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AGRICULTURAL JOURNAL,

AND

TRANSACTIONS

OF THE

Lower Canada Agricultural Society.

VOL. 2. MONTREAL, MAY, 1840. NO. 6.

In all countries there are some districts and some particular farms which are famous for producing certain kinds of grain, and where the whole harvest is frequently sold for seed, and at very high prices. In such localities, we generally find that this advantage arises no less from the nature and properties of the soil being favorable to the production of one particular kind of grain, than to the infinitely more care and attention which is paid to the crop by the farmer. Persons who maintain that a change of seed is absolutely necessary, enquire whether it ought to be taken from a richer or a poorer, a stronger or a lighter soil, and from a milder or a colder climate? Our reply is, procure it from that place where it is most perfect and healthy. This is not always where the soil is richest or the climate the mildest, as, in such places, the grains are often too thick on the ground, and consequently not sufficiently exposed to the influence of air and light to allow the grain to acquire absolute perfection; besides this, the seed and grain is often too large, and there is more husk than *farine* in its component parts, the latter of which alone is capable of affording nutriment to the young plants. In those places, on the other hand, where the soil is so weak that it is incapable of furnishing sufficient nourishment to effect the complete formation of the grain, that grain will be equally improper for the re-production of other plants; for wheat grown upon a soil which only produces stunted grain, will always bear an imperfect seed, and will require to be replaced by seed really derived from good wheat land. It is a well known fact, that in plants as in animals, strength or weakness, health or disease, are transmitted not only to the first generation, but throughout several succeeding ones, and these dispositions can only be gradually eradicated by the help of other influences. A change of seed to be entirely successful, must be managed with great circumspection, and be free from all mixture of varieties as well as from seeds of weeds.

Some seeds retain their germinating power for a considerable period, provided only that they are carefully preserved, while others, on the contrary, lose it quickly, and can hardly retain it for the space of one year. If we come to examine which are the seeds that retain their vitality for the greatest length of time, we shall find it is always the most perfect ones, and that the imperfect and sickly ones lose their power of germinating first. To this fact, is to be principally attributed the advantage of old seed over new in several kinds of plants. Vegetables and plants can only be procreated by perfect and healthful germs, which have not been deprived of their necessary space and nourishment during their growth by abortive plants which will never come to maturity, and which come from a crop free from those diseases, the germ of which lies on the grain, as is the case with smut, mildew, &c. But if we could fully understand this point, we must make ourselves perfectly acquainted with the nature of each particular kind of plant or vegetable. Grain which has become perfectly matured may be preserved for a very long time. Wheat of only one year old is almost

universally preferred as being less liable to disease than new soft wheat. Most agriculturists are of a different opinion as regards rye, and prefer quite new grain, for, when it is more than a year old, they consider it necessary to sow it more thickly than they would in the former case, and, consequently, an equal measure of seed would sow a smaller extent of ground in the former than in the latter case.

The seed of most vegetables keeps good for a considerable period. Vetches are said to keep good for eight or ten years. All kinds of seeds which yield oil keep for very many years, provided the worm does not get into them; old linseed is far preferable to new, while, on the other hand, new hemp-seed is considered better than old. According to my own experience, clover-seed keeps very well for two years; it deteriorates in the third, and becomes useless in the fourth. Each separate kind of grain has a certain period of time, longer or shorter, during which it ought to lay in the earth in order fully to develope itself and ensure its producing perfect plants. The success of the crop may often depend entirely upon a favourable time being chosen for placing the seed in the ground. But as the success of this choice depends upon the state of the weather and the temperature during the period of vegetation, the farmer will never be able with certainty to determine the best time for getting the seed in the ground. He must be chiefly guided by the dryness or humidity of the air or of the soil, and thus endeavour to select that state which he knows to be most favourable to each kind of grain. Rye, barley and buck-wheat requires a dry and warm soil to favour their first germination; others, on the contrary, as wheat and oats, require more moisture. Much is already gained if only in this respect; the favourable moment has been seized, and there will be far more reasonable hope of the harvest being successful when the sowing has taken place under such favourable auspices, than there ever can be when it has been performed under different circumstances. It has often been remarked that certain states of the weather and of the temperature are particularly propitious to the operation of sowing. In the spring, when the atmosphere is loaded with vapours, which, particularly at sun-rise or early in the morning, give to the boundaries of the horizon an apparently undulatory motion, so that the rising sun appears, in the language of the people, "to dance." When this is the case, barley may be sown with particular advantage. Many agriculturists attribute great advantage to the seed being brought in contact with the dew, and, consequently, recommend the sowing to be performed toward the evening, and the seed not covered until the following morning, but this can only be managed when the nights are warm. If there should be any danger of white frost, the seed should not be left uncovered at night. However desirable it is to sow as early as possible, the seed should not be put in the ground until the soil is in a fit state to work.

For the AGRICULTURAL JOURNAL.

THE CULTIVATION OF FLAX.

BY RUSTICUS.

I was glad to perceive in the last number of the *Agricultural Journal*, the interesting communication of "A Canadian" on this subject. There cannot be a doubt, but that much of land in this portion of the Province is quite as well, if not better adapted, for the growth of flax, than for any other description of crops. Besides, the ravages of the wheat fly, and the spread of the potato disease, and the consequent uncertainty of these two staple crops, render it necessary to be on the look out for some crop to compensate in some measure for the difficulty of producing these leading articles of exp... and consumption. Flax would, we conceive, in some measure contribute to render less burdensome the partial loss of these crops, and would be, perhaps, the most valuable and most suitable for export of any crop we can raise, as it is more certain of meeting a market than any that at the moment occurs to us. To show that this is not a mere unfounded conjecture, I will endeavour to give an idea of the extent of the existing demand for

flax, which in Britain is a very large and annually increasing one. Mr. Montgomery Martin, in a recent work, states, that the manufacturers of the United Kingdom consume about 100,000 tons of flax per annum, in value about £500,000. Of this large amount, Russia furnishes five-eighths of the whole, Ireland not quite two-eighths, and the remaining eighth is drawn from various sources. Besides this market, France, Holland and Germany all derive a part, if not nearly the whole of their supplies of flax, from Russia. We see then, that there is an almost illimitable market, and one which will be indefinitely increased with the growth and increase of the population of the various countries which consume articles made of flax. Why then should Russia be allowed to retain the monopoly of the production of this valuable article of export and consumption? our soil and climate combine to render its production easy and profitable, will not then the prospect of such an unlimited market encourage us to attempt the growth of flax on an extended scale? If necessary, let legislative aid be extended to foster its production. It is true that it may be some time before our Canadian farmers produce it in any great quantity, or in the requisite perfection, but the sooner a commencement is made the better. We think that the growing of hemp and flax on a large scale, would add materially to the prosperity of the country, and would besides be a step in the right direction, for the greater the breadth of land covered with crops, and the more varied their description, the more likelihood is there of a good return for the labour expended on the preparation of the soil.

Montreal, April 12, 1849.

The following article is copied from "Thaer's Principles of Agriculture," in a note to that work by the translators, and is interesting:—

As we have, in another place, had reason to remark, "no branch of chemistry is more interesting, even to the Journal reader, than that which relates to the vegetable world, for objects of the highest interests here present themselves in all directions. The fingers of God seems evident in every plant we chemically examine. Thus their juices, which are always so regular and uniform, so sweet in some, so bitter or acid in others, tasteless in many, yet saline in several—the order and the regularity are alike incomprehensible to us. Neither by any contrivance of ours can this regulated order of things be altered. For instance, the wild sorrell still secretes its acid, if nourished with only sugar and water; the sea-kale, which grows wild on the sea-shore, will yet secrete in its juices common salt, when growing on our most inland gardens. Neither can a plant be made to absorb one salt in preference to another. If a sprig of mint is placed in a solution of various salts, it will absorb some, but entirely reject others.

The power which the plant thus exercises is to the chemist utterly unknown. To effect the same separation of the salts when dissolved together in water, the chemical analyst has to perform a series of decompositions and other chemical operations, before the desired result can be obtained, a process which the sprig of mint performed at once. The reader must not suppose that this is the effect of mere filtration, for the most delicate filters are utterly useless in any attempt to separate a salt from its solution. Then, again, certain plants show a decided preference for, and absorb only, particular salts. The nettle and the sun-flower, for instance, saltpetre, (nitrate of potash,) clover, gypsum (sulphate of lime.) And these absorbent powers of the plant are not confined to soluble substances, allumina, manganese, phosphate of lime, &c., which are not dissolved by water abound in plants; and moreover, the required substance seems always placed by some magical and unerring arrangement in the very part of the vegetable where its presence is most needed. Thus flint (silex) abounds in the straw of wheat, where its presence helps to impart the requisite degree of firmness to enable it to support the loaded ear; but it is found in a very diminished proportion in the seed, where it is not required. Is not this the contrivance of its Divine Author? or is all this arrangement also chance? The progress of chemistry continually unfolds many a beautiful vegetable phenomenon, just as mystic, just as astonishing as any of these, and the field is not yet nearly exhausted, but still the conclusion the chemist arrives at is the same. The deeper he penetrates, the more numerous are the contrivances he observes, and more clearly manifested become the works of the Creator. Examine, as another instance of these mysteries, merely a cubic inch of soil, composed at most of only four simple earths, and notice the discordant nature of the chemical ingredients so uniformly and so regularly produced by the different plants which that soil produces with only the aid of water and the atmospheric gases. Observe the wheat producing its flour; the sorrel, its oxalic acid; the beet, its sugar; the poppy, its opium. From one plant comes the fragrance of the rose; from another, the odor of the garlic. Dr. Thomson thought of these things when he observed, ("System of Chem," vol. 4, page 303;) "The multiplicity of operations continually going on in vegetables at

the same time, and the variety of different and even opposite substances found out of the same ingredient, and almost at the same place, astonish and confound us. The order, too, and the skill with which everything is conducted, are no less surpassing. No two operations clash. There is no discord, no irregularity, no disturbance. Every object is gained, and everything is ready for its intended purpose."

The above may not be considered to have much connection with the practice of Agriculture, but we should very much regret if farmers did not feel an interest in reading such articles. We do not conceive it necessary to exclude from this Journal all matter that does not treat of the practice of husbandry, and we trust the subscribers will be better satisfied that we should give them a little variety, provided we do not meddle with political questions.

SCHOOL OF AGRICULTURE AT METTRAY.

The colony at Mettray, near Tours, about 150 miles from Paris, was founded in the spirit of the good Samaritan, which succors the wounded and forsaken traveller by the wayside, takes him home, and there nourishes and cherishes him. This establishment grew out of the compassion of two gentlemen of high rank and fortune, who were moved to essay what could be done for the rescue of unfortunate, condemned, and vagabond boys, to save them if possible from destruction, and give them the power of obtaining an honest living. It is not consistent with my plan, in this place, to go further into the account of the institution than as a *School of Agriculture*, though the directors propose three objects of instruction to qualify their pupils for farmers, sailors, or soldiers. The discipline of the institution is military. They have a full-rigged ship of ample size in the yard, that boys designed for a sea life may here take their first practical lessons; and they have a well-stocked farm of 500 acres, which is under direction to be cultivated by the pupils. The institution is situated in a healthy part of the country, and near a large market town. They employ an educated and experienced agriculturist as director of the farm. The first object is to render it productive, that it may go as far as it can be made to go towards defraying the expenses of the institution; the second, to instruct the boys in the best and most improved methods of husbandry.

The institution had its foundation in private subscription, and though in its commencement it had many difficulties to struggle with, it has now a firm establishment. Besides a farm, there are connected with the institution a large garden, an extensive nursery, and a manufactory for the fabrication of all the implements, carriages, &c., which are used on the farm. The boys are likewise employed in the making of the shoes, caps, clothes, and bedding, which are required, and many fancy articles which serve for sale, and give them occupation, when by any circumstances they are prevented from out-door labor. The number of pupils is at present 450. It is not intended to keep them after sixteen, but they are willing to receive them at the earliest convenient age. I saw several not more than six or seven years old. They live in families of forty or fifty, in separate houses, under the care of a respectable man and his wife, who give them their whole time. This seemed to me a most judicious provision. They have a guardian with them in the fields, who always worked with them. Many of them have been condemned at courts of justice for some petty offence, and many of them, orphans and friendless, have been taken up in the streets in a condition of miserable vagabondage. The discipline of the institution is altogether moral and paternal. Confinement, abstinence, solitude, and disgrace constitute the chief punishments; but there are no whips, no blows, nor chains. It has been so far eminently successful. A boy, who had been earlier familiar with punishment and prisons, and now for some time a resident at Mettray, was asked, Why he did not run away from Mettray? His memorable answer was, "Because there are no bolts nor bars to prevent me."

When one looks at the innumerable herds of children, turned, as it were, adrift in a great city, not merely tempted, but actually instructed, stimulated and encouraged, in crime, and observes them gradually gathering in and borne onwards on the swift current with increasing rapidity to the precipice of destruction, until escape becomes almost impossible, how can we enough admire the combined courage, generosity, and disinterestedness, which plunges in that it may rescue some of these wretched victims from that frightful fate which seems all but inevitable? I do not know a more beautiful, and scarcely a more touching passage in the Holy Scriptures than that which represents the angels in heaven as rejoicing over a repenting and rescued sinner. It is, indeed, a ministry worthy of the highest and holiest spirits, to which the Supreme Source of all goodness and benevolence has imparted any portion of his Divine nature.

If we look at this institution even in a more humble and practical view, as affording a good education in the mechanical and agricultural arts, its great utility cannot be doubted; and much good seed will be sown here, which, under the blessing of God, is sure to return excellent and enduring fruits.

I should have said before, that there is connected with the institution a hospital which is a model of cleanliness, good ventilation, and careful attendance; all the services which were rendered by those indefatigable doers of good, the Sisters of Charity.—*Colman's European Agriculture.*

HYBRIDIZATION AND CROSS FECUNDATION OF PLANTS.

Hybridization, strictly speaking, is the art or act of obtaining an offspring or progeny between two different species of animals or plants; and *cross fecundation* or *cross breeding* is the production of a progeny or race between varieties of the same species. It was maintained by Buffon, Hunter, and other naturalists of the last century, and is yet assumed by many scientific men of the present day, that the hybrid offspring or progeny of two distinct species of animals or plants is incapable of begetting or reproducing its kind; thus making hybridity the test of specific character. From this we may infer, that the progeny of hybrid plants cannot produce seeds; but that produced by cross fecundation may be regarded as fertile.

The observations and experience of practical gardeners and florists would seem to justify the following maxims, as affording some guide to the production of new varieties or races;—

1. The existence of sexes in plants is now universally acknowledged, as occurring in the same flower,—in separate flowers on the same plant, or tree,—as well as in those of trees distinct from one another.

2. Plants nearly related, that is, closely similar in the structure of their several parts, are those only which will immediately impregnate with each other; but it is impossible, at present, to say what families of plants may or may not be brought into fertile union through intermediate crossess. Not long ago, the azalea and rhododendron were thought to be incapable of such union; but this opinion is now exploded; for the Pontic rhododendron, (*R. pontium,*) has been fecundated with the pollen of the Chinese azalea, (*A. sinensis*) and the progeny between that evergreen and the last-named deciduous-leave shrub, is the previously-known phenomenon, a yellow rhododendron. In like manner, the brassicass, (cabbages, turnips, &c.,) mix freely with brassicas, in all their gradations, as well as the cucurbitacæ (melons, pumpkins, gourds, &c.)There are some exceptions, however, to this rule; for the beautiful pelargonium and the scarlet geranium, though nearly allied, according to the clasification of modern botanists, have not hitherto been able to mix. Again, the raspberry and strawberry are regarded as first cousins; yet, after several attempts, they have not hybridized. The goosebery and currant, too, are nearly related, still their alliance seems invincible, though tried by skilful hands.

3. The color of the future blossoms, (not of those hybridized,) seems to be most influenced, though not invariably, by the male plant, if its seeds and flowers are darker than those of the female. Mr. Knight found, that when the pollen of a colored-blossomed pea was introduced into a white one, the whole of the future seeds were colored. But when the pollen of a white blossom was introduced to the stigma of a colored blossom, the whole of the future seeds were not white. Captain Thurtell, from lengthened observation and experiment, also informs us, that he has always found the color and spot of the petals of the pelagorium to be more influenced by the male than by the female plant. On the contrary, however, he observed that the form of the petals follows most closely that of the male plant.

4. Large stature and robustness of habit, according to Mr. Knight, are transmitted to the progeny by either of the parent plants. Therefore, it does not absolutely matter, for obtaining this characteristic, whether the plant, male or female, be large; but he generally found that the most robust female plant produced the finest result. When a good fruit or culinary vegetable is wanted, he recommends that the largest seed from the finest fruit or plant, that has ripened earliest, and most perfectly, should always be selected. In stone fruits, if two kernels are in one stone, these give birth to inferior plants. The florists of the present day, however, are opposed to Mr. Knight in their practice, as regards the hybridization or cross fecundation of ornamental flowers; for they recommend the weakest plants, and those that germinate last, where chastity of form and beautiful marking are required, to be taken the greatest care of, as they are sure to produce the most valuable flowers.

Mode of Obtaining Varieties.—The most successful mode of obtaining good and very distinct varieties, is to employ the pollen of a male flower, grown on another plant, from a distance, and not that bearing the female, or that in which the fecundation is to take place. When the plants are in flower, carefully extract with a pair of sharp-pointed scissors the anthers, if any, from the female flower, or those having anthers, of the same species that are in the immediate vicinity, before they arrive at maturity, or your attempts will be of no avail; for Nature will have performed her part, and instead of a hybrid, you will have a natural progeny. In order further to avoid previous and undesired impregnation, the female flower should be inclosed in a case covered with gauze, and thus continued until the process of hybridization is complete, to exclude insects, and the effects produced by strong currents of air before the desired pollen is ripe. Anothsr effectual mode of preventing undesired impregnation is bringing

the female plant into flower a little earlier than its cogeners, and removing the anthers as directed above. For the stigma will remain vigorous, if unimpregnated, for several days.

After extracting the anthers from the flower you wish to bear seeds, carefully watch the progress of the stigma, and as soon as you find it in a condition to receive the pollen, select the matured anthers from a distance, and bring them in gentle contact with the stigma, to which a sufficient quantity of pollen will adhere. If a double flower should chance to have a fertile anther or two, these should be employed for fertilization, as the flowers of their progeny will almost be sure to be double. Although the fecundity of all the seeds in one seed vessel may be secured by applying pollen only to one style, even where there are several, yet the quantity of pollen is by no means a matter of indifference. Koelreuter found, that from 50 to 60 globules of pollen were required to complete the impregnation of one flower of Hybiscus siriacus; but in Mirabilis jalapa, and M. longifolia, two or three globules were enough; and in the case of pelagoriums, Captain Thurtell says two or three globules are certainly sufficient.

In the course of the process the seed vessel is not altered in appearance, by impregnation, from that of another plant; therefore, no hasty conclusion of failure is justified by that want of change. It is easy to discern, however, whether the fecundation has been effected; for when this is the case, the stigmas soon wither. The stigmas which have not received the pollen remain for a long time vigorous and green.

Mr. Haquin, a distinguished horticulturist at Liege, has impregnated flowers of the azalea with pollen kept six weeks; and camellias with pollen kept 65 days. He gathers the stamens just before the opening of the anthers, wraps them in writing paper, places them in a warm room for a day, collects the pollen they emit, and preserves it in sheet lead, in a cool dry place. Mr. Jackson, of Cross-Lane Nursery, near Bedale, states, that he found the pollen of rhododendron smithii tigrinum to retain its fertiling power even for twelve months. This property of pollen was verified by experiment, in Persia, by the elder Michaux, as early as the year 1782, in observing that the male flowers of the date, (*Phœnix dactylifera,*) will keep during the year, and yet impregnate the female.—*The Cultivator.* D. J. B.

New York, Feb. 3d, 1849.

Professor Johnston, in his "Lectures on Agricultural Chemistry,"— a work which the practical farmer may read with pleasure and profit. After speaking of enriching exhausted lands by ploughing in green crops, the Professor says:—

"There is another mode in which recent vegetable matter is employed in nature for the purposes of enriching the soil. The natural grasses grow and die upon a meadow or pasture field, and though that which is above the surface may be mowed for hay, or cropped by cattle, yet the roots remain and gradually add to the quantity of vegetable matter beneath. If the quantity of organic (vegetable) matter which these roots contain, be greater than that which the crop we carry off has derived from the soil, then instead of exhausting, the growth of this crop will actually enrich the soil in so far as the presence of organic matter is concerned. No crops, perhaps, *the whole product of which is carried off the field,* leave a sufficient mass of roots behind them to effect this end, but many plants, when in whole or in part eaten upon the field, leave enough in the soil materially to improve the condition of the land—while in all cases those are considered as the least exhausting to which are naturally attached the largest weight of roots. Hence, the main reason why poor lands are so much benefitted by being laid down to grass, and why an indeterminate crop of clover is often as beneficial to the after crop of grain, as if the land had lain in naked fallow."

Rat Catching.—At p. 182, of the seventh volume of the Agriculturist, also at p. 63, of the present volume, mention is made of enticing and destroying rats by means of a preparation containing the oil of anise and the oil of rhodium, &c.

As no definite directions are given for preparing and applying the mixture, you would oblige me, and many others, by inserting the *modus operandi* in your next number.

A Philadelphia Subscriber.

In reply to the above, we would communicate to the public, and more especially to our discriminating subscriber, the following recipe, which was purchased by a friend, as a "secret," from an old rat catcher:—

Take powdered assafœtida, 2 grains; essential oil of rhodium, 3 drachms; essential oil of lavender, 1 scruple; oil of anise, 1 drachm.

Let the assafœtida first be well triturated with the oil of anise; then add the oil of rhodium, continuing to rub the material well together with the pestle in the mortar, after which the oil of lavender, and cork up the mixture in a close bottle until required for use.

The method of applying the compound, consists merely in smearing a tame rat with it, after mixing a few drops of it with a little flour or starch, or employing the paste thus formed as a bait for the trap. It is stated, that a tame white rat besmeared with it, let loose in a vault, has been known to be followed by half a dozen other rats, which appeared to be enamored by their albio decoy. A trap placed in a cellar,

haunted by rats, and left there all night, was filled the next morning with these pests, to the number of thirty, and was surrounded by a host of others, that actually could not enter from want of room!

THE PROPER SOIL FOR ROSES.—All roses like a rich soil, which should be made *light* for the delicate rooting varieties, and more *tenacious* for the robust, hardy kinds.

In order to form a light soil, procure one bushel of seasoned turfy loam, half a bushel of well-decomposed stable manure, half a bushel of leaf mould and white sand, proportioned according to the texture of the loam, which will in no case require more than one fourth of its own bulk. The heavy soil may be composed of one bushel of stiff turfy loam, one bushel of night-soil that has been mixed with the loam and laid by for a year, half a bushel of leaf mould or well pulverized manure and sand, as recommended above.

A little burnt earth added to either of the composts will improve them. These above named materials should be thrown together, and frequently turned, for at least three months before they are used.—*The Cultivator.*

APPLE TREES FROM CUTTINGS.

EDS. CULTIVATOR—In your publication of October last, there is a short article headed "Horticultural Humbugs," and the first you mention is, that "the insertion of apple grafts in a potato before planting in the earth, insures the growth." That apple grafts will not grow like the cuttings of gooseberries and currants, whether planted in a potato or any way else, I believe to be a general truth, but perhaps not absolutely so. Some particular kind of tree, under particular circumstances, *may* have succeeded by planting the graft in a potato, which may have given rise to the statement at first.

Your article brought fresh to my recollection, a fact which came under my own observation, and which I shall now relate. I spent the fore part of my younger years in the west of Ireland; while there, I was told that there was a certain kind of apple tree which could be propagated by planting cuttings in the ground the same as the gooseberry; there were small knobs on the branches; and when twigs were cut off below one of these bulbs, and planted in the ground, roots struck out from said knobs, and trees were produced, same as the parent stock. Having my doubts on the subject, I resolved to put it to the test. I procured a suitable twig and planted it in my garden, and no doubt it did start, and grew well, but that is not all. The said twig happened to have a fruit bud upon it, which not only blossomed out, but a full sized apple was matured to perfection on it that same season. Now had I not seen this with my own eyes, and done it with my own hands, it is more than probable I would have been as skeptical as you on the subject, and concluded the whole a humbug also.

What became of the young tree, I cannot tell. I very soon afterwards left the place, and forgot all about it. It may be a good bearing tree to the present day. The fruit, as far as I recollect, was good, and worth propagating, and now, since the matter has been brought to my recollection, I intend to write over for a few grafts from some of these trees, and if I suceeed in obtaining them, and live too see the result, you shall be duly formed. WM. FREELAND.
Brockville, C. W., Jan., 1849.

RELATION OF THE PERIOD OF GROWTH OF A PLANT TO THE EFFECT AND PROPORTION OF LIME IN THE SOIL.

In connection with the quantities of lime actually found in plants, another important circumstance must be taken into consideration.

Whatever kind or amount of food a plant may require to bring it to maturity, it must collect the whole during the time usually allotted to its growth. Thus the longer a crop is in the ground the slower it grows, and the longer it usually takes to come to maturity—the more time it has to collect its food from the soil by means of its roots. Barley germinates and ripens its seed within three months—in Sicily sometimes within three weeks—while wheat is from six to ten months in the ground. The roots of barley, therefore, must do much more work in the same time than those of wheat. They must, among other things, take up the 17 lbs. of lime in the above table in three months, while wheat takes up on an average only 13 lbs. in six months. Now, to effect this in the same soil, it must send out more roots in quest of this kind of food than the wheat will require to do, and thus it must waste more of its vegetative strength under ground. But if we make the supply of lime in the soil more abundant, we diminish the labour of the barley plant, and greatly facilitate its growth.

Thus we arrive at the conclusion that the proportion of lime contained in the soil ought to be adapted not only the proportion which the perfect plant is found to contain and require, but to the period also which is allotted to its natural growth. For crops which run their course quickly, a larger proportion of lime, as well as of all other kinds of food, will be required, or will be beneficial, than for crops that are longer in coming to perfection. Has this fact anything to do with the earlier harvest upon well-limed land, or with its peculiar fitness for the growth of barley?

BREEDING, REARING, AND FEEDING OF CATTLE.

At the annual meeting of the Probus Farmers' Club, held on Tuesday, the 16th ult., Mr. Karkeek, of Truro, Vice-Chairman, delivered the following interesting lecture "*On the Breeding, Rearing, and Feeding of Cattle.*"

He estimated the number of cattle generally kept on the various farms, at 130,000—these including cattle of all ages—such as calves reared, one year old and upwards, and valuing them at about £6 and £7 each on the average, gave £845,000 as their net value. He made his estimate of the number of cattle by calculating the stock generally kept on the various farms, which he said was about twenty on 100 acres on the average, which estimate he arrived at from the returns of some twenty resident farmers in different districts of the county. Of the cattle kept in the county he calculated that between 18,000 and 20,000 were annually fattened and sold, and the annual loss of cattle in the county from various causes, he estimated at 5 per cent. on the total amount, which made a loss of £42,250 sustained by the Cornish farmers in one branch of agricultural economy only in one year. He was confirmed in this calculation, by the opinion of some dozen farmers, as well as by the calculation of the "Farmers' and Graziers' Mutual Cattle Assurance Association"—which society estimated the annual loss all over England at 5 per cent. When we consider, he said, how much of the loss proceeds from mismanagement, it really becomes an object of importance for the Cornish farmer to endeavour, by every possible means, to keep his stock in a healthy condition, by attending more to their general comfort. The statistics given also shewed the importance of more attention being paid to the breeding department—not only as it regards the keeping of a healthy stock, but also a profitable one—Here the lecturer entered deeply into the subject of breeding, and shewed that there was annually an immense number of cattle bred, on which great labour and much money were expended in the rearing and feeding, that proved anything but profitable to their owners; and also that it was not so much the quantity or quality of food which caused an animal to attain a heavy weight in a short period, as the peculiar disposition, derived from inherited and transmissible tendencies to acquire flesh and fat, and come early to maturity. He reprobated the system of breeding from cross bred animals, and said that in all cases where a cross was attempted, be certain to have *pure blood on one side.* "Breeding in the line" he considered the safest way—that is, by first selecting the best of that particular breed, both males and females, which it is intended to propagate from, and maintaining the same (changing occasionally from one family to another) in the greatest purity. He considered that the size and general appearance of a bull was not of so much importance as the general size of the family to which he belonged; and also as it respected cows, that more perfect animals were produced by breeding from those of a small size, than when they exceeded the ordinary size of the race to which they belonged—In the management of the pregnant cow, he recommended that all petted cows, and high-bred ones particularly, when in a high condition, should have a gentle purgative administered some three or four days previously, and repeated, with moderate bleeding, immediately after calving. *Thus prevented dropping after calving.*—With respect to rearing of young stock, the lecturer enforced the necessity of more attention being paid to this part of the general management of cattle in the country. He said that the profit derived from cattle in Cornwall, was very considerably reduced by a disregard of the proper medium in which they are placed, as it respected *temperature*, whether in the open fields—in the state of the yards—or buildings in which they were confined. He then described particular cases of mismanagement, and enumerated the various diseases produced. *Red water*, he considered, was frequently caused by turning young stock that have been warmly housed during the winter, into the fields just as the spring sets in, From the hot-house system they have undergone, they are prematurely preparing to put on their summer coats, which were variably formed at the expense of the constitution, and the exposure of their almost naked backs to cold and wet, at that period, produces frequently constitutional disturbances of the digestive organs; and *red water*, which is primarily a disease of those organs, and not of the kidneys, is the result. *Hoose*, he considered also an affection engendered by crowding young cattle together during the winter, and brought into action by exposure to a few cold stormy nights shortly after being turned out. He considered it dangerous to breed from a consumptive cow, as it is commonly communicated to the offspring. The heifer of a consumptive cow may rear her first calf, but very rarely a second one—The lecturer then described some of those pestilential low typhoid diseases, such as murrain, pleuro-pneumonia, &c., &c., and said he frequently traced their source to the crowded state of cattle houses, and the exposure of the inmates to dirt, filth, and want of proper ventilation as well as exposure to damp and cold. The felon,—a disease known in some counties as "joint murrain," or "quarter evil"—was very common in Cornwall. This he considered to be caused more frequently by an error in diet, and to be the consequence of pushing the vital energies of young stock too fast and too sudden. "I have witnessed it more commonly," he said, "on farms where stock are starved and stuffed by turns, than were regular and judicious feeding is practised; and we more commonly find the complaint make its appearance in the spring and autumn, consequent on an early or late flush of grass." As one

means of preventing so many serious losses in the *rearing depa..ment*, he strongly enforced that all stock intended to be depastured the following summer should never be tied up in ill-ventilated cattle houses during the winter, but kept in small yards having sheds sufficiently large to accommodate four or five steers, or two or three heifers in calf. Those yards which are called hammels in the south of Scotland, should have a southern aspect, and the floor of the shed should be raised about two feet bove the floor of the yard, and well littered to keep the young stock dry and warm. Alluding to farmers who do not possess these conveniences, he said they were in the habit of turning their young beasts out in their farm-yards two or three hours during the day when the weather permitted, and then it was not a very uncommon sight to see them scampering about the lanes and parish roads. He could not too forcibly impress on the landed interest of the country, the necessity, that in all new farm buildings about to be erected, or in the alteration and improvement of old ones, the hammeling system should not be lost sight of. Those yards would be found convenient for many purposes, such as summer soiling where it is practiced, &c.. and he believed that few tenants would refuse to pay 5 per cent. on the outlay to his landlord for the accomodation. Respecting *Fattening Cattle*, he spoke of the new method lately introduced on several estates in this district, by feeding cattle in boxes, as on the estate of Mr. Daubux, of Killiow. Mr. W. Hodge, Callestock, Veor, and the Mes. Davey, Twarnhayle farm. Ae described the method of feeding, as adopted by Messrs. Davey, very minutely. The cost of each bullock was about 1s. 5½d per day on the average.

2lbs. of linseed, 44s. per qr.....	2½d.
6lbs.of barley meal. oa rye, at ¾d.....	4½
84lbs. of turnips, at 10s. per ton.....	4½
14lbs of hay at 3s. per cwt.....	4½
Attendance and fuel.....	1½
	1s. 5½d.

The chaffed hay or straw was first mixed with the meal, in a shallow wooden cistern, and was incorporated with the linseed mucilage in a boiling state. The cattle were fed six times a day, three times with turnips, and three times with the linseed compound, and on this system they were enabled to fatten oxen, averaging 10 cwt. of the very best quality of meat in 16 weeks. Thus the farmer is enabled to feed three animals instead of one on the old plan, and thereby make a quicker return of his capital, which is the life of trade. The lecturer said, that there was good policy in using chaff of some kind or other as a vehicle for the linseed mucilage into the stomachs of cattle. If the stomachs of cattle were not moderately filled up by a meal, notwithstanding it be a rich and nutritious diet, the muscles whose exercise tends to produce a healthy digestion, are not called in action by the food being kept in constant motion in the stomach, and indigestion with all its various train of evils was the consequence. After this the lecturer proceeded to point out many diseases in cattle produced by mismanagement in the feeding department, such as *distention of the rumen*, called roven; also diseases of the third stomach, the *manyplus*—such as *fardel bound*. Speaking of the third stomach he said there were very few diseases by which cattle were afflicted, in which it *is not* involved. It was frequently diseased from being overloaded with hard indigestible food, such as straw-chaff, fibrous turnips, and in most cases of death, which occur from this cause, portions of indigested food have been found in a hard baked state between the leaves of the manyplus. Respecting cooking of food for cattle, he showed both by the peculiar digestive apparatus of the ox, as well as by the experience of farmers, that steaming of roots, hay, and straw, was unnecessary. And he strongly recommended the bruising of grain of every kind. This part of the lecture was confirmed by several experiments *lately conducted on the feeding* properties of grain of different descriptions, given in a whole or bruiced state.

ON THE PIG.

By judicious care and good feeding, pigs can, in a comparatively small space of time, be fattened to an enormous size. Hogs have been made so fat that their skin was fifteen inches above the bone. In the *Worcester Journal*, May 6, 1841, Mr. Walker, of Malvern, is recorded to have killed a Hereford sow, weighing 61 stones 8lbs., measuring 7 feet 9 inches in length, and 6 feet 3 inches in girth behind the shoulders. She fattened so rapidly that she was killed in 14 weeks from the time that her young ones were taken from her. Dr William Westmacott, in his "Scripture Herbal," says, "In most countries, as in the woodlands of Worcestershire and other places, where hogs feed on acorns, the swine's flesh is rendered hard and sound. One peck of acorns, with a little bran per day, it is said, will augment a feeding hog one pound per day in weight for two months together. But it is good to macerate the acorns first in water, and if they be powdered or ground small, they will fatten pigeons, turkeys, peacocks, &c. Oak-mast exceeds all other mast of the forest; for the hams from Westphalia and other parts of Germany, are of those swine that feed on acorns; but it is best to give pigs a few peas after them."

In Wade's "British History" it is stated that a gentleman in Norfolk put six pigs, of nearly equal weight, on the swine food and litter for seven weeks. Three of the lot were kept as clean as possible with curry comb and brush, and were found to consume in seven weeks fewer peas by five bushels than the other three, yet weighed

more when killed by two stones and four pounds upon the average,—a strong argument in favor of keeping pigs clean. From Mr. Boswell's experiments on the feeding of swine, we find, that during an equal space of time, the increase in the live weight of five pigs fed on steam-boiled food was 4 cwt. 2 qrs. 7lbs., at an expense of £6 19s. 4d., while the increase in the live weight of pigs fed on raw food was only 2 cwt. 2 qrs. 21lbs., at an expense of £5 8s. 6d.—a result highly favourable to the practice of feeding swine on steamed food.

"In fattening pigs," says Mr. J. Steele, "I have always found a mixture of barley and peas-meal, moistened with milk in sufficient quantity to make it of a drinkable nature, to be the best; the pigs must be rung to make them lie quiet; the sty should be warm and airy, and the sun not suffered to scorch their backs, as thin-skinned white pigs are blistered by it, which not only renders them of an unsightly appearance, but retards their thriving. They should be protected from exposure to cold winds, cold rains, sleet or snow—a subject not sufficiently attended to on many farms, where they are allowed to lie in heaps, shivering with the cold, in which case it is utterly impossible they can thrive. On the other hand, when they are kept constantly in a close pestilential atmosphere, their constitution becomes undermined, they look delicate and sickly, like consumptive subjects, and never arrive at any size or weight for their age. These extremes should be carefully avoided, and the sty should have an open-barred door, permitting a current of fresh air incessantly to set in and purify the place, conducing to the animal's acquiring a vigorous habit and a doubly increased size. Too much cleanliness cannot be observed; for nothing tends more to their well-doing than dry feet, a dry bed, and sweet air."

The dung of swine is a cooling, rich manure for dry sandy ground, but from their eating numerous weeds, which pass too soon through their intestines to allow of their seeds being destroyed, this manure is not fit for arable lands, but is very good for the roots of fruit trees. Some time ago the Duke of Portland commenced strengthening and promoting the growth of trees in the grounds about Welbeck, by putting pigs in the plantations, and confining them within a certain space till they had rooted up the ground at the foot of the trees, and of course manured the soil. They were then removed to the other parts of the plantation, and confined in the same way, and were fed meanwhile upon potatoes, large quantities of which were bought for that purpose. Mr. J. Hawkins tells us that a method has lately been adopted in some parts of the United States of procuring oil and spermaceti from pigs. They are then killed and boiled altogether, to extract all their lard, which is then converted into *stearine* and *elain*. The oil thus procured is of a remarkably fine quality, and well adapted for lubricating machinery.—*Agriculturist Monthly Journal.*

ON STORING ROOT CROPS.

The Swede crop is the chief, and is the one to which I principally allude. By this time of year all the Swedes should be removed out of the ground, and stored in some way as to protect them from the effects of the frost of the ensuing season, and from the ravages of our hungry visitors (so plentiful in this neighbourhood), and which so often leave the print of their teeth beneath the epidermis of the bulbs.

Many methods of taking up this crop have been tried by various people in the neighbourhood, such as throwing them indiscriminately into heaps, and covering them with soil in the field. The tops in this case are altogether sacrificed, therefore I do not approve of the method. The plan I have this year adopted, and which I conceive to be the most advantageous, is to remove the crop entirely off the field, and this, by watching opportunities even in this wet season, I have nearly effected (without resorting to the fantastical modes adopted by some). I have the crop taken up in the dryest weather possible, and those which are for immediate consumption by our fatting cattle are cleaned ready for use, and are removed from the field to a convenient spot at the homestead, when all necessary covering is added. The remaining part of the crop which is not intended for use till a later period of the season is to be taken up, the tops cut off, and the soil removed from round the roots. The large roots I do not suffer to be cut, as it is my impression the bulb will not suffer any injury half so soon as when the roots and fibres are entirely removed. They are thus to be removed and stored in any spare bit of ground either in the stackyard or elsewhere, and should be covered sufficiently with straw to secure the produce from any ungenial weather which may afterwards follow. The tops are all separated from the roots, and may be consumed by young stock on the pasture ground. If it should be thought advisable not to draw them off, they should be spread evenly over the surface of the field, as I hold them to yield a manure of the most fertilizing qualities.—*G. F.*

VEGETABLE REPRODUCTION.

All the most perfect plants, the only ones which we shall have to refer to, owe their existance, in the first place, to the seed formed by germination.

That reproduction in which the seed is the chief, if not sole agent, is not only the most primitive, but the most ordinary; it is that, therefore, of which I shall generally have to speak, deferring any mention of the other kinds of reproduction until I come to speak of those plants to which it relates.

It is of the utmost importance that the seeds of all kinds of plants should have attained to

perfect maturity, and should have been carefully and healthily preserved.

Seed which has not reached maturity, may, it is true, possess the power of germinating, but it always retains a disposition to disease and weakness. It is true that disposition may be so far conquered by coincidence of favourable auspices, and by a soil and temperature peculiarly adapted to the nature of the plant, that imperfect seeds do occasionally produce vigorous and healthy plants, but there is always great danger of the crop failing, and the saving which the agriculturist may have effected by using such seed is not commensurate with the risk. I think it the more necessary to lay particular stress upon this point, as Banks, the great English Naturalist, has, in his observations on the causes of corn being laid, stated it to be his opinion that grain of corn which has been laid is equally good for seed as any other, since it has not lost the power of germinating, this opinion, promulgated by so celebrated a man, which might have spread itself extensively, and produced the most baneful effects, was soon contradicted by the experience of numerous agriculturists. Although some agricultural authors may have recommended that the smallest grain should be preserved for the purpose of being sown, because then a given measure will contain a greater number of seeds; all practical men who have paid any attention to the subject are not the less convinced of the advantages arising from sowing the largest and most perfect grains, and it frequently happens that, by strictly adhering to this plan, they have obtained particularly good and very marked results, and a stronger and healthier race of plants have been created, which a little care has afterwards been sufficient to preserve. It is this which further accounts for the advantages which are found to arise from sowing the different kinds of grain procured from abroad, where proper care has been employed in their selection. In choosing the seed, a preference ought to be given to that portion of the grain which has been grown upon a soil favourable to it, and calculated to bring to perfection; and it is worth while, on more accounts than one, to take the trouble of gathering the seed from a field suited to the island, and also to pay all possible attention to the harvest by weeding and isolating the plants during their vegetation, and hoeing up the earth, and, in short, sparing no care or pains likely to be conclusive to the perfecting of the crop. By these means, we shall insure the soils becoming completely and uniformly matured; but where it is one of the distinctive properties or peculiarities of the plant for the seed to ripen unequally, those ears or pods should be set apart for the purpose of sowing which are perfectly ripe.

"An interesting series of experiments on the relative weights of the roots, and of the leaves and stems of various grasses, made by Hlubek, is given. "The grasses were grown in beds of equal size (180 square ft.) in the agricultural garden at Layback, and mown in the fourteenth year after sowing, just as they were coming into flower. The roots were then carefully taken up, *washed, and dried,*" I have not room for the details, but it appears that,—If we take the means of all the grasses experimented on, as an average of what we may fairly expect in a grass field—then *the amount of living roots left in the soil when a four-year-old grass field is ploughed up, will be equal to one sixth more than the weight of that year's crop.*"

"A mixture of white clover, of ripwort, of hoary plaintain, and of couch-grass, in an old pasture field, gave 400 lbs. of dry roots to 100 lbs. of hay—and in a clover field, at the end of the second year, there were 56 lbs. of dry roots to every 100 lbs. of clover hay, which had been carried off. In an old pasture or meadow field again, when ploughed up, *the living roots left are equal to four times the weight of that year's crop.* In the case of clover, at the end of the second year, the quantity of dry vegetable matter left in the form of roots, is equal to upwards of one-half the weight of the whole hay which the clover has yielded. Suppose there be three cuttings, (one in the first and two in the second year) yielding four tons of hay, then *two tons of dry vegetable matter are added to the soil in the form of roots, when the clover stubble is plowed up.*"

"This burying of recent vegetable matter in the soil, in the form of living and dead roots of plants, is one of those important ameliorating operations of natnre, which is always to some extent going on, wherever vegetation exists. It is one by which the practical man is often benefited unawares, and of which—too often without understanding the source from whence the advantages comes—he systematically avails himself of some of the most skilful steps he takes with a view to the improvement of his land."

"Peat consists of vegetable matter which has undergone a peculiar change. Under a degree of temperature not sufficiently great to decompose the plants that have sprung up upon the surface, these plants accumulate; and added by a certain degree of humidity, are converted into peat, which is either found in strata upon the surface of plains, or accumulated in great beds on the tops and acclivities of mountains, or in valleys, hollows and ravines. Successive layers of plants being added to the mass, it continues to increase, under circumstances favorable to its production. Water is a necessary agent in its formation, and we may believe, too, a peculiar temperature, since it is only in the cold and temperate, and not in the warmer regions of the earth, that it is found to be produced. The plants which form it have not en-

tirely decayed, but still retain their fibrous texture; and from the action of certain natural agents, have acquired properties altogether distinct from those which, in their former condition, they were possessed of. They have now formed a spongy, elastic, inflammable body, and so different from the common matter of vegetables as to be highly antiseptic.

"The plants whose progress towards the decomposition has been thus arrested, are very various. Over the greater part of the surface of the primary and transition districts of colder countries, the peat is chiefly formed of cryptoplants, mixed with the heaths and other plants which had grown along with it. Sometimes the peat has been found in swamps and lakes, and at other times the humidity of the climate has been sufficient to form it in one continued bed, covering the whole surface of the country."

Norwegian Harrow and Clod-crusher.—Another implement, calculated for cleaning the land, has lately been brought into use in England, called the Norwegian Harrow. Since it was first introduced, its construction has been somewnat modified and improved, and it is thought it will prove of great utility. It is thus described:—

"The acting part of this implement cansists of a frame containing four horizontal spindles, on each of which is fixed a set of cast-iron bosses, with teeth projecting from them like the rowels of a spur. These teeth revolve with the spindles, those on one spindle interworking with the others, so that they severally clear and clean each other. The effect produced is a remarkable bruising, crumbling or disintegration of the soil, without any clogging of the spikes, or possible derangement of the working parts. The weight suffices to cause the spikes to penetrate to the required depth, which is also governed by an adjustment of the wheels applied for travelling the implement, and for taking it out of work when turning; but it acted quite as well when divested of the wheels and of other paraphernalia, which tended rather to embarrass than to assists its good action. Neither stones nor sods appear in any way to obstruct the way of this eminently simple machine, the stones being pushed aside and the sods torn to pieces. The force was thought to be less than that required to work a common set of harrows going an equal depth, and the effect in pulverization much greater. It was tried on two different kinds of soil immediately after ploughing, with similarly good results."

At the meeting of the Royal Agricultural Society in 1847, this implement was subjected to the examination of a committee, who spoke favorably of its operation. They observe that "it is capable of thoroughly breaking up the furrow slices from three to six inches deep, as the farmer may require, leaving the soil in a beautifull condition." It worked the breadth of five feet at a time. Its effect on the soil is different from that of the cold-rushing roller, as the latter leaves it firm and comparatively compact, while the Norwegian harrow leaves it perfectly light and loose.—*The Cultivator.*

TRANSPLANTING EVERGREENS AND OTHER TREES.

Eds. Cultivator—In the third number of this year's *Farmer & Mechanic*, I found an article entitled "Transplanting Evergreens." credited to *The Gultivator*, which has induced me to send you this communication. There are three methods recommended in the article in question.

The first—"to cut a trench late in the autumn around the roots of the tree to be removed, leaving a ball of earth about the roots, proportioned to the size of the tree; after this is frozen, and during the winter, the trees, which the frozen ball of earth, are to be lifted by the aid of a stout lever. They can then be drawn upon a sled and placed at the north side of a barn, or other building, and having straw, old hay, or saw-dust packed about the frozen balls, th y will remain unthawed, till the proper season comes round to set them out."

By the other two methods, the ball of earth is to be raised without freezing; in the one case to be tied up in matting, and in the other, to be allowed to freeze after the tree with the ball has been raised from its natural position to the surface. These last methods may do very well for the small trees, but for the transplanting of large ones, the first is much to be preferred; for a ball of earth sufficient to contain the proper quantity of toots for a large tree; could not, when unfrozen, be raised from the whole in which it stands, without breaking it.

The objections to the first mode suggested, are—1st. A second lifting of the balls of earth, and transporting to the place of setting out. 2nd. Where a large number are to be transplanted, particularly large trees, it would be difficult to find room enough on the north side of a barn; or hay or straw enough to cover them without using a rick.

I have had much experience in the transplanting of trees of all sorts, particularly evergreens—60 or 70 each winter for several years, and have been very successful, and if it will not make my article too long, I propose to give the details of my method for the benefit of your readers. It is the same as that first mentioned, except that I plant the trees as soon as moved. The chief labor and difficulty consists in placing a heavy ball of earth, weighing from 1 to 6 tons, upon the sled (or rather stone boat, for I find that far preferable,) and once there, I do not want to remove it, except to be placed in the

hole where it is to remain permanently. To be able to do this, cover the ground six inches deep with stable manure and litter in a circle 8 or 10 feet in diameter, on the spot where the tree is to be set. There will be no difficulty in digging the hole when necessary, for the manure will have kept out all the frost, and you will have fresh, dry and warm mould to place about the tree for the young fibres to run into. If the soil be not good, another spot (beside an old stone fence, or on the *turning* of a field,) should be kept free from frost to dig good earth from. The best mould that can be had should be used for this purpose—it makes an *immense* difference in the subsequent vigor of the tree. After the tree is planted, and the hole nearly filled up, the manure may be spread on the top, and that again covered with earth. It retains the moisture and nourishes the young fibres the next summer without injuring them. Where a heavy fall of snow occurs early in the season, followed by a few nights of cold weather, THEN go to work at *once* to transplant, and half the labor is saved. The trees may be dug round, (for the snow will have prevented the frost from penetrating deeper than can easily be broken through by a pick-axe,) allowed to freeze one or two nights—and the less frozen the better, if they are only hard enough to bear the rough usage they must get—and then be set out at once.

I have transplanted trees of all kinds with stems from the size of my arm to twenty inches in diameter at the butt, and from fifteen to thirty feet high. Evergreens—at least, white pine, red cedar and hemlock, for my experience extends no farther—are the easiest trees to transplant, as they require little or no watering the next summer. Next in order, come the various kinds of elm, maple and poplar. Birch, chesnut and locust are more difficult. I have lost one out of three. Oak, hickory and beech, may as well be left undisturbed in the woods, unless taken small—say, the size of a man's arm and under. All these require watering copiously during the dry weather of the next summer, and some water the summer after.

I do not raise the ball with levers from the hole, but having broken it entirely loose at the base with levers, crowbars, &c., I hitch the oxen, by a long rope, to the stem of the tree above the branches—protecting the tree from being hacked by the rope—and then turn it down on its side. An inclined plane having been cut on one side of the hole, the stone boat is run under the ball, now lying on its side in the hole; the tree is uprighted, bringing the ball into the stone boat, the oxen are hitched to the boat, from one to three and even four yoke being sometimes necessary, and the tree is carried off standing upright. At the side of the hole where it is to be planted, it is again turned over and rolled or "cut" into its place; be careful to see that it stands perfectly straight and presenting the best side to the point from which most seen.

Should this communication prove acceptable, I will send you, another time, a much easier method of transplanting large trees from swampy ground, without freezing the balls of earth.
A BOOK FARMER.

PARSNIPS—a most valuable root, and the best substitute for the potato as human food, and infinitely more valuable for feeding and fattening all sorts of stock—should now be sown as early as possible. To insure a profitable crop the land should be well prepared, by repeated deep ploughings or deep diggings, the manure well decomposed, and immediately mixed with the soil; they may be sown in beds of 4½ feet wide. They should be drilled either lengthways or across the beds, at 18 inches distance; we prefer across, from the greater facility there is for performing all the operations of sowing, weeding, thinning, and hoeing from the furrows at each side; they may also be sown in raised drills, formed by the plough, as is done for turnips, the drills to be 28 inches apart, to allow of horse hoeing, &c. The plants, in either case, should be thinned out, so as to stand 8 inches, at least, plant from plant. Parsnip and carrot seed may be germinated before sowing by mixing them with moist sand, and placing them in a hotbed, or any warm, dark place. They should be turned over once in every twenty-four hours at least, and as soon as they show symptoms of vegetating, sow immediately. This mode allows of more time for the proper preparation of the land; and the seed being sown a fortnight later, with a better chance of success than the common mode, besides the advantage of knowing that the seed is good.

CARROTS may be sown between the middle and end of the month; the same mode of culture, distance apart, &c., directed for the culture of the parsnip will answer the carrot; the only difference is, that carrots like a lighter and more sandy soil than the parsnip, which delights in a deep, well-tilled, and well-drained, heavy soil.

EARLY RISING.—I was always an early riser. Happy the man who is! Every morning comes to him with a virgin's love, full of blossom, and purity, and freshness. The youth of nature is contagious, like the gladness of a happy child, I doubt if any man be called old, "so long as he is an early riser and an early walker." And oh! youth—take my word for it—youth in dressing gown and slippers, dawdling over breakfast at noon, is a very decrepid, ghastly image of that youth which sees no sun blush over the mountains, and the cares of life are forgotten. *Farmer's Gazette.*

A VISIT TO AN EXPERIMENTAL FARM.

A NUMBER of agricultural gentlemen, friends and tenants of W. W. Whitemore, Esq., met a short time since, by invitation, at Dudmaston, and inspected his estate. Among the visitors present were Sir F. Lawley, Bart., T. C. Whitmore, Esq., M. P., and J. F. Mechi, Esq. The following is a report of the day's proceedings:—

It may be proper here to observe that Dudmaston is situate about four miles from Bridgnorth, in Shropshire, on the road to Kidderminster. Mr. Whitmore has now in his own cultivation over a thousand acres, and has latterly introduced a great many improvements in the way of machinery, manuring, and draining, into his farming operations, which it will become our province to describe.

The first part of the estate visited was the oat farm, in the yard of which Mr. Whitmore pointed out a tram-way, which he found very useful in bringing remote parts of the building together. It was laid down at a trifling cost, and he thought it could be applied with very great advantage to many farms for the purpose of connecting the buildings, which sometimes, from their distance apart, were rendered nearly useless. The manure in the yard is collected together and protected from the action of the elements. An excellent shed was constructed, with a substantial slate roof, under which the manure (good farmyard dung) is placed, and therefore well protected from rain. The whole of the liquid portion of the manure is carefully drained off into a well, and a strongly-constructed iron pump is employed to raise it as required The importance of thus preserving the liquid manure is now becoming well known; and the effects of it in one particular instance; which we are about to relate, will be quite sufficient to convince the most prejudiced or the most indolent farmer of the great loss he sustains by not being particular enough in this respect. How often do we see, even now, a heap of stable dung piled up, exposed to the atmosphere, liable to all the action of rain and other deleterious agents, poisoning the air around it, and giving off in large quantities one of the most important of its properties, in regard to the enrichment of the land, namely, ammonia! Every one who goes by a heap of decomposing stable dung must perceive, by his olfactory nerves, the great quantity of ammonia that is being wasted; and the experience of Mr. Whitmore, and other eminent agriculturists, fully shews that, in point of expense, the proper collecting and saving of manure, is one of the most profitable things that the farmer can possibly do. Passing across two or three fields, the company next proceeded to inspect the small portion of land under the cultivation of the boys of the Industrial School at Quatt establishment. The present state of this land is an admirable instance of what may be effected by spade husbandry and liquid manure. This school, which is connected with the Bridgnorth Union, was founded a few years ago, and it is on a very excellent principle with respect to the moral training of the juvenile pauper population.

Leaving the industrial farm, the company then proceeded to view Park-farm, a place of about 200 acres, part of Mr. Whitmore's estate, but which he has only lately taken in hand to cultivate himself. On this farm Mr. Whitmore has commenced an extensive system of draining on clay land, one field of which the party inspected. Mr. Whitmore had tried to drain that land before with drains thirty inches deep, but found it useless, and that the money so expended was quite thrown away; he had consequently determined to lay down drains five feet deep, which he was at present doing. The drains were fifteen yards apart; eighteen inches open at the top; there being just sufficient room for the men to cut them; and gradually decreasing the width to the bottom, where there was just room enough to lay the pipe. Although not half of the pipes were laid, a great deal of water was already emptying itself at the outlet made for that purpose. Mr. Mechi stated that the improvement in cutting drains had been immense during the last few years; for until lately, in Essex, and other counties, where a drain was required to the depth of five feet, the men would open it out at the top at least four feet, and would not be persuaded that it could be done better. When he suggested an improvement in the mode of cutting in that respect he was quite laughed at by all practical men, who ridiculed the notion of its being done by opening out so little as eighteen inches or two feet; but he was happy to say that a great many farmers, both in this part of the country and elsewhere, had now got over that prejudice. Proceeding through two or three fields, the next thing that occupied the attention of the company was the progress of charring on foul stubble land. With respect to this, Mr. Whitmore said no one having foul land could over-rate its importance. The charred matter was most valuable as a manure. He calculated that upon foul land there were thirty bushels of this weed and stubble to the acre, and on clean land about ten; and his gardener had told him that he considered that material, when charred, to be the most valuable manure that he could obtain, and if he could always obtain it he would never use any other. Mr. Whitmore also said that though he would not certainly recommend farmers to grow weeds merely that they might char them afterwards, yet he would strongly impress upon those who were annoyed with them, which they all were in some degree, to get rid of them in this way. It was a much more preferable plan than entirely burning them, in consequence of the excellence of the charcoal-like deposit as a manure. Another principal and very important consideration in thus disposing of the weeds, that was the seeds by this means

were perfectly destroyed; it frequently happened that if this sort of stuff was put in heaps to rot and decompose, by some extraordinary power *they possess of resisting putrefaction, and the* seeds appeared to retain their vitality, and when the farmer spread the manure upon his land, he also sowed the seeds of those very weeds which had formerly been the cause of so much annoyance to him.

The next thing to which the attention of the company was called was the mode of irrigation pursued by Mr. Whitmore. The water is brought round by the side of a hill considerably above the level of the meadows which it irrigates. Originally it was intended for the purpose of working a mill, which it does at present, as we shall have occasion to mention. From this upper stream of water channels are cut, by means of which it is brought down into open trenches in the meadows, which can be replenished at pleasure, and, by means of a very simple contrivance, the water at any time can be excluded. Mr. Whitmore said, in relation to these fields, that hay had been taken off them from almost time immemorial without the slightest quantity of manure being put on the ground, and the crop had gone down to about a ton per acre. Since he had irrigated the land, however, he had fed 500 ewes off it, and afterwards obtained a crop of hay averaging two tons per acre, without any manure being used. Occasionally this meadow was overflowed by the Severn; but from what we heard the farmers observe, this was considered to be rather against than in its favour. The trenches which were full of water, were about 15 feet apart. Mr. Whitmore mentioned that he thought of increasing the supply of water, and he calculated that for an expenditure of £200 he could obtain a supply of about half as much again as he had, that would enable him to extend his irrigation for all present purposes, and by that means he hoped to improve the land very considerably. On some one remarking on the cost of all these improvements, Mr. Whitmore said he always considered in farming, it was not a question of what it costs, but whether it will pay; and if it yielded a return for the money, it was a good application of capital.

What he wanted was to make that good land, and he thought the best way to accomplish that object was by feeding and breeding upon it. For that purpose he caused the mill which they would presently visit to be erected, in order that they might have always the appliances and means close at hand to make all the processes of the farmer available to the greatest extent, taking especial care in the whole of these proceedings not to lose sight of the great farming manufacture—that was, the manufacture of manure. He believed if all that was carried out to its fullest extent, they would never know the capabilities of land for producing, and would never derive from it all the crops that they might. His object therefore, was first to water the land, and after that he believed the whole science of farming resolved itself into a question of manure. After hearing that explanation, the company proceeded to view *the mill, which was fitted up with machinery* constructed for the purpose of grinding wheat, for thrashing, winnowing, chaff-cutting, and a great variety of other purposes; in fact, all the indoor operations of the farmer and miller are here comprised in one building, and the completeness of everything appeared to give satisfaction to every one present.

PROPERTY IN LAND.

"In the eyes of men, in every age and country, a certain permanence and respectability has attached to the persons and families of those who possess a portion, however small, of the land in which they dwell. Something of the imperishable nature of the possession seems to be communicated to the fortunes of the possessor: the source of his prosperity appears less evanescent than ordinary wealth, and, in the eyes of the vulgar, he is sheltered at once from the caprices of fortune. Nor is the idea entirely erroneous. Its general accuracy may be seen from contrasting the fate of the great landed families, which form the landmarks of society in our country, with that of the rich merchant families, which, if not absorbed into their body, have invariably been swept away by the current of some mercantile misfortune. But it is even more apparent when we compare the present proprietors of Germany with the inhabitants of the towns. The former are not, like our landed gentry, the objects of envy to the burgher population, and are consequently but rarely recruited from their ranks, and still they continue in their humble possessions till many of them attain an antiquity equal to that of our oldest families, whilst in the towns the wheel of fortune maintains an unceasing revolution."

NEW INVENTION IN BAKING.

An invention has been made in Glasgow, which promises to be of great service in the process of baking. As it has not yet been patented, we are not at liberty to enter into details. Some idea of its effects may, however, be formed from the fact that a little model, a mere toy in appearance, standing upon a table less than a yard long and only half as wide, is fully capable of doing the work of five or six bakers—a class of men whose labour is well known to be none of the lightest. The dough is both made and moulded by the machine into loaves of the required size and shape; and, by an original and ingenious process of mixing and kneading, which can be done either with or without barm, the usual loss of weight attributed to evaporation in "raising the sponge" is avoided; and a great saving in flour, as well as time and labour, is consequently effected. The bread manufactured in the model of the machine is of the most excellent quality.—*Glasgow Citizen.*

Agricultural Journal

AND

TRANSACTIONS

OF THE

LOWER CANADA AGRICULTURAL SOCIETY.

MONTREAL, MAY, 1849.

Every means in the farmer's power should be tried, to raise fall wheat, and by repeated experiments upon a small scale, we might succeed. The first requisite is, to have the land thoroughly drained, and never to sow fall wheat except upon strong clay soil. On any other soil in this country, winter wheat will be uncertain, because light soil does not afford a sufficient holdfast to the roots after the severe frosts of winter, and in the commencement of spring the roots are consequently thrown out of the soil. Strong soil, properly prepared by summer fallow, and sowed with fall wheat in the month of August, either in drills or covered lightly with the plough, we have very little doubt, would succeed always, provided the land is well drained. By this plan the wheat plant would have a firm root in the soil before the winter, and would not be so liable to be thrown out by the frost. When the snow and frost are disappearing in March or April, is the most dangerous period of all. If the water produced by the thawed snow becomes severely frozen upon the surface, the wheat plants are very liable to be destroyed. Thaw is still more injurious when it comes on very slowly and is accompanied by alternations of frost. When there is sunshine during the day and severe frost during the night, or when there happens a fall of snow during the night, which is soon melted by the sun, the thawed soil becomes saturated with water, which is unable to penetrate through the inferior stratum, and still continues to be hardened by the frost; this water freezes during the night, and, in doing so, raises up the superficial layer of the earth subjected to its influence, and with it the plants growing there. During the day the earth thaws again, and the earth falls back to its original position; but the plants being lighter, remain on the surface wholly denuted of soil. For several successive days and nights we have seen the same thing repeated, and the greater number of the plants uprooted, and the roots themselves broken where their lower extremities have been tightly fixed in the frozen earth. Sometimes the most vigorous plants cannot entirely resist such weather; those, however, which have most roots and are most tufted from early sowing and sufficient covering, bear it better than others. The more porous and light the soil, the greater the danger of the wheat plants. We have had fall sown wheat looking extremely well in the latter end of March, and subsequently nearly all destroyed from the above causes, but the soil was light and porous, and the seed had been covered only by the harrow. We have not sown fall wheat for some years past, not having any strong clay suitable for it. Every experienced farmer will know that the cause of the failure of fall wheat in Eastern Canada is generally that we have stated, and knowing the cause, there doubtless may be a remedy. Light soils will answer better for spring than fall wheat, but in all cases, the greater the proportion of clay a soil contains, the better it is qualified to produce a good crop of wheat. Soils often appear to be of good quality but do not produce good crops, which may be attributed to their containing some injurious ingredients that require to be corrected or improved by the application of lime, marl or ashes, and the latter may be had by burning a part of the soil itself. Unfortunately, these matters obtain very little or no attention in this country. The last season disappointed the farmers' hopes in regard to wheat more than any previous year during our residence in Canada. The cause is easily accounted for; the seed was not generally sown previous to the 21st of May and down to the same period of June. From that time to the 30th July the weather was most favorable

to its growth, and the general appearance was most luxuriant. The heavy rains in the latter end of July and in August laid most of the wheat crop while it was in this soft and luxuriant state and before it came into ear, and although it was partially raised again, the stems were bruised and injured so much that they never rec vered a perfectly upright position. This misfortune was peculiar to the past season. We believe, however, that under a more perfect system of husbandry, we would not be so liable to such casualties. Very abundant manuring with superficial and badly executed ploughing, accompanied by thick sowing, is one cause of the laying of grain, in almost any season; but this might be remedied by deep and careful ploughing, with thin sowing and covering the seed sufficiently. In the latter case, the stem has more strength at the lower part, because the roots not being too close together are furnished with sufficient offsets; and in the former, it rises too rapidly, and obtains height and strength of blade at the expense of the stem, hence rendering it weak and unable to retain an upright position in heavy storms of rain. The strength of the stems, particularly towards the bottom, is of much more importance to insure a good crop, than the height of the stem. It will invariably be found, that it is only when the stems are proportionally strong, that the length and fullness of the ears will be in proportion to the straw. We very frequently see thin stems attain considerable height, and, nevertheless, bear small ears. It is a good promise of a crop to have the knots of the stem thick. When a field is in full ear and the flowering commences, the crop ought to present a uniform surface, all the plants of the same height, and the ears of the same size and fullness. When this is not the case, and some ears shoot up higher than others, while many are poor and stunted in growth and size, it does not promise a large produce. Spring sown wheat, in consequence of the short time it has to come to maturity, requires that the soil should be in a very good state of preparation, well tilled, pulverized and cleaned. By this means the plants can take sufficient root in the soil to strengthen the stem and nourish the crop. How defective then must be the usual preparation of the soil for the sowing of spring wheat in Lower Canada? How necessary is it, therefore, to adopt an improved system of cultivation for wheat, if we are desirous to raise good crops. Up to the time when the blades shoot and the ears become developed, wheat thrives best in a warm temperature, varied by occasional rains, as such weather is favourable to the growth of its lateral shoots. When it is about to flower, dry warm weather is most favorable to it. After the grain is formed and nearly matured, a moderately moist temperature or occasional showers is the most beneficial one; continuous drought and very warm weather is apt to mature the grain too quickly, and it is then not so perfect as it would be under opposite circumstances. Heavy rains, however, are exceedingly injurious, in almost evey stage of the growth of spring wheat, and particularly before the grain is formed and nearly at maturity. We need not remind farmers how necessary it is they should wash the seed wheat perfectly before sowing in a strong brine of salt and water, skinning off all the light and imperfect grains, and then mixing lime or ashes to dry the seed for sowing. It would be very desirable to obtain varieties of wheat that might be more suitable for spring sowing than those we have. Thaer says: "If real autumnal wheat is sown in February or the beginning of March, a portion of its lateral offsets produce stems and ears which come to perfection the same year, though they yield but a scanty crop. If the grain thus obtained be sown in the following spring, it will approach nearer to the nature of spring wheat, produce more stems and ears, and ripen quicker; and if the grain arising from the second crop be again sown on the third spring, actual spring wheat will come up. On the other hand, if real spring wheat be sown in the fall, and the winter be of favourable temperature, it

will succeed tolerably well, put forth ears and ripen before the autumnal wheat. The grain obtained from it, if sown, produce plants that bear the winter better, and approach nearer to the nature of autumnal wheat, remain longer in the ground, and shoot up taller and stronger. On the following year it will have acquired all the characteristics of autumnal wheat, remain still longer in the ground, and shoot up still higher and stronger." Might not experiments be made in the way suggested by Thaer? Plants might be raised under cover in February or March, and planted out at the commencement of spring, and thus a trial be made of raising a new variety of spring wheat. The white Lammas wheat of England, would be a good variety to make the experiment with, and if it bould be made to answer as a spring wheat we believe it would succeed well in our warm summers. Last fall we sowed a few grains of the black-sea wheat, and it had a healthy appearance on the first of April, unless injured since. If it should come to maturity we shall know more of this matter. Thaer further states, that he does not consider the Egyptian wheat as a distinct variety, since it loses all its numerous shoots and its distinguishing characteristics on being sown on poor land, as these shoots arise solely from a superabundance of succulency. After the wheat has been reproduced several times on poor land, it ceases to bear the slightest trace of that multiplicity of ears by which it was originally distinguished. The grain, however, becomes larger as the number of the sprouts decrease. From these circumstances, it may be very probable more suitable varieties of wheat may be easily propagated by making the trial. There are in England at present over one hundred varieties of wheat, and we suppose they may all have been derived from one original stock. We believe, also, that the various colours of the grain have been produced by soils, climate and cultivation, as well as the beards on one and not on another variety. Wheat, as we have frequently stated, should be staple produce of Canada, and every possible means should be tried to obtain varieties suitable to our soil, climate and other circumstances. This matter is of too great importance to be left to private enterprize, but is one well entitled to the most serious attention of the Government, as it might be the means of doubling the value of the production of Eastern Canada.

From all the reports we have seen we are led to conclude, that the cultivation, of flax either for seed or fibre, or for both, would be as profitable a crop as we could grow, provided the cultivation was what it should be, and the crop managed properly without waste. It will, however, be unjust to attribute any failure or disappointment that may occur in the produce of a crop of flax to the cultivation of that plant, unless every part of the management is executed properly. We have had some experience in this matter in the old country, and know what high prices have been paid for the use of land for a year to grow flax upon it. From six to eight pounds sterling the Irish acre, equal to about four pounds five shillings to to six pounds currency the French arpent. The persons who hired the land having to dig and harrow the soil, purchase the seed and manage the crop in every way, and land was more in demand for this purpose, and at this high rate, than for any other. The poor employed themselves in manufacturing the produce, although the wages or profit they made by it was not of large amount, but it was some help, and we remarked that where flax was grown to a considerable extent the condition of the poor was much better than where it was not, and we believe this is the case in Ireland up to this time. We consider that for most domestic uses, linen is far preferable to cotton, with the further recommendation of its being a native product. The seed we can also manufacture into oil, and make beef of the residue. We shall have to resort to other crops than those we are accustomed to raise, that we may have a greater variety. The greatest defect in any

system of agriculture, is the neglect to cultivate as many different species of plants as the lands can produce in perfection. If we did not grow flax for the fibre, we undoubtedly might for the seed and pay very well. When sown for the seed, not more than half the seed is necessary that would be required to be sown for the fibre. For the latter, two bushels are generally sown. The land ploughed in the fall should be again ploughed in the spring, perfectly pulverized and cleared of all the roots of every sort, and the seed put in as early in the spring as the land will be in a fit state to harrow. The soil should be made quite fine before the seed is sown, and then covered with a light harrow. If the land is in a good clean state the flax will come up very rapidly and seldom require weeding. When to raise seed is the object, it is often sown in drills at 8 to 12 inches apart, and should be weeded carefully of any weeds. The quantity of seed produced from one acre varies from 15 to 30 bushels. This would pay better than wheat, without setting any value upon the fibre. The bolls or chaff are said to be good for cattle, and are frequently ground up with the seed for that purpose. Four quarts of the bolls are considered equal to one pint of pure seed, and either are the proper quantity for one feed for an ox. As the seed might be required for stall-feeding the winter after it is grown, it should be taken off with the ripple and well dried before it is stored, but the stalks may be kept over in stack until the following spring before it is steeped, unless it can be disposed of to those who may have mills for dressing. If the seed is not wanted until the spring after it is grown, it will keep well left on the stalks in stack, but it must be kept from rats or mice as they are very fond of flax seed. An acre of good flax should produce from 30 to 50 stone of clear flax, *or from 4 to 6 cwt., besides some of inferior* quality and tow. It has been found that one acre will produce from two tons to two and a half of stalks, and that each cwt. of stalks will produce from 14 to 18 pounds of clean dressed flax, besides tow. The stalks, of course, sun dried and safely put up in stacks or housed and the seed taken off. This estimate can readily be proved by experiment, and when it is satisfactorily ascertained, there would be no difficulty of fixing the price which should be paid to the farmer for the stalks by those who would have machinery for dressing flax. The stalks will, however, be of value in proportion to their fineness, as the fine will yield more flax in proportion to the weight than the coarse. We have seen a statement that the stalks have been sold in England at three pounds sterling the ton. If they were worth two pounds currency the ton here, they would, with the value of the seed, be worth more than any crop we grow.

We have received the Report of the Committee appointed by the "New York State Agricultural Society," to whom was referred a message of His Excellency the Governor of that State, relating to Agricultural Schools, &c., and to the necessity of their establishment. The Report in question highly approves of such establishments, and recommends them most strongly. The following is an outline of the plan proposed for Model Farms to be attached to Agricultural Schools:—"A farm of liberal extent, embracing, as far as practicable, a great variety of soils, where the various crops could be raised and experiments made, to test the qualities of the soils and their adaptation to particular crops. The farm should be stocked with every species of domestic animal, from the highest to the lowest, as well with the inferior classes or breeds as the superior, that the pupil may be practically taught how to distinguish them, as well as the advantages of one breed over another upon the same feed and under the same treatment. The Institution *should embrace several departments, of which* we would notice the following, not, however, going into a full account of what should constitute the studies and instruction of the Institution. The scholars should be instructed to

estimate the quality of soils and their adaptation to particular crops, the most profitable rotation of crops, the best and cheapest method of draining, irrigation and fertilizing the soil and preparing them for crops; the sowing, management, harvesting and securing the crops, in all of which the pupils should take more or less a working part. The pupils should be instructed in agriculture, chemistry, vegetable physiology, the compound parts of every crop and the best time and manner of its application. A Veterinary department. The pupils should be taught how to distinguish between the good and bad properties of animals: the best methods of improvement and of remedying defects in breeding; the diseases of animals and the remedies to be applied; the management of the dairy in all its details; botany and horticulture. All to be under a competent superintendent, and the necessary assistants to teach the pupils practically all the details of good husbandry. The most careful management to be observed in order that the Institution should be able to pay its own expenses." This is exactly the plan we have submitted more than twelve months ago, but, regret to say, that no action has yet been taken in the matter. Agriculture with us, has, in a great measure, been left to shift for itself. We copy the following extract from a speech of the great Washington on the opening of Congress, Dec. 5th, 1796, as given in this Report: "It will not be doubted that, with reference either to individual or national welfare, agriculture is of primary importance. In proportion as nations advance in population and other circumstances of maturity, this truth becomes more apparent, and renders the cultivation of the soil more and more an object of public patronage; Institutions for promoting it grow up, supported by the public purse; and to what object can it be directed with greater propriety?" We may well echo—to what indeed? for in no country on earth at this moment, is the support of the public purse more necessary to promote agricultural improvement than in Canada.

AGRICULTURAL REPORT FOR APRIL.

The month of April was most unfavourable for executing any of the spring work up to the 24th. The snow had disappeared, and there was a prospect of the spring opening early up to the 10th, but the weather suddenly changed to be very cold—the thermometer falling to 14°, considerable snow fell, and the country assumed the appearance of winter. This put an end to all hope of a very early spring, which we at one time expected. This change in the weather will have prevented the execution of much spring work previous to the 1st of May. Farmers will, consequently, have to use great diligence to have the spring sowing and planting finished as it should be, before to the end of May. To sow or plant after that period, (except buck-wheat or turnips,) is not by any means desirable. The sowing of wheat should not be delayed for a day after the 21st of May. From the mode of cultivation usually adopted here for wheat, pasture land or land in grass, ploughed once in the fall, a good crop of wheat can scarcely be expected, remaining over as it does throughout a long winter, perhaps very imperfectly drained, and then not sown until the latter end of May; we may imagine that the soil cannot be in the very best state of pulverization and cleanliness from grass and weeds, to be sown with wheat, with any prospect of producing a good crop. It was very different when seed was sown early in April, while the soil was fresh and mellow after the winter's frost. There should be some means adopted to stir the soil before the seed is sown. This would afford a better covering for the seed, and disturb the roots of grass and weeds, check their growth, and give the wheat, at least, an equal chance with weeds. When this is not done, it might be possible to shovel the mould of the furrows over the ridges, and this would be some amends for not adopting better means of stirring the old ploughed soil. No wonder our wheat should be liable to be laid by any heavy rain that may fall after the wheat attains some length of stem.

The roots cannot be very far extended in an ill-cultivated soil, and therefore cannot grow very strong or healthy stems, or large full ears. All these facts must be perfectly manifest to any farmer who will take the trouble to consider the subject, and will account at once for deficient crops. A very favourable season we may chance to succeed better, but farmers should cultivate so as to be prepared for adverse as well as favourable seasons—we mean all in their power should be done. As wheat is the most valuable and nutirtive of several grains, so it requires the best soil and most careful cultivation and management, and to expect good crops without performing our part well, would be absurd, and only bring us disappointment. We have in another part of the Journal treated of the cultivation of other crops, and we need not refer to them here. In our next Report we hope to be able to say that all the seed has been sown and planted, and promise a good harvest. The meadows have been much exposed to intense frost this year, and we fear they will suffer from it, particularly the frost of this month. We cannot, at present, form any certain opinion of what may be the result. The meadows and pastures will, we hope, receive all due attention from the farmers, with a view of raising a better and additional number of cattle and sheep, which, we think, would be likely to pay better than bad tillage or raising too large a quantity of the low priced grains, unless for feeding beef and pork. Raising these latter articles, with all due attention to the dairy, and obtaining a good marketable produce from it, should obtain all the careful attention we can give them. We must, however, to make the dairy profitable, have the produce equal to any made on this continent, which there is nothing to prevent us doing, by giving due attention to the business, and endeavouring to understand the management of the dairy fully. We know that the milk of our cows, in its natural state, is as fit for making good butter and cheese as any milk on earth. Our pastures are not certainly of that fertility that would produce the largest quantity of milk, but they can be made so. It will require all the skill and industry that is possible for the farmer to exercise, to keep him in the enjoyment of the comforts he ought to possess from the present prospect of affairs. Other classes and interests will suffer if the farmer is not in a condition to expend, however moderate the amount may be. It may be very well, in theory, that agriculturists should live upon their farms and their own products, and not expend a shilling in a year, but get all they can, and keep all they can get. But the practical working of such a plan would very soon prove how unsuitable it would be for the present state of society or the state of affairs in Canada, unless, indeed, all our population at once become farmers, and live in the country.

"Eat their own lamb, their own chicken and ham,"
"Shear their own fleece, and wear it."

This certainly might be done, were we to begin and construct a new state of society altogether; but unless we resolve to do this, we may as well go on in the old way—and to make all we can, and expend what we can spare—buying from those, who we expect to buy from us. We suppose that farmers will not venture to plant potatoes on a very extensive scale this year, from the great uncertainty of the crop. We recommend early planting, on dry soil, and if farm-yard manure is applied, that the quantity should be small, and not allowed to come in contact with the seed planted. The market has been well supplied with excellent beef, mutton, veal and lamb, and the prices moderate. Beef sold to the butchers at 20s. to 30s. the 100 lbs.; mutton of excellent quality, 20s. to 40s. each, by the sheep, weighing 60 lbs. to 100 lbs. the carcass; well fattened calves, from 15s. to 40s. each; lambs, 5s. to 15s. each; pork, 25s. to 30s. the 100 lbs.; wheat, 4s. to 5s.; barley, 2s. to 2s. 6d.; oats, 1s. to 1s. 3d.; Indian-corn, 3s. 4d. to 4s.; beans, 2s. 9d. to 3s. the minot; fresh butter, 1s. to 1s. 3d.; salt butter, 7d. to 10d. per lb.; cheese of good quality, 6d. to

7½d.; inferior, 3d. to 4d. per lb.; Hay, 20s. to 30s. the 1600 lbs.; straw, 5s. to 10s. the 120 lbs. These prices are not likely to be higher for a considerable period as far as we can judge from present circumstances. We would urge upon the farmers the necessity of doing all in their power to keep down the weeds; and we cannot conclude this Report better than in the following words from the Penny Cyclopædia:—

"The whole process of cultivation is a continual struggle between the farmer and the weeds natural to the soil he cultivates: the sooner he subdues them entirely the less will be his subsequent trouble. And the perfection of agriculture is to produce crops of such vegetables as are useful and profitable, and are suited to the soil which is cultivated, while all others are excluded which might interfere with the crops to be raised. That much remains yet to be done in this respect on farms which are looked upon as models of cultivation, will be acknowledged on simple inspection. The almost universal adoption of the system of drilling and hoeing the crops tend greatly to the destructon of useless plants on arable land: much may yet be done by way of improving the produce of meadows and pastures by the destruction of all noxious and useless plants, and the introduction of those which are nutritous and improve the herbage, whether depastured or made into hay; and nothing is so likely to do so as a good system of alternate husbandry, where the best grasses are cultivated as carefully as the plants which are immediately applied to the use of man.

April 28th 1849.

In the last number of the Journal we endeavoured to show that, to constitute a "Practical Farmer," a most careful training and very considerable practical experience in every branch connected with a perfect system of Agriculture is necessary, and we believe that any man who is a practical farmer in the strict meaning of the terms, will support us in this opinion. The advantages of this training and practical experience in every branch of husbandry, are much more numerous and valuable than is generally imagined, and qualify a man to be a good farmer in every situation, and under every circumstance, if he be in possession of sufficient capital. Without this general training and experience, a farmer will not be able to make the most of the situation he may be placed in, by adopting that kind of farming most suitable for that situation. This is an evil which we see proof of every day in Canada; farmers adhering to their old systems, and the cultivations of the few kind of crops they are accustomed to grow, and cannot be induced to try any other, however profitable it might be to them. A well instructed practical farmer would not act in this way, but would vary his practice and management to suit his situation and circumstances, the quality of his soil, and the market he has for the sale of produce. From the present state of the country, these matters will require more attention than they have done heretofore. Farmers will have to raise such produce as will be likely to sell for remunerating prices. There is no advantage in producing what will not sell for prices that will refund the cost of production, and farmers will have to be cautious not to glut the the market with any article that cannot be exported; or if they do, they will reduce prices to any figure the purchaser may think proper to offer. We shall doubtless have to make great changes in our system of husbandry, to meet the material alteration in our intercourse with the Mother Country. We shall have to produce articles that will sell in the British Isles or elsewhere, such as wheat, beans, pease, beef, pork, wool, flax, hemp, and the seed of the two latter articles—butter and cheese. If all these are of good quality, they will sell at a fair price, and be constantly in demand. Other crops we may grow, but only for home consumption and upon the farm. Linseed might be raised profitably, and would probably pay better than wheat. By adopting a perfect system of Agriculture, we shall be most likely to succeed, because, in a perfect system, crops and cattle will be in due proportion, and a rotation of crops will insure us a variety of produce that will be more valuable than the crops we raise under our present defective saystem.

Sowing a mixed crop of potatoes and beans has been proved in the old country, by the

last three years experience, to be more profitable than either crop alone, and it is said that the beans tend considerably to ward off disease from the potatoes. Potatoes are planted in rows two feet apart, and the sets one foot apart, with a bean between the sets; or the potatoes are planted in rows, 18 inches apart, sowing beans in every third drill, but no potatoes. A crop of potatoes is thus raised, with one of beans, and neither much diminished by the other; but, on the contrary, each may be better than either would be alone. We would strongly recommend this plan, and we have not the slightest doubt that a larger produce would be raised in this way from an acre of land than could be obtained from it by crop of either potatoes or beans planted alone, independent of protection from the potatoe disease. They often sow beans and pease together, in the old country, and it is found a very profitable mode of cultivation for the farmer. The bean-stalk supports the pea-vine without injury to itself, and this causes the pea to be much more productive. The mixture of beans and pease, bruised or broken for horses, cattle or pigs, answers exceedingly well, and we believe better than either alone. Indian corn, grown for fattening cattle, is perhaps as profitable for that purpose as any crop we grow. The grain and cob, ground up together, produces a large quantity of food to the acre, and is excellent food for neat cattle in stall feeding. The cob should not, however, be mixed with the feed for pigs. Vetches are another good crop to cultivate here, and grows more luxuriantly than in the old country. They answer a good purpose to feed green to stock when pastures become dried up in August.

We have often heard farmers assert that large animals thrive better than small animals upon the same food, but we believe experiments are seldom made with such exactness as to settle this matter clearly. On the same pasture, in summer, a small animal may have an equal chance with a large one, provided they are sent to pasture in equal condition. In winter, large and small animals, kept in the same yard, very rarely have an equal chance of obtaining food, nor in the stables, unless in separate stalls. From a long experience, we have invariably found that the smaller and weaker cattle, fed in the same yards with larger and stronger cattle, never are allowed to take their proper share of the fodder, and this we conceive to be one chief cause, that small sized cattle are supposed not to thrive so well as larger sized. We have found this to be the case in cattle-houses, that almost every animal was disposed to be master over another, when there was not a complete division between each, and we adopted the plan of separate stalls in order that each animal should be able to take care of itself, and eat the food assigned to it. Any man who takes the treuble to attend to this matter will see small cattle put to the wall or fence, and afraid to touch any fodder until the larger cattle have satisfied themselves and taken the best, and perhaps trampled upon what remained. Our remarks are not intended to favour any particular sized cattle, but we are anxious that the smaller size should not be condemned upon insufficient grounds. In estimating the comparative value of animals, we have to ascertain which will yield the greatest return in proportion to to their cost and the food they consume, and this can only be done by the most careful experiment, allowing an equal chance to each animal in winter and summer. A small sized beast not allowed to have a fair proportion of food in winter is not in good condition coming to the pasture in spring, and therefore cannot have an equal chance of yielding the same produce in milk, butter, cheese or beef, as the larger animal that is in good condition when going to pasture in spring. This is a subject well deserving the attention of farmers, in order to satisfy themselves as to the most profitable description of cattle, and which will pay most in proportion to their cost and maintenance.

We have long recommended the increase and improvement of pastures and meadows in Canada, as a necessary means of raising good cattle, and the products from them, as well as the production of good crops of wheat and other grain. The wretchedly bad pastures that generally prevail here have a most injurious influence upon our Agriculture, and prevents the possibility of our having good or profitable cattle or sheep. If we had a due proportion of rich meadows and pasture on every farm, our agriculture would be in a very different condition from what it is. With fertile meadows and pasture we may at any time insure good grain crops, and we may keep good cattle and sheep also. There cannot be a more certain proof of a bad system of husbandry than to see poor pastures and an insufficiency of meadow. It, in the first place, shows that the stock cannot be good or yield profitable returns; and in the next, that there cannot be any regular rotation of crops observed. We will not object to a small proportion of pasture on a farm, provided that all the arable upon that farm is cultivated properly and yielding large crops, but however small the quantity of pasture, it should be of good quality. We hold it to be impossible that a good system of agriculture can be in operation where there is a large proportion of the farm left as a pasture that was under crop the year previous, and allowed to lie fallow without any grass-seed, to be ploughed up again the following year. Such pastures cannot yield much of butter or cheese, make good beef, maintain cattle or sheep in a profitable state of improvement, or keep a sufficient stock to manure the land for a future crop. If land was some years kept in pasture, the roots of the grasses, when ploughed up, would manure it considerably; but when it is allowed to remain only one year, producing a sort of grass and weeds, there are not many roots formed, particularly when no grass-seed are sown. Experiments have been made by collecting all the roots of old pasture, washing and drying them, and it was found the roots weighed four times as much as the dryed crop of hay of the same land. This proves the advantage of keeping land in grass. As the absence of good pastures and meadows is the proof of bad farming, so is their presence an indication of a better system of husbandry. We do not say that a farmer may not have all his land in tillage and meadow without any pasture, keeping his cattle confined and fed under cover throughout the year, and nevertheless farm well and profitably. But where this is not done, and cattle are kept on poor miserable pasture, good farming is out of the question. There is another very objectionable custom here of allowing the whole of the farmers' stock to pasture together. All these matters are of importance, and until we think them so, and manage them more judiciously, we cannot expect to farm well or to our own advantage.

The Directors of the Lower Canada Agricultural Society met at their rooms in this city, on Tuesday, the 3d of April, in conformity to notice to the members, for the purpose of electing a President, Vice-Presidents, and Secretary, and also various Committees for the ensuing year. John Yule, Esq., of Chambly, being unanimously elected President, took the chair, when the following gentlemen were elected Vice-Presidents:—Honbles. P. B. DeBoucherville, F. P. Bruneau, Adam Ferrie, G. R. S. DeBeaujeau, R. N. Watts, Esq., M. P. P., and A. Jobin, Esq., M. P. P.

William Evans, Esq., was elected the Secretary.

The following Committee were chosen:—

Executive Committee.—Major Campbell and A. Pinsonnault, Esq.

Finance Committee.—Hon. Adam Ferrie, John Molson, and Alexander Morris, Esquire.

Journal Committee.—Hon. A. N. Morin, Charles Penner, and Alexr. Morris, Esquires.

By order,

WM. EVANS, Secretary,
L. C. A. S.

Major Campbell, Civil Secretary, has placed in our hands a sample of maple sugar, made at his Seigniories, at Mount St. Hilaire, by the daughter of a miller, named Rousseau, of superior quality to any we have ever seen, and almost equal in appearance to the best refined loaf sugar. The process of making is very simple, straining the sap through flannel, and then boiling it down slowly in an *earthen* vessel, instead of an iron one. This sample may be seen at the Rooms of the Lower Canada Agricultural Society, and is sufficient proof that Maple Sugar of a quality equal to any sugar imported might be manufactured here. All that is required is, to collect the sap carefully, strain it, and boil down in an earthen vessel. This is a native manufacture that should be attended to by all who have the maple trees in sufficient number. We consider this information so kindly given by Major Campbell, of great importance, if acted upon, as there are abundance of trees in the country that would afford an ample supply of sugar for the whole of Canada.

To provide the means that are necessary to promote the improvement of Canadian Agriculture, will do more to secure the general prosperity of this Province than any other measures that are in our power to adopt, and it is a very extraordinary circumstance what little attention is devoted to an interest that is of infinately more importance to the inhabitants of Canada than any other in it. We have, for many years, endeavoured to attract some attention to this subject, but we have failed in inducing any practical measures that would be calculated to produce the general improvement required. *There can be no difficulty* in expending our means when we have got them, but the chief point is to create the means to expend. One would imagine that, to create the means to expend, should be the first object of the solicitude in every conntry. The expenditure of our means, whatever they may amount to, is quite a sample affair, compared with the skill and industry necessary to be exerted in creating them; and it is utterly vain to expect that we shall have much to expend over what we are able to create by skill and industry applied to the proper cultivation and management of our lands and our cattle. The products of our agriculture must, to this country, be the life and soul of her prosperity, and in exact proportion to the prosperous condition of Canadian Agriculture will be the general prosperity of the country, and cannot go beyond. We make this statement without the slightest apprehension that it can be disproved by any arguments that may be advanced, however plausible. It, therefore, remains with those who are in a position to do so, to provide by every possible means, that Canadian Agriculture shall be improved to the uttermost, so far, at least, as affording a suitable education and proper instruction to those who may be hereafter employed in agriculture. Let it be manifest to all, that our agriculture is regarded in that light which its vast importance intiles to be by those who should be capable of estimating its value, and it will very soon assume a different position in this country.

We consider it of great importance to Canada that we should have manufactures of Agricultural implements as well as of other articles, and it affords us much satisfaction to have it in our power to state, that we have implements manufactured in Montreal, equal, if not superior, to any munufactured on this continent, and some of them very much superior to any we have had an opportunity of seeing in North America, although we have seen very extensive depositiories of implements in Canada and the United States. We have already noticed the implements manufactured by Mr. Fleck, St. Peter street, that only require to be seen to be approved of, and there is the additional advantage, that Mr. Fleck understands his business so well that he is ready and anxious to adopt any improvement that may be suggested to him, and this is what we can-

not get many mechanics to consent to—they are generally so confirmed in their own opinion. In addition to Mr. Fleck, we have to notice Mr. William H. Rice, who has his manufactory at No. 23, Notre Dame street, within two doors of the office of the Lower Canada Agricultural Society. The cribbles and fanning machines, manufactured by him, are the best we have seen in North America, and we can, without hesitation, recommend them to farmers. We have seen them at work in grain stores, and they clean the grain effectually. In one store we were assured that one thousand bushels of wheat could be cleaned for shipment in one day. Mr. Rice's screens and sieves for grain are of the best description, and having a wire-cloth manufactory, he can furnish any description of sieves or screens that may be required for any particular purpose. We hope subscribers will not suspect us of recommending implements unworthy of recommendation. Any who do, we would invite to visit the stores of Mr. Fleck and Mr. Rice, and judge for themselves. We conceive that all friends to Canadian prosperity should give every encouragement to native mannfactories when the articles are good. If these manufacturers are encouraged, they will be able to manufacture every implement required by farmers, as we are convinced they can do so. We do not approve of inferior quality of implements however low priced. Good implements, and experienced, and active men to use them, is what the farmer requires to make his business profitable, and without these it cannot be so. Want of capital may prevent many from purchasing the former advantages, and the absence of experienced articultural labours precludes those from hiring the latter. We have it in our power, in a great measure, to remedy most of these disadvantages—first, by encouraging native manufactures, and next, by establishing the means of regularly training youth in all the works of a well conducted farm. We trust these suggestions will obtain all the consideration that the interests of our agriculture is entitled to.

Barley requires a rich and well pulverized dry soil. Should the soil require manure, it should be short or fermented, as the nature of the grain renders it necessary that the nutriment intended for it should be properly prepared for and adapted to its organs. This is the more necessary from the short time it is sown until at maturity. Barley would always be the better for having the seed well covered, two inches deep at least. This would be best effected by sowing in drills, and as we have no regular drill machines here, the drills can be made with the plough, the seed sown broadcast and then harrowed, most of the seed will fall into the drills. Heavy rains after the barley is sown is very injurious to it. No crop will succeed so well without much rain as barley. We suppose its cultivation will not be so extensive in future as it has been. It is, however, excellent food for fattening cattle and pigs, when coarsely ground, and scalded with hot water. Barley should not be sown until the weather becomes fine and the soil perfectly dry. It is one of the best grains to sow grass seeds with, provided it is not sown too thick.

Parsnips.—The following method for their cultivation is recommended in the "Irish Farmer's Gazette."—"The simplest method is to sow the seed in ridges, with deep furrows to secure dryness, and short manure trenched at least nine inches deep. Steep the seed in manure drainings for 24 hours, then mix with sand or dry mould to separate the seeds; dibble them six inches assunder across the ridge, three or four seeds in each hole, which to secure rapid generation may be filled with compost; let the rows be eight inches apart at least." This mode of culture will admit of weeding and thinning the plants without any difficulty. The seed should not have more than one inch of covering, and this of compost or light rich mould.

CARROTS.—This most useful root may be cultivated in a similar way to the parsnip, and we recommend it to the attention of farmers as one of the most profitable crops he can grow, to a certain extent in proportion to what he may require for his own stock, but not for sale. They are more easy to cultivate than potatoes, the expense of seed scarcely anything, and the produce is of considerable value upon the farm for horses, cows and pigs.

MANGEL-WURTZEL.—We have, in several numbers of this Journal, given the various modes of cultivation of this plant. The soil should be in the best condition, well manured; the seed steeped in manure draining for at least twenty-four hours previous to sowing, and it should be sown as soon as possible in drills 24 to 30 inches apart. It is not necessary to cover the seed very deep. The land should be perfectly well drained, or it cannot be in a proper state to produce a good crop.

REMARKABLE PLANT OF COW PARSNIP.—At the nursery grounds of Messrs. Blackhouse, Fishergate, York, is now growing a splendid specimen of "Heracleum gigantum," the "gigantic cow parsnip plant." It is botanically allied to the common carrot and parsnip, and is therefore an umbellifer. It is biennial; sown in autumn, it perfects its growth in the following summer. A tolerable estimate may be formed of its astonishing rapidity of growth, from the following measurement, previous to which it may be stated, that the present subject was sown in August of 1847, and showed no signs of special vigour until early in May of the present season. Its dimensions are as follows:—Height ten feet, the stem being 10 inches in circumference at the base. A single flake of the leaf, which is formed of three equal divisions, is three feet six inches in length, and the entire length of one leaf, including its stalk, is six feet six inches. The foliage of this single plant extends thirteen feet in width, thus giving a circumference of 39 feet! It is calculated that it would require a period of ten years or more, for a plant of the common hawthorn of our hedges to attain an equal diameter of growth with that, which, in the above instance, has, to a great extent, been formed in the almost incredibly short space of two months! Its flowers are of a creamy white colour, borne on long radiating pedicles, or stems springing from a single focus or centre, like the spokes or wires of an umbrella, and graduated in length, so as to form remarkably large and slightly rounded table-like heads or umbel from 12 to 18 inches across. The rapidity and luxuriance of its growth may form a parallel with the most wonderful instances of tropical vegetation, and is considered to be the largest known plant of the order to which it is physiologicall allied. For its truly magnificent growth, especially as a hardy plant, thriving in the commones soils, it is well worthy of a place in every garden sufficiently large to display its proportions, o where vegetable structure is admired. Richly manured ground would no doubt induce much greater vigour than that now described.—*Nottingham paper.*

CURE FOR COLIC IN HORSES.

SIR,—I beg you will find space in your valuable GAZETTE for the insertion of these few lines relative to a mare in foal, belonging to my master, W. B. Smythe, Esq., of Barbaville House, which had taken extremely ill of colic on the evening of yesterday, the 7th inst. I tried experiments, by giving linseed oil, spirits of turpentine, laudanum, warmed beer, &c., all of which proved ineffectual. I then took six quarts of lukewarm water, and rubbed a quarter of a pound of yellow soap on it, and had one-half of the same given as an injection; and in three-quarters of an hour after I had the other half given, and then had the animal trotted lively for about ten minutes, and then brought in; in about five minutes after the animal found relief from natural causes. I afterwards mashed her with bran and kept her warm, and she is now perfectly recovered.

SECRETARY'S OFFICE,
Montreal, 25*th April*, 1849.

SIR,—In reply to your letter of the 12th ultimo, I have the honor to enclose to you, for publication in the Journal of the Agricultural Society of Lower Canada, the accompanying copy of a statement furnished by the Deputy Inspector General, showing the date of the organization of each County Agricultural Society in Lower Canada, established under the provisions of the Acts 4 Will. IV., cap. 7, 8 Vict. cap. 53, and 9 Vict. cap. 24, as far as the returns made to the Government afford the information. I regret that the extreme pressure of the Public business has prevented an earlier compliance with your request.

I have the honor to be, Sir,
Your most obedient servant,
J. LESLIE,
Secretary.

Wm. Evans, Esq.,
&c. &c. &c.

STATEMENT shewing the date of the organization of each County Agricultural Society in Lower Canada, established under the provisions of the Acts 4 Wm. IV., chap. 7; 8 Vict. chap. 53; and 9 Vict. c. 24, as far as the records of this Office afford the information.

Districts.	Counties.	Date of first organization.	Paid as District Society for the years
Montreal	Montreal	Prior to 1845	1845
	Two Mountains	Do	1848
	Do No. 2	18th June, 1846	
	Beauharnois	Prior to 1845	1847
	Huntingdon	Do	1846
	Do No. 2	21st April, 1846	
	Rouville	Prior to 1845	
	Do No. 2	22nd February, 1847	
	Chambly	29th June, 1844	
	Do No. 2	10th February, 1847	
	Berthier	2nd September, 1845	
	Missisquoi	30th June, 1845	
	Terrebonne	17th July, 1845	
	Shefford	23rd February, 1846	
	Verchères	27th February, 1846	
	Do No. 2	25th February, 1847	
	Vaudreuil	23rd February, 1846	
	Richelieu	22nd February, 1848	
	Do No. 2	5th February, 1849	
Quebec	Quebec	Prior to 1845	1846
	Bellechasse	16th February, 1846	
	Dorchester	23rd February, 1847	
	Do No. 2	25th February, 1847	
	Megantic	22nd February, 1847	
	Rimouski	21st February, 1848	
Three Rivers & St. Francis	Drummond	Prior to 1845	1845
	Sherbrooke	24th June, 1845	1847
	Do No. 2	28th February, 1848	
	Stanstead	30th June, 1845	1846
	Yamaska	10th February, 1846	1848
	Nicolet	26th February, 1846	
	St. Maurice	26th February, 1849	
Gaspé	Gaspé	15th September, 1845	
	Do No. 2	12th February, 1849	
	Bonaventure	24th June, 1845	
	Do No. 2	15th February, 1848	

NOTE.—It is to be observed that the County Societies do not in all instances come in rotation according to the dates of their formation, there being other qualifications required by Law, as for instance the 13th section of the Act 8 Vict. c. 53, provides "that no Society shall after the 1st February, 1847, be entitled to become a District Society as aforesaid, unless the subscriptions for the purposes thereof, shall during each of the two years then last past, have amounted to at least £25 currency."

Some of the Societies before enumerated, which appear from the dates of their organization entitled to become District Societies, have not been so considered in consequence of the amount of their subscription not amounting to the sum required s above.

INSPECTOR GENERAL'S OFFICE,
Montreal, 21st April, 1849.

(Signed,) JOS. CARY,
Deputy Inspector General.

SECRETARY'S OFFICE,
Montreal, 25th April, 1849.

THRASHING MACHINES.

SIR—Having been requested by several eminent agriculturists at the Nation Cattle Show at Kilkenny in July last, to give a report on the relative merits of different kinds of thrashing machines; I have since kept the subject steadily in view, and at length, with the kind assistance of several manufacturers, and by means of much careful enquiry, personal observation, and experiment, I have been able to collect some practical details, which I thus publicly communicate, in order to invite discussion on a subject not yet generally understood in this country.

There are two distinct species of machines for separating the grain from the straw—one effecting the object by beating it out, the other by rubbing it out. The former is the kind most commonly in use; it is called the beater machine, and, in its construction, each manufacturer usually claims some improvement of his own application or invention. When the close drum-beater, with a straw-shaker, is worked by a pair of horses, yoked together to a single arm, going 3½ round in a minute, the out-horse travelling at the rate of about 3 miles, and the inside horse at the rate of 2½ miles per hour, the bearer moves at a velocity of about 3,000 feet in a minute, separating in that time about 22 $\frac{4}{10}$ lbs. of dry wheaten straw from the grain; a pair of revolving metal rollers suck in the opened sheaves from the hands of the workmen, to be submitted to the action of the beaters, and the grain heads of the sheaves require to be carefully introduced into regular quantities, in order to secure their being perfectly thrashedout.

A small skeleton drum-beater machine, without a shaker, is made at Limerick, by an ingenious mechanic of the name of William Southwell, which is moved by a pair of horses, yoked singly, each at an extremity of a long timber bar, passing across the diameter of the horse walk, and travelling at the rate of 3¼ rounds per minute, or 2½ miles per hour. This machine separates only about 14 5-10th lbs. of dry wheaten straw, and about 20 lbs. of dry oaten straw, per minute, from their respective grains.

The drum of the English rubber machine is an iron skeleton, circular frame, six bars at equal distances, parallel with the axle, forming its circumference, which bars, in some machines, are smooth, and in others jagged with projections, and revolve from 700 to 900 times in a minute, near to a concave trellis, or grating made of iron plates, rods of wire, to suit the form of the drum bars, by which the grain is perfectly rubbed out of the straw, and about one-third more work is done than by the beater The opened sheaves are thrown sideways to the drum of this machine without the intervention of rollers, and on this account it is generally distinguished in England by the name of a "bolter."

Machines on the rubber principle, called peg drums, are made in Cork, with drums, both open and close, with and without shakers. The one which I tested was an iron skeleton cylinder, having 68 square-shaped iron pegs, fixed in 8 bars, which formed the circumference parallel with the axle, each peg being 2¾ inches long, 7-8th of an inch diameter at the stem, and tapering to 5-16ths of an inch diameter at the point. This drum revolved from 500 to 600 times, or about 4,000 feet, in a minute, within a concave furnished with 80 similar pegs, allowing sufficient room between them for the passage of the grain, and which can be increased or contracted to suit all descriptions of corn, as well as of beans and peas. Two horses, the outside one travelling at the rate of 2½ miles, and the inside one at the rate of 1¾ miles, per hour, yoked together to a single arm, going 2½ rounds in a minute, separated 34 6-10th lbs. of oaten straw per minute from the grain, and may be estimated to deliver 26 lbs. of dry wheaten straw in the same time. This machine appeared to require a stronger draft than the beater, but how much this may be compensated for by the greater slowness with which the horses have to travel I am unable to determine. Having no rollers, it may be said to bolt its food, though the sheaves cannot be put in sideways, as the English bolter just described. The digestion is always complete, and the grain perfectly separated from the straw, and there seems to be no check to the quantity of feeding other than the strength of the machinery, or the power of the horses. It has one disadvantage which has hitherto prevented its general use—a chance stone in a sheaf, striking against the pegs, will sometimes break some of them in the middle of the thrashing, and driving them with the force of a pistol ball, may do serious mischief should any person be in their way; they are, however, easily replaced. To guard against injury to life or limb from such accidents, every one about the machine is cautioned not to expose himself by standing opposite the delivering face of the drum, *when there is no slacker*, the straw being in such case removed sideways by a girl with the hay-rake. Notwithstanding the liability to these casualties, I have not met with any person in possession of a peg-drum machine, who considered the possibility of such accidents to be of any serious objection to its use.

The comparative expense of thrashing with these machines may be estimated as follows, viz.:—

Limerick small skeleton drum beater.

	s.	d.
2 girls opening sheaves, at 5d.	0	10
2 do. collecting, shaking, and throwing out straw, at 5d.	0	10
1 man feeding machine	0	10
1 do driving horses	0	10
1 pair of horses, at 2s. 2d. each	4	4
For 8 hours' actual work	7	8

would be 11½ per hour, 1s. 1½d. per 1000 lbs. of dry, wheaten straw delivered from the machine.

Large, close drum-beater with shaker, as made in Cork, and at Ardee, in the county of Louth.

	s.	d.
3 girls opening sheaves, &c., at 5d	1	3
1 girl throwing out straw	0	5
1 man for feeding	0	10
1 do. driving horses	0	10
1 pair of horses	4	4
For 8 hours' actual work	7	8

Would be 11½d. per hour, or 8½d per 1,000 lbs. of dry wheaten straw.

Skeleton peg-drum, made in Cork.

	s.	d.
3 girls opening sheaves, &c., at 5d	1	3
1 girl raking straw from before the drum	0	5
1 do. throwing out straw	0	5
1 man feeding machine	0	10
1 do driving horses	0	10
1 pair of horses	4	4
For 8 hours' work	8	1

Would be 1s. per 1,000 lbs. of dry wheaten straw.

—Yours, &c., CHARLES BEAMISH,
Buckingham-place, Cork, February 6, 1849.

THE WILD ANIMALS OF OLD ENGLAND.

It is to be remarked that wild animals of large size were then far more numerous than at present. The last wild boars, indeed, which had been preserved for the royal diversion, and had been allowed to ravage the cultivated land with their tusks, had been slaughtered by the exasperated rustics during the license of the civil war. The last wolf that has roamed our island had been slain in Scotland a short time before the close of the reign of Charles the Second. But many breeds now extinct or rare, both of quadrupeds and birds, were still common. The fox, whose life is, in many countries, held almost as sacred as that of a human being, was considered as a mere nuisance. Oliver St. John told the Long Parliament that Strafford was to be regarded, not as a stag or a hare, to whom some law was to be given, but as a fox, who was to be snared by any means, and knocked on the head without pity. This illustration would be by no means a happy one if addressed to country gentlemen of our time; but in St. John's days there were not seldom great massacres of foxes, to which the peasantry thronged with all things that could be mustered. Traps were set, nets were spread, no quarter was given, and to shoot a female with cub was considered as a feat which merited the gratitude of the neighbourhood. The red deer was then as common in Gloucestershire and Hampshire as they are now among the Grampian Hills. On one occasion Queen Anne, on her way to Portsmouth, saw a herd of no less than five hundred. The wild bull, with its white mane, was still to be found wandering in a few of the southern forests. The badger made his dark and tortuous hole on the side of every hill where the copsewood grew thick. The wild cats were frequently heard by night wailing round the lodges of the rangers of Whittlebury and Needwood. The yellow-breasted marten was still pursued in Cranbourne Chase for his fur, reputed inferior only to that of the sable. Fen eagles, measuring more than nine feet between the extremities of the wings, preyed on fish along the coast of Norfolk. On all the downs, from the British Channel to Yorkshire, huge bustards strayed in troops of fifty or sixty, and were often hunted with greyhounds. The marshes of Cambridgeshire and Lincolnshire were covered during some months of every year by immense clouds of cranes. Some of these races the progress of cultivation has extirpated; of others the numbers are so much diminished that men crowd to gaze at a specimen as at a Bengal tiger or a Polar bear.—*Macaulay's History of England.*

WANDSWORTH—NEW CURE FOR CHOLERA.—To Mr. Howell, senior, the world is indebted for a recent discovery which will, it is fervently hoped, henceforth cause this malady to be one of the least dreaded. The hitherto unknown principle which has been adopted by Mr. Howell has been communicated to our reporter by that gentleman, with his full authority to publish the same. In arresting the collapse, which is the last and fatal stage of the disease, Mr. Howell sponges the whole body, and particularly the spine, with turpentine of boiling heat. This powerful stimulant at once produces re-action over the whole body, removing the coldness of the skin, disperses the cramps, averts the sickness, and enables the stomach to receive medicine and food. In five recent cases of cholera where collapse had set in this remedy was employed by Mr. Howell and his son with triumphant success.—*Observer.*

BEWARE OF THE RING BONE.—If colts stand on a plank or any hard floor that is not well littered, they will be subject to the ring bone. When breeding horses, we left the floor of the colt's stables, of the soil over which they were built. If this should be a deep loam, or of a clayey texture, then remove the soil about two feet deep, and replace it with sand, or the finest gravel to be obtained. Colts should also be let out to exercise in a yard, or open space, every day during the winter, when not particularly stormy; and in this yard there should not be older horses, or any horned animal which can do them injury. Being very playful, they are more apt to provoke attacks upon them than other animals.

DESTRUCTION OF LARKS BY THE TELEGRAPH WIRE.—One frosty morning last week, the platelayers upon the Whitehaven Junction Railway found no less than seventy larks lying dead beneath the telegraph wires between Workington and Maryport. The same day Mr. Forster, inspector of the line, found seventeen larks between Harrington and Workington. The heads of many of the birds were cut off, and their bodies otherwise mangled. Sea birds, and different kinds of game, have also occasionally been found dead, having probably come in contact with the invisible wires at night when in full flight.—*Carlisle Journal.*

FARMING IMPLEMENTS.

WE, the undersigned, certify that we have carefully inspected a variety of Farming Implements manufactured by Mr. A. Fleck of St. Peter Street, and we feel great pleasure in recording our unqualified opinion that they are very much superior to any article of the kind which we have seen manufactured in the country, and equal to any imported.

And we would particularly recommend to the notice of Agriculturists throughout the Province his Subsoil Grubber, which he has improved upon from one which took a premium of £10 from the Highland Society of Scotland. This implement seems well adapted to improve and facilitate the labours of the Farmer, and we cannot doubt that it will soon be extensively used in improved cultivation. His Scotch and Drill Ploughs are also very superior, and well worthy of the inspection of every one desirous of possessing a valuable article.

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March 1, 1849.

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MATTHEW MOODY, *Manufacturer.*

Terrebonne, July, 1848.

NEW SEED STORE.

THE Subscriber begs to acquaint his Friends and Customers that he has, under the patronage of the Lower Canada Agricultural Society,

OPENED HIS SEED STORE,

At No. 25, Notre Dame Street, Opposite the City Hall,

Where he will keep an extensive assortment of AGRICULTURAL and GARDEN SEEDS and PLANTS of the best quality, which he will dispose of on as favourable terms as any person in the Trade. From his obtaining a large portion of his Seeds from Lawson & Sons, of Edinburgh, who are Seedsmen to the Highland and Agricultural Society of Scotland, he expects to be able to give general satisfaction to his Patrons and Customers. He has also made arrangements for the exhibition of samples of Grain, &c., for Members of the Society, on much the same principle as the Corn Exchanges in the British Isles. He has a large variety of Cabbage Plants, raised from French seed, which he will dispose of to Members of the Society, at one fourth less than to other customers.

GEORGE SHEPHERD.

P. S.—An excellant assortment of Fruit Trees, particularly Apples, which he will dispose of at one-fourth less than the usual prices. Also, a large quantity of fresh foreign Clover Seed.

Montreal, April 1849.

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