

Technical and Bibliographic Notes / Notes techniques et bibliographiques

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

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

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

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

Title on header taken from: /
Le titre de l'en-tête provient:

- Title page of issue/
Page de titre de la livraison
- Caption of issue/
Titre de départ de la livraison
- Masthead/
Générique (périodiques) de la livraison

- Additional comments: /
Commentaires supplémentaires:

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

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

THE
CANADIAN AGRICULTURIST,
AND JOURNAL OF TRANSACTIONS

OF THE

BOARD OF AGRICULTURE, AGRICULTURAL ASSOCIATION, &c.

VOL. VII.

TORONTO, MAY, 1855.

No. 5.

Agriculture, &c.

TOWNSHIP OF YORK FARMERS' CLUB.

A meeting of the members of this Club was held at the Red Lion Inn, Yorkville, on Wednesday Evening, March 28th. R. Davis, Esq., Vice-President, occupied the chair. A larger number of members than usual were present. The subject for discussion was, THE FALLOWING OF LAND, which Professor Buckland introduced by an extemporaneous address, the substance only of which we can give in this place, and our notice of the long and interesting discussion which ensued must necessarily be very brief.

The Professor commenced by defining the process of fallowing, as practised in ancient and modern times, for the purpose of clearing the land of weeds, and by giving it a longer or shorter period of rest, to enable it to recruit its exhausted powers. The several kinds of fallow were then described: the *naked* or *bare fallow*, under which the land remains without any crop for a whole year, and subjected to repeated ploughing and harrowing; the *bastard fallow*, comprising a spring or early summer crop, such as rye, vetches, &c., after which the ground is thoroughly cultivated and prepared for fall wheat; and the *green crop fallow*, a striking feature in improved modern husbandry, the ground being well prepared in spring for root crops, such as potatoes, turnips, mangold-wortzel, &c., sown in drills, and the intervals regularly cultivated by horse or hand-power during the period of growth.

Fallowing is a very ancient practice, going back indeed to the earliest authentic records of cultivation. It was in fact the principal means, up to a comparatively recent period, of restoring arable land from exhaustion induced by repeated cropping. Fallow were consequently had recourse to at regular and sometimes very frequent intervals; a practice which more or less continues in every part of the world at the present day. The ancient Jewish law required that the soil should remain at rest, without any crop whatever, every seventh year; an injunction which, whatever typical application it might have, was well suited to renovate the exhausted soil of Palestine.

The Romans invariably practised fallowing, and to them many modern nations owe the system, for wherever that powerful and enlightened people carried their conquering arms, their arts, including their agriculture, as well as general civilization followed. The Romans were accustomed to fallow every alternate year, so that only one half of their tillage land was in crop at the same time. It is a remarkable fact that the fallow was unknown in Scotland till the commencement of the last century, although long and extensively practised in England. The land being there laid out in long and narrow slips was unsuited to cross ploughing; a circumstance that must have materially retarded the introduction of fallowing and green crops. The introducer of the fallow system into Scotland was Mr. Walker of East Lothian, who had to endure for a time, as do most improvers, the ridicule and contempt of his neighbors; but in a few years the practice became general over large areas.

It should be borne in mind that till within a comparatively late period the naked fallow system was indiscriminately pursued upon every variety of soil. The introduction, however, of turnips and potatoes into field culture on light soils, during the latter part of the last century, particularly in Norfolk, naturally paved the way for the contraction of the bare fallow, which, in course of time, became restricted to the heavier class of soils. A strong controversy was for a long time carried on in the agricultural community between the advocates and impugners of the fallowing system, and the result appears to have been, as is frequently the case in all such debates, that a medium course was adopted. The followers of the old system restricting naked fallow, as a general rule, to cold and wet clays; while their opponents achieved a great and most beneficial triumph in substituting the bastard fallow, or the culture of root crops in rows, on all the lighter descriptions of soil. The moderate clays and heavier loams were still undisposed of, discussion still continuing, and each party claiming them; till at length the introduction of underdraining as a means of improvement on the wetter and heavier lands, gradually prepared them for ranking among turnip and root growing soils; so that the naked fallow became at last restricted to the heavy clays, as at the present time.

The larger proportion of wheat raised in Upper Canada is after summer fallow, a practice no doubt, when not abused, the best adapted to the wants and

circumstances of the country. The process was too often slovenly conducted, so as to preclude the full benefits of the fallow, either in the extirpation of weeds, or the proper deepening and weathering of the soil by which, especially in dry lands, several insoluble manuring substances are brought into a fluid state so as to be available to the wants of the growing plant. It was a good practice to plough the ground deeply in the fall, to allow it to lie in a rough state through winter, exposing as large a surface as possible to the joint influences of the air and frost. The summer working should be deep and thorough, for in fallowing, as in most other agricultural operations the old adage holds true, that what is worth doing at all is worth doing well.

With regard to the long and keenly mooted question, whether the naked fallow ought to enter at all into the modern courses of an advancing husbandry, he (Professor B.) was of opinion that it had hitherto been too extensively and indiscriminately practised, and that upon all the lighter descriptions of soil, it might be beneficially dispensed with. On the clays, however, the fallow in some shape or other will always be found necessary every few years. It is the most effectual means of cleaning, loosening, and sweetening the soil, and has always been regarded as the mainstay of the clay-land farmer. It should, however, be resorted to only as a necessity, and not as occupying invariably any given year in a course of rotation. It is doubtless an expensive practice; involving the loss of a year's produce, and it adds nothing to the soil. When produce is low in price, the first crop after naked fallow seldom if ever pays expenses; but its benefits are usually felt through the whole subsequent course of the rotation. Fallowing acts upon the soil chemically as well as mechanically, and is a certain means, as all experience testifies, of bringing into activity the latent elements of fertility. Clays to which the practice of fallowing is chiefly restricted, always contain a greater or lesser amount of insoluble silicates of alumina and the alkalies. By repeated cultivation these manuring substances are exposed to the action of air and moisture, and as the soil becomes mechanically disintegrated, they combine in a solvent state, and become available as food for cultivated crops. As underdraining and thorough cultivation advance, naked fallows, even on the heavier soils, will become less frequent, and the growth of root-crops and row culture extended. This is evidently the natural tendency of a scientific and progressively advancing course of agriculture.

The CHAIRMAN expressed his agreement in the main with the statements and reasonings of Professor Buckland. The chief question to be decided was whether fallowing pays. He was of opinion that it did not; except occasionally on the heavy soils, infested with weeds. In the Township of York, except upon the stiffest lands, the naked fallow ought to be discarded.

Mr. LEE was of opinion that the summer fallow upon most of the soils of York Township was unnecessary. His farm was generally light, upon his peaty land he raised excellent oats, and found that fall wheat did better after a crop than a summer fallow. He highly approved of the row culture of root crops.

Mr. PALMER expressed himself decidedly in favor of extending and improving the cultivation of turnips, mangolds and especially carrots; and thought that we should look more to the quality of our cultivation than to its mere extent.

Mr. CHERRIMAN remarked that the summer fallow could not be altogether got rid of in this country, even on the lighter soils, as weeds were so remarkably quick in growth. The first thing was to keep the ground clean.

Mr. PLATER strongly argued for the necessity and utility of fallowing on the stiffer soils. His farm mainly consisted of a clay sub-soil, and although he could produce root crops, they could not be got off in sufficient time for fall wheat. He could usually get a heavy crop off the latter after a bare fallow.

Mr. ALCHIN, of Paris, said that on the light soils of the Counties of Brant and Dumfries the naked fallow was not generally necessary.

Mr. SAMPSON thought that the first step in good husbandry was deep and thorough working of the land, and that consequently improved implements were of primary necessity. He was an advocate of fallows; but they should be well done. In the State of New York exhausted arable land had been restored by deep ploughing and keeping down the weeds.

Although there was some difference of opinion in the meeting, it was obvious that nearly all were in favor of dispensing with bare fallows on the lighter soils. After a vote of thanks to Professor Buckland for his opening address, the Club adjourned.

GUELPH FARMERS' CLUB.

An adjourned Meeting of the Farmers' Club was held at the British Hotel, Guelph Friday week; Col. Salders in the Chair.

The subject for discussion was that of "Manures," introduced by Mr Charles Davidson, as follows:—

MR PRESIDENT AND GENTLEMEN,—In compliance with a request, made at the latest meeting of the Farmers' Club, that I would introduce the subject of MANURES, and their application: I am sorry it should have fallen upon me to bring before you a subject of such importance, for I freely confess I have neither the ability nor the experience necessary to do it justice, as I consider it one of the fundamental roots in the science and practice of Agriculture; and as you are mostly all aware that my calling has been other than that of a Farmer, for the last fifteen years, you will bear with me in the remarks I am about to make, as they are those chiefly drawn from my own experience, and that generally adopted in the West of Scotland, previous to my leaving it; and which, at the time, was considered best adapted to give satisfactory results.

But, as I have before remarked, I consider that, to do justice to such a subject, the aid of the practical Agriculturist, in collecting, making, and applying the various articles which may be brought under the head of Manures, and their adaptation to the different soils; as, since the science of Chemistry has been applied to Agricultural purposes on an extensive scale, and the services of competent chemists secured to almost every Agricultural association in Britain, to aid and instruct the members thereof in ascertaining the wants of the different descriptions of soils within the bounds of such association, many errors have been rectified, and great improvements made.

I will, however, leave that part of the subject to be treated of by practical farmers; and not such as I—who may be termed a theoretical one—and will, therefore proceed to examine what may be understood as a Manure; and in answer thereto, I would state that I consider whatever is added to the soil to increase its fertility, and cause a great increase of

the fruits of the earth, to be a manure; and which may be classed under either of the following heads: viz., Animal, Vegetable, or Mineral.

Animal manures are chiefly those that consist of the excrements of an animal.

Vegetable, that which is made by decomposing the vegetable productions of the earth; and

Mineral, those substances taken from the earth which by the action of fire or otherwise are made to stimulate the dormant particles of the soil with which they come in contact so as to put forth their fructifying effects for the good of the husbandman, such as gypsum, or plaster, lime, marl-ashes, &c.

I am, however, unable to give these their proper value, not being able to lay them before you in an analyzed state; but will proceed to take a plain practical view of them; and will commence with the most common manure to be found, but not on that account the less valuable, viz. Farm-yard dung.

It is, in general, a compound of both animal and vegetable matters, and one which I consider has more of those nutritious qualities necessary for the growth of plants, than any other description classed under the foregoing heads.

But, Mr President, manure must first be collected before it can, properly speaking, be made or applied; and here I would ask permission to glance at the arrangement of a farm steading, so that its construction may be most advantageous for the purpose of collecting manure.

Where such has been properly laid out, a cattle-yard, straw-yard, or dung-hill (whichever name it may be known by), will form a principal feature in its arrangement; and although there are many different plans adopted, yet that which seemed to be the most suitable for such a purpose was to place the premises in such a position that the dung hill would be so situate as easily to drain the wash from the stable and cow-sheds; but not in my opinion as some have supposed, that it should be in a hole, so as to retain all the moisture, unless it at the same time was roofed in, and guarded around the outside with a water-table, so as to prevent the heavy dashes of rain which occasionally fall, from running into it, and destroying many of its essential qualities. Such a practice, however, I do not approve of; and I would rather place it in a situation where the superfluous moisture might drain off, but which at the same time, would not be allowed to go to waste, (for I consider the wash richer than the soil.) A reservoir should be constructed at the lowest point, so as to collect all that might run off, with a pump and place in it, so that it might be again distributed over the heap, should the dung-hill or yard not be necessary, as what was voided by the cattle during the winter (which was the general practice adopted in my native country), then it would not be necessary, as what was voided by the cattle would be sufficient to keep it in a moist state. What has found its way into the reservoir could then be diluted with water, and used as top dressing—the advantages of which are surprising. I have no doubt some of you saw in the *Guelph Herald*, I think it was, quoted the other day from a Scotch paper, that an acre of Italian Rye-grass had yielded twenty tons of hay during the season, having been cut ten times, and after each cutting it got a top dressing of liquid manure. The comparative value of liquid manure to solids, I will glance at presently.

Many other methods were adopted, so as to apply the superfluous wash; some of these were to fill the reservoir with dry straw, so as to absorb the liquid,

covering it over with peat or other porous earth, so as to determine the ammonia and prevent its escaping; and mixing such with other manures, for applying it by itself. At other times it was found beneficial in stopping too great a fermentation, from being poured over the dung-heap. Now, having collected the solid portions into a dung-heap, and the liquid into a reservoir, I will next endeavour to show what I conceive to be necessary to prepare it for use. But, Mr. President, before proceeding to this part of the subject, allow me a few minutes to contrast the system generally practised in this country, to that adopted at home, as previously explained; and I think you will agree with me that the system pursued here, in general, is a most injurious one to the farmer's stock, as well as to the manure.

Very little care apparently is taken to keep the droppings of the cattle together, or have it mixed with vegetable matter, so as to preserve as much as possible the valuable portions of it from escaping by the air, or being washed away by the snows and rains of Spring. Often you find the cattle at liberty to range over a field or lane, of acres in extent, which is covered over with their droppings, exposed to all the changes of the seasons; which practice must appear, on the slightest reflection, ruinous to the farmer. I look upon it as so much money lost; as what ever reduces the quality makes the article inferior, and consequently of less value.

But to proceed to the preparation of manures.

The fermenting of vegetable manures is a process I consider absolutely necessary, in any country, but more especially in Canada; not only on account of its being necessary in producing immediate effects on the crops to which it is applied, but the ease with which it can be ploughed down; yet how often do we see farmers driving it out in its rough unmade state, immediately on the opening of the spring, or before the last ploughing for wheat, in the summer; and spreading it on the land, and ploughing it in. The first objection I would advance, would be the open state in which it leaves the land, which, if a hot season sets in after the seed is sown, must necessarily retard vegetation. But, sir, if it was considered essential to have it well fermented in Britain, before applying it, how much more so is it necessary to be done here, when we take into consideration, the quantity of noxious weeds to be met with, growing along every road and wood side, whose seeds when ripe are carried by the winds over the whole neighbourhood which spring up along with the crops, and are gathered in harvest along with the grain, and consequently find their way into the cattle-yards, and which, if not destroyed by fermentation, will come up stronger each year, being well saturated with the strength of the manure.

I have heard it argued that by applying it to land early in spring, which was intended for summer fallowing, preparatory to sowing with wheat, that they would spring up, and by using the cultivator they would be destroyed. Such a system might answer a good purpose with light annual seeds; but with those increased in pods, which frequently lie dormant for years, until the moisture and action of the air destroys their covering, when they germinate and make their appearance, much to the annoyance of the farmer, it convinces me still of the necessity of having the manure well fermented before applying it.

The simplest way to effect which I have found to be to carry the manure, out to the field in the early part of the spring, in which it is intended to be used, and thus thrown by into a heap, which, if required for immediate use, the looser it is up the better, so

that fermentation may take place more rapidly and the manure decomposed and ready to apply; but should it be intended to remain for any length of time before using it, it would be better to drive the teams over it, so that the fermentation might not be so rapid. In either case, the dung heap ought to be brought as near to a point at the top as possible, so that should any heavy falls of rain take place, it might be run off, and a practice I have seen generally adopted was to cover the heap with peat or porous earth so as to determine the ammonia arising therefrom; and here where plaster is easily obtained, occasionally scattering a quantity of it over it, would be superior from its retentive properties to the former. Plaster also can be beneficially applied where the stall feeding of cattle is followed. For every one knows that on cleaning out such houses, an effluvia of no very agreeable odour arises, which, by scattering a few handfuls of it over the floor, it is at once checked or retarded by the plaster, and such also is its effects if scattered over a dung heap while undergoing the process of fermentation.

Having gotten it collected and properly made, the next step is to apply it.

That is a process all generally are acquainted with

The general practice was to drill it in for green crops, either potatoes, turnips, or carrots. For the last it required to be as well decomposed as possible to effect it, so that the root might not be divided and run into what was called toes, but which description of manure, pigeon dung, or such like being always preferred, if they could be obtained: yet, when these were not to be had, well fermented farm-yard dung was used. It is, however, a generally admitted fact that the more manure is fermented, the more its organic matter is lessened, yet the more speedily will its influence be felt on the crop to which it is applied; and, although less in quantity, is better in quality. Another method was practised, when dung was collected during the summer; when it was properly made, it was spread on the ground in the fall, where it was needed to plant potatoes in the Spring, and ploughed in so that it might incorporate with the soil, and at the same time save a vast amount of labor in the Spring, a system which I much approve of, as, by treating it in that way, the potatoes, will be clear in the skin and free from scab; which although of good quality, makes them unsightly to the eye, and lowers their value in the market. In applying it when turnips were intended to be grown, it was always put in drills, sometimes having a quantity of bone dust added to it. At other times it was applied to summer fallow, and ploughed in with the last furrow before sowing; and in doing so, care should always be taken to cover it properly, as vegetable manures, more especially, have always a tendency to rise; and, if exposed to the weather, lose much of their virtues.

Having now very imperfectly drawn your attention to Farm yard manure, in its solid form, I would merely glance at it in its liquid form, which is far more valuable than what is generally understood.

I would take for instance, the urine of horses and cattle. I will give you the opinion of Henry Youle Hind, Esq, in preference to mine on this head—as stated in his lectures on Agricultural Chemistry—in which he states that Farmers are very anxious to obtain Guano at a great expense, yet what is Guano? but the excrements of birds. It is composed of various ingredients, together with acid in combination with ammonia, of which latter substance, guano contains from 7 to 17 per cent.. Canadian farmers (he states) would not think of purchasing guano, even if

a supply were at hand. The price of \$10 to \$60 a ton, presents a great objection to its use as a manure, when a substitute of almost equal value is to be found in the urine escaping from our stables. He estimates that the urine and droppings of a full grown cow or horse contain a quantity of saline and mineral ingredients, exactly equal to the quantity of the same substances contained in the food consumed. In the solid excrements are found those large ingredients which, as they pass through the body of the animal, resisted the action of the fluids with which they came in contact. This somewhat singular statement will appear perfectly credible, when we consider that a full grown horse or cow consumes food for years together without increasing in weight: that is to say, the mean or average weight of a milch cow or working horse or ox is the same throughout a period of many years. Certain constituents of the food assume the form of muscle, bone, and blood, supplying the place of an equal amount of worn out and useless materials, which are discharged from the body in the urine.

The same author calculates that a horse voids 3 lbs of urine a day. From November to March he will void 450 lbs., which contains soluble solids as much as is contained in 200 lbs. of Guano. A cow voids 20 lbs. to 40 lbs a day; and for the same length of time gives as much soluble solid as is equal to 500 lbs. of Guano.

Now, Mr. President, in looking at the above statement, from a party competent to make such a calculation, what must be the loss to the Farmers of Canada, whose cattle are allowed to wander up and down, as I before stated, in lanes, where their droppings, either of solids or liquids, are comparatively lost?

I will next merely glance at green manuring such as ploughing down buckwheat, clover, and rape, (on the West coast of Scotland, we considered seaweed, direct from the Sea, also a green manure: its effects being much the same as those first mentioned. The general system adopted for those first named, was to get the land as well pulverized as possible; and then to sow either as thickly as possible—that is buckwheat or rape, clover being sown the previous year, and ploughed down the next; so that they might grow as rapidly as possible, thereby checking the growth of any weed that might show itself; and when well grown and coming into bloom, roll it down with a good heavy roller, so that the plough might the more easily turn it under with the furrow, when its results would be seen in two ways: first, in cleaning the land of weeds, and second, in giving a good crop.

But the disadvantage in adopting such a course is that it has no lasting effect, the first crop being sufficient to exhaust all its strength; and on that account it is seldom resorted to except when a supply of more permanent manure cannot easily be obtained.

Guano, I have no experience in applying; but from the results, which we see in the Agricultural reports from Britain, its powers must be very great; and like Bone-dust, the small quantity applied to an acre, makes the cost of carriage so trifling, that it in a great measure, reduces the first cost of the article, when compared with the expense attendant on carrying a quantity of Farm-yard dung any distance.

Bone-dust, in my time, was very generally used, for the raising of Turnips: the bones having been crushed by a mill for the purpose. It was to be had at most all ports on the coast and was well adapted for light loam or sandy soils; and its effects were astonishing. As to its application, when carried to the field, it was applied sometimes alone, and at other

times along with other descriptions of manure. It was put in drills the same as other manures; but if used alone, the drills were not made so deep. I recollect when we sowed but five bushels per acre; but it was ultimately increased to ten and upwards. If other manure was applied in connection, about half and half,—say 15 tons of well-made manure, and six bushels of bones.—the bones were sown by a machine constructed for the purpose, which distributed them very regularly. They were then covered up, and the seed sown in the usual way.

I will now merely glance at the Mineral Manures as briefly as possible; as I have occupied your time too long already, in what you mostly all have had the practical experience of.

And the first I will notice is Gypsum or Plaster. As it is got in a prepared state, when received, I will not dwell on that part. Most of you are aware of its qualities, at least so far as its beneficial effects on grasses from top dressing are concerned; that being the general way in which it is applied; but it would also serve a good purpose to sow it pretty thickly over a manure heap, when undergoing the process of fermentation, as its principal quality is in fixing the ammonia, and not allowing it to escape. In applying it to crops, either as a top dressing, or sowing it along with the seeds, it has been recommended by the author formerly mentioned, to add its own weight of common salt, by which it affords a greater supply of soda to the roots of the plant, and thereby increases its growth. It also attracts and detains the ammonia from the air to the plant, which affords more nourishment than many would credit. In fact I have often heard it stated by parties, when speaking of the use of Plaster, that it would soon wear out the soil. I for one differ with such, as I consider, as I have already remarked, that it determines not only the ammonia in the soil to the plant, but also draws the same from the air. But as you have all had more experience of its use and application, I will leave it to others to further explain.

The next I will take up is Lime. You are all aware how it is prepared.

Its application requires greater care and judgment than any of the foregoing manures; for unless it is properly applied it will impoverish, rather than improve the soil. I beg to make a general remark here, than in speaking of applying it, I will look upon the land as all well drained; otherwise it is worse than useless to use lime.

In applying it, the Farmer has the following object in view; viz., to bring into action the dormant portions of the soil, by stimulating them to yield to the roots of plants that nourishment which it contains, but which, from its adhesive qualities, was kept locked up. It is like all other Mineral Manures, constantly descending, and therefore ought to be applied as near to the surface as practicable, having an entirely opposite tendency to Farm-yard manure, as that requires to be ploughed down as deeply as the soil will permit, for the latter will always work to the top, while the former will work to the bottom. Hence the advantage in applying it, as a top dressing. It should never be put on in too great a quantity; in fact, the judgement of the Farmer is put to the test, having to take into consideration the soil he intends to operate on.

It can profitably be applied by mixing it with the weeds gathered off the fields, or the clearing out of ditches, &c., and forced into a heap by which it burns and destroys obnoxious weeds, and leaves a valuable compost to be formed, which will greatly increase the productiveness of the soil to which it

may be applied. Here I have had no experience in applying it, but have no doubt there are some here who have experimented with it, and who can give their practical experience.

There are other Mineral Manures, such as marl ashes, leached and unleached, but which, not having had much experience with their results I will leave to others, who have had more to explain.

And, Mr President and gentlemen, to conclude; I feel greatly obliged to you, for having had patience to listen to what I have advanced which I feel is but of small importance to a class of men such as the Farmers of the County of Wellington; but should I have opened the subject in such a way as will tend to the further elucidation of it from the parties present, I shall feel amply recompensed.

Some discussion ensued, during which the substance of the foregoing address was fully approved. Several members of the Club spoke in favour of the use of liquid manure, and the formation of suitable tanks in or near the barn yard. Mr McCrea also spoke in favour of the moderate use of lime, and described its beneficial action on land on which there was a superabundance of decaying vegetable matter; as well as on heavy clay soils. A vote of thanks having been given to Mr Davidson, for his able address, the Club adjourned for the season,—time of next meeting to be decided upon at the County Agricultural Show to be held in the Fall.

MR. McDOUGALL'S REPORT TO THE BUREAU OF AGRICULTURE.

(Continued from page 105.)

Analyses have been made of the surface and sub-soil of Upper Canada, taken from a few localities, widely separated, but their practical value to the Agriculturist may be doubted, unless something more is done. The thorough and satisfactory manner in which the Geological Survey of the State of New York has been carried on, and the admitted practical advantages that have resulted from it to the intelligent Agriculturists of the State, induce me to recommend for your consideration whether it would not be more advantageous to the Province in every respect to increase the scientific corps under the direction of Mr. Logan, so as to complete the Survey of the settled parts of Canada, within a much shorter period, than will be practicable with his present force.

The subject seems to fall appropriately under your cognizance, as one of the means by which Agriculture may be largely aided.

It seems, moreover, a work, which to be useful, must be thorough, and therefore demands the generous help, and watchful supervision of Government.

DITCHING MACHINES.—There is still a great desideratum in the operation of thorough draining, viz: a machine that will rapidly and inexpensively open the trench to a proper depth. Fowler's Draining Plough, as exhibited at the great Exhibition of 1851, is an ingenious attempt to accomplish the object. This plough makes the orifice and deposits the tile at one operation, and without disturbing the soil. It leaves only a narrow slit in the earth as it passes along. A strong iron coulter with a plug large enough to open a space for the tiles, descends from a stout frame work placed on wheels, to the depth at which the tiles are to be laid, and is drawn from one side of the field to the other by a wire rope attached to a capstan. The tiles are threaded on a rope to the back of the plug. When the field is crossed the rope is detached from the plug,

and withdrawn, leaving the tiles in the orifice it had made, which completes the drain.

The objections to this machine are obvious

1st. The difficulty of keeping the plug at a proper incline notwithstanding the irregularity of the surface. This is one of the points in which it is said to have been lately improved.

2nd. The liability to meet stones, or other obstructions in its course. This is an insuperable objection; and in Canada would I fear contract within very small limits the field of its operations. Every stoppage from such a cause would make it necessary to dig a hole in front of the plug, and remove the obstruction by hand, the horses and driver, &c., being in the meantime idle.

3rd. Liability of tiles to be broken. If a tile should split while being dragged along after the plug, it would leave the rope, choke the passage, and perhaps stop the machine. How in such a case is the point of obstruction to be ascertained? The rope on which the tiles are threaded like a necklace, is three or four feet under ground, and the distance from the side of the field where this necklace enters the earth may be 10 or 15 rods. As I have not seen the machine in operation, these observations are, of course suggested by the *modus operandi*. Perhaps English tiles are strong enough to sustain the pressure, but those I examined at Waterloo, Albany, and New York, would hardly endure the strain of such a process.

4th. The expense of the machine, and the expense of working it:—I have not at hand the means of ascertaining the cost of Fowler's Draining Plough in England, but judging from the amount and character of its machinery, it could not, in this country, cost less than £100 or perhaps £150: Two horses and three men if not more, are required to work it.

This would place it beyond the reach of the ordinary farmer, though I apprehend the question of cost would be met as in other cases if the other difficulties could be overcome. Parties would no doubt be found to undertake draining as a business, going from farm to farm.

A new ditching machine, was exhibited at the Crystal Palace, but its merits were not very apparent. It was exhibited by a Mr. Pratt of Canadaigua, New York, and will he asserts, cut 150 rods of ditch, two feet deep, in a day; it is drawn by a single span of horses. As the foot and a-half or two feet of clay, which, the inventor of this machine does not profess to move, is at the bottom of the difficulty and constitutes four-fifths of the expense of cutting a proper ditch, I did not consider the machine worthy of being recommended to your notice.

A draining plough has lately been introduced into Scotland, which is highly spoken of for cutting shallow drains.

It is thus described by the correspondent of an American Journal:—

"In the first place, a common plough is passed back and forth, turning a furrow out on each side. Then follows the draining plough which goes down from two to two and a half feet; the mould board being so constructed as to turn the earth all out. In this manner twelve acres in the vicinity of Stirling were drained with three ploughs in one day, the tile being laid in the furrow just as the plough left it.

The earth was returned to the ditch by means of a scraper in the form of the letter V, the legs of course protruding forward, and a team attached to each leg on each side of the ditch."

A machine that will cut a narrow ditch to the depth

of three and a half or four feet, cheaply and expeditiously, leaving the bottom a proper incline independently of slight inequalities of surface, and that will not be seriously obstructed by stones, roots, &c., is a great desideratum, and when invented will be worth millions to agriculture.

By reducing the cost of this operation, which lies at the foundation of successful farming, even one-third, you would ensure its general introduction, and no man can calculate the value and importance of the results that would follow. I therefore recommend the offer of a considerable sum, say two hundred or two hundred and fifty pounds, as a premium to the inventor of such a machine.

The Crystal Palace contained some new and many improved implements and machines, of great practical value to the agriculturist, but I discovered none, besides those already mentioned, that seemed to come within the scope of my instructions.

A number of reapers were exhibited possessing various features, some adapted to rough and light crops, others to the level prairies, and abundant harvests of the west. A self-raking apparatus attached to one of these, excited much attention, and is certainly a most ingenious contrivance. The machinery by which the rake is operated is somewhat complicated, and therefore liable to derangement in unskillful hands. The inventor is a Mr. Aitkins of Chicago, Illinois. I recommended the proprietor to send a machine to the Provincial Exhibition, and gave him the necessary information for the purpose. He promised to do so, and I had the pleasure of seeing it on the Hamilton fair-ground. I have reason to believe that a considerable number of these reapers will be introduced into Upper Canada before next harvest. In cases of this description government aid or interference is unnecessary. The enterprise of the manufacturer, or the necessities of the farmer, under the stimulus of high prices for labour and the products of labour, induce him to search out and call to his aid, new labour-saving machines, as soon as their utility is established. There were Threshing Machines, Fanning Mills, Grain Separators, Hay Presses, Ploughs, Straw-cutters, &c., and numerous other implements designed to facilitate the various operations of the farm, which well deserved the attention of the intelligent agriculturist; but as I saw nothing to warrant me in recommending any of these machines or implements to the special notice of the Bureau, or Boards of Agriculture, "with a view of their introduction into this Province," at the public expense; and as I was not authorized or expected to report on the Exhibition generally, I shall not offer any particular observations upon them. All those of real utility are either already known to Canadian farmers, or soon will be through the medium of our annual Provincial Exhibitions.

SEEDS, VEGETABLES, &c., &c.—Under this head, I beg to observe, that by a friendly correspondence between the Bureau and Patent Office at Washington, and between our boards of Agriculture and the State Agricultural Societies, an interchange of seeds, &c., could be secured that would put us promptly in possession of every new variety or newly discovered product of the Vegetable Kingdom, that may be introduced into the United States. I did not feel myself at liberty to open a communication with the Patent Office on this subject, as it was beyond my instructions. Having made the suggestion I leave the matter in your hands. The Secretary of the New York State Agricultural Society, B. P. Johnston Esq., whom I met at the Crystal Palace, expressed great willingness on behalf of the Society to reciprocate in all such matters with our Boards. The State

Society has established, at Albany, an Agricultural Museum which already contains a large collection of objects illustrative of the history, progress, and present condition of the art in that State. It is open to the public and is daily visited by persons interested in agriculture. Nearly all new inventions in agricultural mechanics, that have stood the test of experiment, may be seen here, either in the shape of working models, or, as is generally the case, in the shape in which they left the hands of the manufacturer. Fruits, seeds, grain, vegetables, of every variety, are collected, labelled, and, in such mode as may be practicable, preserved for exhibition. Mr. Johnston, who was present as the agent of New York State, at the World's Fair, London, brought from Europe on his return some forty varieties of wheat. These were distributed among the members of the Society in different parts of the State, for the purpose of being tested.

The results will be carefully noted. Mr. Johnston promised to collect and send to the Board of Agriculture, samples of those varieties which might prove to be valuable.

I may mention as a matter of some interest, and as indicating the probable advantages of the intercourse recommended, that Mr. Johnston received from a Russian gentleman, whose acquaintance he formed when in London, seed of a new variety of flax. It is represented to be a winter flax, and is expected to prove of great value especially in the Northern States. Its character and advantages are set forth as follows:

1st. "It has the advantage to be sown in the fall; not subject to be sown too early or too late, as this is often the case with the spring seed, and has always a failure of the crop in its train."

2nd. "The winter seed shoots sooner and before the weeds come out, which latter are kept back by it; it is earlier ripe and can be brought in before the hands are wanted for other agricultural operations."

3rd. "In order to prevent the shooting in the fall, the seed must be worked in by the ploughs as early as possible, and then the seed is not damaged, neither by 20 degrees of cold. (Reaumer.) In the spring as soon as the field is dry, it must be slightly harrowed. It shoots with the first rays of the warm sun, and is already in flower when other spring seed is sown, and before the insects can do it any harm."

4th. "This seed is glossy, but dark and mixed with black grains, yet all shoot. It is a great deal more oily than the common seed."

The seed of this flax was to be tested this present winter, and if Mr. Johnston's expectations are realized, it may be well worthy the attention of the Canadian flax grower.

At Rochester I procured and forwarded to Professor Buckland, 12 bushels of seed wheat, comprising the three varieties of most repute in Genesee Co.

This wheat has been sown on the experimental farm at Toronto.

PATENT LAWS.—During my examinations at the Crystal Palace, I came in contact with a number of American inventors, who complained loudly of our illiberality in granting patents for inventions. They accuse the Canadians of short-sightedness, as well as injustice, in not affording to American inventors encouragement and protection upon as favourable terms at least, as those accorded by their laws.

From the facts which came to my knowledge, during these enquiries, I am convinced, though formerly of a contrary opinion, that a change in our Patent Laws by which the inventors of valuable machines

in the United States, could obtain the protection of a Patent in Canada for a short period, say 5 or 7 years would be the means of readily introducing numerous American inventions which under the present system are not introduced at all; or only by individuals who hearing of them by chance possess sufficient enterprise to become their own importers. It is now the interest of the American inventor, to keep as far away as possible from the Canadian frontier. If the character of his machine is such, that it cannot be 'pirated' manufactured in Canada, and clandestinely sold in the United States in violation of his patent, the produce of that machine may be imported in such quantities and at such prices as to reduce very much the value of his patent. Indeed, so common has this practice become in the case of wooden manufactures, that a bill was lately introduced, and (if my recollection serves me) passed by the New York Legislature, making contraband all manufactures proved to be the produce of Canadian copies of American inventions.

The difficulty of discrimination may prevent the effective operation of such a law, but the existence of a wrong which was felt, is proved by the attempt to remedy it.

It was probably supposed that by leaving the whole field of American discovery open to the enterprise of our machinists and manufacturers, they would hasten to appropriate every thing valuable for reproduction at home. But this expectation has not been realized. A considerable outlay is required to procure patterns, and make the necessary preparations for manufacturing heavy and valuable machines; and when a man's next neighbour may set up in the same business and under sell him the moment he has introduced and established the value of the article, it is very plain that the enterprise is attended with some risk.

The consequence is, that Canadian manufacturers have not shown the alacrity that was expected in "pirating" American inventions. In the case of cheap machines or implements adapted to common use, the evil is not so great; though even in regard to this class, I believe their introduction would be much facilitated by holding out inducements to the inventors to occupy the field themselves.

All foreigners are excluded from the benefit of our Patent Laws, while, "any person a subject of Her Majesty, and resident in this Province," may avail himself of their protection, not only for his own inventions, but for such as he "may have discovered or obtained a knowledge of" in foreign countries, except the "United States and Her Majesty's dominions."

A Canadian may obtain a patent in the United States upon the same terms as a citizen, except that he must pay a somewhat higher fee. So may an American obtain a patent in England. Why should we be less liberal? To profess a desire for "Reciprocity," while our Patent Laws are a standing proof of hostility to the principle, will not add to our reputation for consistency or honesty.

If, therefore, these laws expose us to the charge of inconsistency—if they display less international liberality than the patent laws of any other civilized country—if their effect be not to promote the prompt and general introduction of important new inventions but to obstruct and delay their introduction, it seems to me that no time should be lost in revising them.

I strongly recommend the subject to your notice, in the hope that you will agree with me in thinking that it demands the attention of the legislature.

I beg to conclude this report, the result of a short mission of twelve days, with the following *resumé* :

1st. I recommend the abandonment of the idea which seems to have been entertained by your predecessor, if it be entertained by you, that the Minister and Boards of Agriculture should undertake the importation directly of animals, implements, or machines, except in those rare cases in which private enterprise has been found wholly inadequate; and in these rare cases, I apprehend the offer of premiums, provided they are sufficiently liberal, will be found the cheapest and most efficient means to achieve the desired result.

2nd. I recommend the abandonment of any special inducements or agencies, that may have been proposed or adopted, with the view of turning the attention of farmers in Upper Canada from their present crops to that of flax. I offer no opinion upon the propriety of special Governmental inducements in Lower Canada.

The offer of premiums, say £100 each, through the Boards of Agriculture, for the introduction and establishment in Upper and Lower Canada, respectively of a complete set of flax machinery, might lead to beneficial results; I therefore recommend the offer of such premiums.

3rd. I recommend that a sufficient sum be placed at the disposal of the Board of Agriculture, to enable it to secure either by offering a sufficient premium, or by entering into a conditional agreement with some practical potter in the vicinity of Toronto, the immediate importation of Scragg's Tile Machine. The same aid should be extended to the Board for Lower Canada. Should it turn out that the machine of Mr. Charneck is capable of producing good tiles with rapidity, and at small expense, importation will of course be superseded. I may observe that numerous "improved" Tile Machines have been presented to the public within the last few years, but Scragg's, Clayton's, and Whitehead's appear to have maintained their supremacy.

4th. I recommend the offer of a liberal premium for the invention, or introduction of a Ditching Machine, the conditions being prescribed by the Board of Agriculture.

5th. I recommend that measures be taken to make the Geological Survey immediately useful to the agricultural interests of the Province. A better digested and more systematic arrangement of materials explained by diagrams, maps, &c., upon the same plan as the State Survey of New York, is what seems to be wanted.

6th. I recommend that an immediate grant of £400 or £500 be made to each of the Boards of Agriculture, in order that they may begin the collection of materials to form the Agricultural Museums contemplated by the Act 16th Vic, cap. 2, sec. 16. I am not aware that any step has yet been taken to establish these museums, owing, I presume, to a want of means by the Boards. The manufacturers of implements would, in most cases, supply samples gratuitously, as they would be repaid by the publicity thus secured. The collection of grains, seeds, &c., and the testing of their qualities under the direction of the Boards, would be productive of important results. No one can visit the museum at Albany without perceiving at once its great utility.

7th. I recommend an amendment of the Patent Laws, so that foreign inventors may obtain a limited protection in Canada on complying with certain conditions; one of which should be the establishment of a manufactory or depot in the Province, where the invention could be purchased.

There are other points, some of them of as much

importance to the cause of agricultural improvement as any I have yet mentioned, which I should have been glad to submit for your consideration, but they do not come strictly within the scope of Mr. Cameron's letter. The Experimental Farm at Toronto is in an unsatisfactory state for want of means, and from uncertainty as to the ultimate disposition of the University grounds which have been assigned for the purpose.

Unless more decisive and thorough measures are speedily adopted, the whole project will miscarry, and not the least of the evils to be apprehended from its failure is the prejudice it will excite in the public mind against all scientific demonstration in the art of agriculture.

Having taken a deep interest in the organization of the Bureau and Boards of Agriculture, and having been honored by your predecessor with frequent consultations in the preparation of the Agricultural Act, I have felt the more freedom in offering suggestions and recommendations as to general conduct and principles, rather than specific measures.

Without attempting to enumerate the various implements, &c., which I consider adapted to Canada, I have endeavoured to ascertain what action by your department and the Boards of Agriculture in promoting their introduction into this Province, would be likely to ensure success, and to point it out.

I have the honour to remain,

Your humble servant,

WILLIAM McDOUGALL.

Toronto, December 1853.

ADULTERATION OF GUANO.

There are few victories more dearly bought than a good bargain; there are no dangers against which it is more necessary to re-echo so continual a caution. Down even from the days of Troy, when Glaucus changed away his golden suit, to the time when Moses brought his gross spectacles, and the countryman tried his dozer of razors, it has been still the same. Despite the oft-solicited interference of "the presiding magistrate," ladies are found yet to essay on the great sacrifice of Oxford-street. Wonderful hacks, sold only because their owners have no further use for them, are still to be fared out of curious corners, by clever people only too anxious to get "a bargain." Flash auctions, sham smugglers, and too accommodating bankruptcies, all pander most profitably to this weakness of the English people.

None, as we have often had occasion to tell him, has more need to beware of a bargain than the agriculturist, as none, in the exercise of his vocation, may gain one at a greater cost. It would be difficult to calculate how often or in how many different ways, has this been impressed upon him. In the purchase of certain articles necessary for the business of the farm, the cheap must be the bad. There can be no doubt at all about it. The more and more you examine the real bearings of the case, the more you will become convinced how utterly impossible it is to honestly undersell the market. For the benefit, however, of him to whose well doing our labours are chiefly directed, we may venture to tell the following story, founded, as it will be seen, strictly on facts:—

Situated at the extreme north of the Isle of Anglesey, is a spot known as the Paris Mountain. To the miner and geologist this, it is hardly necessary to add, has long been an object of interest as well as

of profit. Rich in copper and other mineral, "streams of yellow ochre," says a local authority, "flow down the gullies of the mountain-side to the river port and sea." Some years since, we are further informed, "these streams were dammed up, or impounded by those through whose property they flowed, with the view of extracting the pigment by eva, oration or other processes." The experiment was successful enough, for the cream of this skimming, we learn, "formed a valuable article of commerce;" while on the other hand "the residuum was worthless, lying in lumps, an eyesore and a nuisance." The spirit of sanitary improvement, however, has reached even North Wales. The lesson now commonly taught us, that something may be got out of everything, was put into very sharp practice even in so remote a district, and an example afforded to many a more assuming locality. The inhabitants of the markettown of Amwch, lying at the foot of the mountain, and of course the chief sufferers from the nuisance, had of late been agreeably surprised by noticing with what care and uninterrupted diligence this "residuum" was collected and removed. The curious could only further ascertain that it was shipped for Liverpool, where it mysteriously disappeared. To what purpose it was to be applied no one could imagine, although no doubt in the some way or other to further illustrate the now very popular theory—

"There is something to be got out of everything." Having at any rate run the drag of this residuum as far as Liverpool, where we came to a long check, let us now return into Wales. We diverge from our route a trifle, and find ourselves at length in the ancient and curious old city of Chester. Here we meet with one Mr. Pickering, an honest Cheshire yeoman, who, like another Moses Primrose, is changing his famous Cheshire cheese for Peruvian guano, with a certain Mr. Thomas. The great inducement to this is, as a matter of course, "a bargain." Mr. Thomas tells his friend, confidentially, that he purchased the guano a bargain from Messrs. Gibbs & Co. during the winter—that he had made an excellent speculation of it—and that he could sell it, comparatively as he had bought it, *cheap*. This was not enough for Mr. Pickering; he buys a ton, and, like poor Moses, directly he has it home he begins to suspect the wisdom of his contract. The symptoms are certainly alarming, and he sends at last for a doctor. This is Mr. Hewson, the analytical chemist of Liverpool. By this gentleman's powers of testing the truth, Mr. Thomas's Peruvian guano is discovered to be only half what it was represented to be. It is adulterated to the extent of fifty per cent., the other half being sand, gypsum, and ochreous clay—in a word, chiefly that "residuum" which in the first place so annoyed, and afterwards so perplexed, the good people of Amwch.

Mr. Thomas, the defendant, as a dealer in this stuff was strong enough in his own innocence to enter the witness-box, and submit to all the complimentary interrogatories of a cross-examination. His answer on his defence came very straight to the point. He had not sold this manufacture as *genuine* guano—he never warranted it as such; he offered it merely as *Peruvian* guano. Let our readers in their future dealings remember to bear in mind so nice a distinction; and, once more, let them be cautious over a bargain. The price of a horse is now received in our courts more or less as his warranty. It may come to be the same with the price of guano, and that when people buy at a low figure, they must understand that they buy at a risk. The judge, indeed, in this very case summed up chiefly on the question of warranty. There was little defence as to the character of the

manure; but what could be expected at the price? Mr. Pickering, to be sure, after an immense trial of trouble and anxiety, got his money back again, and lost his crop! With this moral to the agricultural community, may we leave our history of how the Cheshire farmer followed out the *permutatio Glauci*, and swapped away his good cheese for bad guano. —*The Farmers Magazine*.

On Diminishing the Quantity of Roots Used in Fattening Cattle.

BY CHARLES LAWRENCE.

(From the Journal of the Royal Agricultural Society of England.)

The feeding of bullocks has been of late much discussed in the agricultural journals and elsewhere. It is singular that such a variety of opinion, such a diversity of practice, and so great a difference in expense, should exist at the present day on a subject of every year's experience from time immemorial, and that by thousands of agriculturists. Amongst an eminently practical people, as we are reputed to be, it would have been a natural presumption that the mode and cost of feeding a bullock in the shortest time, and on the most economical plan, would be as well established as any proposition whatever: the only deviation being the time required for the operation; and this would depend on the age, the breed, and the condition of the animal put up. Had this been the occupation of the merchant or manufacturer, instead of the farmer, such a discrepancy would not have existed at this day. Hitherto, exact experiment, carefully noting weight, measure, cost of food, &c., has not been an attribute of the farmer. Such alone will furnish a sound foundation for reliable practice, for which Mr. Lawes has set us an admirable example.

I will presently give some particulars of the feeding of some bullocks last winter; but my immediate object is to repeat a protest I have made from time to time against the prevailing practice of giving to feeding animals a very large quantity of roots daily, and that in a neat state. When I commenced feeding bullocks, some years ago I depended mainly on the experience of others, and was in the habit of noting down the allowances of the different kinds of food recommended in the agricultural periodicals, and otherwise, by men of reputed authority in such matters. The quantity of roots recommended I have observed to be from 1 to 1½ cwt. per diem, and for large bullocks even up to 2 cwt., and that without admixture.

Now, what is the object we propose to accomplish? It may be assumed for our present purpose we are dealing with animals at maturity in point of growth, that the skeleton is fully developed, and that we have only to accumulate flesh and fat. The first consideration would seem to be, what is the food which, at the least cost, contains the largest proportion of those elements which build up the muscle and fat, and is at the same time palatable to the animal. General experience points to the various roots grown on the farm as best fulfilling the latter condition; but when it is borne in mind they contain on an average somewhere about 88 per cent. of water, the next point for consideration is how we can combine with this quantity of fluid as much solid food of an ordinary kind [whether hay, straw or chaff] as may be requisite, having reference to the capacity of the stomach, and that degree of healthy action which is essential to the due assimilation of the more nutritious por-

tions of the food. It must ever be borne in mind that it is not the quantity of food put into the stomach of the animal which accomplished the object in view, but that which is thoroughly digested and assimilated by the healthy action of the viscera. When animals are in a state of rest, and consuming food so mixed. I have observed that, with water constantly before them they take very little, unless the more nutritious food supplem^{ed} be of a heating nature, such as pea or bean meal in too large a portion; the safest course is to combine crushed linseed with those articles. Such considerations led me to doubt the expediency of making the chief food of fattening animals that, nine-tenths of which consists of water, and more especially unmixed with more solid food. The setting before a bullock half a cwt. of neat roots the first thing in the morning, some hours afterwards their allowance of more solid and nutritious food, and repeating the feed of roots in the evening, appeared to be an irrational proceeding; and, on the other hand, that a due admixture of the solid and fluid foods would probably aid the proper digestion of each. I resolved therefore to diminish the quantity of roots which I had generally heard recommended to one half—viz., from 70lbs. to 80lbs. per diem, according to the size of the animal, and to give a portion of these with each feed, as intimately incorporated as might be practicable with the more solid food. With this view I obtained Moody's Cutter, now sold by Carson of Warminster, which cuts the roots into thin ribbands; these we turn over amongst the chaff, so that the animals cannot avoid eating them together.

I have for some time directed the attention of some of the agricultural implement makers to the want of a pulping-machine, in order to effect a still more intimate incorporation of the dried food with the roots for which a prize has lately been offered by the Royal Agricultural Society. Such an article was produced at Lincoln, by Mr. Phillips, of Downham. This is an effective machine, at 11 guineas. It cannot probably be rendered, as at present constructed, at a less cost; but while the cost of Moody's Cutter is only £4 10s., a machine for pulping must be produced at much less cost than 11 guineas before it will get into the farmers hands.

I observe that the animals, under the change to which I have adverted throve faster, and were kept equally clean with one-third less litter, by weight than we had found necessary on the former mode of feeding.

In the month of August, 1853, our swedes and mangold were struck with some kind of blight, or other not very well defined malady, which nearly stopped their gallant growth, and we were reduced to the alternative of selling some of the stock, or putting the whole on short allowance of roots, and we adopted the latter. We limited the bullocks to 50lbs. weight, and the sheep to 10lbs. per head per diem. We had plenty of good barley straw, but the hay was very indifferent, having been exposed for several weeks to rain, and put up at last in questionable condition.

I purchased seventeen bullocks at the October Hertford fair. For the first four weeks they had little else than the barley straw and bad hay cut into chaff, with their 50lbs. of root. From that time till they were sold they had 6lbs. of linseed and rape-cake mixed in equal proportions and boiled, and the soup poured over the chaff, which was completely absorbed. This destroyed the fungus or mould which had accumulated on the damp hay, and render it perfectly sweet, but of course could not restore the

nutriment washed out by rain. The linseed and rape-cake together averaged £8 per ton; the cost of this, therefore, was 2s. 7½d. per head per week. The attendance I put at 6d. per head per week [a man and a boy, at 18s. managed in all respects 24 bullocks, 24 fattening hogs, and the store pigs]; the chaff, 2s. 4d. per head per week; the roots [estimated at 10s. per ton] 1s. 8d. Say, for the first four weeks the cost was 5s. per head per week; and for the next thirteen weeks 6s. 10., when the animals were sold. The account stands thus:—

17 bullocks, prime cost	£282	17	6
Feeding 4 weeks, at 5s.	£17	0	0
“ 13 “ at 6s. 10d.	76	1	0
		93	1
			6

The were sold for £386 10.

The credit balance of £6 11s. 6d. would be absorbed by the engine-power in cutting the chaff; and the manure represents the straw cut for litter.

The result, I think, shows that bullocks may be fattened, in a reasonable time, at a less cost, and with a much less quantity of roots than are usually given, by the mode of feeding adopted, without actual loss. I may observe, too, in reference to this particular case, that, though beef during the year 1853 bore a good price, lean stock commanded a much higher proportional price in the market.

Cirencester. August 9, 1854.

ON THE CULTIVATION OF FLAX & HEMP.

Flax may be considered as a staple commodity in Flanders; it employs a great portion of the population, is exported in large quantities, and the cultivation and preparing of it is most perfectly understood there. It may be raised in various soils, but its quality depends much on the land chosen for its cultivation, and on the tillage and manuring. Its roots sink deep where it has room, and it is generally said, that the roots of good flax should strike into the soil to a depth equal to half the length, at least, of the stem above the ground. The soil most proper for this plant, if there is a choice, is a deep, rich, friable loam, neither too dry in summer nor wet in winter—in short, the best and deepest soil that can be found; but, as this is scarcely ever to be obtained to any great extent, art and labour must supply the deficiency of nature; and trenching, working, and manuring must create a deep soil, and enrich it. A porous sub-soil, or one that is well drained, is essential. In a course or rotation, in which flax enters as a principal crop, the whole management of the land should have a reference to the flax to be raised. In the three tables of rotations which we have given on the authority of Mr. Van Aelbroek, it may be observed, that each begins with flax and ends with flax; and there is no doubt that the arrangement of the crops is much influenced by the preparation of the soil required to

bear a good crop of flax at the end of the course. For this purpose a surplus of tillage and manure is given to each crop, so that the soil is deepened and ameliorated at each successive step, and is brought to as perfect a state as it will admit of by the time the turn comes to sow flax. This may remove the surprise which is naturally excited by amount of tillage and manure given to each crop, which appears, at first sight, far greater than can be required. The quantity of liquid manure poured over the light lands year after year, cannot fail to make them rich, and the frequent trenching with the spade, must, in the end, transform the whole soil, to a considerable depth, into a compost of rich vegetable and animal matter, intimately mixed with the natural earths. It is, in fact, an accumulation of humus, which is the best preparation to ensure a good crop of flax. It is not, therefore, to the immediate preparation of the soil for the flax, that its abundance or good quality is to be chiefly ascribed, but to a gradual system of amelioration, which has brought the soil into the high condition required for this plant.

The finest flax is raised in the neighbourhood of Courtray, where the soil is naturally of such a quality as flax requires. In other districts the soil requires more care and culture to make it produce anything approaching to the quality of the Courtray flax. In some, as in the Waes country, and more especially in the neighbourhood of Ghent, no exertions or manuring can produce flax which will bear comparison with the best; but they produce very good crops, notwithstanding, of a moderate quality; and they find it a profitable crop, which to the farmers is always an important point. If it were not for a course, continual improvements of the soil, they never could raise such flax as they now produce; nor would any soil or quantity of manure, put into the land at the time the flax is sown, produce so large or so good a crop as will grow in land gradually and properly prepared. It is necessary to premise this, in order to prevent disappointment when attempts are made to imitate the Flemish methods. If any one will follow the whole course on a similar soil, the result will be probably the same.

The crops which immediately precede flax in light soils, are barley, or rye, with turnips after them the same year. In this case these crops are more highly manured than usual; and the turnips have a double quality of liquid manure. About Christmas the turnips being taken off, the land is ploughed into high ridges, and the intervals dug out: it re-

mains in that state secure from wet and exposed to the winter's frost. As soon in spring as the weather permits, the land is again ploughed and well harrowed, to let the seeds of annual weeds vegetate. A month after, another deep ploughing and harrowing are given to bring it into good tilth, and clean it well. Peat ashes are now put on at the rate of thirty bushels to the acre, and these are spread and harrowed in: a few days after ten hogsheads of strong liquid manure—the emptyings of privies preferred—is poured regularly over; and thus it is left for a week or ten days, that the manure may soak in. The seed is then sown—the quantity varies; but is always very abundant—160 lbs. are generally sown on an acre. The seed is slightly covered by a bush harrow, or the traneau drawn over the land: more than half-an-inch of earth over it would prevent its vegetating. Cloudy or showery weather is chosen for sowing it, as a very hot and dry air might also prevent its raising. The best seed is imported from Riga. The first crop of seed raised from the Riga seed is sometimes used; but it is supposed to degenerate fast; and the home-raised seed is said to produce coarse branched flax. This, however, is maintained by others to be a mere prejudice; and it is recommended to sow a spot thinly, and give the plants room to grow and perfect their seed. The flax of these plants will be much inferior; but the seed will be good and plump, and equal to the Riga seed for sowing. The question arises still, which is the cheapest method, to raise seed thus, or to import it? This is a matter of simple calculation; and we must leave the flax growers to decide it.

About Courtray the method is somewhat varied, the flax is sown earlier: the soil being peculiarly suited to this crop—less preparation is required. The preceding crop, which is frequently colza or oats, receives a double portion of manure; some very rotten dung is ploughed in with the stubble, and is completely decomposed during the winter. Early in spring the ground is ploughed and harrowed across; liquid manure is poured on as before, and the seed is sown. The quantity and nature of the manure depends on the state of the soil as to fertility, especial care being taken that no hot dung be used, and nothing which by any chance can increase weeds. Rape cake, dissolved in urine, or ground to a powder, is a favourite manure. Six hundred to one thousand rape cakes, and one thousand gallons of urine, are often put on an acre of land on which flax is to be sown. It is an essential condition, that previous to the sowing of the

flax-seed the land be quite clean and free from weeds.

Clover-seed or carrots are often sown amongst the flax; but many careful cultivators allow of no mixture, or anything to divide the juices of the soil with the flax. It is evident, that in ground so highly manured, the carrots or clover cannot fail to grow well; but they are weeds as regards the flax, and, therefore, it is thought, that they should not be allowed to grow amongst it.

The next operation is to weed the flax, as soon as it is a few inches high, and can be readily distinguished from the weeds. This is done by women and children who, from custom delight in the work: they go in parties, and generally work cheerfully together; with coarse cloths tied round their knees they creep along on all fours, which injures the young plants less than if they walked; they go against the wind, in order that the plants, which are laid flat by their creeping over them, may be blown up again into an erect position as soon as they have passed over. This proves what minute attention is paid to every circumstance which can possibly affect the crop. When the ground is quite clean, and the flax is grown to a good height, preparations are made for pulling it. The fibre is in the best state before the seed is quite ripe, and if this alone were the object, the flax should be pulled without waiting the seed to ripen; but then the seed is valuable for the oil it contains, and forms an important item in the value of the crop. These advantages are to be balanced; and flax is generally allowed to stand till most of the seed is ripe, or nearly so. Much judgment is required to ascertain the exact time, when there is a maximum of value, and each grower solves this problem for himself.

When the flax is pulled it is laid on the ground in small parcels to dry. As soon as the capsules which contains the seed become dry, and break readily on being pressed between the finger and thumb, they are taken off by drawing the flax through a rippling machine, which is a kind of comb with blunt iron teeth, which separates the capsules from the stalk: and they are saved in bags or baskets. The flax deprived of its seed is now tied in small bundles, and in some places immediately put into water to steep; but about Courtray, where every process is carried on in the greatest perfection, and where steeping flax is a distinct trade, the flax is placed upright in rows as soon as it is pulled, and the root end spread out, and the tops resting against each other in the form of the

letter A, or the rafters in a roof; they do this so skillfully that the rain has little effect upon it, and, unless it blows very hard, the wind will not overturn it. In a week or ten days, if the weather is dry, it is collected into thick bundles of 8 or 10 lbs weight each, and firmly tied. In this state it is stacked in the field, or deposited in a barn. The seed is beaten out at leisure in winter, and the flax is not steeped till the May after.

The method of steeping is the same at whatever time it be done, and the following is the common process:—

A piece of water is over which alders grow, is chosen in preference, as the leaves of that tree steeped in the water give the flax a peculiar tint, which is thought desirable; or if such a place is not at hand, alder leaves are sometimes tied up in the bundles of flax. It is thought that the alder leaves also drive away insects, which injure the fibre of the flax while steeping. The best and most experienced steepers, however, disregard these notions, and prefer the clear, soft water of the river Lys, which they confine in long ronds made for the purpose along the side of the river, of such a depth that the flax may stand nearly upright in them without touching the bottom. This requires a depth of five feet or more. If they cannot be made so deep, the flax must be placed in a slanting position in the water, the root end lowermost and the upper end a little under the water. It is kept in this position by means of mats placed over it; and poles with stones placed on them keep the mats down and the whole under water. If the steeping takes place in August, the fibres will be sufficiently loosened from the woody parts of the stem in a week. In October it will take double that time, more or less, according to the temperature. The warmer the air is the sooner the flax will be steeped. In May it takes somewhat less time than in October, and the flax steeped then comes out of a lighter colour than that which is steeped while green.

Some steepers tie the bundles together in pairs, the root end of one to the seed end of the other, so that half the flax leans upwards in the water and half downwards; but there seems no good reason for this practice, for, as the root end is sooner steeped than the upper, it will be unequally steeped, even if the flax be laid horizontally in the water, which is not thought so good as placing it vertically or nearly so. But as these men have great experience in the process, we must hesitate before we blame a practice of which we do not immedi-

ately see the advantage. Those who steep the flax in the Lys itself, collect it in thick bundles nearly a foot in diameter, and somewhat longer than the flax, by laying several small bundles together, as described above. In these large bundles the root projects at each end, and the tops are inside. They are tied round very tight in two places, about six inches from each end. They are then packed upright and closely packed in a cage or frame, made of wood and laths, ten feet square and four deep; boards loaded with stones are placed over the top so as to sink the whole a few inches below the water of the river. Thus the water runs over and under the frame, and is continually changed. The consequence of this is, that the flax becomes of a clear, white colour, without the usual bluish tint and is therefore more valuable. The time of steeping is somewhat longer than in stagnant water. It is pretended by those who do not adopt this method, that there is considerable loss in the weight of flax steeped in this way, which counterbalances the superior value. This is however not clearly proved, and the quantity of flax brought from a great distance to be thus steeped, is a presumptive proof that this method is, on the whole, the most profitable, and the best.

The flax is frequently examined when it is nearly steeped enough. If it be left a few hours too long in the water, the quality is injured; and if it be taken out too soon, the whole fibre will not be detached, but will break in the scutching. As soon as the fibres separate from the woody part, the whole length of the plant, it is immediately taken out of the water, the bundles are untied; and the flax is spread out to dry on a piece of short grass—the place having been previously well swept, that no earth or dirt may be on it. In rainy weather this process is deferred; as rain would now injure the flax materially. It remains on the grass ten or twelve days; and is frequently turned over during that time. It is then housed; and in the course of the winter it is scutched and heckled—operations, which, not necessarily connected with agriculture, need not be described here.

The capsules containing the linseed, which were separated from the stem before they were steeped, are spread on cloths in the sun to thoroughly dry them; after which they are stored in a dry granary until the seed be wanted for crushing or for sowing. The seed which is beaten out in winter is better than that which has been separated from the capsules at first, because it has had time to ripen, and to convert more of its mucilage into oil. The

Flemish flax seed, when sown, produces more seed than that from Riga, but the flax is inferior. Hence fresh Riga seed is bought every second year. Next to Courtray, for the growth of good flax, are Roulers, Thielt and Onchenarde; the Waes district comes next, with Termonde and Alost: that from the neighbourhood of Ghent is inferior.

An acre of good flax, near Courtray is worth from £20 to £25, without reckoning the seed, which is worth £5 or £6 more. Merchants come out of France and Brabant to buy it, as it is pulled and tied in bundles. They have it steeped at their own expense by the regular steepers. In other districts the flax is of less value; in some not above half this sum. When it is considered that wages are not much more than half of what they are in England, it will be seen that the rent and profits of an acre of land fit for the growth of flax, must be considerable; but it must be observed that this golden crop only recurs every nine or ten years and the continual manuring of the land must in part be set off against this crop, which, some how or other, considerably reduces the fertility of the land.

Hemp is not cultivated so extensively as flax, but as it forms a principal produce in the Waes district, where there are some considerable rope and cable manufactories, and is cultivated with some care, it cannot be passed over. The best soil for this plant is a good deep loam, such as it is found in spots in the Waes district, and near Alost. The hemp raised on this soil is long and of a strong texture, and consequently well adapted for cables, cordage and strong canvas for sails. In lighter soils the hemp is sown thicker, and does not attain the same size or strength.

The soil on which hemp is intended to be sown is ploughed in autumn, and again in spring. In the middle of May it is manured with fifteen tons of good rotten dung, which is immediately ploughed in, unless the land had been manured in autumn, which is the better practice, as then the dung is already in a decomposed state at the spring ploughing. In some small farms the hemp-land is trenched and prepared with the spade, and it amply repays the additional expense. In either case the liquid manure is not omitted, especially if *vidanges* can be procured; five tubs of this last, each as much as a horse can draw on the land, are considered as good a dressing as fifteen hogsheads of the common tank liquor, which is chiefly cows urine. This manure is allowed to sink into the soil for three or four days; the land is then harrowed, and about

half a bushel of hemp seed is sown per acre. The seed should be heavy, shining and dark-coloured, and of the preceding crop; in three or four days the plants make their appearance, and soon after this they are carefully weeded and thinned out by hand. In very good soils, and where strong hems are required, the plants are left six inches from each other. The strongest plants are pulled up in preference, as the male plants, which produce no seed, appear first. The name of male and female, as applied to the plants of hemp by botanists, are usually inverted by the hemp growers. They call that which produces the seed the male plant, and that which is barren the female. These names were no doubt used before the sexual system was well understood; but we shall call that the female which bears the seed. The male plants arrive first at maturity, at the time when the flower sheds the pollen which impregnates the female. They should then be gathered, as they would wither and become useless, if left till the seed was ripe on the female plants. This taking out the male plants does good to those which remain; and in order that this may be done without breaking the females, the seed should be sown in narrow beds with paths between them. From this circumstance arises a practice of sowing hemp in a border all round a garden or potato-ground, or in rows with potatoes between them.

When the female hemp is fit to be pulled, the plants are drawn out of the ground with the roots and laid in small bundles about six inches in diameter. These are placed against each other in a circle, the heads forming the apex of the cone. If the weather should be very rainy while they are in that state, the heads are sometimes protected from the rain by a covering of straw; but this is not a common practice. If the weather is fine, the whole is sufficiently dry in a week or ten days; the seed is then taken off by means similar to those employed for flax, and the hemp is steeped.

The female hemp requires the least time for steeping; a week or ten days in the water is sufficient to make the fibres separate from the wood. If a much longer time is required, it is a proof that the hemp was either pulled too soon, or allowed to stand too long.

Rye or wheat is usually sown on the land which has borne a crop of hemp. Sometimes turnip-seed is sown amongst the hemp, when the male plants are pulled up; but this is scarcely worth while, and the return seldom repays the trouble. Before the whole crop is pulled, if that takes place in Septem-

ber or October, the rye or wheat is thrown amongst it; the peeling of the stems covers this seed, and no other tillage is required. A slight application of the liquid manure soon makes the corn spring up; this saves ploughing and harrowing.

The produce of an acre of hemp in Flanders is about 350 lbs. of hemp, and from thirty to thirty-five bushels of seed, if the soil is good and well cultivated. It is not usual to sow hemp repeatedly in the same ground, as is done in many other countries, and also in parts of England, where a hemp land is a name given to some enclosure near the farm house, which from time immemorial is the only spot where hemp is ever sown. The Flemish farmers have no hemp lands; and they seldom sow this crop again in the same spot in less than eight or ten years. Hemp requires so much care and manure, that it is not a favorite crop; it clears the land from weeds, and is a good preparation for wheat; but flax is upon the whole more profitable, and therefore preferred.

When the hemp has been steeped and dried, the fibres are separated from the wood by hand, or by a mill which crushes the woody part. This mill consists of a stone of a conical shape, revolving on another circular stone laid horizontally, as in a cider mill; the wood is thus broken and afterwards easily separated from the fibre by beating and combing; but it is more commonly separated by hand; and the hemp thus treated is preferred. It is an easy employment for old people and children, by the winter's fire, or on a summer evening; but it is too tedious to answer on a large scale.

COL. MORRIS'S STOCK.

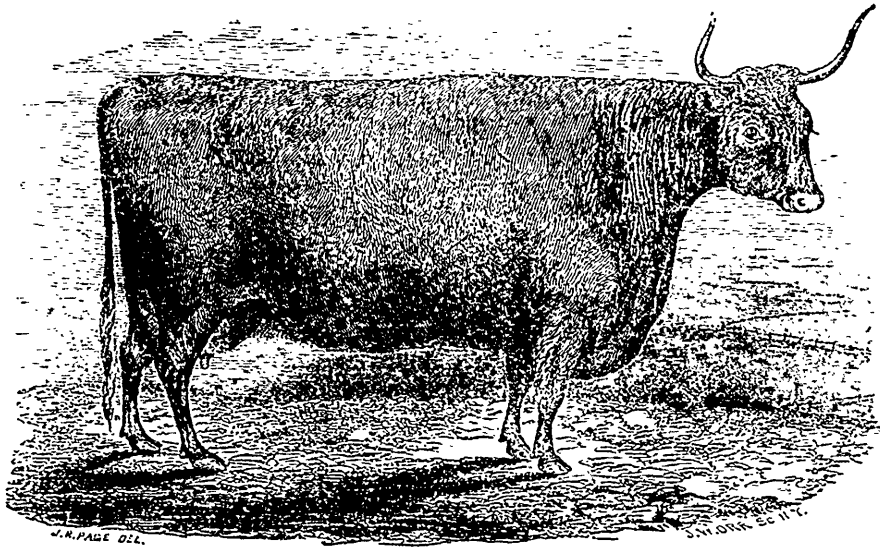
One of the advantages of a good agricultural paper is, the information it gives the farmer in regard to stock. If the reader of such a paper can find in its columns reliable accounts of the most carefully selected and best managed herds of cattle, &c., and the names and repute of those breeders who keep animals for sale, he may save himself much trouble, anxiety, and expense. In dealing with pretenders and sharpers, too many of whom are now "abroad," you can never be sure that you get what you have bargained for. Our advice is, to place more dependence upon the skill and character of the breeder than upon your eyes. These will often deceive you, especially in the matter of improved stock. It is better to be sure of the pedigree than to rely on a fine form.

As we have opportunity we shall extend our ac-

acquaintance *personally* with breeders and their stock, in the United States, as well as Canada, and then we shall be able to speak with more confidence on this important subject.

We made some reference in our last number to the stock of Col. L. G. Morris, of Mount Fordham,

N.Y.; and promised a further notice. We give below a portrait of his Devon Cow, "Birth-day." She took the first prize in her class at the New York State Fairs of 1853 and 1854. Mr. Morris has a splendid herd of Devons; and thinks them even more profitable on light soils than the Dairymans:—



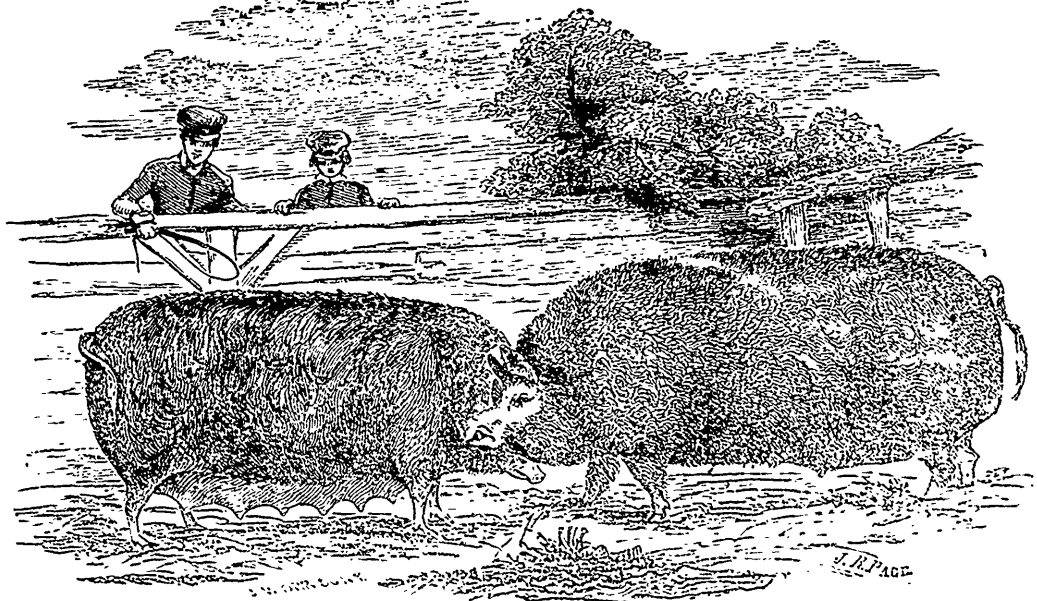
BIRTH-DAY,

(38 Davies' Herd Book), winner of 1st prize at Devon Agricultural Show at Exeter, England, 1846, and at Bristonple & one of a dairy of cows; also, 1st prizes at New York State Fairs of 1853 and 1854.

We saw the Essex and Berkshire pigs in their "best estate," at Mount Fordham. Colonel M. takes great pains in breeding them; and in sup

plying orders always selects pairs from different families.

Below is a portrait of two of his finest Berkshires:



LADY BURKE AND SIR ROBERT,

Winners of the 1st prize in their classes at the New York State Fair, 1854.

THE MONTHS—MAY.

May is the very month of mirth !
 And if there be a time on earth
 When things below in part may vie
 For beauty with the things on high,—
 As some have thought earth's beauties given
 For counterparts of those in heaven,—
 'Tis in that balmy vernal time,
 When Nature revels in her prime,
 And all is fresh and fair and gay,
 Resplendent with the smiles of May.

MAY'S MONTHS.

The month of May has always been a peculiar favourite with the poets and the lovers of nature, and high praises have been sung of its beauty and attractiveness. It should be remembered, however, that many of the most charming characteristics of this month have been drawn from more southern climates than that of this country or the British Isles; and the change of reckoning from the Old Style to the New, causing a difference of twelve days, will, in some degree, account for the discrepancy which too often appears between the weather and natural appearances of the beginning of the month as experienced by us, and the glowing descriptions frequently given by poetical writers. Notwithstanding the sickleness so common to the early part of the month, yet this is pre-eminently the season of hope and joyous excitement, and Nature is prodigal of her vernal gifts. She scatters flowers, and revels in dews; for, though we moderns may abandon the customs of our forefathers, and even deny to May those joyous attributes with which they delighted to invest her; though we complain of cold winds, and sometimes dull days, and frosty nights, cutting down flower and leaf, yet is May a gladsome month withal. The profusion of flowers, so delightful to both sight and smell; the leafing and blossoming of shrubs and trees; cool and refreshing showers, often in connection with warm sunshine and an atmosphere most delicious and invigorating to inhale;—each and all combine to foster feelings and sentiments of the highest rational enjoyment. It is the season of rural labour and activity, and equally that of rural gratification and expectancy.

The modern name of this month is derived from the goddess *Maia*, a divinity who was worshipped under many names by the Romans, but whose chief title was *Bona Dea*, or the "Good Goddess," as representing the earth. By our Saxon ancestors May was called *Tri-milki*, "because (as an old writer observes) in that month they began to milke their kine three times in the day."

The first of May, or, as it is commonly called, *May-day*, was in the olden times a day of universal relaxation and social enjoyment. The origin of several of the May games and pastimes of our ancestors must, no doubt, be looked for in still remoter

ages, and in an Eastern direction. The following extract from Stow will give the reader some idea of the habits of the English two or three centuries ago:—"In the month of May, namely, on May-day in the morning, every man, except impediment, would walk into the sweete meadows and green woods, there to rejoice their spirites with the beauty and savour of sweete flowers, and with the harmony of birds prayeing God in their kind; and for example hereof, Edward Hall hath noted that K. Henry the Eight, as in the 3 of his reigne, and divers other years, so namely on the seventh of his reigne, on May-day in the morning, with Queene Katheren his wife, accompanied with many lords and ladies, rode a May-ing from Greenwich to the high ground of Shooter's Hill, where, as they passed by the way, they espied a companie of tall yeomen clothed all in greene, with greene whoodes, and with bowes and arrowes, to the number of 100. One being their chieftaine, was called Robin Hoode, who required the king and his companie to stay and see his men shote, whereunto the king granting, Robin Hoode whistled, and all the 200 archers shot off, losing all at once; and when he whistled againe, they likewise shot againe; their arrowes whistled by craft of the head, so that the noyse was strange and loude, which greatly delighted the king, queene, and their companie."

The *Morris-dance* is a May-day festival still retained in some parts of the North of England. A rush-cart, drawn by horses, precedes the procession of the dancers, who are attired in comic and holiday costume, Robin Hood and his companions being frequently the principal characters. This custom is thought to be of Moorish origin, and to be derived from Spain.

Dancing round the May-pole, on May-day, is a practice that still partially survives in England; and seems peculiarly appropriate to this vernal season. The late learned Dr. Parr evinced great interest in perpetuating this ancient custom, and erected a May-pole on his parsonage grounds, around which the young men and maidens of his parish were wont to dance, accompanied by the good doctor himself. Aubrey informs us that at Oxford, "the boys doe blow cowshorns and hollow canes all night; and on May-day the young maids of every parish carry about their parish garlands of flowers, which afterwards they hang up in their churches."

The rural gaities and festivities of this enchanting season formerly observed in "merrie England," have of late years almost become obsolete. Still nature continues the same,—always beautiful, inspiring, and instructive. She still scatters her lovely flowers over verdant fields and woods; the wild songsters of the grove continue to charm us with their sweet music, and the whole face of creation wears an aspect of

beauty, tenderness and love. The May festival has come down to us from a very remote antiquity, and its origin is probably owing to some of the earlier nations of the east.

Some classes, such as the milkmaids and the chimney-sweepers, have in particular assumed this day for a distinctive festival; or, what is more likely, they continued to celebrate it long after it fell into disuse with their neighbours. The first of these have in most parts continued their Mayings, though Strutt, who wrote little more than seventy years ago, says, "the Mayings are in some sort yet kept up by the milkmaids of London, who go about the streets with their garlands and music, dancing." Misson, too, but he is of yet earlier date, has described the same thing, and more minutely:—"On the first of May," he observes, "and the five and six days following, all the pretty young country girls that serve the town with milk, dress themselves up very neatly and borrow abundance of silver plate, whereof they make a pyramid, which they adorn with ribbands and flowers, and carry upon their heads instead of common milk pails. In this equipage, accompanied by some of their fellow milk-maids and a bagpipe, or fiddle, they go from door to door, dancing before the houses of their customers, in the midst of boys and girls, that follow them in troops, and everybody gives them something."

Whit Sunday, or Pentecost, which occurs this year on the 27th of this month, is an Ecclesiastical festival, set apart at a very early period in commemoration of the miraculous out-pouring of the Holy Spirit on the Apostles. The appellation of *Whit-Sunday* is generally allowed to be only a slight abbreviation of *White-Sunday*, from the early and eastern practice of candidates for baptism being clothed in white.

This day is also the anniversary of St. Augustine, who was deputed by St. Gregory to be the converter and apostle of the English. He succeeded in impressing the truth of the Christian religion on Ethelbert, king of Kent, and many of his subjects, and became the first Archbishop of Canterbury. After many years of persevering labor this venerable man died on the 26th May, about A.D. 610. and was afterwards canonized.

In many parts of England *Whitsun-week* is observed more or less as a holiday, particularly in the manufacturing districts. Tens of thousands of children in Manchester and other large towns, belonging to Sunday and other schools, are taken by railways and boats long distances into the country, for rural recreation. It has long been a practice for the young folks to appear in new attire at this festival; all are animated by expectancy and enjoyment, and the attractive beauties of spring help not a little the general effect.

We are among those who have the belief that whatever tends to refine and enlarge the range of human sympathies, and to promote the unsophisticated enjoyments of childhood, must be in accordance with the beneficent will of Providence, and should be warmly cherished. In the present material and utilitarian age there is danger lest some of the purest well springs of human happiness be permitted to dry up in the breathless race for wealth and worldly distinction. Of all dupes of society, however, the cultivators of the earth are the most inexcusable, if they neglect the moral teachings of their innocent and time-honored pursuit; in the daily following of which they not only witness the heart-striking proof of creation, wisdom, and goodness, but they are the actual instruments employed by the Divine Architect for the accomplishment of his benevolent purposes in the wonderful economy of nature, for the benefit and enjoyment of both the rational and irrational parts of his creation.

May is a busy month to the farmer, and as the present season is late, the larger portion of the most important operations of spring have yet to be performed. All kinds of grain should be sown as soon as the soil and atmospheric conditions are suitable. The early sowing of tares, carrots, parsnips, &c., for cattle food, is of much consequence, and the land should receive the best cultivation that circumstances will allow. Ground intended for turnips, mangel wurzel, potatoes, &c., ought now to be thoroughly prepared and manured, if not done before. The success of root crops depends far more on the cultivation and attention they receive than is generally imagined. It is not uncommon to hear men complain of the want of success in those matters, attributing their failure to some peculiarity of the season, when, in fact, it is simply due to their own want of skill and attention. There can be no doubt that root crops pay; but their culture must be thorough, in accordance with the most approved modern practices, and in a country like ours, it is generally inexpedient to have large breadths under such crops.

Bees still require attention, and in suitable situations will repay for all that is bestowed on them. In ordinary seasons, they seldom cast their swarms in this country before next month. Tusser in his *May's Husbandry*, says—

"Take heed to thy bees that are ready to swarm,
The loss thereof now is a crown's worth of harm;
Let skillful be ready, and diligence seen,
Lest being too careless, thou losest thy beam."

There is an old proverb, as ancient as the days of Tusser, which says, in alluding to bees—

"A swarm of bees in May
Is worth a load of hay;
A swarm of bees in June,
Is worth a silver spoon;
A swarm of bees in July
Is not worth a fly."

We cannot more appropriately conclude our monthly paper, than with the following lines from Bishop Heber:—

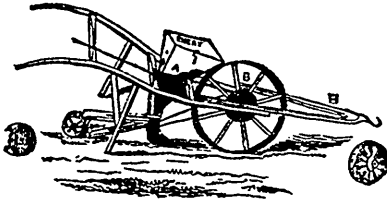
"Queen of fresh flowers,
Whom vernal stars obov,
Bring thy warm showers—
Bring thy genial ray.
In nature's greenest livery drest,
Descend on earth's expectant breast,
To earth and heaven a welcome guest,
Thou merry month of May !

"Mark ! how we meet thee
At dawn of dewy day !
Hark ! how we greet thee
With our roundelay !
While all the goodly things that be
In earth, and air, and ample sea,
Are waking up to welcome thee,
Thou merry month of May !

"Flocks on the mountains,
And birds upon their spray,
Tree, turf, and fountains
All hold holiday ;
And love, the life of living things,
Love waves his torch, and claps his wings,
And loud and long thy praises sings,
Thou merry month of May !"

B.

SEED SOWERS.



Seed Sowers have become very numerous; and it is difficult to decide between them as to merit. Messrs. McIntosh & Walton, of this city, (to whose establishment we can with confidence recommend our readers,) have several kinds for sale. We are putting to the test one of their small hand sowers, mounted on two wheels. It is said to answer for most garden seeds, and for turnips, carrots &c., in the field.

The cut at the head of this article represents a kind much used in the States. We are not aware whether they have yet been patronized to any extent in Canada.

The Seed Sower, of which we gave a cut, in a late number, and which consists of a long, narrow box carried before the man, and suspended from the neck, is highly spoken of by those who have used them. They are also sold by Messrs. McIntosh & Walton.

SHEEP HUSBANDRY.

NO. 2.

NEW LEICESTER.

We present in this number a brief history of the New Leicester, or Bakewell sheep. This breed has been extensively introduced into Upper Canada, and is more esteemed than any other.

Some writers have contended that the valuable family of long-woolled sheep, now so extensively spread over Great Britain, was of foreign origin; but thorough investigation proves their assertions groundless.

With the short-woolled variety, from time immemorial, each was assigned a locality admirably adapted, from soil, herbage, and climate, to itself; and thus their respective peculiarities both of form and fleece, through many centuries, remained distinct. Both varieties have been essentially improved by the art of man, as has already been shown in reference to the South Down; and, if possible, a still greater improvement has been effected of the long-woolled breeds, especially as to profitableness of carcase, through the indefatigable efforts of Mr. Bakewell, of Dishby, Leicestershire, and Mr. Cully, his able coadjutor.

We offer no apology for introducing to the reader nearly the whole of Mr. Youatt's faithful and interesting history of this renowned breed, valuable to all as showing the means adopted by Mr. Bakewell by which the New Leicester was brought to its present perfection of carcase, and extraordinary early maturity.

THE OLD LEICESTER SHEEP.

"This was a large, heavy, coarse-woolled breed, common to most of the midland counties, and reaching from the south of Yorkshire, and as far as Oxfordshire and Gloucestershire. It had a white face, no horns—it was long and thin in the carcase, flat-sided with large bones—thick, rough, and white legs—and weighing, the ewe, from 15 to 20 lbs., and the wether from 20 to 30 lbs. the quarter. It was covered with wool from 10 to 14 inches in length, coarse in quality, and weighing from 8 to 13 lbs. The pelt and offal were thick and coarse; the animal was a slow feeder, and the flesh was coarse-grained, and with little flavor."

NEW LEICESTER SHEEP.

The following description of the New Leicester will show the reader in what respects Mr. Bakewell effected his improvement over the old breed.

"The head should be hornless, long, small, tapering towards the muzzle, and projecting horizontally forwards. The eyes prominent, but with a quiet expression. The ears thin, rather long and directed backwards. The neck full and broad at its base where it proceeds from the chest, but gradually tapering towards the head, and being particularly fine at the junction of the head and neck; the neck seeming to project straight from the chest, so that there is, with the slightest possible deviation, one continued horizontal line from the rump to the poll. The breast broad and full; the shoulders also broad

and round, and no uneven or angular formation where the shoulders join either the neck or the back, particularly no rising of the withers, or hollow behind the situation of these bones. The arm fleshy through its whole extent, and even down to the knee. The bones of the leg small, standing wide apart, no looseness of skin about them, and comparatively bare of wool. The chest and barrel at once deep and round; the ribs forming a considerable arch from the spine, so as in some cases, and especially when the animal is in good condition, to make the apparent width of the chest even greater than the depth. The barrel ribbed well home, no irregularity of line on the back or the belly, but, on the sides, the carcass very gradually diminishing in width towards the rump. The quarters long and full, and, as with the fore legs, the muscles extending down to the hock; the thighs also wide and full. The legs of moderate length, the pelt also moderately full, but soft and elastic, and covered with a good quantity of white wool, not so long as in some breeds but considerably finer.

"It was about the middle of the last century that Mr. Bakewell first applied himself to the endeavour to improve the then existing breed in Leicestershire. Up to this period very little care had been bestowed upon the breeding of sheep.

"Two objects alone appear to have engrossed the attention of the breeders: first, to breed animals of the largest possible size; and, secondly, such as should produce the heaviest fleeces. Aptitude to fatten, and symmetry of shape, that is, such shape as should increase as much as possible the most valuable parts of the animal, and diminish in the same proportion the offal, were entirely disregarded.

"Mr. Bakewell perceived that smaller animals increased in weight more rapidly than very large ones; and that they consumed so much less food, that the same quantity of herbage applied to feeding a larger number of small sheep would produce more meat than when applied to feeding the smaller number of large sheep which alone it would support. He also perceived that sheep carrying a heavy fleece of wool possessed less propensity to fatten than those which carried one of a more moderate weight.

"Acting upon these observations, he selected from the different flocks in his neighbourhood, without regard to size, the sheep which appeared to him to have the greatest propensity to fatten, and whose shape possessed the peculiarities which he considered would produce the largest proportion of valuable meat, and the smallest quantity of bone and offal.

"In doing this, it is probable that he was led to prefer the smaller sheep, still more than he had been by the consideration above stated, because it is found that perfection of shape more frequently accompanies a moderate-sized animal than a very large one.

"He was also of the opinion that the first object to be attended to in breeding sheep was the value of the carcass, and that the fleece ought always to be a secondary consideration. The reason of this

is obvious: the addition of two or three pounds of wool to the weight of a sheep's fleece is a difference of great amount; but if, to procure this increase, a sacrifice is made of the propensity to fatten, the farmer may lose by it ten or twelve pounds of mutton.

"The sort of sheep, therefore, which Mr. Bakewell selected were those possessed of the most perfect symmetry, with the greatest aptitude to fatten, and rather smaller in size than the sheep then generally bred. Having formed his stock from sheep so selected, he carefully attended to the peculiarities of the individuals from which he bred, and, it appears, did not object to breeding from near relations, when by so doing he put together animals likely to produce a progeny possessing the characteristics that he wished to obtain.

"Mr. Bakewell has been supposed by some persons to have formed the New Leicester variety by crossing different sorts of sheep; but there does not appear to be any reason for believing this; and the circumstances of their varying in their appearance and qualities so much as they do from the other varieties of the long-wooled sheep, can by no means be considered as proving that such was the system which he adopted. Every one who has attended to the breeding of domestic animals must have experienced that, *by careful selection of those from which he breeds, and with a clear and defined conception of the object he intends to affect, he may procure a progeny in which that object will be accomplished.*

* * * * *

"Such is the origin of the New Leicester breed of sheep, which have, within little more than half a century, spread themselves from their native county over every part of the United Kingdom, and are now exported to the continents of Europe and America. Such, indeed, have proved to be their merits, that at the present day there are very few flocks of long-wooled sheep existing in England, Scotland, or Ireland, which are not in some degree descended from the flock of Mr. Bakewell. A pure Lincoln or Teeswater flock is very rarely to be found; and although some flocks of the pure Cotswold breed remain, in the greater number of instances it is probable that they have been crossed with the New Leicester.

"No other sort of sheep possesses so great a propensity to fatten—no other sort is fit for the butcher at so early an age—and although they are not calculated for the poorest soils, where the herbage is so scanty that the sheep must walk over a great deal of ground for the purpose of procuring its food, no other sort of sheep, in soils of a moderate or superior quality, is so profitable to the breeder.

"They vary much in size, weighing at a year and a half old, with ordinary keep, from 24 to 36 lbs. per quarter. In this respect, therefore, they are inferior to the Lincoln, the Cotswold, and the Teeswater sheep. By crossing them with either of these breeds, the size of the sheep may be considerably increased; and it is said that this may be done without diminishing perceptibly either their inclination to become fat, or the early maturity for which they have always been remarkable.

"The kind of meat which they yield is of a peculiar character. When the sheep are not over fattened, it is tender and juicy, but, in the opinion of many persons, somewhat insipid.

* * * * *

"The Leicester sheep were never favorites with the butcher, because they had little loose inside fat. It ought, nevertheless, to have been recollected that the smallness of the head, and the thinness of the pelt would in some measure counterbalance the loss of tallow; and that the diminution of offal is advantageous to the grazer, for it shows a disposition to form fat outwardly, and is uniformly accompanied by a tendency to quickness of improvement.

"The New Leicesters, however, are not without their faults. They are not, even at the present day, so prolific as most other breeds. This was too much overlooked in the time of Bakewell and his immediate followers. Their object was to produce a lamb that could be forced on so as to be ready, at the earliest possible period, for the purposes of breeding or of slaughter, and therefore the production of twins was not only unsought after, but was regarded as an evil.

* * * * *

"It was likewise, and not without reason, objected to them that their lambs were tender and weakly, and unable to bear the occasional inclemency of the weather at the lambing season. This also was a necessary consequence of that delicacy of form, and delicacy of constitution too, which were so sedulously cultivated in the Leicester sheep.

"The last objection to the New Leicester sheep was the neglect and deficiency of the fleece. There is little cause, however, for complaint at the present period. The wool has considerably increased in length, and has increased both in fineness and strength of fibre; it averages from 6 to 7 lbs. the fleece, and the fibre varies from 5 to more than 12 inches in length. It is mostly used in the manufacture of serges and carpets.

"The principal value of this breed consists in the improvement which it has affected in almost every variety of sheep that it has crossed; but it has met with, especially in Wales, a powerful antagonist in Costwold."

The introduction of additional evidence showing the necessity of providing luxuriant pasturage for the Leicester breed, will be proper.

"I occupied a farm," says a Lammermoor shepherd, "that had been rented by our family for nearly half a century. On entering it, the Cheviot stock was the object of our choice, and so long as we continued in possession of this breed, everything proceeded with considerable success; but the New Leicesters came into fashion, and we, influenced by the general mania, cleared our farm of the Cheviots and procured the favorite stock. Our coarse bean pastures, however, were unequal to the task of supporting such heavy-bodied sheep; and they gradually dwindled away into less and less bulk; each generation was inferior to the preceding one; and, when the spring was severe, seldom more than two thirds of the lambs could survive the ravages of the storm."

Sir John Sinclair has also recorded his opinion on this point. "The Leicester breed is perhaps the best ever reared for a rich arable district; but the least tincture of this blood is destructive of the mountain sheep, as it makes them incapable of withstanding the least scarcity of food."

MALFORMATION OF THE TURNIP.

The following facts were communicated to a recent meeting of the *Chemico Agricultural Society of Ulster*, and published in its *Journal of Transactions*, for a copy of which we are indebted to the kindness of some unknown friend. We remember nearly two years since some similar turnips grown by the Hon. Adam Ferguson, of Woodhill, Upper Canada, the seed of which had been imported direct from a most respectable house in Scotland. There can be little doubt that peculiar atmospheric conditions, as well as the soil, have an influence on the result.—EDITOR.

"Specimens of turnips, exhibiting in a most remarkable manner the curious splitting up of the bulb into numerous roots and the production of several stems, so as totally to alter and destroy the character and value of the crop, were placed on the table, and excited much interest. The specimens, Dr. Hodges stated, had been forwarded by Messrs. Drummond, the eminent seed merchants in Dublin, and had been taken from a field on which the crop was of excellent quality, except in a patch of ground in the corner of a field, where the plants, like the specimens, had "sperted" so much from the normal form that they presented the appearance of rape. The soil from the plot on which the malformed roots were growing had been forwarded by Mr. Drummond for chemical examination; and Dr. Hodges reported that he was also engaged with the investigation of soils from the Albert Model Farm, near Dublin, on which the turnips had also become malformed, and, in many cases, diseased. The subject was of serious importance to the public, and he would direct the attention of the society to the aid which the members might afford to the investigation of the disease—if it might be so termed—which interfered so much with the project of the farmer. He also described the extent to which mildew had appeared this year on the turnip leaf.

GRASS SEED FOR AN ACRE.—An English farmer recommends the following mixture for an acre—8 lbs red clover, 2 lbs white do., 2 lbs yellow do., with one bushel of rye grass. This, by his computation, affords 100 seeds rye grass, 50 red clover, 32 white, and 12 yellow clover, per superficial foot. In this country a good substitute for the rye grass would be the same quantity of red-top per ac e.

PLASTER operates beneficially on light, dry and sandy or open soils, as they soonest admit the rain water which dissolves and conveys it to the roots of the plants. Plaster may be applied to pasture or mowing lands in March or early in April, or tea with fine eff ct.

MILLET AND ITS CULTURE.

MR. EDITOR,—Of the millet there are three distinct genera: the *Polish* millet, the *Indian* millet, and the *Common* millet.

Of the *Common* millet there are three species: the *German*, the *common* or *cultivated*, and the *Italian*.

The *German* millet grows with a reed-like stalk, from two-and-a-half to three feet high, with a leaf at each joint about one-and-a-half feet long, and about one inch broad at the base, ending in a sharp point, rough to the touch, surrounding the stalk at the base, and turning down about half the length. The stalks terminate by compact spikes about three-fourths of an inch in diameter at the bottom, tapering to the top, six or eight inches long, and closely set with small roundish grain. It is an annual, and soon perishes after it has ripened its seeds. Of this kind of millet there are three varieties, the *white*, *yellow*, and *purple* grained.

The *Italian* millet rises also with a reed-like stalk, four feet high; the stalk is thicker, and the leaf broader than the preceding; the spikes are from eight to twelve inches in length; they are not compact but are composed of several roundish clustered spikes. There are also two or three varieties of this, distinguished only by the colour of the seeds.

The above described species of the common millet being the only kinds cultivated in this section, I shall omit giving a description of the other kinds; and proceed at once to give my readers the benefit of my practical knowledge in reference to its culture.

In consequence of my meadows being destroyed by the severity of the winter of 1854, I was of necessity compelled to substitute something for the hay crop, and finally decided upon millet. I found it very difficult to procure seed, but much more difficult to procure reliable information with regard to its culture; consequently, my first year's experience was in reality a year of experiment.

The field upon which I sowed my millet was a wheat stubble. The soil sandy loam, the higher portions of the field being quite sandy, and in a medium state of cultivation: the surface undulating. During the latter part of May it was ploughed ten inches deep, with a Polly plough, No 2, which is one of the best stubble ploughs in use. The first week in June the ground was harrowed twice, lengthwise of the furrow, with a heavy double scratch harrow. The millet seed was sown immediately, at the rate of 12 quarts per acre, and followed with a light seed harrow and roller. I commenced cutting my millet in the middle of August, with a common grain cradle: let it lie in the swath one to two days, according to the temperature of the weather: bound in sheaves and shocked up the same as wheat. Judging from the number and size of the loads, the yield was two tons per acre. Had the season been favourable the produce would have been one-third more.

From my limited experience I have come to the conclusion that millet is peculiarly adapted to light, warm soils, but will grow on almost any soil which is not too wet; that the soil should be ploughed deep and well pulverized; that the time to sow the

seed, if intended for hay, is any time during the month of June—if intended to ripen, the last week in May; that the quantity of seed if intended for hay should vary from 16 to 20 quarts—very rich soils requiring most seed to prevent the stalks from growing too rank—but, if intended to ripen, 8 to 10 quarts per acre will be quite sufficient; that the proper time to harvest if for hay, is when the grain is just filled and the top of the head or spike is beginning to turn yellow, but if intended for seed it should fully ripen; that the best mode of harvesting is to cut with the cradle or reaper and bind into sheaves when sufficiently dry; and that the yield per acre on good soils well cultivated, will be from 3 to 4 tons of hay or 30 to 40 bushels of seed. It leaves the soil in a loose, friable state, consequently grass and clover seeds do well when sown with it.

As to nutritious qualities, it is a regular panacea for the craving of all hungry stomachs, whether of biped or quadruped. Horses will work hard and keep in fine condition by being fed on green millet, finely cut with a straw-cutter and mixed with four quarts of ground millet seed per day, to each horse. Fed in the same way to milch cows, it will keep them fat and sleek, and cause an unusual flow of good rich milk. Colts, calves, and sheep fairly luxuriate in the green fodder. The seed fed to hens will make everlasting layers of them, whether Dorkings, Shanghæes, Poland, Spanish, or native, other necessaries being provided.

D. W. FREEMAN.

Windham, C. W.—*Genesee Farmer*.

SOWING CLOVER SEED.

Clover takes a place so important in the system of rotation by which the fertility of our wheat farms is kept up, that we may be excused for recalling some hints heretofore given upon the subject. The season for deciding and acting in the matter is here, and remarks upon quality and quantity, manner and management, will neither be mis-timed or uninteresting.

It is only about eighty-five years since Clover—and with it Gypsum or plaster of Paris—was first introduced into this country from Germany. These together had worked wonders in Flemish and English agriculture, and have now come to be pretty well known and appreciated in our own. Clover is grown very extensively for hay and pasture and for plowing under as a green manure, wherever the wheat crop is the staple product. Several varieties, known as the large, small, and medium kinds, are cultivated, but in this section the latter prevails most extensively, and is generally preferred, as making better hay, and being equally valuable as a fertilizer. As to the quality of the seed, great care should be taken that it be pure, for some of the worst pests of the farm have been more widely disseminated by being sown with clover seed brought from a distance.

The true economy as to quantity of seed, is to sow liberally, for by saving five dollars here, a loss of twenty dollars is often sustained in hay and pasturage. One-third of a bushel is the least amount, even when mixed with other grass seeds, which

should be sown on an acre. The difference between half and full seeding is very great—as indeed it must be when one covers the earth with a thick growth of grass, while the other does it very imperfectly. Some experiments made to test the matter show more than double the product for several years from the field fully seeded, over that where only the usual quantity had been sown.

Spring is undoubtedly the best time for seeding wheat fields to clover, and is that generally employed. Many fields are already sown, though the backward spring has doubtless delayed others. The use of a light harrow after sowing is the best security for the vegetation of the seed and the permanence of the young plants, and will not injure the wheat in the least, but is generally thought very beneficial to that crop. The growth of clover is increased, and its "catching" in a measure ensured, by a top-dressing of from one to three bushels of plaster per acre in May. No one who has observed the essential difference in plastered and unplastered clover will neglect its application.

Clover takes less from the soil and more from the atmosphere, in proportion to the feeding and manuring value of its product than most other plants. This is one source of its value—its numerous roots, long stalks, and abundant leaves, supplying much vegetable matter to the soil. A luxuriant growth of clover is an excellent preparation for any and every crop. The soil is loosened and deepened by its far-spreading roots, which bring to their support and to the surface the valuable salts in the subsoil not usually pressed into service. This, too, is the reason why clover so delights in a deep, fresh, soil, and why after subsoil plowing such abundant crops are sure to follow.—*R. N. Yorker.*

Horticulture.

THE GARDEN.

We gave a few directions in our April number for early garden operations. Though some of these may be repeated, we think we cannot do better than publish entire the "Hints" of Mr. Fleming, as given in his catalogue. They are adapted to the soil and climate of this part of Canada, and as Mr. Fleming ranks a A No. 1, as a gardener and seedsman, we publish his directions with much confidence.

We take this occasion to remark that Mr. Fleming may be relied upon as a man of skill and integrity. He keeps a large assortment of seeds, roots, flowers, &c., and persons at a distance may depend upon having their orders correctly filled. :—

Brief Hints on Sowing and Raising Culinary Vegetables.

BY JAMES FLEMING.

In selecting seeds, the first thing to be attended to is to choose the best to be had, and, if possible, obtain them from a responsible seedsman. Never

buy those which are "cheap" because they cost less for they will prove the "dearest" in the end.

Most kinds of Seeds grow more freely if soaked in soft water from 12 to 48 hours before sowing. Seeds of a hard nature, such as blood-beet, wurzel, nasturtium, &c., often fail from want of attention to this circumstance. Indian Corn, Peas, and numerous others, soaked four hours in a tepid solution of chloride of lime and water, mixed in the proportion of one-fourth of an ounce of the lime to a gallon of water, and then sown in the ordinary way, have been known to throw out germs in twenty-four hours.

The seeds of common garden cress, immersed in oxygenated muriatic acid, will germinate in six hours whereas, when immersed in water alone, they will not show signs of vegetation in less than thirty hours.

Rolling the ground, after sowing, is very beneficial and will assist in making the seeds vegetate more freely. Where a roller is not at hand, it may be done with the back of a spade.

Kidney, or French Beans, may be planted any time in May, in drills two inches deep, the beans two inches from each other; the drills about 18 inches apart. If a regular succession is required, sow a few every few weeks, from the 1st of May to the 1st of July.

Broad, or Windsor Beans, do not succeed well in this climate, the summer heat coming on them before they are podded, which causes the blossoms to drop off. The best soil to grow them in is a rich, stiff clay, and on a northern border, shaded from the mid-day sun. Sow in drills two feet apart, the drills two inches deep, and the seeds three inches apart.

Blood Beet, Long and Turnip, may be sown in a good, rich, deep soil, about the first week in May. Draw drills about a foot apart and one inch deep; sow moderately thick; when the plants are up strong thin them out the distance of six inches from each other in the rows.

Brocoli and Cauliflower require a deep rich soil of a clayey nature, and highly manured. To produce early Cauliflower, or Brocoli, the seed ought to be sown in a hot-bed, early in March. When the plants are quite strong and hardy they may be planted out in the garden, about the middle of May. Plant in rows, two feet square. The kinds that will do well in this climate are the Early London and French Cauliflower, Purple Cape, and Walcheren Brocoli.

Cabbage, both early and late, may be sown any time in May. The best situation for raising the

plants is a rich, damp piece of ground, partially shaded. Seed sown in a situation of this kind is not so subject to be destroyed by the black flea. When the plants are strong they may be planted in rows, and managed the same as directed for Cauliflower. The best kinds for summer use are the Early York, Battersea, and Vannack; for winter use the Drumhead, Large Bergen, and Flat Dutch.

Cucumbers may be sown in the open ground any time in May. They require a good, rich soil. Sow in hills, four feet apart, leaving only three plants on each hill. The cucumber and melon vines are liable to be attacked by a yellow fly or bug. Soot, charcoal dust, or soap-suds, applied to the plants, will assist in keeping them off.

Musk and Water Melons may also be sown at the same time, taking care to sow the different kinds a good distance apart from each other, as they are apt to mix. Plant in hills, six feet square, leaving only three plants on each hill. When the plants have grown about six inches, stop or pinch out the top of the leading shoots; which will make the plants throw out lateral shoots, on which you may expect to have fruit.

Carrots.—The most suitable ground for growing carrots is a deep, rich soil, that has been well manured the previous year. Sow any time in May, in drills one foot apart, and one inch deep. When the Carrots are up, thin them out, four inches apart; and keep the ground free from weeds. The kinds that are generally sown in gardens are the Early Horn, Long Orange, and Red Surrey; for field culture the White Belgian and Altringham. The produce of one acre of field Carrots, when properly cultivated, may be rated at from 500 to 800 bushels. In cultivating them on the field system, the drills ought to be two feet apart, and the Carrots thinned out, at least, twelve inches asunder.

Celery.—This vegetable is much esteemed as a salad. It requires considerable attention to grow it to perfection. To have early Celery the seed requires to be sown in a hotbed, in the month of March; for winter Celery, the seed may be sown in a hotbed, in the month of March; for winter Celery, the seed may be sown in the open ground, any time before the middle of May. Sow on a small bed of fine, rich earth—beat the bed down with the back of the spade—sift a little fine earth over the seed—shade the bed with a mat or board until the plants begin to appear. Celery plants ought to be picked out into a nursery-bed as soon as they are two or three inches high. Cut their roots and tops a little,

before planting; water them well, and shade them from the sun until they begin to grow. Let them remain in the nursery-bed about one month, after which they will be fit to transplant into the trenches. The best sort of soil to grow Celery in is a deep, rich loam, and in an open part of the garden. Mark out the trenches a foot wide, and three feet between each trench. Dig the trenches one foot deep, laying the earth equally on each side. Put three or four inches deep of well rotted manure into the bottom of each trench; put a little of the surface soil over the manure; dig it well up, incorporating the soil well with the manure; dress the plants by cutting off the long leaves and the ends of the roots. Plant in single rows, along the centre of each trench, allowing six inches between each plant. Water them well, and shade them from the sun until the plants begin to grow. In earthing up Celery great care should be taken not to cover the heart of the plant.

Lettuce is easily raised from seed which may be sown from the 1st of April to the end of June. If good headed Lettuce is wanted, the plants should be transplanted out on a rich piece of ground, in drills 12 inches apart and six inches in the drill. The Malta, Green Coss, and Victoria Cabbage are the most suitable kinds to sow, as they head without tying up.

Onions.—The yellow and large red are the best for a general crop. The ground for Onions should be well prepared, by digging in plenty of well-rotted manure. The seed may be sown from the middle of April to the middle of May. Sow in drills, one inch deep and 12 inches apart. When the young Onions are up, thin them out to the distance of three inches apart.

Parsnips require a deep rich soil. Sow in drills, one inch deep, and the drills 15 inches apart. Cultivate the same as directed for Carrots.

Radishes should not be sown in the open air sooner than the middle of May. They require a deep, sandy soil, that has been well cultivated and manured the previous year.

Rhubarb is a perennial plant, and may be raised from seed. Sow about the middle of May. When the plants are one year old, they should be transplanted into a very deep, rich soil, in rows three feet apart. The foot stalks of the leaves should not be cut until the plants are two years old.

Salsify is an excellent vegetable. The roots, when properly cooked, resemble oysters in flavor. The seed may be sown from the 1st of April to the

middle of May. They require the same kind of soil and cultivation as directed for Carrots.

Spinach is a useful vegetable, and very hardy. Seed sown in the month of September will stand over the winter, and come in for early greens in the spring. For summer use, seed of round Spinach may be sown from May to July. It requires a rich soil. Sow in drills, one foot apart.

Tomatoes are much cultivated for their fruit. To have them early, the seed should be sown in a hot-bed, early in March. When the plants are a good size, and Spring frosts are over, plant them out in the garden; let the plants be four feet apart. Plant on a south border near a fence, and they will produce abundance of fruit.

Turnips—One of the best sort for garden is the Early White Stone, which may be sown from the middle of May to the end of August. Sow in drills fifteen inches apart, and thin out the plants to eight inches assunder. Field Turnips, such as Swedish, Aberdeen Yellow, &c., may be sown in drills, two feet apart, about the middle of May. White Globe, and Flat Norfolk, will do to sow about the middle of July. Turnips are very apt to be eaten by the black flea. A good remedy is to steep the seed one night in train oil. This will greatly promote germination, and the growth of the young plants.

THE STRAWBERRY.

This delicious and healthy fruit is found in a wild state so plentifully, and of such good quality in many parts of Canada, that we do not wonder at the neglect with which the large and improved varieties are so generally treated. But in many Townships it must be cultivated in the garden, or a supply can not be depended on.

In the neighbourhood of New York and other large cities, strawberry culture has become an extensive and profitable business. Indeed, they are transported by rail many hundred miles to all the large cities. While on a visit to New York last summer, we had strawberries at dinner every day, that were grown in Virginia. They are brought to market in small baskets holding little more than a pint. These are all carefully preserved by the dealers, and returned for another supply of fruit. Why are our Canadian markets so poorly supplied with this delicious fruit?

To aid those who may wish to plant a few beds we copy the following directions from the best and most recent work on the subject. Mr. Saxton, N.

Y., has sent us a neat little work, entitled "A complete Manual for the cultivation of the strawberry with a description of the best varieties, &c.," by R. G. Pardee. There is also an appendix, containing the observations of some of the most successful cultivators in the United States. We give in this number the directions for spring treatment. Summer treatment, such as mulching, watering, &c., will be given in the June number:—

SITUATION.

A warm, exposed, and yet rather moist location is the best for a strawberry plantation.

If very early fruit be an object, select a side-hill gently sloping towards the south, with a liberal admixture of small stones or coarse gravel in the soil. This should then be protected on the north, west, and east by a high closed board fence, or a live hedge; we have seen an artificial hedge of withered evergreen boughs that answered an excellent purpose, and enabled the owner to realize fifty cents a quart for the crop, when otherwise he could not have so much anticipated the usual season, and would have been compelled to take twelve-and-a-half cents for the same quantity.

If late fruit be desired, then select a piece of land facing the north, and exposed. Low land is usually preferable to high, hilly land for the strawberry, yet it can easily be raised on both; a little knowledge of its character will enable us to remedy the defects of the high ground. If the situation is near a spring of water, where it can be irrigated, and is also susceptible of drainage, it is very desirable.

Though they will sometimes succeed when partially shaded with trees or shrubbery, yet they are best flavoured in an open garden, with no shade but their leaves. Alpines, and some other kinds, planted in the northern shade of a fence or dwelling, will commence later and continue longer in their bearing season.

SELECTION OF SOIL.

New land, recently disrobed of its forests, if of a deep gravelly loam, we think is the best adapted to the strawberry, and next a sandy loam; but almost any soil, even the heaviest clay, can be prepared by a liberal admixture of sand or gravel, so as to produce the finest fruit.

As has been intimated, a low moist soil as can be procured, consistently with depth and thorough drainage, is best adapted to the strawberry; and yet elevated knolls, and even sand-hills, with the precautions above named, have often succeeded well.

Wet, spongy lands, except with a porous subsoil susceptible of drainage, and high, barren hills, with a thin, flinty soil, are alike to be avoided.

The strawberry, however, is so retentive of life that it will live in almost any soil; but it will not produce much fruit, unless the remedies are in some way applied to the ungenial soils.

PREPARATION OF THE SOIL.

Clear the ground of weeds, roots, and seeds of all kinds, in preparation of thorough drainage, which in most soils should be attended to the first thing. The best drains are the earthen tile drains, from two to four rods apart, which should be so constructed as to be left open at both ends for the circulation of the air, as well as the release of the stagnant water. A brush or coarse stone drain is beneficial as a temporary expedient.

After draining, break up the soil as deep as possible with a subsoil plough, or by trenching twenty inches or more deep. The strawberry is so sensitive to drought and stagnant water, that very little of the best land of our country can be exempt from draining and trenching, if we would receive in return uniformly large crops of fruit in all seasons.

Inasmuch as the fruit is composed of so large a proportion of potash, soda, and lime—sixty-two parts in every hundred, as will be seen in the tables in this work giving the analysis of the strawberry and plant—we recommend next, that an application to the acre be made of twenty to thirty bushels of unleached or leached ashes, ten to twelve bushels of lime—either stone or oystershell—with two or three bushels of salt, which should be thoroughly mixed with the soil if possible, some weeks before the plants are set out. A liberal handling of the soil, thoroughly pulverizing it, before proceeding to the work of transplanting, is good economy.

MANURES.

On this point we are aware we shall differ widely from some of our ablest horticulturists, to whom we confess our inferiority in most things in the great science of horticulture; yet in this we are confident that their own personal experiments, did their time permit, would lead them to the same result that we have deliberately arrived at.

And first, we would not use animal or barn-yard manures for strawberries. We have eschewed their use entirely for the last six years. If friends who have watched our beds for years, say the soil was peculiar, and is not a fair test, we answer, that may be, but we have arrived at this positive conclusion from our experiments and observations in other locations and soils, as well as in our own garden, and every step has only confirmed us in the opinion, that animal manures are too stimulating and exciting to the plant for the full bearing properties of the strawberry.

Fine fruit has been raised, we know, in fair quantities and of enormous size, in the use of animal manures, yet we think the quantity and quality would have been decidedly increased by the use of vegetable instead of animal manures. The latter causes the plant to run too much to vines, and start its runners before it has even perfected the earliest part of the first crop of fruit, besides filling the earth generally with seeds and undecayed portions of the straw, and fibrous portions from the barn yard, which come into injurious contact with the numerous fibrous roots of the plant in its progress in the earth, which should always be kept as pure for the strawberry as possible.

Leaf-mould, decomposed turf or peat, well composted with new surface soil, or muck, ashes and lime, is a good manure for the strawberry. We wish it, however, distinctly understood that few good soils need enriching at all for the strawberry; on the contrary, most of the soils (for instance, those in Western New York) would be more benefitted by being depleted by an admixture of half river sand.

It will be seen from the interesting articles in our Appendix A, from C. F. Peabody, Esq., near Columbus, Georgia, that his own observations and experience have led him to the same conclusions. Other cultivators might also be named, who have arrived at similar results.

It is far better to feed the fruit properties instead of the plant; for we opine it will be found that the over-feeding of the strawberry is one of the most universal and destructive errors in its cultivation.

Some use liquid manures, composed of cow and hen droppings dissolved in a barrel of water; but they are not well adapted to assist the fruitbearing properties of the plant, but are good if the object be to send out runners and increase the plants.

On the opening of spring—the latter part of April or the 1st of May, in the latitude of the State of New York—it is well to give the plants an impetus by liberally showering them every ten days or two weeks with a solution, in six gallons of water, of one quarter of a pound each of sulphate of potash, sulphate of soda, (Glauber salt,) and nitrate of soda, with one and a half ounces of sulphate of ammonia; or, if these cannot be conveniently obtained, use the same quantity of potash, sal soda, Glauber salts, and sal or muriate of ammonia; or a solution of either of them will be beneficial if applied alone.

We have tried for many years various combinations in solution, but have been unable to obtain any so valuable as the first named.

We have always found plaster injurious to the strawberry, and ashes beneficial, when judiciously applied.

SEEDS—QUANTITY TO BE SOWN, &c.

The following estimate of the quantities of different kinds of garden seeds required to produce a certain number of plants, or to plant a certain quantity of ground, is copied from an agricultural exchange:

Asparagus—One ounce will produce about 1,000 plants, and requires a seed bed about twelve square feet.

Asparagus Roots.—1,000 roots will plant a bed four feet wide and from 200 to 250 feet long, according to the distance apart the plants are placed in the row.

Beans.—English Dwarf.—One quart of seed will plant from 100 to 150 feet of row, according as the sorts may be early or late.

Beans.—French Dwarf.—One quart will be sufficient for about 350 hills, and the same quantity will plant from 250 to 300 feet of row.

Beans.—Pole.—One quart of Lima, White dutch

or Scarlet Runners, will plant about 300 hills, or 250 feet of row.

Beets.—When sown as gardeners generally sow it it requires at the rate of ten pounds to an acre. one ounce will suffice for about 150 feet of row.

Brocoli.—One ounce will produce from 2,500 to 3,000 plants, and require a seed bed of about forty square feet.

Brussels Sprouts.—The same as Brocoli.

Cabbage.—Early sorts the same as Brocoli; the late and Savoy sorts will require a seed bed of about sixty square feet.

Cauliflower.—The same as the later sorts of Cabbage.

Carrot.—Three to four pound are required to an acre, and one ounce will sow about 200 feet of row.

Celery.—One ounce of seed will produce about 7,000 or 8,000 plants, and require a seed bed of about eighty square feet.

Cucumber.—One ounce of seed will be required for about 150 hills.

Curled Cress.—One ounce of seed will sow a bed containing sixteen square feet.

Egg plant.—One ounce if properly managed in the seed bed, will produce from 2,500 to 3,500 plants.

Kale.—The same as Brocoli.

Endive.—One ounce will produce about 3,500 plants and require a seed bed about eighty square feet.

Leek.—One ounce produces about 2,000 or 2,500 plants, and requires about 60 square feet of seed bed.

Lettuce.—One ounce will require a seed bed of about 120 square feet, and will produce 6,000 or 7,000 plants.

Melon.—One ounce will be quite sufficient for about 120 hills.

Nasturtium.—One ounce will sow 25 feet of row.

Onion.—From four to five pounds are required for an acre, when raised for the bulbs; one ounce will sow about 200 feet of row.

Okra.—One ounce will sow about 200 feet of row.

Parsley.—Six or seven pounds are required to the acre; one ounce will sow about 200 feet of row.

Parsnip.—From five to six pounds are generally sown per acre; an ounce will sow about 250 feet of row.

Peppers.—One ounce will produce about 2,000 or 2,500 plants.

Peas.—From one to two bushels are required to an acre; one quart of the smaller sorts will sow about 120 feet of row, and of the larger sorts one quart will sow about 200 feet of row.

Pumpkin.—One quart of the common field sorts will plant from 500 to 600 hills, and, of the finer garden sorts, one ounce will plant, about fifty hills.

Radish.—From twelve to fourteen pounds of the early spring sorts are required to an acre, if sown broadcast; but half that quantity is sufficient if sown

in drills. Of the latter sorts five pounds to the acre, in drills, are sufficient. One ounce will sow about one hundred square feet.

Salsify.—From five to six pounds are generally allowed to an acre. One ounce will sow about 150 feet of row.

Spinage.—Cultivated in drill, from seven to eight pounds to the acre are sufficient; if sown broadcast double that quantity. One ounce will sow about 200 feet of row.

Squash.—One ounce will plant from fifty to eighty hills, according to the sorts and size.

Tomato.—One ounce will produce about 2,000 or 3,000 plants, and require a seed bed of about eighty square feet.

Turnip.—From one or two pounds are generally allowed to an acre; one ounce will sow 2,000 square feet.

Water Melon.—One ounce will plant from 40 to 50 hills.

AGRICULTURAL SEEDS.

Quantity varying according to the soil, and whether sown in drills or broadcast.

Wheat,.....	5 to 6	pecks per acre.
Rye,.....	5½ to 6	“ “
Oats,.....	2 to 4	bush “
Barley,.....	1½ to 3	“ “
Millet,.....	¾ to 1½	“ “
Broom corn,.....	1 to 1½	“ “
Indian corn for soiling,.....	3 to 4	“ “
Peas, broadcast,.....	2½ to 3½	“ “
“ in drills,.....	1 to 2	“ “
Beans, broadcast,.....	2 to 3	“ “
“ in drills,.....	1 to 2	“ “
Buckwheat,.....	1 to 3	“ “
Timothy,.....	12 to 20	quarts “
“ with 6 to 10 pounds clover,.....	8 to 10	“ “
Red top,.....	16 to 24	“ “
Blue grass,.....	10 to 15	lbs. “
Rye “.....	10 to 16	“ “
Tall oat grass,.....	12 to 16	“ “
Orchard grass,.....	20 to 30	“ “
Red clover,.....	8 to 16	“ “
White “.....	2 to 4	“ “
Lucerne, broadcast,.....	3 to 12	“ “
“ in drills,.....	12 to 18	“ “
Sanfoin, broadcast,.....	1 to 5	bush. “
“ in drills,.....	2 to 3	“ “
Potatoes,.....	15 to 20	“ “
Turnips,.....	1½ to 3	lbs. “
Carrots, broadcast,.....	4 to 5	“ “
“ in drills,.....	2 to 3	“ “
Parsnips, broadcast,.....	6 to 8	“ “
“ in drills,.....	4 to 6	“ “
Beets in drills,.....	4 to 5	“ “
Kohl Rabi,.....	2½ to 2½	“ “
Rape, in drills,.....	2 to 3	“ “
“ broadcast,.....	4 to 7	quarts “
Mustard for seed,.....	8 to 12	“ “
“ for ploughing under,.....	12 to 20	“ “
Hemp,.....	1½ to 2½	bush. “
Flax for seed,.....	4 to 6	pecks “
“ for fibre,.....	8 to 10	“ “
Teasels,.....	1 to 2	“ “
Rice,.....	2 to 2½	“ “

WEIGHTS.

Of sundry Agricultural Products, and other articles of use to the Farmer.

Wheat,	60	lbs.	per bush.
Shelled corn,	56	"	"
Rye,	58	"	"
Oats,	32	"	"
Barley,	47	"	"
Clover,	60	"	"
Timothy,	45	"	"
Flax seed,	56	"	"
Hemp,	44	"	"
Blue grass,	14	"	"
Buckwheat,	48	"	"
Peas,	64	"	"
Beans,	63	"	"

Communications.

SUGGESTED IMPROVEMENT IN THE MANNER OF APPOINTING THE JUDGES FOR THE PROVINCIAL SHOW.

(To the Editor of the Canadian Agriculturist.)

SIR,—While all would desire to acknowledge the ability and care which have been shown in the general management of the Provincial Exhibitions, and the triumphant results of those great annual meetings, may I be permitted to suggest that the method hitherto adopted of appointing the Judges has not been quite satisfactory, and might with advantage be altered. Many seem to think that it would be better if the Judges of the thoroughbred stock and dairy produce could be named some time previous to the Exhibition, and that their appointment might best be left with the Council of the Association. Perhaps some such method as the following could be practically carried out:—

Let each County Society forward annually to the Secretary of the Association, in March, a certain number of names of thoroughly competent Judges, stating what they are qualified to judge, who will promise if nominated to give their services, but taking care not to recommend persons for any department in which they themselves intend competing. From such lists let the Council of the Association select and appoint those who are to serve as Judges, duly notifying by a circular all the parties of their appointment, and if any of the same should be prevented by sickness from giving their attendance; such vacancies might be filled up at the meeting of the Directors on the Wednesday morning, just before the Judges proceed to their duties. It would be for the Council of the Association to consider the propriety of paying the Judges so much per diem for their services.

While many men of enterprize are importing into the Province so much valuable stock, and occasionally bring those two hundred miles to compete at our great Provincial meetings, no effort should be spared to preserve that feeling of perfect confidence in the efficiency and impartiality of the Judges appointed.

I am, Sir,

Your most obedient servant,

GEORGE ALEXANDER.

County of Oxford,
16th April, 1855.

Miscellaneous.

THE OLD COTTAGE CLOCK.

BY CHARLES SWAIN.

Oh! the old, old clock, of the household stock,
Was the brightest thing and neatest;
Its hands, though old, had a touch of gold,
And its chime rang still the sweetest:
'Twas a monitor too, though its words were few,
Yet they lived, though nations altered;
And its voice, still strong, warned old and young,
When the voice of Friendship falter'd;
Tick—tick! it said: quick, quick to bed;
for ten I've given warning:
Up, Up—and go—or else, you know,
you'll never rise soon in the morning!

A friendly voice was that old, old clock,
As it sood in the corner smiling.
And blessed the time with a merry chime,
The winter's hours beguiling:
But a cross old voice was that tiresome clock,
As it called at day-break bddly,
When the dawn looked grey o'er the misty way,
And the early air blew coldly:
Tick, tick it said; quick, out of bed,
For five I've given warning;
You'll never have health, you'll never have
wealth,
Unless you're up soon in the morning!

Still hourly the sound goes round and round,
With a tone that ceases never;
While tears are shed for the bright days fled,
And the old friends lost for ever!
Its heart beats on—though hearts are gone
That warmer beat and stronger;
Its hands still move—though hands we love
Are clasped on earth no longer!
Tick—tick! it said: to the churchyard bed;
The Grave hath given warning:
Then up and rise, and look to the skies,
And prepare for a heavenly morning.

WILLOW PLANTATIONS.

[The following article on the cultivation of Willow for Basket Making &c., has been issued from the Agricultural Warehouse of Messrs. Parker, White & Gannett, Boston Massachusetts, who will supply cuttings for five dollars a thousand, and the necessary information for the planting arrangement of Osier-beds. The subject is not without interest in Canada, where large importations of Osiers and baskets are annually made. With very little trouble we might readily grow all the material for domestic consumption, if not for exportation:—Ed.]

THE CULTURE OF WILLOW FOR OSIERS.—When its principles are well understood, is not difficult, and the profits, under good management, are very great. The fear that the supply may soon overreach the demand is not only groundless, but on the contrary, it is susceptible of proof, that for a long time to come, the demand in its increase far beyond the proportional increase of production in this country. It is about fifty years only since England received almost her entire supply from the continent. The long continued wars cut off this supply and the deprivation was so severely felt that it became a matter of national concernment, and premiums were rewarded for the formation of Willow Plantations. Men of every degree of means and of all ranks engaged in it, and its cultivation extended very rapidly, [the Duke of Bedford having a plantation of one thousand acres, yet to the present time prices have not declined, but rather advanced. "Saunders," in his "Osier Plantations," stating from his own knowledge, says, "some good plantations have yielded annually, for several years a profit of £25 to £30 sterling per acre; some as high as £40 £45. In 1852, from reliable information from different quarters, the good plantations yield from £30 to £40 net profit." American fields are equally productive, and prices in New York, and Philadelphia about twenty per cent higher. The French Osiers sell now at \$120 per ton, and the Belgian at about \$140, which is lower than it has been for eighteen months past.

A great discouragement arose at the commencement of willow culture in this country, from the failure of the most vigorous kinds of European willows to produce good Osiers—many of their most popular varieties being nearly worthless here. Among those that have proved to be good and adapted to our climate the following may be named:—

VIMINALIS.—It is the opinion of nearly all engaged in the cultivation or manufacture of basket willow, that this is one of the best varieties for all purposes, particularly for work that requires long, slender, unsplit wands, of great toughness. It has very small leaves, and shows no marks of the buds after the bark is removed. On good land it grows to be 8 or 10 feet high.

PURPUREA, OR BITTER PURPLE WILLOW.—Valuable in all respects as an Osier. The intense bitterness of its bark and leaves renders it exempt from the attacks of beasts and insects, and consequently adapted for making live fences. Lasting fences, very ornamental and profitable, may be made of it, producing a crop of Osiers yearly. This may be characterized as the "Elegant Willow," its leaves and shoots considered; but *Triandra* is the most ornamental, having very showy catkins.

CAPREA.—This makes a good Osier, and grows better on dry sand than most others. Its catkins make

a very beautiful appearance, and in consequence of their flowering early, they are used for feeding hens.

TRIANDRA.—It is perfectly hardy, thrives in a great variety of soils, and is as productive here as any European willow in its own country. Its rods are long, slender, tough and pliable, and particularly adapted for all kinds of split work requiring those qualities. It is very ornamental, having showy catkins.

FORBAYANA.—Another very valuable one in all respects.

ALBA.—Makes a tolerable good Osier, more particularly adapted for split work, and being a strong, rapid grower, with horizontal branches, is used for live fences. A growth of three years will make a substantial barrier, and will yield an annual profit from the trimmings. Cuttings set for this purpose, require to be larger than when put out in a plantation, the usual length being 2½ to 3 feet.

The observations and experiments through which we arrive at these facts, were made at Fishkill and Newburgh, N. Y. Jamesville, Vt., and Hingham, Mass.

To plant an acre, from 10,000 to 12,000 cuttings are required. Those of vigorous growth possess more vital energy than those of lowland production, and make the most healthy and productive plantations. Cuttings are used from 8 to 14 inches in length.—10 or 12 inches is probably the best for deep soils, and not more than 8 on very retentive soil; not more than 3 inches should be left out of the ground. They are set in rows, three feet apart, and from twelve to sixteen inches distant in the rows. The first two crops will be in proportion to the number of cuttings, but after four or five years, they will entirely occupy the ground, even if more than 16 inches apart, but when the value of the early crops is considered, 12 inches will be found to be the most economical distance.

Willow will grow in any soil, thrive in a great variety of soils, but gives its best returns only in such as are suited to its habits.

It is a lover of moisture, but does not tolerate standing water, or soil sodden with water nearer than within one foot of the surface, during the warm, growing season. Overflowing in winter is not objectionable, nor is overflow from a freshet in summer, that soon passes off. A deep, rich, sandy loam, diluvial and alluvial, such as constitutes many bottoms not so much elevated above the stream that winds through them, that by diving down in the previous soil two or three feet in midsummer, the roots cannot find moisture—if kept clear of rampant weeds, will give an astonishingly vigorous growth, yielding three or four tons per acre. The occasional overflowing, that would render such of little value for crops would be rather advantageous to willow. Any retentive soil, rich and deeply worked, any clay, freed from water by draining, if necessary, will give great returns as Osier fields. Deep, alluvial soil, that has not water standing on its surface, or near it in summer, is excellent; so is drained swamp, when brought under cultivation. A low, level bottom, from which a crop has just been removed, in the spring properly prepared and planted, would on and after the second year, give a net percentage on investment that nothing else can approximate, and with a certainty that pertains to no other crop.

Many of the growers of willow in England, employ and for which they pay a price amounting for rent and taxes, which would purchase the fee simple of a piece of ground as eligible in this country.

Cuttings must be prepared in fall or winter, but, to avoid being thrown by frosts, not planted till spring if necessary they may be kept in a cool place until last May, without injury, but April or May is preferable for planting, or soon as warm weather opens.

Whenever it is practicable, the ground should be deeply worked; fields that have been previously cultivated will have the advantage of easy tilage, but where the ground is soft and wet, and rich, simply turning over the sward with large, deep furrows and following with sub-soil plough will give perhaps as good a growth of willows as any other preparation. The surface should be as level as possible before setting the willow, on account of convenience in cultivation. The entire cultivation required the season, is such as would be given to a crop of corn, and may be chiefly done with a cultivator on land that is so firm as to admit the travelling of a horse; but simply keeping the weeds down, in ground that is too soft is so often all that is required. A machine has recently been invented by Mr. Co by, of Jonesville, Vt., which strips the bark from the wands with great rapidity, saving more than half the cost of preparing the Osiers for market by the present mode.

BOXES FOR MELONS.

As I have a way to make boxes to preserve melons or cucumbers from bugs, not in common use, I will give you a description of it.

Take common wrapping-paper or newspaper, cut into strips two feet long, and eight inches wide. Then take pine sticks one-half inch in diameter and a foot in length. Split your sticks three-fourths of their length, being careful not to split them entirely apart. Double your paper so that it will be but three inches wide; take each end of your paper and put it together so as to form a ring, and pull your stick apart enough to insert each end of your paper, which will hold it in the form of a ring; take your paper and stick to the hill of melons and stick the split end of the stick in the ground; have some small sticks to place inside of your paper to hold it in its place, and bank it up around the bottom so that the bugs cannot crawl under the paper, and your box is completed.—*R. N. Yorker.*

CORN-CARRYING ON THE RUSSIAN STEPPES.

In order to judge at what cost the most important of those exports are thus brought, and in order to enable an inquirer to predict with any approach to certainty what could be done under the pressure of the most extraordinary temptation from without, let us leave the sharp stoacs, deep mud, or clouds of dust of Odessa, and examine the tracts along which those long line of bullock wagrons come creaking from more northerly directions. I have said that a vast belt of Steppe girdles this coast. We are upon a Steppe. The prevailing colour, as far as the eye can reach over the immense plain, is a scorched brown. The intense heat and drought have reduced the Steppe to this condition, and far beyond the horizon line, and away, vast upon vast, is the same dreary looking and apparently waste expanse. Not that it is all flat—hills, barren and rugged, diversify the line, and add to its difficulties, in dry weather considerably, in wet incalculably. To look at the ground on which you stand. You are on one of the roads as they are termed. Elsewhere, a road, good or bad, means something which has been made—a line, upon which has been gathered material

for binding and clasping, and below which there is some kind of draining; bad or good, the road is, as compared with the adjacent land, dry, compact and elastic. Dismiss all such ideas from your mind, or rather drag your limbs for an hour behind that corn-waggon, and such ideas will disappear of themselves. Dead and helpless seems that wobegone track, creaking and drawing over which comes the bullock-waggon—all wood, and built precisely as waggons were built a thousand years ago. The driver sits in front, occasionally lashing the grey bullocks more by way of form than with any idea of hastening them, and his massy beard hangs down over a species of censor, whence arise fumes of an unsavoury kind. But it is not in luxury, or in imitation of his eastern neighbours, that the peasant keeps this odour-breathing vessel under his nose—the contents are an abominable mixture for greasing the wheels of his waggon, and by which you may track it through many a yard of tainted air. Why he has placed the reeking vessel between his legs I know not, unless it be to remind himself more forcibly of the necessity of an operation, without the incessant performance of which his clumsily built cart would be on fire in four places at once. Contrast this wretched machine with the well contrived, iron mounted cart of the German colonist, a few miles hence. But on goes the waggoner, jolting and creaking along the unhelpful soil, and singing some of those old airs in which, rude as they are, there is some melody, or saying prayers to one or other of the multifarious national saints. On he goes and so he and his predecessors have gone since corn was grown in Russia. Ricketty carts, knotted rope harness, drowsy bullocks, wretched roads—so crawls the loaf towards the Englishman's table.—*Shirley Brookes, A year in Russia.*

ENGLISH AND AMERICAN HOTELS.

We could hardly picture to ourselves a greater contrast than that between an old country and an American hotel. The two things are not in the least alike. Arriving at an Inn in England, you are treated with an immense deference; allowed the seclusion of a private apartment, charged exorbitantly for everything, and, at departure, curtsied and bowed out at the door, as if a prodigious favor had been conferred on the establishment. In the United States, things are managed differently. The Americans, with some faults of character, possess the singular merits of not being exclusive, extortionate, or subservient. But where all travel, hotel keepers can afford to act magnanimously. Instead of looking for livelihood from few customers, scheming petty gains by running up a bill for use of caudles, firing and other conveniences, and smoothing every thing over by a mercenary bow, the proprietor of an American hotel is a capitalist at the head of a great concern, and would despise doing any thing shabby; hundreds pour in and out of his hotel daily; he notices neither your coming nor going; without ceremony you are free of the establishment; and when you pay and depart, there are no bows, no thanks, but you are not ill-used; and that is always felt to be a comfort.—*Chamber's Notes in America.*

TAKE CARE OF THE TREES.—Canker worms will soon begin to ascend the trees, unless proper means are speedily taken to prevent it. Small leaden troughs filled with oil, and encircling the trunks are a good preventive. The increased crop will amply repay the expense.

THE CLIMATE OF THE CRIMEA.

A trustworthy account of the South Crimea is to be found in the writings of Pallas, the great Russian botanist, who lived at Akmetshet, or, as it is now called, Simpheropol. In one of his works the author says:—

“The mildest and most fruitful region in all the Russian Empire is that continuation of valleys arranged in a natural amphitheatre at the southern base of Taurida (the Crimea) along the coasts of the Black Sea. The climate is little different from that of Anatolia and Asia Minor; winter is hardly felt, the primrose and the crocus appear above the ground in the month of January, and the oak retains its green foliage throughout the year. No part of Taurida, perhaps of the whole Empire, affords the Botanist a greater variety of plants, or the husbandman a richer harvest. The ever-verdant laurel grows beside the olive, the pomegranate, the fig, or the date tree, which might have been brought to the country in ancient times by Greek colonists. The manniferous ash, the mastich, the sumach, the bladder-nut, the sage-leaved cistus, the emerus and the arbut of Asia Minor flourish in open air. The walnut and almost every kind of fruit tree thrives in the woods or rather the natural gardens in the valleys. The Caper bush is scattered along the coast, the wild vine reaches to the tops of the highest trees, descends again to the ground, and forms, with the viburnum, festoons and garlands. High hills, masses of rocks, streams and cataracts, verdant fields and woods, and the sea that bounds the horizon, renders the landscape equal to any imagined or described by poets. The simple life of the good Tartars, their cottages cut in the solid rock and concealed by the thick foliage of surrounding gardens, the flute of the shepherd, his flocks scattered on solitary hills, remind the stranger of the golden age. The traveller leaves the people with regret, and envies the destiny of mortals ignorant of war, the frauds of trade, and luxuries accompanied with all its vices.”

Although there is a dash of fine writing in this statement, the facts included in it give the botanist satisfactory proof that the winter of the South Crimea has little to be dreaded. Where the olive and the caper bush, the mastich tree and the fig-tree find themselves at home, there can be no serious cold. The caper bush more especially affords unmistakable evidence of a climate where a hard winter is unknown, and we know from other authority than that of Pallas that it is an extremely common plant: in fact, the capers of the Crimea are a common article of sale in the southern provinces of Russia.

It is undoubtedly true, that occasionally there are exceptional winters. Pallas himself informs us that in 1747 the frost was so intense during the most boisterous north winds, that not only the whole Sea of Azof, together with the Bosphorus, but also a great part of the Bay of Kaffa and several creeks of the Black Sea were covered with ice sufficiently strong to support the weight of persons crossing both on foot and horseback. But this seems to have occurred on the north-eastern coast—the southern shore from Balaklava to Alouptka is sheltered from these cold winds, and it is there that we presume the troops will winter.—*Gardener's Chronicle*.

Editorial Notices.

SALE OF SHORT HORNS, &c.—We direct the attention of our readers to the advertisement of Col. J. M. Sherwood, whose sale of Short Horns, South Downs and Suffolk hogs, will take place on the 20th of next month. Col. S. is an extensive breeder, of established reputation.

FLAX.—We request the attention of our readers to the excellent article on “Flax” in the present number, for which we are indebted to Wm. Hutton, Esq., Secretary of the Bureau of Agriculture, Quebec.—B.

PROSPECT OF WHEAT CROPS.—After a brief visit to the adjoining townships, we are able to state, that at this season the wheat crops look most promising. We learn that Winter has left the crop throughout Upper Canada in a very favourable condition. Our exchanges from the United States, especially the more Western, represent the prospects of an abundant wheat harvest as never more encouraging.

NOTICE.—The Office of the *Agriculturist* is removed to the building occupied by Messrs. McIntosh & Walton, Agricultural Implement Dealers, corner of Yonge and Adelaide Streets.

THE FEMALE EMIGRANTS' GUIDE, AND HINTS ON CANADIAN HOUSEKEEPING, By Mrs. C. P. Trail, Authoress of the “Backwoods of Canada” “Forest Gleanings,” “The Canadian Crusoe,” &c., &c. Toronto, Maclear & Co.; and sold by all the principal Book-sellers. 1855.

This is a cheap and valuable little work from the pen of a Lady, favourably known in the walks of Literature, and who has resided many years in Canada. The work is adapted to meet the wants of a more numerous class of readers than its title denotes, and we purpose to examine its contents more in detail hereafter. In the meantime, we strongly recommend it as an interesting and valuable production.—B.

MARKETS.—Being crowded for space we omit a detailed report of market prices in this number. There is little coming into the market at the present season, except wheat and Flour, and prices of other products vary so much as the season advances, that the omission will be of little consequence. Wheat has been selling for some days in the Toronto market as high as 11s 3d per bushel. Flour from 50s to 51s 3d.

The Reciprocity Treaty has, no doubt, contributed at least 15 per cent of these high rates.

ADVERTISEMENTS.

ENGLISH CATTLE
IMPORTED ON COMMISSION,

BY
Messrs. THOMAS BETTS & BROTHERS,
OF LIVERPOOL AND HERTS, ENGLAND,

EMBRACING

Pure Blood Horses; Short Horned Cattle; North Devons,
Herefords, Ayrshire and Alderney Cows; Pure Bred
Southdown, Cotswold and Leicester Sheep;
Suffolk, Essex and Berkshire Swine;

HADHAM HALL,

BISHOPS STORTFORD, HERTS, ENGLAND,
Residence of Messrs. Betts & Brothers,

Two Miles from Bishops Stortford Station, on the
Eastern Counties Railway, and 32 Miles
from London.

MANY of the best breeders of Stock reside within a few miles
of Messrs. BETTS' residence, such as the celebrated breeder of
South Down Sheep, and the gentleman who has taken the
first prize the last two seasons at the Royal Agricultural Society,
for the best entire Farm Horse; also several noblemen and gentle-
men who keep the pure bred Short Horns.

Gentlemen will agree with us, that it is better to employ a
professional agent in the purchase of stock, they being likely to
know where and how to select the best cattle at the lowest
price.

Messrs. Betts will always deliver with the cattle an authenti-
cated pedigree.

As soon as they are purchased, information by the first mail
will be given, stating the price, and the time they will leave
England for America: also the receipt from the owners of the
Cattle.

To secure importers against losses that are liable to occur to
cattle on seaboard, Messrs Betts beg to inform gentlemen they
can be insured when desired, against all accidents and disease,
from the day of purchase in England till the day of delivery in
America, on application to our agent.

Commission Charged.

Horse,	each,	\$50
Bulls or Cows,	"	60
Ram or Ewe,	"	30
Three Sheep from the same owner, each,	"	2
Ten do	"	11
Twenty Ewes,	"	8
Three Swine from the same owner, each,	"	22
Ten " " " " "	"	11

*Expense of keep and attendance from the time of purchase up
to the period of sailing from London or Liverpool,
including Railway expenses, &c., as follows:*

Horse,	each,	\$40
Bull or Cow,	"	25
Sheep or Swine,	"	15

Expense by Sea on Board the Steamers.

Horse,	each,	\$125
Bull or Cow,	"	105
Sheep or Swine,	"	25

*Keep and attendance across the Atlantic on board the Steamer,
provision for 30 days.*

Horse,	each,	\$35
Bull or Cow,	"	25
Sheep or Swine,	"	8

Expense by Sailing Vessels.

Horse,	each,	\$100
Bull or Cow,	"	50
Sheep or Swine,	"	18

Keep and attendance by Sailing Vessels, provision for 60 days

Horse,	each,	\$70
Bull or Cow,	"	50
Sheep or Swine,	"	15

We have been permitted to refer to two of the largest importers
of cattle into America, Geo. Vail, Esq., of Troy, and ol.
Lewis G. Morris of Mount Fordham, N.Y.: as regards our rate
of charges, both gentlemen deem them very reasonable.

If gentlemen prefer, the stock will be selected and purchased,
by charging five per cent. and travelling expenses. All other
bills, such as fitting up of the Ship, provender, passage and
attendance, will be rendered on delivery of the stock in America.

A full and complete list of the best stock to be disposed of in
England, will be kept with our Agent,

JAMES M. MILLER,
81, Maiden Lane, New-York City.

Parties favouring Messrs. Betts with orders, will please make
use of the following Table of Specification:

BREED.	Horse.	No. of Bulls required.	No. of Cows required.	About the age required.	If to come by Steamer or Sailing Vessel.	If insured.
Horse, - - -						
Short-Horned, - - -						
North Devons, - - -						
Herefords, - - -						
Ayrshire, - - -						
Alderney, - - -						
South Down Sheep, -	Rams.	Ewes.				
Cotswolds, - - -						
Leicester, - - -						
Suffolk Swine, - - -	Boars.	Sows.				
Essex do. - - -						
Berkshire, - - -						

Short Horns, Devons, Herefords, Ayrshire, Alderney Cows,
South Down Sheep, Cotswold, Leicester, Hampshire South
Down Sheep, selected and imported on commission to any
part of America, by Messrs THOS. BETTS & Co., Liverpool and
Herts, England. Circulars, containing the prices of all kinds of
Stock, and the expenses to America, also giving the weight and
quantity of wool of all kinds of Sheep, can be received by applying
personally or by letter to our agent J. M. Miller, 81, Maiden Lane,
New York City.

N.B.—A Model of a Patent which, for future will prevent all
accidents occurring to Cattle, can be seen at 81, Maiden Lane,
N.Y. and at Liverpool.

In answer to numerous enquiries respecting the prices of the
best stock in England, such as should be imported to America,
can be obtained at the following prices:

	\$.	S.	\$.
Thorough Bred Horses, from -	1000	to	2000
Short Horn or Durham Bull -	400	"	1500
Do Cows -	200	"	800
Do yearling Bull -	200	"	1000
Do do Heifer -	175	"	400
Herefords Bull -	300	"	800
Do Cows -	200	"	600
Devons Bull -	300	"	800
Do Cows -	200	"	500
Ayrshire Bull -	150	"	300
Do Cows -	100	"	250
Alderney Bull -	150	"	225
Do Cows -	100	"	150
		Will weigh	Will shear
		when killed	when washed
		and dressed	wool
Cotswold Sheep Ram -	160	to	300
Do Ewe -	25	"	100
Leicester Sheep Ram -	100	"	200
Do Ewe -	20	"	50
South Down Sheep Ram -	150	"	300
Do Ewe -	25	"	100
Hampshire do Ram -	75	"	125
Do Ewe -	15	"	25
Swine Boars -	25	"	50
Do Sows -	15	"	40
Merino Sheep from Spain			
Mules from Spain.			5

JUST PUBLISHED,

THE Journal and transactions of the Board of Agriculture, of
Upper Canada, No. 1, Vol 1st, pp 160 Toronto: printed
and published by Thompson & Co, for the Board of Agriculture

This work will be issued in quarterly parts, four of which will
form a volume. The first part embodies the transactions of this
Provincial Association from its institution in 1846, down to the
commencement of the year 1851. The next number will contain
an account of the further proceedings of the Association and
the Board of Agriculture, Prize Essays, Abstract of County
Reports, &c

The work will be sent free by post for 5s per annum. All
communications and remittances to be addressed to the Secretary
of the Board of Agriculture, Toronto.

TORONTO, May 1, 1855.

5.

THOROUGH-BRED DURHAM BULL
FOR SALE.

THE well-known Bull, "Wheat-eat," from the herd of the
Hon Adam Ferguson. A Pedigree will be given. For
particulars apply to

JAMES SCARFF,

Secretary, County of Oxford Agricultural Society.
Woodstock, 2 th April, 1855.

5-11

UPPER CANADA STOCK REGISTRY.

To Owners and Breeders of Thorough Bred Horses and Cattle.

THE BOARD OF AGRICULTURE FOR UPPER CANADA, having determined to open a REGISTER, at their Office, in this city, for thorough Bred Horses and Cattle, Notice is hereby given, that any person desiring to avail himself of such register, can do so under the restrictions herein mentioned, furnishing duly certified particulars to this office; and can obtain a certificate of the same, which shall be held as officially correct in all future transactions relating to the stock so registered.

No Animal shall be registered, unless a clear and distinct connection be established, to the satisfaction of the Board, both on Sire and Dam, with the British or American Stud and Herd Books.

Where the Animal to be registered has been purchased by the person desiring to register, or has been imported for breeding purposes, a correct statement must be given of all particulars before a certificate can be issued.

It is desirable, in order to facilitate the taking of entries for the Provincial Exhibition at Oshawa in October next, that persons desiring to register stock should do so at an early date, as all animals for which Register certificates shall have been given will be entered without further inquiry. Owners of stock are recommended to keep Duplicates of Pedigrees.

G. BUCKLAND, Secretary.

Office of the Board of Agriculture }
Toronto, March, 1855. }

DRAINAGE AND SEWERAGE PIPE MACHINE

CHARNOCK'S PATENT.

BY this Machine, Drainage and Sewerage Pipes of all descriptions, as well as perforated and other Brick, Flooring Tiles &c., are molded with the greatest facility and precision.

A man and three boys can turn out from 5, 6, to 10, 00 feet of pipes per day, according to sizes; and it worked by horse, steam or water power, a proportionate increase will be obtained.

This Machine is in extensive operation in England, where, in addition to the testimony of numerous Tile Makers, as well as that of the first Machinists of the day, the following Prizes have been awarded to it.

- By the Yorkshire Agricultural Society, at its annual meeting, 1845, as the first Tile Machine with a continuous motion, ----- £5 0 0
- By the same Society, the following year as the best Machine of the day, ----- 19 0 0
- By the Lancashire Agricultural Society, at its annual meeting, 1845, ----- Silver Medal
- By the Highland Agricultural Society, at its annual meeting in 1846, as the best machine ----- 5 0 0

At the meeting of the New York State Agricultural Society, at Saratoga (1853), a working model of this Machine was awarded the Silver Medal and Diploma; and at the Fall Exhibition the same year of Lower and Upper Canada, held respectively at Montreal and Hamilton, the same Model was awarded a Diploma from each Society. It was awarded the First Prize and Diploma at the recent Exhibition in London Canada West.

The price of the Machine is £5, (half cash and remainder at six months), with five Dies for Pipes. Brick and other Dies at a moderate charge.

The Patentee guarantees the effective working of the Machine.

All orders to be addressed to

JOHN H CHARNOCK,

Drainage Engineer, Hamilton, C. W., the Patentee.

Hamilton, March, 1855.

LAKE-VIEW NURSERY.

THE Subscriber offers for sale the present Spring, a very choice assortment, of Fruit and ornamental Trees, Flowering Shrubs, Roses, Dahlias, Green House, and bedding-out Plants, Fruit Tree Stocks, Hedge Plants, and a general assortment of Nursery Stuff. His Stock of Dwarf Fruit Trees, will be found very complete, bearing Trees of which can be furnished to order. Orders respectfully solicited.

Descriptive Catalogues can be had on application.

JOHN GRAY

Lake-view Nurseries, Toronto, 1855.

PURE-BRED ANIMALS.

AT PRIVATE SALE,

Mount Fordham Westchester Co., 11 miles from City Hall, New York, by Harlem Railroad.

HAVING completed the sale of animals, as advertised in Catalogue of 1854, (excepting Short Horned bull "Ra'ca" 9918), at prices highly remunerative, for which patronage I feel grateful, not only to the public of almost every State in our Union, but to the Spaniards, Cuba, and the Sandwich Islands; I will issue about the 1st of April a catalogue for 1855, of short Horned Bulls, and calves (some of which belong to my friend, and part associate Mr N J Becar) North Devon Bulls and Bull calves, Southdown Rams, Suffolk, Berkshire, and Essex Swine, of almost all ages, and of both sex, now ready for delivery. This catalogue will be illustrated with portraits of my Prize Animals. Most of the original animals of my breeding establishment were selected by me in England in person, and strictly in reference to quality, in my judgment, best adapted for the use of this country.

January 3rd 1855.

I. G MORRIS.

DURHAM BULLS.

THE SUBSCRIBER has several yearling Durham or Short-horn Bulls for sale from the most renowned breeders ever imported in this country. Parties wishing to purchase will please call.

Nelson, 25th Jan., 1855.

P. FISHER.

2-3

TO BREEDERS.

THE Thorough Bred Short-horned Bull, "JOHN O'GAUNT," Second Breed by John S. Tanqueray, Esq., Hendon, Middlesex., England, imported by Frederick Wm. Stone of Guelph, October last.

This very superior Young Bull will be kept at the Subscriber's Farm, Farnham, Rushville, five miles from Guelph.

Terms for Service—Thorough bred, Five Pounds; of grade, 6s. Parties wishing it, can have pasture at a reasonable rate. No risk by subscriber.

His sire, "John O'Gaunt" (1621 English Herd Book), was sold in 183 for \$4,000.

Guelph, April 24, 1855.

FREDERICK WM. STONE.

Sale of Imported Short Horned Cattle, South Down Sheep and Suffolk Hogs.

I WILL sell by Auction at my residence on Wednesday 20th June next, my entire Herd of Short Horned Cattle—consisting of about twenty-five head of my choice animals. Nearly the whole of them are Imported, and their direct descendants.

Also about Seventy-five South Down Sheep. There are imported from the flock of Jonas Webb, Esq., of England, and their descendants.

Also, a few Suffolk Hogs, bred from the importation of J. C Jackson, Esq.

Catalogues, with the pedigrees and further particulars, will be ready about 2nd April, and can be had at the Offices of the different Agricultural Papers in this State, and Ohio Cultivator and Indiana Farmer, and by application to me.

TERMS OF SALE.—For all sums under \$100, cash; over \$100 to \$1000, three months; over \$1000 to \$3000, six months; and all over \$3000, six or twelve months credit, on approved notes with interest.

April 5, 1855

J. M. SHERWOOD.

Auburn, N. Y.

SPRING STOCK OF IMPLEMENTS.

THE Subscribers beg to inform Agriculturalists and Horticulturists, that they have received a large and varied assortment of FARM & GARDEN IMPLEMENTS

And would solicit a call from parties about to purchase, at No. 77, corner of Yonge and Adelaide streets, Toronto. They have on hand a quantity of the most improved Lap Furrow Ploughs, which have of late been so much in demand Reaping and Mowing Machines on the most improved principles, will be for sale in their season.

McINTOSH & WALTON.

Toronto, 1st May, 1855.

PRINTED AT THE GLOBE OFFICE, 22, KING ST. TORONTO