegetable matter. In the second class, it has been the custom to place gypsum, lime, such salts as are found to produce a favorable effect on vegetation, as the phosphates of lime in bones, and the nitrates existing in saltpetre, soda, &c.' [*Albany Cultivator*, Vol. 8, p. 95.] To these may be added a third class, consisting of variable mixtures from the two former, with several kinds of earth, and denominated composts. Thus we have the simple classification of all the manures into, 1st, *Nutritive Manures*; 2d. *Stimulative Manures*; and, 3d *Composts.*

Nutritive manures.—The great depositories of the manures of this class are the *barn-yard*, the *piggery*, and the *privy vault.* Each of which will claim our attention, for a moment, in relation to the causes which operate to diminish the amount and value of their contents.

Causes of Waste.—How, then, are the contents of these depositories chiefly liable to waste? We answer, 1st. By *infiltration*, or soaking away into the earth; 2d. By *evaporation*, or being taken up by the sun and winds; 3d. By excessive *fermentation*, in which the heaps accumulate so great a degree of heat, as to dissolve the salts which they contain, and dissipate them in the form of gaseous exhalations; and, 4th, by *drainage*, or flowing away in the currents of water, which are suffered, but too often, to despoil our barn-yards of their richest treasures, and to defile our highways, and clog up our ditches, with that which might otherwise fatten our cornfields.

Remedy for Drainage.—To close effectually the last-named waste-gate, it is only necessary so to excavate the central portions of the yard, as to form a sufficient reservoir for the liquids that will naturally find their way into it, and carefully convey away the droppings from the roofs of the buildings, by good conductors, and to turn the

course of any superfluous waters from higher grounds, by effective trenches.

Remedies for Infiltration and Evaporation.—To guard against infiltration, let the yard, and especially the excavated portions of it, receive a thorough coating (if nature has not been beforehand in supplying one) of the purest *clay* at command; and to escape the mischiefs of evaporation, furnish it with an abundance of litter, such as refuse straw, orts, weeds, and leaves from the forest, together, with muck, surface-soil from the road-sides, hedges and ditches, or any other convenient matters of a porous nature, to absorb the liquids, and protect the whole mass from the influences of the atmosphere. A further security still, will be found in occasionally strewing the yard with plaster, which, by combining with the volatile portions of the manure, and converting them into salts not volatile, will rob the atmosphere of that portion of its prey.

Remedy for Fermentation.—Having taken the above precautions, little danger need be apprehended from excessive fermentation, except in case of considerable piles of horse-dung; and here it will be very easy to avert the evil, either by occasionally spreading open the heaps, or, what is far better, by interlarding them at proper intervals, with muck, or surface-soil, which will not only effect the object in question, but, by absorbing the juices of the pile, become of equal value with the dung.

The markets have continued without much variation in prices during the winter—nor is it probable they will change now to any great extent. Beef and mutton are rather higher, but in pork and veal there is scarcely any difference in price. The grain market has been stationary throughout the winter; the price of wheat and flour moderate, and of other grain much too low. Oats are rather higher, but still at a low rate. There is a large consumption of this article in consequence of the number of horses kept in and near Montreal, and of its extensive use in distillation. Potatoes are not high, though we think they will rise in price in spring, as a large portion of them were lost in the fall, before they could be taken up and secured. The hay and straw markets have been largely supplied, and prices moderate. It will depend in a great degree upon the early commencement of spring, whether the price of these articles will advance or not. As the farmers will probably sow a large quantity of wheat this year, it is not likely that so much hay will be brought to market the next year, and the price may advance to something like a fair remuneration, which it never gives when under from six to eight dollars the hundred bundles, and for straw in the same proportion.

The month of March has been very moderate and little snow fell—there is, however, a considerable quantity still covering the land, and we need not expect it will all disappear for several days, unless the weather becomes much warmer than at present. The roads in the neighbourhood of Montreal, are much broken up, and sleighing difficult. In the city, wheel carriages have been some time in general use. We must expect bad roads in the country, neither fit for wheel nor winter carriages, as in some places there remains a large quantity of snow, while in others it is nearly gone. We have had a long winter, of full five months up to this time, which is very unusual. On an average of many years, the snow does not cover the ground more than four months, in the cultivated parts of Canada. We believe it would be advantageous that our lands, roads and rivers should be covered with snow and ice from the 1st of December to the 1st of April, but when it happens that the winters continue from five to six months, it shortens the working season very much and inconveniently for the farmer. It is impossible to conjecture, with any pretension to accuracy, what sort of season the ensuing one may be, but we may hope it will be a favourable one for the farmer, as the winter has been cold, and a large quantity of snow has fallen. Farmers will require to use great exertion when work is possible in the fields, because most of them have ploughing to be executed, which they were prevented from finishing last fall, by the early commencement of winter. Much will depend upon the favourable state of the weather. More work can be done in one month of fine weather than in two of wet and changeable weather, and it can also be much better executed.

The following selection from Low's Agricultural work, on the weight of cattle, may be interesting to farmers:—

The parts of an ox to which the term *offal* is usually applied are the head and feet, the tallow, the hide and horns, and the entrails.

The fat of an ox, it has been said, is that unctuous substance which is interningled with, and surrounds, the muscles and other parts. That which grows internally is mostly termed tallow, and is generally considered to be of the same value, weight for weight, as the flesh of the fore-quarters; and so likewise is the hide. These and the other parts, termed offal, are commonly regarded as forming about one-fifth of the value of the animal. When beef is said to be sold at a certain price *sinking the offals*, the meaning merely is that the whole price of the animal is reckoned upon the carcass alone; hence, when beef is sold at a certain price sinking the offals, that price is more than if it were sold without including in it the price of the offals.

That portion of the ox which is used for food, exclusive of the offals, is usually termed the quarters, because the animal, on being cut up, is divided into four parts or quarters. The most esteemed parts for food are the hind-quarters. These weigh somewhat less than the fore-quarters; though the more perfect the form of the animal is, the more nearly do the fore and hind quarters approach in weight.

Practice enables persons to judge of the weight of animals by the eye alone; but it is convenient to be able to ascertain the weight by measurement. This may be done with considerable correctness in the following manner:—When the animal is standing in a natural position, measure his length in feet from the foremost upper corner of the shoulder-blade in a straight line to the hindmost point of the rump; then measure the girth or circumference immediately behind the fore-legs; multiply the square of the girth by the length, and this product by .238, which will give the weight of the quarters in stones of 14lb. each. This rule has been arrived at by regarding the body of the animal as a cylinder, and determining, by experiment, what proportion, on an average, the actual weight of the quarters of animals bears to the cylinder.

Another method of ascertaining the weight of fat cattle, is, by weighing them when alive. One-half of the live-weight may be considered as equal to that of

the four quarters; but in the case of fully fattened animals, a more correct result will be arrived at by multiplying the gross weight by .605. This rule has been arrived at, by determining, from an average of cases, what proportion the dead weight of the four quarters is found to bear the living weight of the animal.

It is said in England, that an ox of from 700 lbs. to 800 lbs. weight, will consume about one ton of turnips in a week, or about one acre of good turnips in 24 weeks and if the animal thrive well it will gain about 14 lb. in weight in the week. If fed with oil-cake, an ox would require from 12 lbs. to 15 lbs. per day with 7 lb. of hay. It is recommended that potatoes should be given with turnips in feeding animals as they are said to thrive well on mixed food. When fed with potatoes and turnips, one meal of the former and two of the latter in the day will be found a good arrangement. When cattle are fed on the grains of distillation, they generally get from a bushel to a bushel and half per day, with as much hay as they can use, giving them the liquid portion of the wash as drink. From 4 to 5 ounces of salt may be given per day to a full grown ox when stall feeding. In Canada, turnips cannot be applied to the stall feeding of cattle, in consequence of the difficulty of storing them and keeping them sound in large quantities. We may, however, judge, from the value of turnips in nutriment, compared with other food, the quantity of different descriptions of food that would be necessary for a full grown ox of a certain weight. We shall give the table of the comparative value of food for animals in a future number.

In the summer of 1792, Arthur Young visited the farm of Robert Bakewell, the celebrated breeder and importer of stock, and published the following account of his mode of husbandry in the annals of Agriculture. Mr. Bakewell was one of the first agriculturists who attempted to bring cattle and sheep to that perfection of form, that would produce most profit to the owner, and he did succeed admirably. His exertions were, during life, constantly applied to this object, and the improvement effected by his careful, and skilful selection of breeding animals, has been of incalculable advantage to the British Isles. Mr. Bakewell may have been actuated by motives of self interest in all that he did, and who is it that is not acted upon by this motive, in a greater or less degree? but notwithstanding this, he has deserved well of his country, as all men will do, who are instrumental in producing a permanent improvement, that gives an increased value to the productions of a country. We wish we had a few such men in Canada, and we need not question their motives, or find fault with them.

"From Loughborough, we sent our letter to the celebrated Mr. Bakewell, who was polite enough (the afternoon proving rainy) to come to town, and spend the evening with us; and next morning we accompanied him to Dishly, where he first showed us his stock of black cattle, bulls, cows, and oxen, all remarkably well shaped, and in good condition. It has been Mr. Bakewell's study to promote and improve a breed of cattle, which lays most fat on the upper, or roasting parts, these selling at a much higher price than the lower, or boiling pieces; and, from the cattle shewn us, he seems to have wonderfully succeeded in attaining his object. The cattle were in the house, and not shewn us together, but brought out, one after another, which, it seems, is a rule of the society with which he is connected.

Mr. Bakewell has been in the practice these several years, of watering his meadow and pasture lands, which he considers a great improvement, as superseding the necessity of manure, and producing more food by 20s. per acre; though the original expense of making the canals and intersections, did not exceed that sum, and the annual expense attending on keeping the drains in proper order, and all the watering operations, is not more than 5s. per acre. He has no regular or fixed period for watering, as in Wiltshire, but keeps watering all the year round, cutting generally four times in the season, and giving what is cut, green to his cattle in the house. He has mowers constantly at work, and says he keeps cutting till Christmas. The time and manner of watering, Mr. Bakewell says, is very discretionary, and depends much upon situation. When very hot, the water is allowed to continue about forty-eight hours, when moderate about four days, and when cold about two weeks. Watering is not yet become general. We formerly mentioned, that the Bishop of Llandaff had begun it at Calgarth, with success. Where the situation answers, it certainly ought to be adopted, especially in countries at a distance from lime, and other foreign manure; and perhaps it is one of the greatest means of improvement, that can possibly be introduced into many parts of Scotland. Mr. Bakewell thinks it would also be of considerable benefit, even to arable land, where it could be accomplished.

We could not see his rams, on account of a rule of his society, that they are only to be shewn from the 8th of June to the 8th of July, and from the 8th of September to the end of the season.

Mr. Bakewell informed us, that a parcel of sheep had gone together, on the same pasture, since they were lambs;—that, with a view to see which of them fed upon the least food, he took them into the house, and tied them up for a fortnight, weighing them when they went in, and giving them as much food as they chose to eat, which was also weighed, and a regular account kept of the whole. The following was the result with regard to the four last above-mentioned:

	w't of Sheep. lb.	w't of meat. lb	offal. lb.
Hereford,	149	113	36
Half Hereford, and half Spanish,	163	129¼	44¾
Half Hereford, and half Leicester,	170	132¼	37¾
Leicester, or Dishly breed	174	150½	23¾

Mr. Bakewell prefers a light boned, to a large boned sheep, and mentioned an experiment he had lately tried, in order to settle his mind upon this subject. The large boned sheep, weighing 200 lb. eat 143 lb. in a fortnight; while the light boned, which weighed 223 lb. eat only 108 lb. in the same period. Mr. Bakewell indeed, goes to say, that he never saw a good sheep with a large bone; and he applies the same observation to black cattle and swine, signifying, that he questioned much if the West Highland Scotch were not the best kind of black cattle. He added, that in his opinion, many small are to be preferred to a few

large cattle or sheep, if the quantity of pasture or food will pay equally, by feeding the many as the few.

The criterion or excellence, with Mr. Bakewell, seems to be, *what will pay most for the same quantity of food.*

There are three different breeds of sheep in Leicestershire; the old Leicester breed,—the new Leicester, or Dishly breed,—and the common, or forest sheep. The fleece of the Dishly breed, weighs at an average, 8 lb. and sells, at present, at 10d, per lb. Mr. Bakewell considers his own breed hardy enough for any part of the island, that could produce them sufficient food; and even able to climb and live on mountainous grounds, which if it were the case in summer, could hardly be possible during the snows of winter, whether the shortness of their limbs, or the weight of their fleece and carcass, is taken into consideration. In regard to climate, Mr. Bakewell expressed an opinion, that, in general, it had not such an effect as was supposed, in changing the nature of sheep or wool; referring, in proof of that idea, to the above different kinds of sheep shewn us, as still retaining their distinct and original qualities, both in regard to shape and fleece, notwithstanding the change of climate and pasture. Keep the breeds pure, and Mr. Bakewell is satisfied, that no material change will be effected by either climate or pasture. This not being generally believed or understood, deserves to be further investigated and attended to Mr. Bakewell, however, acknowledged, that the same kind of sheep would not produce such fine wool, in *rich* as in *poor* pasture, which is certainly agreeable to past experience and observation.

Notwithstanding that Mr. Bakewell gets about 3000l. a year for hiring out his rams, he expressed an unfavorable opinion of the practice of crossing, affirming, that it would be much better to find out what was the best, or most suitable breed, for the different kinds of land, *e. g.* for land at 5s. 10s. 15s. and 20s. per acre; and suppose, in a progressive state, other four kinds, making in all eight; and to extirpate the rest, in place of keeping them on, and attempting their improvement by crossing."

A writer in the "Maine Farmer" says that:—

Bakewell's wonderful improvements in live stock, were effected by his always selecting and keeping the best for breeders, and not like the most of our farmers, selling the best to the butcher or drover, because they could obtain a dollar or so more per head.

His principles were, fine forms, small bones, and a true disposition to make ready fat, which is indeed inseparable from small bones, or rather fine bones, and fine forms, or true symmetry of parts.

In the fattening of cattle and sheep, there is a point to be obtained, at which their flesh will be of the best quality and most valuable to the consumer, and all beyond this, is a waste of time and expense in their keeping.

An eminent breeder says "before Mr. Bakewell's days, we had no criterion but size, nothing would please but elephants and giants." And this is too much the case with our farmers at the present day. But Bakewell's prime object, in improving cattle and sheep, was to render his animals most profitable in *beef* and *mutton.*

So far as we breed cattle and sheep in this country, we must extend our views beyond *beef* and *mutton*; and with the former combine *milk*, *butter*, and *cheese*, and a fitness for *labour*; and together with *mutton*, aim at the greatest quantity of the *most useful wool.*

We wish to remind our readers upon the importance of keeping none but good breeds of stock whether cattle, sheep, or swine, even if they keep but few of them rather than a great many poor ones.

We perfectly agree with this writer. The most useful animals of all those kept on land are such as will give the largest returns for their cost, and what they consume during the time the farmer keeps them.

Table shewing the number of days between any day in any month and the same day in any other month for a year.

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sep.	Oct.	Nov.	Dec.
Jan.....	365	31	59	90	120	151	181	212	243	273	304	334
Feb.....	334	365	28	59	89	120	150	181	212	243	273	303
March...	306	337	365	31	61	92	122	153	184	214	245	275
April.....	275	306	334	365	30	61	91	122	153	183	214	244
May.....	245	276	304	335	365	31	51	92	125	153	184	214
June.....	214	245	273	304	334	365	30	61	92	122	153	183
July.....	184	215	243	274	304	335	365	31	62	92	123	153
August...	153	184	212	243	273	304	334	365	31	61	92	122
Sept.....	122	153	181	212	242	273	303	334	365	30	61	91
Oct.....	92	123	151	182	212	243	273	304	335	365	31	61
Nov.....	61	92	120	151	181	212	242	273	304	334	365	30
Dec.....	31	92	90	121	151	182	212	243	274	304	335	365

Importance of well Ventilated Apartments.—A man consumes or spoils more than one gallon of air a minute; consequently, all closely confined places must be very unwholesome. Candles and lamps become dim in public assemblies, and this is the indication of the impurity of the air. The perspiration from animal bodies is exceedingly injurious in a confined space. "Three thousand human beings," observes Dr. Arbuthnot, living within the space of an acre of ground, would make an atmosphere of their own steam about 71 feet high, which if not carried away by winds, would become pestiferous in a moment." —Dressed food, both animal and vegetable, pollutes the atmosphere; consequently, a room is very insalubrious immediately after it has been used for the purpose of dining. Dr. Priestly, on one occasion, corked up a bottle of this kind of oxygen.—Every room ought to be completely purified, by the opening of the door and windows, at least once in a day. A close bed-room is also extremely unwholesome, neither ought the bed to be surrounded with curtains; many persons have a habit of sleeping with the curtains drawn entirely around the bed; no practice can be more injurious. The fire-place should never be stopped up by chimney boards, but in damp and very cold weather; a fire is essential to health, care being taken that the room is not over heated.—*Many dangerous colds* are caught by changing the atmosphere of a warm, dry sitting room, for that of a cold, damp bed-chamber; such transactions are injurious even to the robust, and often fatal to the weak and delicate.

Female Society.—A modern writer observes that "he who speaks lightly of female society, is either a numskull or a knave,"—the former not having sense enough to discern its benefits, and the latter hating the restraints that it lays on his vices.

Never choose a woman for a wife who has thin lips and a sharp nose—except you want a *scold.*

SONG OF THE SOIL.

BY J. H. R. BAYLEY.

I start the bulb of the beautiful flower,
And feed the bloom of the wild wood bower
I rear the blade of the tender herb,
And the trunk of the stalwart oak I curb;
I force the sap of the mountain pine
And curl the tendrils of the vine;
I rob the forest, and clothe the plain
With the ripest of fruit and the richest of grain.

The cheek of the peasant I flush with health,
And yield the sturdy yeoman wealth.
I give the Spirit of Commerce wings,
And prop the tottering thrones of kings,
The gorgeous palace and humble cot
Owe every atom to me they've got—
And the prince at his banquet, and hind at his board,
Alike must depend on the fare I afford.

Man may boast of his creature might—
His talents in peace, and his prowess in fight;
And lord it over beast and bird,
By the charm of his touch, and the spell of his word·
But I am the sole and mighty source
Whence flows the tide of his boasted force—
Whatever his right and whoever he be,
His pomp and dominion must come from *me!*

I am the giver of all that's good,
And have been since the world hath stood;
Where's there wealth on the ocean, or beauty on land,
But sprung from the warmth of my fostering hand?
Or where the object fair and free,
That claims a being, but's traced to me?
Cherish! then, cherish, ye sons of toil,
The wonderful might of the fruitful soil!

MONTREAL MARKET PRICES.

CORRECTED BY THE CLERK OF THE MARKET.
New Market, March 29.

Wheat,.....per minot,.....	5/6 @ 6/0
Oats,..... do	1/0 @ 1/3
Barley,..... do	2/0 @ 2/6
Peas,..... do	2/0 @ 2/9
Buckwheat, do	2/0 @ 2/3
Rye,..... do	2/6 @ 3/0
Flaxseed,... do	4/6 @ 5/0
Potatoes,.... do	1/0 @ 1/3
Beans, American, per bushel,.....	4/0 @ 4/6
Do. Canada,.... do	6/0 @ 6/8
Honey, per lb,.....	0/4½ @ 0/5
Beef,... do	0/2 @ 0/5
Mutton, per qr.	1/3 @ 4/6
Lamb,... do	2/0 @ 3/6
Veal,..... do	2/0 @ 15/
Pork,.....per lb,.....	0/3 @ 0/5
Butter, Fresh, do	0/9 @ 0/10
Do. Salt, do	0/6 @ 0/6½
Cheese,..... do	0/3 @ 0/4½
Lard,..... do	0/5 @ 0/6
Maple Sugar, do	0/4 @ 0/5
Eggs, per dozen, fresh,.....	0/6 @ 0/6½
Turkeys, (old), per couple,.....	5/0 @ 6/0
Do. (young) do	3/0 @ 5/0
Geese,..... do	4/0 @ 6/0
Ducks,..... do	2/0 @ 3/6
Fowls,..... do	2/0 @ 3/0
Chickens,..... do	1/2 @ 2/6
Partridges,..... do	2/6 @ 3/0
Hares,..... do	1/0 @ 1/3
Apples, American, per barrel,.....	6/0 @ 9/0
Do. Canada,... do	5/0 @ 12/6
Flour, per quintal,.....	12/6 @ 13/4
Beef, per 100 lbs.,.....	12/0 @ 25/
Pork, Fresh, do	22/6 @ 27/6
Hay, per 100 bundles,.....	20/0 @ 27/6
Straw, per 1200 lbs.,.....	12/6 @ 17/6

UNRULY MILKERS.—Does your cow kick? Do not fly into a passion, and pound her with a handspike, or beat her with a goad or cow-hide, or vent your spite in kicking her in turn. You will only spend a great deal of vengeance uselessly; causing great wear and tear of temper, make yourself feel very foolish when you get over it, and set a bad example to your children; while your cow, in seventy cases out of seventy-one, will kick as badly as before, or worse. If she is a heifer, you will certainly teach her to kick; as her kicking in the first instance was from pain or fright, or some such cause, of which she would be cured by simply paying no attention to it. A heifer never kicks from principle. If she is an old cow, your thrashing will generally be worse than thrown away. Just keep philosophical, and try other means.

Make a pen of just the size that the cow can comfortably stand in and no more. This you can do in the corner of your yard, by setting down three posts, and boarding them up fence-like, leaving it open at the end to drive in the cow. Let a space be left open at the side where you wish to milk. Put your cow into it, and fasten her in by stretching a chain across the end of the pen behind her. Then take a piece of rope, say fifteen feet long, and tie one end of it to a post behind the cow, and near its length distant from her: tie the other end to the leg of the animal, just above her foot, draw it back as much as it would naturally be for her to be milked. Then sit down and milk the cow at your leisure. It will take a man an hour perhaps to make the pen; and when once made, it is very little more trouble than to milk without. She may object going into it the first and second times, but will afterwards give no trouble.

This we recommend only, however, when a man has an animal, valuable otherwise, which will kick—*a poor* cow that will kick, is too great a nuisance to think of keeping at all.—*Prairie Farmer.*

FRESH GARDEN, FIELD AND FLOWER SEEDS.

THE Subscribers have received and offer for sale:—
2500 lbs. FINE FRESH VERMONT CLOVER SEEDS,
200 minots SUPERIOR SIFTED TIMOTHY SEED,
A few Bushels of FINE SEED WHEAT, imported from RUSSIA.
ENGLISH SEED BARLEY.

Together with a general assortment of Garden, Field, and Flower Seeds, all warranted fresh and of the growth of 1843.

S. J. LYMAN & CO.
(LATE J. BIRKS & CO.)
Place d'Armes.

Montreal, April 1, 1844. 3m.

The Canadian Agricultural Journal,

PUBLISHED MONTHLY,

AT ONE DOLLAR PER ANNUM,

PAYABLE IN ADVANCE.

Any Post Master or other individual who obtains six subscribers, to be entitled to one copy, gratis.

As the object of this Journal is to improve Canadian Husbandry, by the dissemination of the best and cheapest Agricultural information, the charge for it will be simply sufficient to cover the necessary expense. The subscription price will therefore be Five Shillings per annum, to single Subscribers. Societies or clubs will be furnished at the following rates:—

50 copies for.....	$30
20 copies for.....	15
10 copies for.....	8

Payable always in advance.

WILLIAM EVANS, EDITOR AND PROPRIETOR.

LOVELL AND GIBSON, PUBLISHERS.