

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.

- 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.
- Additional comments:/
Commentaires supplémentaires:

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 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

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

10X	14X	18X	22X	26X	30X
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12X	16X	20X	24X	28X	32X

THE

CANADIAN AGRICULTURAL JOURNAL.

Vol. III.

MONTREAL, DECEMBER 1, 1846.

No. 12.

We have now brought our journal to the last number of the third volume through many discouragements certainly, and an almost total want of support from those from whom we might reasonably expect it. It is an extraordinary circumstance, that this journal, the only one in Eastern Canada published with the sole object of promoting the improvement and prosperity of Agriculture, that must produce the means of subsistence, directly and indirectly for the whole population of Canada, and, be the principal source of our revenue, should want due support, and that we should now have to complain that we have expended a very considerable amount, over the subscriptions we have received, or are likely to receive. We have addressed the journal to many individuals who are not farmers, but whom we supposed, nevertheless, would feel an interest in promoting the prosperity of Canadian Agriculture, as the first and principal interest in the country, and would be disposed to support by the trifling amount of one dollar annually, a publication that was likely to do good, and could not do harm. We have addressed it to farmers who we expected would be sure to support us, if upon no other principle, upon that of rendering them a service, fully equal to the amount of subscription. There are we suppose not less than forty or fifty journals devoted to mercantile interests, and to politics published in Eastern Canada, and only one Agricultural journal, for which the annual subscription is only five shillings, about one fourth the cost of any other journal, and though Agriculture is the basis which must give support to all other interests in Canada, yet we could not collect one third of the amount required to pay the printer. If this state of things does not show the estimation in which our Agriculture is held by the respectable classes in Canada, and by Agriculturists themselves, we do not know what can show it. It is all very plausible for farmers to say, "we require no book farming or instruction in our profession, which we already perfectly understand." If this reply be correct, and reasonable, then certainly Agricultural Societies are useless, and it is useless to publish any thing relating to the science, or art, of Agriculture, or the results of experiments in the practice of husbandry. Agricultural publications are useful, or

they are not, and if they are not useful, it would be better not to waste time and money in their publication. We do not pretend that our journal is the most useful that could be published on Agriculture, but we presume it contains no selections that are not calculated for instruction, and equal to any that are published with that object. The public money paid in premiums by Agricultural Societies generally goes to the best farmers, or those who have capital to pay for good stock, and crops, but it is of very little benefit in offering instruction and encouragement to farmers who require both. A very small portion of the funds of each County Society applied to the purchase of this, or some other foreign Agricultural publication, and circulated among the farmers generally, we presume would not be a waste of public money granted expressly for the improvement of Agriculture, not with those who are already so improved as to require no more, but amongst those who have no such pretensions, to be so perfect in their profession, that it would be impossible for them to receive any more profitable instruction: A few Agricultural Societies, in Western Canada, do take our journal for distribution, at a low price certainly, but not one such Society in Eastern Canada, takes a copy from us. Our friends have often recommended us to discontinue our publications, that have been so heavy a drain upon our time and money, but we have persevered hitherto, in the expectation that some time or other, we would obtain support and countenance from the Government, as this was all that would be required to insure us the support that has been withheld from us, from other quarters. We now submit the matter to those who may be better capable of estimating the probable amount of benefit which this journal would be likely to produce in Eastern Canada, published in the English and French languages. If it is considered that it would not be useful, it would of course be folly to continue it. But on the contrary, should it appear that it would be expedient to publish it, in both languages, and circulate it generally, through every parish in Lower Canada, we promise to make the journal as useful as we possibly can. For the time past we have not had the encouragement of support, but on the contrary the very great discouragement of knowing

that we were expending our time and money, with out a hope of remuneration. The case is now respectfully submitted, and it will depend upon the encouragement we receive, what course we shall pursue, in regard to continuing the publication.

SCIENCE & PRACTICE OF AGRICULTURE

BY THOMAS SKILKING.

Dublin: James M'Glashan; W. S. Orr and Co. London.

In regard to labour, which is a most important subject with the farmer, the quantity and quality greatly depend upon the state of the drainage. If the land is of a heavy clay description, and undrained, the labour will be severe both on man and horse, and of course expensive; but if dry, even the most tenacious soils will be comparatively easy, and cheaply done. Besides, wet land can only be laboured at certain times and seasons—always late. Late ploughing causes late seed time, and late harvest, which seldom turns out well. The early crop is always the safest and most productive. Besides, the ground is never in a proper condition to receive the seed; it is either too wet or too dry. If sowed when wet, a scurf will form on the surface in dry weather, exclude the air, and injure the crop. If suffered to get too dry, it is then of the consistence of brick, and no extra labour will break it down to a fine state of tilth, to cover the seed properly; and the same consequences follow—the dry spring will injure the crop. But the most retentive soil, when properly drained, can be ploughed at any season (early of course); the winter's frost will act on and ameliorate it in various ways. The first indication of spring will find it ready for the seed, loose, friable, and easily managed; much less seed will suffice, the seed will get a favourable bed, and a loose fine cover. Such advantages must produce an early and abundant crop; not to speak of a dry warm soil in winter for the autumn sowed crops, and the difference of preparing wet and dry land for potatoes and other green crops in the spring and summer.

A great portion of the farmer's difficulties are in prospective. We are in dread of a goblin, yet we have never seen one. The farmer is in dread of the pernicious qualities of the subsoil, because he has not tried it, or if he have, it has been done in such an injudicious manner as to ensure a failure in the expedition. But the question arises—What is the difference between the surface and the subsoil? They are in general composed of the same ingredients, of like materials; but the surface soil has been cultivated, repeatedly turned over and exposed to the ameliorating influence of the atmosphere, air, heat, light, and frosts, the grosser particles broken down, the metallic substances oxydized, all mixed with, and enriched by organic and inorganic matter, in the form of manure. This being the case, why should not any portion of the under soil, which is lying idle, be brought up and treated in the same manner, with like success, and rendered equally fertile; but the subsoil has renovating and enriching qualities, which are always required above. Land which has been long cultivated, and the crops carried off, is exhausted of the inorganic manure, the salts of lime, magnesia, soda, potash, &c.; but these substances are in general contained in the subsoil, lying idle or dormant, and will become available when the soil is brought up, acted on, and decomposed by the atmosphere. By this means land is renovated, and the necessary food supplied to the

crops. The popular dread or dislike of trenching up the subsoil, has arisen, in a great measure, from the well known fact, that certain subsoils contain ingredients of a deleterious or poisonous character, which, coming in contact with the roots, produce disease and weakness in the plant; but this is the best reason why such subsoils should be improved, the poisonous qualities neutralized and removed. To bury and keep down a bad subsoil, is only perpetuating an evil. It has been found that the deleterious substances in the soil are the salts of certain metals, of iron in particular. The well known *red till* abounds in this, and its noxious qualities arise from it. Now, red till, or any other such substance may remain buried under the surface soil for centuries, as it has done, without being changed in its properties; but trenching it up to the surface, exposing it to the action of the atmosphere, and mixing it with quick-lime, the lime will decompose the salt, by combining with the acid, and forming inorganic manure (a salt of lime,) at the same time, the metal being free, will immediately combine with the oxygen of the atmosphere, and form a harmless, if not a useful ingredient in the soil. On this principle of removing those noxious salts from the ground, merely subsoiling, stirring, or breaking up the subsoil, and allowing it to lie or remain below, is recommended; the water and air get a free passage through it, and the noxious salts being soluble, are washed down in the drains. Besides the chemical changes produced in the soil, by the free admission of air and water, and its exposure to the atmosphere, trenching has the effect of permanently improving it in regard to the principal constituents, the earths, sand, clay, and lime. In mixing and blending them together, both surface and subsoil are put into a better condition, and a more happy combination is produced. It very frequently occurs that the subsoil contains some of the earths in excess, which are required above, and *vice versa*. Say the upper soil is light sand, gravel, or peat, they may be clay, or marl, or both below.—Land that has been frequently limed always contains much of this substance in the under soil, as its disposition is to sink. Now, if these are trenched up and intermixed, they are both brought into a favourable and fertile condition; the sand, gravel, or peat above gets a mixture of clay and lime, which will give them a consistence and a capability of carrying all kinds of crops, and the light soil that replaces the heavy below, keeps the bottom free and open. In fact there is nothing to prevent almost any farmer to have a fertile soil, and of any required depth, if he will only exert himself with skill. The same results follow the throwing down a heavy, and bringing up a lighter soil. The condition of the soil, in regard to a proper mixture of the earth, is of the first importance.—They must be in due proportions to ensure high fertility.

THE SUN FLOWER.—This plant should be cultivated much more than it is at present, in rich soils. It yields a large quantity of seed per acre, and it is especially valuable for fattening poultry, making the flesh exceedingly sweet and delicate. It is also excellent food for cattle, more especially when ground up with a mixture of other grain. It is said that from 30 to 40 lbs. of oil can be extracted from 100 lbs. of seed, and that it brings a good price. The leaves make good cigars.—*American Agriculturist.*

A person in North Shields has a rabbit of the Spanish breed which has in four litters produced forty-seven young ones—first litter, nine; second, fourteen; third, twelve; and the fourth, ten.—*Newcastle Journal.*

IMPROVEMENT OF LAND BY MECHANICAL MEANS.

By MR. JOHN CAMERON, Assistant in the Laboratory of Professor Johnston, Edinburgh.

The art of improving land by mechanical means was known and practised by the ancients to a considerable extent; but it is only within a very recent date that its advantages have been fairly appreciated and fully realized. The progress of this department of art has been commensurate with the spirit of improvement which is so peculiarly characteristic of the present age.

By the persevering exertions, and acknowledged talents of Mr. Smith, of Deanston, the most recent and valuable improvements have been made in this department of the art of culture. But as preliminary to the subject, and before we proceed to treat of it in detail we will submit a few observations on the impediments which a superabundance of water or moisture presents to the healthy condition and growth of the crop.

A superabundance of moisture frustrates in a great measure the end which the farmer has in view in the general working of the land.

Wet lands are apt to retain the chill waters of winter till a late period in spring; and when the parching winds of March overtake a soil of this description, it is deprived in a serious degree of its productive energy. Vegetation is generally later in making its appearance in spring where water has been allowed to accumulate and stagnate, the farmer is prevented from commencing his operations till the season is far advanced, and a late harvest with a crop inferior both in quantity and weight is generally the result. To apply manures to a soil of this description is useless, for the beneficial influence which they are in other cases calculated to produce would be almost if not completely counteracted. These, among other reasons, should induce both landlord and tenant to avail themselves of every contrivance by which these impediments may be partially if not entirely removed.

Let us now consider a few of the most important mechanical means that have been devised for the improvement of the land.

1st DRAINING.—This is allowed on all hands to hold the first rank amongst the merely mechanical means by which the soil is rendered capable of producing valuable crops. In stiff and heavy clay lands draining is attended with the most beneficial results, and few will be inclined to dispute its efficacy in those cases where water has been found to lodge and stagnate in the surface soil. The drain not only carries away the rain water from the surface which may have a tendency to accumulate and stagnate there, but also arrests the water which may spring from beneath. As this water often holds in solution ingredients noxious to vegetation, the subsoil is thus prevented from retaining substances injurious to the plant, whilst the surface soil is, at the same time, preserved from an excess of moisture. In land which has been drained the water of the rains make its way easily through the soil, and does not sweep along the surface and carry along with it those ingredients which are beneficial to the soil, as is too frequently the case in undrained land. The rain waters too, in their passage through the surface soil to the drain leave in it those substances which they are known to contain favourable to the growth of plants. They also wash out from the surface soil, and, if the drains be deep enough, contribute to clear the subsoil of all those noxious substances which have a tendency to collect in the cold and wet bottom soils of undrained lands, and which are hurtful to the roots of those plants which

penetrate deep into the soil. This is one of those advantages which in the course of time result from the draining of land. When efficiently wrought out it constitutes a most important permanent improvement which can be fully produced by no other available means. Its permanency, however, will depend upon the manner in which the drains are kept. And if the draining be neglected, the openness of the soil will be more or less impaired till the land will again gradually return to its original condition. The constant filtering of water through the soil in making its way to the drains displaces the air that is lodged in it and keeps up a constant fresh supply which, it is well known, has a considerable effect in promoting the growth of all cultivated crops. Other good results follow the drainage of the superfluous water from the land, and which are equivalent to a change of soil. The earth becomes drier, looser, and more friable; the hard and stiff clay crumbles down and offers less resistance to the plough, so that they are more easily wrought and present fewer impediments to the operations of the farmer. Solids by this means too often change their temperature, lose their former coldness, and become better fitted for the production of vegetation. An effective drainage, in many respects and in many localities, is equivalent to a change of climate. Vegetation appears earlier in spring, and consequently the harvests are much earlier. Wet weather in autumn often prevents the sowing of winter corn in undrained lands, so that the farmer is obliged to alter his mode of cropping, and await the appearance of good weather in the spring to enable him to sow some other grain. The removal of water is followed by another important practical advantage equivalent to an actual deepening of the soil. Wet lands, when the weather is so dry as to enable the farmer to proceed with his operations, are found even in favourable seasons to retain a cold and superfluous moisture in the subsoil. This confines to the surface soil alone the roots of those plants that penetrate naturally deep into the soil in quest of food. The roots being thus confined to the surface layer tend gradually to exhaust it, but when the water has been carried off by the drains, the soil becomes dry to a greater depth, an accession of fresh air is conveyed to it, the particles become loose, and the roots descend with safety and are abundantly supplied with the nourishment which they require. From this we may draw a practical conclusion, namely, that the deeper the drains are made the better, if the water can find a speedy outlet. For then there is a greater depth of soil to nourish vegetation, and especially for those deep-rooted plants, such as lucerne, which are found so apt to fail in soils of a moderate depth. Wheat and clover, although not so deep-rooted plants as lucerne, are known to send their fibres for three or more feet in depth, in quest of nutrition, when the subsoil is dry and in a healthy condition. Deep drains are less liable to be injured by the operation of the subsoil plough, and are not so apt to be stopped up by the roots of the plants. The valuable and durable fertility of the land is thus promoted by the increase of its available depth.

But other ends not less important are attained by effective draining. When the land is dry the farmer is enabled to follow up his improvements with a greater degree of confidence, and a surer hope of success. In soils where water is allowed to stagnate the application of bones, rape dust, nitrate of soda, wood ashes, and other artificial manures, to increase its fertility, is almost useless. Even the powerful fertilising properties of lime and of little avail upon a soil where an excess of water prevails. But when the intelligent farmer has dry fields, he can bring all the know-

ledge which scientific research is capable of affording to practical experience to aid him in carrying out his improvements with a confident hope of ultimate success. Draining may be looked upon, therefore, as preliminary to all improvement; for no improvement can be effected unless the land be previously drained. It is also well known that a general system of drainage is not only beneficial in changing the climate with regard to the ripening of vegetation, but it has a material effect on the health of the population. Agues and fevers are not of so frequent occurrences in those districts where the land has been thoroughly drained.

2d, **Ploughing and Subsoiling**.—By the operation of the plough weeds are uprooted and insects are destroyed. By frequent turning, the soil is reduced to a minute state of division; it becomes more loose and pervious to the roots of the plant: the air so necessary both to animal and vegetable life, finds an easy access to the roots, and thus aids in developing the productive energy of the land. That air is essential to animal and vegetable life is evident from the fact that animals require a constant supply of oxygen, which they obtain from the air. Plants also require a constant supply of oxygen, which they obtain from the air. Plants also require a constant supply of carbonic acid, which is derived from the same source. Oxygen is essential to the healthy germination of seeds; and it is in consequence of their being deprived of a supply of it that they often lie in a dead state in the earth for many years, till, when brought to the surface and in contact with the air, they begin to exhibit signs of life. It is also supposed that the roots of living plants require a certain proportion of oxygen to support them in a healthy condition. In order to afford them this necessary supply it is requisite that the soil may be rendered permeable. Thus, by an actual mechanical means, namely, ploughing, an important chemical action is effected.

The organic matter of the soil is more rapidly and effectually decomposed when in contact with the air; consequently it becomes more readily resolved into those forms, namely, carbonic acid and water, which are best adapted for the nourishment of the young plant.

When the agency of the air is excluded the organic matter decays more slowly, and the compounds produced are often injurious to vegetation, thus retarding more than aiding the growth of the crop. By the presence of the air the decomposition of the inorganic substances in the soil is facilitated. Thus the soil, by frequent exposure to the influence of the air, will yield more readily a sufficiency of organic and inorganic food to the roots of the growing plant.

Nitric acid and ammonia, so essential to vegetation, are produced more readily in the soil when it is frequently turned by the alteration of the plough; so that the more thoroughly the land is ploughed and pulverized the more likely is the farmer to reap a valuable remuneration for his labour.

Subsoiling.—When the land has been thoroughly drained the use of the subsoil plough is of material importance. It goes eight or ten inches deeper than the common plough, tearing open and loosening the soil, so that the water finds a more ready escape and the air penetrates the more easily, enables the roots to descend with greater facility to the under soil. In stiff clayey subsoils this instrument is of supreme importance in mellowing, aerating, and in general giving a practical value to that which had been lying useless hitherto, beyond the reach of the common plough.

But it is after the land has been brought, by judicious draining, to a proper state of dryness that the value of the subsoil plough can be fully realized. It

is necessary that the sides of the cut effected by this implement be not allowed to cement together again, and to ensure this the dryness of the land must precede the operations of the subsoil plough. In order that the full effect of the drains be attained, especially where stiff clayey subsoils exist, and that the under layers may be meliorated in such a manner as to yield nutrition to vegetation, every practical and intelligent farmer will see cause to conclude that this is the best instrument for effecting the object desired.

Improvement of the Soil by Mixing.—This is a practice often resorted to in those cases where the soil is defective in its physical constitution; such as in the case of peaty soils, where too much vegetable matter abounds, a mixture of earthy substances is capable of rendering it better fitted for the rearing of cultivated crops.

In the same manner, a sandy soil may be improved by a mixture of clay, and a clay may be improved by adding it to a mixture of sand. But the addition of these substances do not only produce a physical change in the qualities of soil, but have also in many instances a chemical effect. By the addition of clay to a peaty soil it not only renders it more consistent, but it yields to it those inorganic substances of which it was formerly deficient. It is thus with marls when applied to the land. The friability and openness of clayey soils are increased—they add to them carbonate and often phosphate of lime, substances which are not only highly beneficial but absolutely necessary to vegetation. There is little doubt that much good will result from such admixtures in many cases where the means are available and can be had at little expense. But as the change effected in many instances is not only in the physical character but also in the chemical constitution of the soil, we shall defer, till a future article, entering on the consideration of the improvement of the land by chemical means.

TO THE FARMERS OF NOTINGHAMSHIRE.

GENTLEMEN.—Little more than twelve months have elapsed since we first heard of the potato disease, and yet how important have been the results arising therefrom. It has produced two commissions of three commissioners each, with corresponding salaries: it has been made a peg upon which to hang free trade, and a lever with which to oust protection. Quire upon quire of faultless foolscap has been used to convey reports and opinions of various learned societies, agricultural, horticultural, chemical, and even clerical; and, *wonderful coincidence!!!* they have all come to the same conclusion, and have published nearly the same amount of information. After some six months' assiduous examination (Sundays and holidays included), during which some tons of diseased tubers have been peeled, cut, washed, grated, sliced, rasped, saturated with acids, and peeped at through microscopes, they have one and all arrived at the following conclusions, viz.—'That the potato is sick—very sick—exceedingly sick;—yes, it is truly sick, and very sick indeed.' After these opinions, gentlemen, you are perfectly justified in considering, and you may say it conscientiously, that the potato is dangerously ill. But whether the disease be pleurisy or phethora, diabetes or dropsy, these learned persons furnish no diagnostics. Under these unfortunate circumstances we are obliged to go to the ailing tuber itself.

The potato was not known in England previous to the year 1563, when it was brought to this country from America by Captain Hawkins; and although it has been sufficiently long in this country to render it indigenous, yet we ought not, from this fact, to con-

clude that it has altogether lost its natural character. The potato is the native of a clime which produces two crops per year instead of one; and there it is quite free from either scab or curl, nor is it anything like so watery as we have it here.

When the alarming extent of the disease became known last year, and the learned professors before-mentioned were doing their utmost to turn England and Ireland into large starch manufactories, I was induced to procure different samples of potatoes from various parts of the country, both diseased and healthy, with a view to ascertain whether they were equally productive of starch. This I found to be by no means the case; for instance, two samples of healthy red kidneys gave the following results; viz:—

	Water.	Starch.	Dry Fibre, &c.	Residuum.
First sample grown in Bedfordshire	73.94	16.75	7.50	1.81
Second ditto grown in Derbyshire..	74.56	15.09	8.05	2.30

The Bedfordshire sample was grown upon a red sandy clayed loam, which rested upon a red shaly subsoil. Two diseased samples of the same sort and growth gave the following results:—

	Water.	Starch.	Dry Fibre, &c.	Residuum.
Bedfordshire..	77.15	11.25	7.64	3.96
Derbyshire (badly diseased)	78.10	10.75	7.65	3.50

The residuum I did not examine, but from its appearance, and being insoluble in water, I judged it to be vegetable gluten and caseine. These two experiments, however, clearly establish two important facts: 1. That diseased potatoes contain nearly four per cent. more water, three per cent. less starch, and leave nearly two-per cent. more residuum insoluble in water than sound ones. And 2. That the disease itself consists in excess of moisture and vegetable caseine. From these two facts we may infer a third—viz., that the disease itself is not infectious but epidemic. From this it must be understood, as our opinion, that the disease is not transferred from one infected tuber to another during growth, though we are of opinion that the disease may be propagated by using diseased seeds. If, then, the disease be epidemic, and not infectious, the questions which naturally present themselves are, when and how does it commence? To the first question, we give it as our firm opinion, that the disease commences from the very moment that the potato has arrived at full growth, and not before; this is borne out by one fact which has come to our knowledge—viz., a friend of ours planted some early kidneys for his own use, and as a matter of course, began to eat new potatoes at the same time as every one else. Previous, however, to finishing his crop of first earlies, he and his family left home for a few weeks, and, on his return, upon recommencing his potatoes where he left off, he found a considerable portion of them diseased, where before he had found none. This, so far as it goes, is proof that the disease commences as soon as the tuber arrives at maturity. In addition to this we have lately made another experiment, with a view to ascertain the relative amount of water and starch contained in ripe and unripe potatoes of the same sort, and grown upon the same land. The following is the result:—

	Water.	Starch.	Dry Fibre, &c.
Albany kidneys (ripe)...	73.05	17.75	9.20
Ditto (unripe).....	60.50	17.25	14.15

From the above it will be seen that the ripe tuber contains more than 4½ per cent. more water than the

unripe one, while the quantity of starch is nearly the same: and it is also evident that the excess of dry fibre in the unripe sample is converted into caseine in the ripe one, which, being acted upon by the carbonic acid absorbed from the soil and atmosphere, causes acid fermentation, and hence decomposition. Under these circumstances it is wise to get your potatoes quite as soon as they are ripe, or a little earlier, if found diseased, to treat them in the manner recommended in my next letter. In preparing your land for the next crop, first well lime it, and in your trenches scatter gypsum and Epsom salts (the latter may be procured at 8s. 6d. per cwt.) in equal quantities over your seed, at the rate of four or five cwt. per acre. This treatment I have seen tried upon a small scale for the present crop, and as yet there is no appearance of the disease manifesting itself.

I am, gentlemen, yours faithfully,
O. P. Q.

QUALITIES OF MEAT.—Every country is famous, more or less, for some produce, so is every county; for instance for the best beef we are indebted principally to Scotland; the Highland ox, which if bred in Scotland, kept there until four years old, and fed twelve months in Norfolk, cannot be surpassed; those also that are killed in Scotland are likewise very commendable, but the connoisseur would give the preference by far to those that had undergone a change of atmosphere and pasturage. Norfolk produces excellent beef, as likewise does Herefordshire, which three sorts are ranked as best by the best judges. The Brighton downs are noted for producing sheep of the first quality, next to which may be ranked those of Norfolk downs; they are rather larger, more fleshy, and the meat sometimes a darker colour. Herefordshire also produces some very excellent. The Scotch mutton is also very good, and deservedly of high repute, but I rarely ever use it, as it is killed in Scotland, and hurriedly packed, which causes it not to look so well, and frequently bruises it; but that of Leicestershire is, in my opinion, quite the contrary, being coarse and very fat; I consider it unworthy of making its appearance on the table of a man of wealth. When residing at Milton Mowbray I tried several haunches, even after hanging a month in winter and then roasted to perfection; I could not find in them any savour worthy of the taste of any epicure; I consider it more as a useful nourishment than a delicate meat. The best Welsh mutton is fine, direct from its native mountains: the heath upon which it feeds gives a very rich flavour to the meat, which is very dark and without much fat; many are fed in the English counties; they are very excellent and much fatter, but do not possess the same wild flavour. The veal to be obtained in the spring time of year comes from the West of England, being rather small and white; but there is a ready supply of good veal from Surrey and Essex throughout the year. Although very fine veal may be obtained in this country, it is not to be compared to the quality we obtain in France; the veal of Pontoise, a little town about six miles from Paris, outrivals any; I would venture to say that one pound of that veal would make a better steak than double the quantity of veal procured here; no one can account for it, but such is the actual case; although there the quality of any other description of animal food is deficient, we have to doast of the excellent flavour, succulence, and of the excessive whiteness of our veal. House lamb may be had throughout the whole year, but there is no great demand for it before February; Grass lamb makes its appearance now much earlier than formerly: the quality much depends upon the winter season; if a mild winter, they may really be fed upon grass; but if the contrary, they must be fed with prepared food, which increases their size but diminishes their quality. Pork, for roasting, is best when about six months old, Berkshire and Hampshire producing the best. The size of a leg of pork should not exceed more than seven pounds, nor much less than six; I do not know why, but of late years pork has lost in a great measure its popularity, and but seldom appears on a nobleman's table; it is in the season from October to about March.—Soyer's Cookery.

FATTENING OF CATTLE.

TO THE EDITOR OF THE MARK LANE EXPRESS.

SIR,—“Est modus in rebus” is a trite and true maxim, and the middle path is the safest. In fattening cattle we seem to have overlooked the important fact, that *excess* here is symptomatic of *disease*, and that fat is neither nutritious nor wholesome, whether chemically or physiologically considered. Baron Liebig very properly classes the *matériel* of grease under two divisions—the nitrogenous and non-nitrogenous; muscle belongs to the former, and fat to the latter. The former ministers to nutrition, properly so called; when the non-nitrogenous is connected with respiration and animal temperature.

That we push the fattening of cattle to an extreme point in many cases can admit of no doubt, and that such overfed, and even fat, meat is not merely unwholesome but unwholesome, is a truth beyond cavil or dispute. In our Christmas exhibitions we perceive nothing but mere interlineations of “lean,” the nitrogenous muscle being almost obliterated or absorbed into the non-nitrogenous fat. The force of these remarks will be materially strengthened by considering the circumstances under which this unnatural state of things is consummated. Oilcake, *e. g.*, is employed as food, and we superadd entire want of exercise and undue warmth. These are readily recognised as powerful auxiliaries to the deposition of fat; but these, also, war with the laws of nature, and the experience of ages proves that these sacred laws cannot be infringed with impunity. Assuredly, unnatural food and unnatural treatment cannot in the “nature of things,” contribute to the information of what is “good for food,” either in reference to its being wholesome, or easy of digestion, or nutritious. In sacrifice, the fat was consumed on the altar, while the muscle was preserved for food, and we now see a philosophy in this.

Further, it is a matter of serious consideration whether our modern and novel modes of feeding and fattening cattle may not entail a class of diseases, to which, in their natural condition, they are strangers.

I am, respectfully, sir,

Your obedient, humble servant,

J. MURRAY PH. D.

Portland-place, Hull, Oct. 3

KHOL RABI.

TO THE EDITOR OF THE MARK LANE EXPRESS.

SIR,—As I fear that our turnip crop is, locally at least, threatened with a disease analogous to, if not identical with, that which preys upon the potato, it seems to me wise to consider whether some substitute may not be found to lessen the evil. The “Kohl Rabi” appears to be a highly nutritious root, and eminently calculated as food for cattle. I like it much as an esculent for the table, and I believe cattle are very fond of it, and as far as my cursory chemical examination of the “Khol Rabi” goes, it is entirely favourable to its employment for the end proposed. It is extensively cultivated along the borders of the Rhine, indeed was the predominant vegetable cultivated in the gardens I visited at Wiesbaden, Colonge, Coblenz, Bingen, &c., and at Heidelberg, and some other places, it occupied the chief place in the public markets. I have cultivated a small plot of Khol Rabi this season, and it gives promise of good produce, while my turnips are destroyed.

I am, sir, yours respectfully,

J. MURRAY, Ph. D.

Portland Place, Hull, Sept. 22.

THE TURNIP FLY.

TO THE EDITOR OF THE MARK LANE EXPRESS.

SIR,—As many remedies have been applied for the destruction of that enemy to the turnip crop, called the “fly,” or flea, I have been in the habit for the last four years of soaking my turnip seed in a decoction of elder shoots. The remedy is this: Put the *elder shoots* into a small tub or pan, and pour scalding water on them; let them remain till cold, take out the elder and put the turnip seed in for twelve hours, and then hang it up in a bag to dry: it is then strongly impregnated, and I have always had a plant when my neighbours have had to sow two or three times over. I tried an experiment this year in the same field. I sowed Swedish turnips with the *above dressing*, and a small part of the field without it: the fly took them; and the *dressed part* was an *excellent plant*. I feel convinced that if I had dressed the other part of the field, the fly would not have destroyed the plant. If you think my observation worthy of a place in your valuable journal, you can insert them.—I am, Mr. Editor, your obedient servant.

W. WILSON.

SKETCHES FROM A MODEL FARM.

Whoever strives to improve the condition of agriculture merits the gratitude of the community at large and it is with satisfaction, therefore, that we mention the name of Lord Torrington, as having caused an homestead, upon a very improved plan, to be arranged in Peckham green, Mereworth, near Maidstone, which with buildings and machinery complete, cost upwards of 2000*l*. The farmhouse possesses every convenience and comfort; the offices adjoining are enclosed within a wall, and the whole capable of being secured by lock and key. On entering the gate facing the east stands the large bullock and cattle lodge, entirely under one roof, and capable of containing forty-eight head of cattle, besides calves and sheep. A sketch of this will be found at the head of our calendar for July

It is of an oblong square, 53 feet, seven inches, by 90 feet 6 inches, and divided into six compartments, each beast having a feeding trough, and water cistern to itself, whilst pipes convey currents of cool air to the animals heads. According to the principle carried out, there is a covered drain, by which the drainage and refuse passes of in a receiver, where after lying about a fortnight, it becomes perfectly eligible to be used as good manure. They are several rooms adjacent to this building, one for cooking the food of the cattle, of which we give a view, another, with two floors, with a machine for cutting turnips, &c., and at the end is an oilmill complete for making the linseed cake, the straw-cutting and, at one extreme is a window from the parlour of the farm-house, so that the manager can at all times, command a view, of the whole proceedings. On the opposite side to this edge is a capacious barn, with two floors, on one of which is a threshing machine capable of turning out fifty quarters per day, and on each side, are three loose boxes, for horses, bulls, or cattle that are sick. Behind these is the piggery, and close adjacent the cart-houses, and other buildings. Also the oast-houses, on a new construction patented by Knight. The machinery is turned by two horses in a mill. At a short distance stand three cottages, each having two rooms on the ground floor, and two above, with a small flower-garden in front, and kitchen-garden at the side; of these we also give a sketch. In the back-yard is a pump for general purposes, an oven for the whole of the inmates, a drying place and laundry.

WHEAT FROM VAN DIEMEN'S LAND.—Two vessels have arrived at this port from Launceston, Van Dieman's Land, with cargoes of bark, gum, mahogany, and wheat, the produce of the colony. One of them, the Benjamin Heap, brings 2,848 bags of wheat. It is in linen bags of fine quality; but in consequence of the mahogany steaming in the ship, and communicating a light moisture to the grain, it will require to be turned over two or three times, as it is technically expressed, before it will be dry enough to enter into consumption. 50 sacks of the wheat, we are informed, are consigned to a gentleman in Staffordshire, from a friend in the colony, and intended exclusively for seed. An experienced corn dealer on 'Change informs us, that he never saw grain of so fine an appearance. It is very white, and the skin of the grain is of unusual thinness. Numerous applications have been made for samples of the lot, but in vain. The remainder of the cargo is of superior quality, and as at the present time there is a great demand for Indian corn and other articles not usually consumed in this country, we direct the attention of the public to the importation as a decidedly prominent subject, and one which may hereafter exercise a great influence on the imports to this country. We have not the means of stating anything respecting the amount on hand in Van Dieman's Land, but we are told by the gentleman from whom we derive the fact here stated, that there is plenty of it to be had. The cost of this cargo was as follows:—

	s.	d.	
Cost in Van Diemen's Land,	3	0	per bush. of 70 lb.
Freight.....	2	3	"
Duty.....	0	1½	"
Commission.....	0	6	"

giving a total cost of 5s. 10½. per bushel of 70lb. A portion of that part of the cargo which is to be disposed of, has already been sold at 9s. 6d. per bushel, realizing to the importer, in the present state of the market, a profit of more than sixty per cent. A little competition would probably reduce the charges, and the extraordinary profit which has accrued on a first transaction, and would bring the produce of the colony into a ready market. As the import has made some sensation amongst corn-dealers there can be no doubt but that the enterprise of the merchants of Liverpool will be directed to more extensive importations from the colony at Van Diemen's Land, which, under present circumstances, will benefit the colony, and be lucrative to themselves.—*Liverpool Courier.*

WHEAT FLOUR.—The attention of the Board of Customs having been called to certain cases in which the collectors and comptrollers of the customs revenue at the outports have continued to charge the duty of fourpence and one-eighth per cwt. on wheat flour the produce of Canada, under the Act 6 and 7 Vict., cap. 29, the commissioners have deemed it expedient to cause the principal officers of the several departments in London, and the collectors and comptrollers at the various outports throughout the United Kingdom, to be apprised that the duty imposed on wheat flour by the Act above-mentioned is considered to have been repealed by the present corn law of 9 and 10 Vict. cap 22, which enacts that the duty on wheat meal and flour from foreign countries shall be "For every barrel, being 196lbs., a duty equal in amount to the duty payable according to the average price at the time on thirty-eight gallons and a half of wheat;" but if the produce of and imported from any British possession out of Europe, "on wheatmeal, barleymeal, oatmeal, rye-meal, peameal, and beanmeal, the duty shall be for every cwt. fourpence half-penny;" and that the

proper rate of duty chargeable on flour the produce of Canada is 4½d. per cwt., the same as wheatmeal under the latter-mentioned Act; and the respective officers have received directions to govern themselves in the matter in future accordingly. The importations of flour from Canada are well known to be of an extensive character, although not so much so as those from the neighbouring States of North America, under the American Union; the matter will, therefore, be of interest and importance to the trade.

THE OXEN OF THE CAPE COLONY.—The method of journeying in South Africa, where extensive trips are meditated, is by waggons well stored with all necessary commodities, each drawn by twelve or fourteen oxen, which are harnessed in yokes two abreast, and driven by a Hottentot, armed with a huge bamboo handled whip, with another man, or leader to conduct the team, or span, in colonial phraseology, over difficult ground. Each ox has his name, and when addressed, immediately recognises it by increased exertions. The sagacity and docility of the Cape ox, when properly trained, is amazing. Good cattle, without a guide, and in the darkest night, will adhere to a road and never leave it whilst in harness. Should they by any accident lose their way they will stop. On these occasions the two leading oxen, always the best in the span, carry their heads close to the ground and seem to be exercising all their powers of discernment. They obey the voice of their driver, when desired to go to the right or left, with great readiness. I have even heard of a trader to Port Natal, whose oxen would bring an empty waggon across narrow but deep rivers, if they only saw their master wave a white handkerchief on the opposite bank. The leaders appeared to watch for his signal, and on beholding it at once dashed in and swam in its direction. This story may appear incredible, but I had it from a very respectable person. It may assist the reader to give him a slight description of the Cape ox waggon. It is clumsy and uncouth in appearance, but never was any vehicle more admirably adapted for contending with bad roads, upsets, and other vicissitudes of South African travelling. Should an overturn occur, it is so constructed that the sides, roof, and other portions easily detach themselves from the bed, and in half an hour all may be replaced; or if a fracture have taken place, except in the wheels, which can rarely happen, it may be mended or supplied on the path, by the aid of a few tools and some green wood.—*Methuen's Wanderings in South Africa.*

AGE OF PLANTS.—Some plants, such as the minute funguses, termed mould, only live a few hours, or, at most, a few days. Mosses, for the most part, live only one season, as do the garden plants, called annuals, which die of old age, as soon as they ripen their seeds. Some, again—as the fox-glove, and the hollyhock,—live for two years, occasionally prolonged to three, if their flowering be prevented. Trees, again, planted in a suitable soil and situation, live for centuries. Thus the olive may live 300 years, the oak double that number; the chestnut is said to have lasted 950 years; the dragon's blood tree of Teneriffe may be 2,000 years old, and Adamson mentions banians 6,000 years old. When the wood of the interior ceases to afford room by the closeness of its texture, for the passage of sap, or pulp, or the formation of new vessels, it dies, and by all its moisture passing off into the younger wood, the fibres shrink and are ultimately reduced to dust. The centre of the tree thus becomes dead, while the outer portion continues to live, and in this way trees

may exist for many years, before they perish. The singular elephant plant has been said to attain at the Cape of Good Hope, the age of 200 years, years, reckoning by the rings of the bark of the crown. De Candolle gives the following tale of very old trees.

Elm.....	of 335 years.
Cypress.....	about 350
Cheirostemon, about	400
Ivy.....	450
Larch.....	576
Orange.....	630
Olive.....	700
Orientalplane.....	720 and upwards.
Cedar of Lebanon, almost	800
Oak.....	870, 1080, 1500
Lime.....	1076 1247
Yew.....	1214 1438, 2588, 2880
Taxod'um.....	about 4000 to 6000
Banbab.....	5150 (in the year 1755)

The Canadian Agricultural Journal.

MONTREAL, DECEMBER 1, 1846.

The high wages of labour, and the difficulty of procuring regular and competent men to work upon a farm, is a great drawback to Canadian Agriculture. If men could be had who understood the work on a well managed farm, and did their duty faithfully at all times, as they are found to do in the British Isles, the question of amount of wages would be only a trifling consideration. It is a farmer's interest to be well served and pay well, but we regret to say that this is almost impossible here. However well disposed labourers may be, if they do not understand their business, it is impossible they can render valuable service to a farmer in proportion to the wages that have to be paid. It is only when we can see the difference between the work performed by a man regularly trained to Agricultural labour and one who is not, that we can estimate the value of the one over the other. Farmers cannot in this country afford to expend money on labour, unless the work executed will pay the expenditure. The system in England of having boys serve a regular apprenticeship to farmers, is the very best method to secure regular and valuable farm servants, men who can render double the service of those who have not been so brought up. We do not know any trade or business that requires this sort of apprenticeship more than farm labourers. Much time is wasted, and work imperfectly executed, by men who do not understand their business properly, and scarcely any man can understand his business properly, brought up on a small holding of land of a few acres in the old country, unless they have worked regularly on a well managed farm. The whole system requires to be so different from

that of a man working when he pleased and how he pleased upon a few acres of land, for himself, that labour becomes painful and burdensome to him when required to work differently and constantly. We wish the system of apprenticing boys were adopted here, and we are convinced it would work beneficially both for agriculturists and for those employed by them. There are a large number of boys come to this country annually, with their families, and a considerable proportion of these boys might be advantageously, both for their parents and for all parties, apprenticed out to farmers, on proper terms. Of course there would be no use in placing them where they could not receive proper instruction, and only be made slaves of, but there are many places that could be had for them, where they might be much better provided for than with their parents, without reference to the instruction they would receive. We trust this plan may be adopted, and we will answer for it that it will prove as advantageous to those who may be so apprentice'd as to the country generally. Apprentices to trades, that are not the hundredth part of so much importance as agriculture, is thought necessary, but the most ignorant is considered fully qualified to work on a farm. This is one cause that the profits of agriculture are so inconsiderable. If other trades were to employ persons entirely ignorant of the business they were to be employed in, we would soon find how very indifferently the work would be done. There does not exist a doubt that from the inexperience of labourers in a great portion of the work to be done on a well managed farm, the labour costs twice as much as it should do, and is not near so well done. It is absurd to suppose that it requires more experience to make a coat or a pair of shoes, or work in any other handicraft trade, than to execute well the several works to be done on a farm. Such a supposition is a great mistake, and respectable farmers should do all in their power to encourage the proper training of boys and men, in all the business of agriculture. By inducing well disposed men to remain for some time in one place, would be one step towards instructing them properly. The constant inclination in emigrants, to change and ramble about the country, increases the difficulty of instruction, or useful service to those employing labour. These observations are intended to benefit the employed as much as the employer. An experienced, faithful labourer will be able to sell his services at a higher rate than a man that does not know his work, and is not disposed to be faithful or attentive.

A man cannot be an expert ploughman in less than six or seven years, indeed it requires that time to make a man expert at the ordinary work upon a well managed farm. Persons who could not have experience upon their own small patches of land, cannot understand regular and constant work. These matters may not appear to be much considered, but they are of the utmost consequence on a well managed farm, or where it is desired to have it well managed. It is a constant torment, to have to look over and instruct every new hand that may be employed upon a farm.

Sufficient draining appears to be the principal improvement recommended at present in English Agriculture. Lord Stanley, and other landed proprietors, in their speeches to Agricultural meetings, have stated that capital judiciously applied in this way pays better than in any other, and would generally yield from five to ten per cent, and that it would be a better speculation than purchasing railroad shares. We are convinced that draining where required in Canada, would be one of the best improvements that could be adopted, and would also be a good investment of capital if our lands are to be worth cultivating. We are advocates for railroads and canals, and easy means of communications in every direction throughout the country, but in order to employ these means of easy communication, it will be necessary to raise a large produce. To cultivate and improve our lands so that they should produce abundant and excellent crops and cattle, butter and cheese, is the sure means to promote general prosperity, and for a period of nearly twenty years it has been our untiring endeavour to convince the Canadian people of this fact. There was no obligation upon us to do this, except a strong conviction (which those only who have experienced such impressions on the mind can understand) that we were bound in duty to our country, to suggest and recommend such measures as appeared to us would be for the general good. We had no other inducement, or promise of reward or even remuneration offered to us.

In a former number we submitted our opinion, that it was impossible to support Montreal in continued improvement, and prosperity, unless by the general improvement of the Province in valuable productions. A fine house, and costly furniture, however perfectly faultless both may be, will not support the inmates for a day unless there are other resources. The most valuable description of imported merchandise would be useless unless there is

a surplus produce raised here, annually created, that will afford the means of purchasing, and paying for this merchandise. It is from the profits of trade and commerce chiefly, that cities and towns can be supported, and it is only the production of our own country that can support trade and commerce. Trade and commerce cannot be carried on in a country that has not abundant productions of her own, and the success and profit will be in proportion to the amount and value of the productions created. Trade and commerce could have no existence if new productions from the earth were not constantly created. We would not offer those observations but to remind those engaged in other business and professions, that agricultural prosperity would be as much for their interest, as for those engaged in agriculture. We can tell other professions plainly that here, there is no other source from which the means for their support can be derived but from the productions of land. We conceive, therefore, when this fact is capable of demonstration, and not only this, but that all revenue must be indirectly derived from the same source; that it is most extraordinary, if not culpable, that the improvement of agriculture is not the great object of solicitude with the Government and all educated men in whatever business engaged. If agriculture was not of so much consequence we trust we have been endowed with a little more common sense, than to have given up our time and money for near twenty years to recommend it to the care and consideration of the Government, the Legislature, and to the Community generally—with very little success, we regret to state, though certainly with honesty of purpose on our part. When we find ourselves in possession of all we require, or at least a reasonable share of them, we never put ourselves to the trouble of inquiring from what source we derive these things. We generally place all the credit and comfort of having them to ourselves, and do not acknowledge that we owe them all to the labour and skill of man, applied to the cultivation of the earth, made fruitful by a wise and bountiful Creator. The production of the earth after all must be acknowledged the source of all our comforts and conveniences, however great our rank, power, or knowledge. A division of labour is best for the general advantage, but it is from the surplus productions of agriculture that those engaged in other professions and pursuits have to be supported. By the division of labour, each particular profession is able to attain a more perfect knowledge of the particular branch they study and practice, than if ev-

ery man were a "Jack of all trades." A division of labour is good, and necessary but perfection in the art of agriculture is the greatest good, and the most necessary of all. We could not long subsist on the most perfect productions of the foug or the loom, on physic, or law, but the abundant productions of agriculture can support all these and hosts of others as well as agriculturists, and maintain all in their proper places, and professions. We submit these facts to remind all how much they are really interested in the abundant productions of the country they inhabit. We may have something more to expend than the amount of our productions, but this is owing to our connection with a powerful nation, and other accidental circumstances, but as a general rule, no country can have more to expend than her own productions will afford her or purchase for her. We would wish to see as many of the community as possible, or as can obtain them, in the enjoyment of the comforts, conveniences, and even the elegancies of life, but we cannot but perceive that our principal city, with its beautiful, and costly style of buildings, must necessarily introduce a costly style of furniture, equipage, and high living, that will require a very large amount of annual production in the country to maintain all this. We offer no objection to this costly taste that is introduced, and we only advert to it to show the necessity of encouraging the production of the means to support it, and this only can be derived from an improved and prosperous agriculture. It is perfectly manifest that Canada must depend upon her own productions, and fine houses are only a means of expending money not creating it. Canada cannot be more useful as a Province of the British Empire than by raising a large production of which she may have a surplus to exchange for British Manufactures. This country can also give settlement and employment to the surplus population of the British Isles. All that is required is to direct and encourage the industry of our constantly augmenting population in cultivating our lands and bringing them into profitable productiveness. Eastern Canada is very differently circumstanced from Canada West, in regard to her rural population, and this population have a claim upon a paternal Government for instructing them in the art of agriculture, that has attained so great a degree of perfection in the British Isles. We do not know how it would be possible to benefit the population of Eastern Canada more than by instructing them in the art that would enable them to augment the annual production of

the country to more than double what is obtained from it at present by the defective system of agriculture generally practised—and we are convinced that this great good is attainable by adopting proper means.

We have been told by a respectable Miller that the yield of wheat and flour this year is very good, and much greater than it was last year. This was our own opinion from the harvest. The Canadian wheat is good this year for the Merchant and the Miller, but measures very short in quantity for the farmer. It is the same case in respect to barley; it is dry and sound for the brewer, but will produce short measure for the farmer. Indeed the produce of grain this year will fall far short of the farmer's expectations from the promising appearance of the crops when growing.

We stated in a former number that unless labour-saving machines employed by the agriculturist were very perfect in their construction, they would not prove to be a saving to farmers. With regard to thrashing machines we conceive that they are no saving of labour to the farmer, either in time or money, and that they can be usefully employed only where there is a large quantity of grain required for the full shipping. The long winters here give farmers a fall opportunity to have their grain thrashed to meet the market demand, by employing the men they required in summer. This would be another means of inducing men to remain for a longer time in one place, if they were worth keeping. We have seen thrashing mills waste more grain than would pay for the thrashing by hand three times over. Indeed we would regret to see them generally introduced, as an evil rather than a good to the generality of farmers in Eastern Canada. There are many ways of employing the money necessary to purchase a thrashing mill, that would pay much better than to employ it in that way. Fifty or sixty pounds judiciously expended in draining or other improvements on a man's farm would produce more annually perhaps than he would have to pay for thrashing. We are certain it would do this in many cases. If machines were only to be employed in summer, the saving and benefit of having work done expeditiously might be very desirable, but it is only in winter that thrashing is done, and at that time there is plenty of labour to be had on moderate terms. We can tell the farmers that thrashing machines are much more likely to glut the market for grain, and lower prices in Canada, than raise them, considering the circumstances of

the country with our ports closed five months of the year. As we before observed they might be useful to farmers who had a large quantity of wheat to sell in the fall, when there would be a good demand for shipping it to England, but even in that case it might not be advantageous to be in too great a hurry, and in no case if the grain is not clean thrashed out. We consider it a sinful waste to allow grain to be badly thrashed. In the Far West thrashing mills may do very well, but in Eastern Canada we require them not on ordinary farms.

We do not think it necessary to publish an Agricultural Report at this season of the year. We may, however, observe, that the season up to this time has been open and very mild. Some snow has fallen, but did not remain on the ground many hours. In fact we had scarcely any severe frost, up to this time. Ploughing, we should suppose, would be very forward, though we are told that in many situations the soil was too wet for ploughing. The unusual mildness of the weather, has admitted of sending the farmers stock to pasture in fields up to this time. We think it favourable that the winter should not commence before the first of December, and then continue cold up to the 1st of April. It shortens the winter, and gives opportunity of finishing the work to be done in the fields. The markets are well supplied with meat of excellent quality, and at moderate prices. The farmers bring in excellent mutton, and other meat; and fowls, which they sell in the Market, from their carts. This, they have been accustomed to do during our residence in Canada, and we conceive that it would be a very arbitrary measure indeed, to attempt to prevent farmers from doing this if so disposed. They have an unquestionable right to sell good, healthy meat in the market, as any other Agricultural produce. We cannot admit any distinction should be made between the right of selling an ox or sheep to be slaughtered, and that of selling them ready slaughtered in a proper manner. There is a wide distinction between the right of a farmer to sell his slaughtered meat in the public market, and that of a butcher carrying meat about the city, and selling it by retail at the houses of the citizens. This we certainly think a great injustice to butchers paying for stalls in the market.

Onions appear to be nearly a failure in England this year. At Windsor Onion Fair lately, they sold as high as 17s. sterling the bushel, and the average about 15s.

We have already expressed our conviction that the potato failure in Ireland will be much more likely to produce future good, than evil consequences, provided the distress occasioned by the failure, at the present time, is promptly remedied by the relief to the sufferers. It is full time that there should be some change for the better in the food of three-fourths of the Irish and Scotch people. We include some of the latter, as it appears by the Report of the Times Commissioners that some of the poor in Scotland are fully as badly provided for as the Irish poor. The potato disease will prevent that root from being so extensively cultivated in future, and oblige the people to raise some other and more certain description of food. We should regret to lose the potatoe altogether, but we hope that it never shall again be so extensively made use of as food for the human family. We have not the least doubt but that the disease will ultimately prove a blessing to the poor of the British Isles, and induce greater industry to provide food better suited to man than potatoes. The Earl of Rosse in speaking of the state of Ireland lately is reported to have said:—

“That, if all would join together in honest and good faith to promote the public welfare, they would have no cause hereafter to lament the present crisis; for by it the foundation would be laid of the greatest improvement in the system of Agriculture, and a great, important, and beneficial change would be wrought in the condition of the labouring population.”

We fully concur in these sentiments, because we were long of opinion that the great facility of raising large crops of potatoes for food was not favorable to industry or improvement amongst the poorer classes. They appeared satisfied with this sort of food, as it was so easily procured, and made no further exertion to better their condition.

We have seen a statement, in a late English paper that when barley brings only 4s. per bushel to the farmer, the beer and porter made from it is about 9s. to the consumer, including duty, manufacture, &c.

The duty on Malt alone is 2s. 6d. the bushel. We cannot exactly say what is the exact cost of the produce in beer, of a bushel of barley, to the Canadian consumer, though we may know what the barley is sold for by the farmer, and we also know that there is no malt duty paid in Canada.

Of course, if the price of Barley and beer in this country is not in due proportion the only cure for this evil is, competition, which is open to all, who chooses to enter into the trade of brewers.

By the last advices from England Canadian red wheat sells from 8s. 6d. to 9s. and white 9s. to 9s. 6d. the 70lbs. We believe the Canadian minot may not weight 70 lbs. generally but it will not be far from it. These prices being sterling, are equal to about the following in Canadian currency, 10s. to 10s. 7d. and 10s. 7d. to 11s. 2d. per 70lbs. The price for Canadian peas, is 6s. to 6s. 6d. per imperial bushel, which is one gallon less than the Canadian minot. These prices are in our currency and measure equal to about 8s. to 8s. 7d. the minot. We do not see why the prices of wheat and peas at Montreal shou'd be only about half what they sell for when in England. There must certainly be something wrong, when the prices in our shipping ports, are so out of proportion with the prices in England. We give a statement in the present number of the cost of importing a bushel or 70lbs of wheat from Van Dieman's land, which including duty and commission amounts only to 2s. 10½d. though that country is nearly three times the distance from England that Montreal is. This is some of the effects of protected shipping. The price of Canadian butter is stated at 70s. to 76s. the cwt. in England that is equal to about 85s. to 90s. of our currency. Butter is an article that can be sent home without much risk, and we consider our prices are out of all proportion with English prices.

Ballinasloe Fair, Ireland, held on the first week of October last, disappointed farmers; though the prices were high, they did not realize what farmers expected. Some top lots of 2 year old wethers sold from 50s. to 60s. sterling each. Some top lots of ewes also sold for 50s. each, and one lot sold for £3 each. Tups sold from £8 to £25 each. The total number of sheep sold was 65,500, unsold 10,500. We recollect when the number of sheep sold at this fair was more than double what is reported sold at the last fair. The Cattle Fair is reported to have been heavy. The prices of several large lots of 3 year old heifers is given, as varying from £13 10s. to £17 5s. each. The last day of the fair the prices rose about six or 8 per cent. on cattle, though the first day, sellers had to sell at 30s. 50s. each beast, less than they refused in the morning. Total number of cattle sold about 9,000, unsold about 3,000. We perceive that at subsequent country fairs higher prices were given than at Ballinasloe.

There is no statistical information less to be relied upon than the reported gross production of the ag-

ricultural crops of the United States in a year. Indeed it is most difficult to ascertain the produce in any country. The true means of establishing this fact is by the amount exported at the end of the year, and then calculating the probable expenditure of the population for the same period. To form any correct opinion of what quantity the United States may have to export in a year, of their agricultural produce, from the accounts published of the annual productions of each State in the Union is utterly impossible, and those who depend upon these accounts will be disappointed.

We perceive by an advertisement in the *Mark Lane Express*, a new discovered variety of wheat offered for sale. "Fullard's Ten-Rowed." said to be unequalled for quantity and quality. One gentleman says that 32 bushels of this wheat sown by him produced at the rate of eighty bushels and one peck to the acre. Another states, that from three pecks of this wheat sown, the produce was eighty bushels. The price it is offered for is 12s 6d. per bushel. It is to be had at Mr. Meaves, 12 and 13 Davies Street, Berkely Square, London. It would be well to import some, and try how it would succeed in Canada.

It is very interesting to see the exertions of Agricultural Societies in England, to promote Agricultural improvement. At the meeting of the Stewpony Agricultural Society in October last, several interesting speeches were delivered, of which we beg to submit some extracts. Lord Lyttelton said:—

If I were on this occasion to enter into any general remarks on the state of agriculture, your time probably would not be profitably employed: but from the general knowledge which I possess, I am convinced that there is nothing of so much importance, with regard to the social and economical condition of this country, as the promotion of the application of the capital to land. I am persuaded there can be no greater evil than that of a stagnation, a want of employment, or a discouragement to the general pursuits of Agriculture. And this much cannot be doubted—these two points, first, that the science of Agriculture has already greatly improved; and secondly that there is a far greater improvement remaining to take place. If any one considers the subject, and looks at his own estate, it matters not what part of the country it may be, he cannot but be impressed with the conviction that nothing requires his attention, and that of every true patriot, more than the improvement of the land.

The next speaker was Mr. Whitmore, the President of the Society, who remarked:—

I entirely concur in what Lord Lyttelton has stated with respect the benefit to be derived from institutions of this nature. It is a matter of immense moment to gentlemen engaged in agriculture that they should occasionally meet, in order to communicate to each other and

disseminate points of information, with regard to the progress of the science. I concur also in what his Lordship has said, that we are but at the beginning of this improvement. True, that we have made much progress therein as compared with other countries; true also that great progress has been made in agriculture as compared with its state in this country only twenty years ago; but we are as yet only in the infancy of what capital and skill are destined to develop.

With regard to another point touched upon in the report, and which is of immense moment to all of us—I mean the manufacture, and storing of manure—I have tried the system of boxfeeding, which was so strongly recommended to you last year, by Mr. Warnes; I have tried it in winter, and some portion of the summer, and the result is, that I consider it to be an immense improvement in the manufacture of manure, and attended with enormous benefit to the land. You are aware of the construction of the boxes in which the animal is placed, and that underneath the box, is a receptacle for the manure. Now I have left this receptacle under the animal for full six months at a time without his sustaining the least injury in regard to health; I had it lately cleared out, and my men told me the manure was so strong, as to make them sneeze and their eyes to water. Why, it is obvious, both solid and liquid manures stored up in a covered place, without being washed by the rains or dried by the sun, must be of far greater value than those produced under the ordinary system? And what is the ordinary system? Why, turning a few starveling beasts upon some straw, and when that rots, it is supposed to be manure; and you all know that the streets are frequently littered with straw, for the purpose of making manure, as soon as it should turn black, although there are none of the constituents of manure in it. Now, if the box feeding were attended with an enormous outlay, you might be allowed to pursue this wretched system; but I say that the old plan is more expensive than the new one, and that he who takes the proper means to make his manure of the right sort will be amply repaid.

A Mr. Foley made the following observations in proposing success to the Royal Agricultural College of Cirencester.

He then begged leave to propose a toast, as follows: The toast which I am about to propose to you is success to a new establishment which is at present little known, but which I trust will prove to be one of great importance. It is Success to the Royal Agricultural College at Cirencester. The character of the British farmer has always been highly esteemed, and I hope it will long continue to be so in this country, but formerly his education was almost entirely neglected; and I recollect the time when it was considered that because a boy's father and grandfather had been farmers he was duly qualified to act as one: that is not now the case. Farmers, like other people, appreciate a good education, and I have known several instances, where they have given as much as £200 per annum, to send their sons out as pupils. Now the object of Cirencester College is to give the best practical education at a very cheap rate. It has had to contend with all the difficulties and prejudices to which everything new is liable. Its first important feature was being distinguished by the sanction and approbation of a royal charter; since that period, the members of the council have determined that no exertions shall be spared on their parts to render it an establishment, beneficial to the public, and worthy of such honour. Errors

have been committed and corrected, and it is yet too early to assert that more changes may yet be found necessary. The building is not yet completed, but is, I believe, nearly full, as far as the accommodation will admit; there are now about 100 pupils, and the College is intended to contain about 200 when finished. The payments fixed at the general meeting of the shareholders, were as follows:—From 14 to 16 years of age 30*l.* per annum; from 17 to 18, 40*l.*; from 18 to 20, 50*l.* Two years are sufficient to attend to the courses of lectures for a final examination. I now venture to recommend all those who have sons to avail themselves of the cheap and rapid conveyance afforded by railways, and to go and see the college: they will then be able to judge for themselves whether they can do better than to send their sons there for two years. Each share of £30 gives a right of nomination for a pupil when a vacancy occurs. Mr. Foley concluded by proposing "Success to the Royal Agricultural College of Cirencester."

The following extract of a letter copied from the Mark Lane Express is worthy of attention. We think it would be very expedient to endeavour to obtain some of the roots of potatoes in their natural state where first discovered, and we believe this would be the best means to discover the real cause that has produced the disease:—

Now, Sir, through the medium of your respectable paper, I would beg to inquire—which fact might be easily ascertained by any one having communication with the aborigines of America or others who reside in the country to which the potato was indigenous, namely Virginia, from which it is said it was brought to this country by Sir Walter Raleigh (Youghall, in Cork, if my recollection serves me, is said to have been the first place in which it was planted)—I say I would wish to inquire whether the root in its real native state can now be obtained?

I would now say a few words as to the cause of the failure of the potato. The potato has certainly not been cultivated according to nature. It is partly tuberous and partly annual; what is meant by these terms is, it is a plant which can be raised both from seed and root. Now, I apprehend that the plant should, from its very introduction into this country, have been cultivated from seed as well as tubers, which could have been done thus. The general crop of potatoes on a farm growing for use would, of course, require to have been three or four years raised from seed, and during their growing a regular supply of seed sown for succeeding years, and change of seed and roots from one kind of soil, in the same way as is usual with grain to another. Had such a system been adopted, say 25 years ago, there is at least a strong probability the plant would not now have failed.

You will recollect that about 14 years ago—just when the cholera was committing its dreadful ravages in this country—that potatoes then, so far as my knowledge extends, were for the first time affected, but not so far, at least, as the shaw was concerned.

Now it was my opinion, as soon as I had turned my thoughts to the subject, that the plant had degenerated, had lost its native hardy vigour; and how, it may be asked, did I arrive at that conclusion? Well, in this way: In many cases the plant would not grow when the tuber was cut, but would when planted whole; formerly it would. Again, seed raised from said potatoes would not, in many cases, produce. Now, when we take into account that sound potatoes, prior to that fai-

lure, could be obtained from cut as well as uncut tubers, did it not appear that the potato had degenerated? If such a conclusion is correct, can anything, I would humbly but respectfully ask, be more reasonable, to prevent that valuable and highly nutritious plant, the poor man's friend, from disappearing altogether from the country, than by introducing a hardy, native aboriginal.

Sept. 21.

Yours, &c.,

A. B.

DINNER TO THE DONORS OF A FLOCK OF SHEEP TO THE EARL OF CHICHESTER.—On Friday evening a large party were invited to Stanmer by the Earl of Chichester to inspect his flock of sheep, and to partake of dinner. The company consisted principally of the fifty agriculturists who last year presented each to the noble earl a ewe lamb, upon his lordship's commencing farming. This singular gift originated at a meeting at Westfrie, upon Mr. Wm. Saxby's suggestion, as a mark of the esteem in which his lordship was held by the farmers of the neighbourhood, and was warmly supported by John Ellman, Esq.; and the several donors, in a very few days, supplied Stanmer Park with a well-selected flock, though of varied blood, of South-down ewe lambs. Twelve months have now elapsed, and his lordship availed himself of the opportunity of inviting the party to his residence to inspect their present, and the progress he was making in farming. The meeting was strictly of a private nature, and with only one or two exceptions, was composed of the contributors of the gift. These exceptions were John Smith, Esq., of Lewes, and Jonas Webb, Esq., of Bahraham. The company upon their arrival partook of an elegant luncheon in a marquee erected in front of the house; after which in company with his lordship, they inspected the flock. The Countess of Chichester and family honoured the company with their presence during the greater part of the morning. At three o'clock dinner was served up in the entrance hall. On the right and left of his lordship sat Sir Henry Shiffner, Bart., J. D. Gilbert, Esq., and Wm. Tees, Esquire. In the evening the guests retired to the marquee, and partook of tea and coffee, and about nine o'clock retired. As this meeting evidently was intended to be a private one by his lordship, we do not feel ourselves justified in publishing the particulars which we have received from private sources—but we hesitate not to say, that we shall fail in our expectations if his lordship does not attain a high position as a flockmaster in a few years.—*Sussex Express.*

The *Constitutionnel* announces that the price of flour had again increased at the corn-market of Paris on Saturday, and that the price of bread would be augmented by two centimes on the 1st of October.

PORTUGAL.—THE FOOD OF THE PEOPLE.—The failure of the crops of all kinds of grain has caused a very considerable rise in the price of bread; and that failure, coupled with the deterioration of potatoes—not in particular districts, as occurred last year, but generally throughout the country—has excited very serious apprehensions of a scarcity of food. Twelve years ago potatoes were little used in Portugal; now they form a considerable portion of the food of the people, and their quality has greatly improved of late years; but still the best are far inferior to those of Lancashire and Ireland. Last year they suffered much from the same blight and rot that prevailed elsewhere; but this year the disease has attacked the stalk and leaves in the first instance, and the potatoes are so small and watery as hardly to be fit in many places for human food.

LIVE NOT TO YOURSELF.

On the frail little stem in the garden hangs the opening rose. Go ask why it hangs there? "I hang here," says the beautiful flower, "to sweeten the air which man breathes, to open my beauties, to kindle emotion in his eye, to show him the hand of his God who purified each leaf, and laid them thus on my bosom. And whether you find me here to greet him on his usual morning or whether you walk, find me here on this lone mountain side, with the bare possibility that he will throw on me one parting glance, my end is the same. I live not to myself.

Beside yon highway stands an aged tree, solitary and alone. You see no other tree near it, and you say surely that tree must stand for itself alone. "No," says the tree, "God never made me for a purpose so small. For more than a hundred years I have stood here. In summer I have stretched out my arms and sheltered the panting flocks which hastened to my shade. In my bosom I have concealed and protected the brood of young birds, as they lay and rocked in their nests; In the storm I have more than once received in my body the lightning's bolt, which had else destroyed the traveller; the acorns which I have matured from year to year have been carried far and near, and groves of forest oaks can claim me as their parent I have lived for the eagle, which has perched on my top, for the humming bird which has paused and refreshed its giddy wing, ere it danced away again like a blossom of the air; for the insect that has found a home within the folds of my bark,—and when I can stand no longer, I shall fall by the hand of man, and I shall go to strengthen the ship which makes him lord of the ocean, and to his dwelling to warm his hearth and cheer his home. I live not unto myself."

On yonder mountain side comes down the silver brook, in the distance resembling the ribbon of silver, running and leaping as it dashes joyously and fearlessly down. Go ask the leaper what it is doing. "I was born," says the brook, "high up in the mountain; but there I could do no good; and so I am hurrying down running where I can, and leaping where I must, but hastening down to water the sweet valley,—where the lark may sing on my margin, where I may drive the mill for the accommodation of man, and then widen into the great river, and bear up his steamboats and shipping, and finally plunge into the ocean, to rise again in vapour, and perhaps come back again in the cloud to my own native mountain, and live my short life over again. Not a drop of water comes down my channel, in whose bright face you may not read, 'None of us liveth to himself.'"

Speak now to that solitary star that hangs in the far verge of heaven, and ask the bright sparkler what it is doing there? Its voice comes down the path of life, and cries—"I am a mighty world. I was stationed here at the creation. It was among the morning stars that sang together, and among the sons of God that shouted for joy, at the creation of the earth. Aye, Aye, I was there

When the radiant morn of creation broke,
And the world in the smile of God awoke,
And the empty realms of darkness and death
Were moved through the depths by his mighty breath,
And the orbs of beauty, and spheres of flame
From the void abyss, by myriads came,
In the joy of youth as they darted away
Through the widening wastes of space to play.
Their silver voices in chorus rung,
And this was the song the bright ones sung.

Here among the morning stars I hold my place, and help to keep other worlds balanced and in their

ces. I have oceans and mountains, and I support myriads of immortal beings on my bosom; and when I have done this, I send my bright beams down to earth, and the sailor takes hold of the helm, and fixes his eye on me, and finds his home across the ocean. Of all the countless hosts of my sister stars who walk forth in the great space of creation, not one, not one lives or shines for herself!"

And thus God has written upon the flower that sweetens the air, upon the breeze that rocks that flower on its stem, upon the rain-drops which swell the mighty river, upon the dew-drop that refreshes the smallest sprig of moss that rears its head in the desert, upon the ocean that rocks every swimmer in its chambers, upon every penciled shell that sleeps in the caverns of the deep, as well as upon the mighty sun which warms and cheers the millions of creatures that live in his light,—upon *all* has he written, "None of us liveth to himself."

And if you will read this lesson in characters still more distinct and striking, you will go to the garden of Gethsemane, and hear the Redeemer in prayer, while the angel of God strengthens him. You will read it on the hill of Calvary, where a voice that might be the consecrated voice of the whole universe of God, proclaims that the highest, noblest deed which the Infinite can do, is to do good to others,—to live not to himself! Rev. J. Todd.

Ammonia, a compound of nitrogen and hydrogen, seems the compound which nature chiefly makes use of to furnish nitrogen to plants.

Ammonia is contained in the air, and every shower which descends brings with it a portion of this valuable substance, for the use of the vegetable world. There can be no doubt that all wild plants obtain their ammonia from this source. But though even with cultivated plants more ammonia may thus be conveyed to the soil in a year than they take out in a year, yet it may not be conveyed at a time when the plants most require it. An artificial source of ammonia in the soil is, with proper regulation, doubtless of great benefit. Guano, rags, horn shavings, &c., are all capable of supplying ammonia to the soil. But great care should be taken in the use of these manures. If a farmer should manure his soil with these alone, without a proper amount of mineral matter, he would undoubtedly deteriorate his soil; they should, therefore, always be mixed with manures containing much mineral matter—such as wood or peat ashes, used as an adjunct to farm yard dung, or alternated year by year with other manures, containing the necessary amount of inorganic matter.

The decomposition or putrefaction of all vegetable or animal matters containing nitrogen always furnishes ammonia. Thus urine after some time has a strong ammoniacal smell. A badly ventilated stable always smells strongly of ammonia in the morning, from the decomposition of the animal excrements. Formerly sal ammoniac used to be made from camel's dung. It is now a product of the decomposition of coal (vegetable matter), by heat in the making of gas.

The dung-mixens in fermenting give out ammonia in a volatile form, and unless some means be taken to stop its escape, it will serve to manure the whole neighbourhood instead of the farmer's own land. It may be prevented from escaping by the addition to the midden or dung-heap of a quantity of finely powdered gypsum. In making the mixen, a layer of dung twelve or fourteen inches deep ought first to be placed on a proper bottom, then a few pounds of gyp-

sum strewed over, then another layer of dung, then gypsum, &c. The whole ought to be covered with a layer of mould, four or five inches thick. It is very improper to mix lime with manures of any kind. The consequence is, the immediate liberation in a volatile form of all the ammonia, to the great detriment of the farmer. As an illustration I will add to this sample of Peruvian guano, which is almost without smell, a quantity of quick lime. A powerful odour of ammonia is immediately produced. (Experiment performed.)

We now have in this course of lectures mentioned the principal properties of OXYGEN, HYDROGEN, NITROGEN, and CARBON, the four elements which constitute the organic parts of vegetables and animals. It is wonderful to observe how the wisdom of the Almighty is displayed in every portion of his vast dominions. We have seen that vegetables derive their supplies of oxygen, hydrogen, carbon, and nitrogen, from *water, carbonic acid* and *ammonia*. How wonderful, therefore, is it that the decomposition and putrefaction of vegetable and animal matters should result in the reproduction of water, carbonic acid and ammonia; the destruction and death of one generation is thus by the wisdom of God made to provide for the sustenance and life of another.

No sooner does an animal cease to exist, or a vegetable begin to decay, than the sources of new life are afforded, with all that is essential to keep up a ceaseless round of living and sentient beings.

UNIVERSAL DIFFUSION OF LIFE.—Since the time when in an earlier work, I attempted to describe the universal diffusion of organic life on the surface of the globe, and its distribution in height and in depth, our knowledge has been wonderfully augmented by Ehrenberg's brilliant discoveries, which rest not on ingenious combinations and inferences, but on direct and exact observations. By these discoveries the sphere of animated existence—we may say, the horizon of life—has expanded before our view. Not only is there no interruption of minute microscopic forms of animal life in the vicinity of either pole, where larger animals cannot maintain themselves, but we find among the microscopic animals of the south polar Seas, collected in the Antarctic expedition of Captain James Ross, a remarkable abundance of new forms, which are often of great elegance. Even in the residuum obtained from melted ice, which floats in round fragments in latitude 78 deg. 10 min. S., there have been found above fifty species of siliceous-shelled polygastrics, and even coccinodiscs with green ovaries which were therefore living, and able to resist the extreme severity of the cold. It is not only so in particular localities, in inland waters, or in the vicinity of coasts, thus thickly peopled with atoms invisible to the naked eye. Samples of water taken up by Schayer in 57 deg. S. latitude on his return from Van Dieman's Island, as well as those taken between the tropics in the middle of the Atlantic show that the ocean water, in its ordinary condition, without any appearance of discoloration, contains innumerable microscopic organisms, quite distinct from the siliceous filaments of genus *Chaetoceros*, floating in a fragmentary state like the *oscillatoria* of our fresh water. Some polygastrics which have been found mixed with sand and excrements of penguin in the Cockburn Island appear to be generally distributed over the globe; other species belong to the Arctic and Antarctic Polar regions. Thus we see that animal life reigns in the perpetual night of the depths of the ocean; while on continents, vegetable life, stimulated by the periodical action of the solar rays, chiefly predominates. Not only are earth, air, and water, filled with life, and that at most different temperatures, but also the interior of the various parts of animal bodies; there are animalcula in the blood of frogs and of salmon; according to Nordman, the fluids of the eyes of fishes are often filled with a worm which lives by suction (*diplostomum*); and the same naturalist has even discovered in the gills of the beak an extraordinary double animal (*diplosion paradoxon*) having two heads and two caudal extremities disposed in rectangular directions.—*Humbolt's Cosmos*.

THE DEATH OF THE FLOWERS.

BY C. B.

How happily, how happily, the flowers die away!
Oh, could we but return, to earth as easily as they!
Just live a life of sunshine, of innocence and bloom,
Then drop, without decrepitude or pain, into the tomb.

The gay and glorious creatures! they neither toil nor spin,
Yet, lo! what godly raiment they're all apparell'd in!
No tears are on their beauty, but dewy gems more bright
Than even brood of Eastern Queen, endiadem'd with light

The young, rejoicing creatures! their pleasures never fall,
Nor lose in sweet contentment, because so free to all;
The dew, the shower, the sunshine, the balmy blessed air,
Spend nothing of their freshness, though all may freely share.

The happy, careless creatures! of time they take no heed,
Nor weary at his creeping, or tremble at his speed;
Nor sigh with sick impatience, or wish the night away,
And when 'tis gone, cry dolefully, Would God that it were
day!

And when their lives are over, they drop away to rest,
Unconscious of the penal doom on holy Nature's breast:
No pain have they in dying, no shrinking from decay—
Oh! could we but return to earth as easily as they!

POLISH HONEY.—Poland is perhaps the greatest honey producing country in Europe. In the provinces of Podolia, Ukraine, and Volhynia, in particular, the cultivation of the honey-bee has long formed an object of national importance, and these bee-gardens are not only very numerous and extensive, but they are also common in other parts of the kingdom. There are cottages in Poland with a very small portion of land attached to them, on which was to be seen as many as fifty hives; while there are farmers and landed proprietors who are in possession of from 100 to 10,000 hives! There are some farmers who collect annually more than 200 barrels of fine honey, each barrel weighing from 400 to 500 lbs., exclusive of the wax. A tenant is often in this way enabled to pay his rent and taxes, to defray other domestic expenses, and often to accumulate handsome dowries for his daughters.—*The Journal of Agriculture.*

TREATMENT OF LITERARY MEN.—The soldier, the sailor, the architect, the painter, are all within sight of the most lavish prizes of public liberality. Parliament has just given titles and superb pensions to the conquerors of the Sikhs. The India Company has followed its example. We applaud this magnificent liberality in both instances. Two general Officers have thus obtained a peerage, with £7,000 and £5,000 a year. They deserved those rewards. But the whole literary encouragement of the British empire, with a revenue of fifty two millions sterling, is £1,200—little more than the tenth part of the pension allotted to those two gallant men. There can be no greater scandal to the intellectual honour of the country. The pettiest German principality scarcely limits its literary encouragement to this sum. We doubt whether Weimar, between literary offices and pensions, did not give twice the sum annually. But named in competition with the liberality of the leading sovereigns, it is utterly mean. Louis the Fourteenth, two hundred years ago, allotted 80,000 francs a year to his forty

members of the Academy—a sum equivalent in that day, and in France, to no less than £5,000 a year in our day, and in England. Frederic II. gave pensions and appointments to a whole corps of literary men. At this moment there is scarcely a man of any literary distinction in Paris who has not a share in the liberal and wise policy of government, either in office or public pension. But if we are to be answered by a class plethoric with wealth and rank, that literature ought to be content with living on its own means, must not the obvious answer be—Is the author to be an author down to his grave? Is there to be no allowance for the exhaustion of his over worked faculties?—for the natural infirmities of years?—for the vexation of a noble spirit compelled to submit to the caprices of public change?—and with its full share of the common calamities of life, increasing their pressure at once by an inevitable sense of wrong, and by a feeling that the delight of his youth must be the drudgery of his age? When the great Dryden, in his seventieth year, was forced, in the bitterness of his heart, to exclaim, "Must I die in the harness?" his language was a brand on the common sense, as well as on the just generosity, of his country.—*Blackwood's Magazine.*

A GOOD EXAMPLE.—The Austrian government has just issued an ordinance, declaring that every engine driver on the Rail-roads of the state who shall have for the space of one year, performed his duties without having caused any accident shall be entitled to a reward of one hundred florins (260f) and that every engine driver whose trains have met with no accident for ten consecutive years, shall receive 1,000 florins; (2,260f.) and a gold medal. It is hoped that this regulation which appears to us to be well worthy of imitation, will tend to diminish the frequency of rail road accidents.—*Herold.*

Sensibility is like the stars, that can lead one only when the sky is clear. Reason is the magnetic needle which guides the ship when the stars are wrapt in darkness.—*Herder.*

A FEW VOLUMES OF

The Canadian Agricultural Journal,
Price, Five Shillings, Bound,
TO BE HAD OF THE PROPRIETOR.

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, PRINTERS.