Technical and Bibliographic Notes / Notes techniques et bibliographiques

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

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

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

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

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

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

☐ Additional comments:/ Commentaires supplémentaires:

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

10X	12X	14X	16X	18X	20X	22X	24X	26X	28X	30X	32X
						✓					

THE

CANADIAN AGRICULTURIST,

AND JOURNAL OF TRANSACTIONS

OF THE

BOARD OF AGRICULTURE, AGRICULTURAL ASSOCIATION, &c.

VOL. VII. TORONTO, DECEMBER, 1855. No. 12.

Agriculture, &c.

CLOSE OF VOLUME VII.—REDUCTION OF PRICE, &c.

With this number we complete the *seventh* volume of the *Agriculturist*, and again appeal to our friends, and the friends of agricultural improvement, for another year's support. While we are conscious of many short-commings, and while we admit that we have not, from various causes, been able to devote as much labour and attention to the work as we intended, and may be fairly held to have promised, yet we claim to have given all our subscribers full value for their money. The low price of the *Agriculturist*, and the small number who support it—the extent of the country and the number of those *who ought* to support an agricultural journal being considered—will not justify the expenditure of more time or money than we have hitherto devoted to its publication. For several years, the proprietor found himself annually out of pocket by the enterprise. Still, in the hope that the diffusion of intelligence, the increase of population, the growing necessity for improvement in agriculture, the emulation excited through societies, clubs, and exhibitions, would create the demand for a more extended circulation of the *Agriculturist*, he continued to send it forth on its mission. Our hope has not been altogether disappointed, though several causes, over which we had no direct control, have conspired to limit the circulation of the *Agriculturist*, especially during the past year Of these, we may mention the introduction, from the States, of an agricultural journal, at one time in good repute, and enjoying a large circulation in its own country, under the pretense that it was a *bona fide* Canadian publication, issued at Hamilton! This spurious concern was be-puffed by certain journals, either from a desire to injure the *Agriculturist*, or because their proprietors had some interest in the importation. It was sent all over the country, just at the season when subscriptions to the *Agriculturist* were about to be renewed, and thus many persons, and even some societies, were charitable enough to take in the stranger, and, we fear, lost their money for their pains. It appears that the managers of this Hamilton enterprise, collected all the money they could from yearly subscribers, issued three or four numbers, and then suspended! When they intend to supply the remaining numbers, we are not informed We did not think it worth our while to notice either the rise or fall of the so-called *Canadian Farmer*, except to pull off its false face; but we were, nevertheless, quite alive to the fact that it would injure this journal, not merely as a rival,—which we knew could not be long,—but by bringing discredit upon the agricultural press generally. It is difficult to ersuade those who have been cheated once

to run the risk a second time. The sins of one publisher are thus visited upon another; and, in this case, *we* are the victim.

Another event may have contributed somewhat to prevent that increase in the circulation of the *Agriculturist* which we might fairly have anticipated,—we refer to the issue of a quarterly journal by the Board of Agriculture. The Journal does not depend directly upon popular favor for support; it is a government work, printed and circulated at public expense. The first two or three numbers were little more than reprints of the *Agriculturist*, but the public are promised, in future numbers, original matter of a miscellaneous description, which will bring the Board's quarterly into competition more or less with other agricultural journals, not so fortunate in their financial arrangements. We do not apprehend any permanent injury to the *Agriculturist* from the circulation of the Quarterly Journal Official documents are seldom purchased by the public at large, and gratuitous distribution never awakens much interest. For a year or two, we may feel the effect of this new kind of competition, but as soon as the public become aware of the object and character of the respective publications, it will be seen that they occupy distinct fields,—that the one cannot supply the place of the other. We shall be glad to send over to the Journal the dry statics, and the heavy lumber, of which many readers complain, and confine our pages to the useful, the instructive, the practical, and the entertaining.

We have resolved to reduce the price of the *Agriculturist* to *half-a-dollar* in ALL CASES. As it passes through the mails *free of postage*, no one can hereafter object to it on the score of expense To prevent inconvenience in remitting money, no subscription will be received for less than *two copies* It will be easy for any person wishing a copy, to get his neighbor to take another, and thus remit a dollar at a time. To clubs and societies, the price will remain as heretofore. The limit as to number (not less than 20) will no longer be enforced. Any number from two upwards, will be supplied at $\$\frac{1}{2}$ each.

We intend to make some improvements in the next volume,—in appearance as well as in substance,—but of this we shall say but little, until our arrangements are completed. It is best to let these things speak for themselves.

We solicit early orders, and prompt payments On no other plan can we hope to escape difficulty and embarrassment in attempting so large a reduction of price.

IN-AND IN-BREEDING.—I perceive by your journal of yesterday, that Mr. Valentine Barford's show of Leicester rams will take place on Wednesday 6th of June. Mr. Barford is said to be the most successful in and-in breeder of sheep in the kingdom; for he has bred from the pure Bakewell blood for 65 years, without the aid of any other sort or kind, and bred from his own flock for upwards 50 years, maintaining size, weight and constitution. I have known his flock for upwards of half a century, and they appear as strong in their stamina as when I first saw them. Mr. Barford does not use a ram, unless he has a wide loin, a large breast and collar, and very wide between the forelegs, all of which points denote a hale constitution. I have known Mr. Barford's rams to be put to gigantic Lincolnshire ewes in the neighbourhood of Peterborough, which produced sheep that weighed 70 lbs per quarter, or 280 lbs. the carcase, fed by Mr. Bird, and slaughtered and exhibited at Peterborough. Although in-and in breeding has beatsthousands to a stand, Mr. Barford still shines in it, which shows his superior judgement. Smithfield, England, May 29th, 1855.—*Mark Lane Express.*

The *Maine Farmer* tells a pretty good story of a case of *garget* having been cured by giving a cow three pounds of sulphur, in the course of the same number of days, and remarks, that the doctor must have been a homœopathic heretic. If the cow's nose had only been dipped in a solution of chlorate of pottassa, and ignited, she would have made a splendid walking lucifer match.

HOW TO SHOE A RESTIVE AND KICKING HORSE.—Procure a sponge and saturate it with chloroform and sulphuric æther, equal parts, envelop the same in the smith's apron—in lieu of a more convenient vehicle—apply it to his horseship's nostrils, and in a very few moments he will be as docile as a kitten Just keep him fuddled—nothing more—and he will submit to the shoeing operation with commendable grace and *non resistance.*

Those who are in the habit of breaking *colts* must in order to be successful, resort to the *lash* of kindness. *Kindness* is a powerful weapon.

ON THE CHOICE OF BROOD MARES.

The following article, by an able contributor to the *Mark Lane Express*, may be read with profit by Canadian breeders:

THERE can be no doubt but that the breeding of horses of a superior description would amply repay those farmers who are possessed of the requisite knowledge; and whose farms present a suitable combination of light, productive, arable land, with pasture of good quality. The price of first-rate horses has advanced in a remarkable degree of late years and it is not likely to decline so long as the country enjoys an ordinary degree of prosperity. It is everywhere matter of co .plaint among buyers, that good horses never were so scarce as at the present moment; and the man who is possessed of a weight-carrying hunter, or a fine carriage horse, will, if inclined to sell them, not find himself long without a customer. Still, notwithstanding these inducements, the breeding of horses on a large scale is confined to a few districts, of which the principal are the East and part of the North Riding of Yorkshire, Lancashire, and part of Northumberland. On the Yorkshire Wolds it is a pleasant sight to see, field after field, with its half-score of handsome colts; some of them adapted for the chase, while others are destined for London carriage-horses. Though not so plentiful as I remember them some twenty years ago, especially the higher bred ones, they are still to be found in sufficient numbers to show that the farmer considers them a portion of his stock productive of profit, and consequently worthy of attention. Even there, however, breeders might with advantage propose to themselves a higher standard, and aim at producing hunters of the first class, which would surely remunerate them better than leggy and somewhat underbred coach-horses, which are every day less suited to the requirements of customers. One reason why hunters are not bred there so extensively as in former years, is, that farmers, either tempted by the high prices offered by foreigners, or under the pressure of agricultural distress, have, from time to time, parted with their best brood mares. Much is it to be lamented that either good mares or stallions should ever leave the country, they are nevertheless, abundance remaining from which to rear, with judicious management, a valuable breed of young horses. In the hopes of affording some encouragement to the extension of this important department of agriculture, I offer the following hints:—

One of the most important elements of success is the choice of brood mares. Never breed from a mare which is not well bred. By well bred, I do not mean having many crosses of blood; for many mares, nearly and even quite thoroughbred, are very undesirable animals to breed from. A well bred mare, in the true sense of the word, is one of which the progenitors, for many generations back have been carefully selected. In this respect Yorkshire breeders possess a considerable advantage over those who reside in districts where breeding is less extensively carried on. In the former country it is easy for a farmer, even of moderate means, to procure mares which are above the suspicion of being tainted with cart-blood. Owing to the abundance of both thoroughbred and "nag"* stallions, a roadster mare is seldom or never put to a horse of an inferior stamp to herself. Thus, with little or no trouble or cost, a class of mares is in the hands of Yorkshire farmers, where elsewhere it would require much expense and research to gain. With but little of outward show to recommend them, they breed excellent hunters, when put to a suitable thoroughbred horse; whereas mares of similiar appearance in other countries would only produce stock fit for harness—if, indeed, they were fit for anything. The reason is, that in the latter case the cart or other inferior crosses would reappear, and thus baffle the calculations of the breeders.

Perhaps mares, such as the Yorkshire farmers use, are on the whole, the safest for the agriculturist to breed from. Although not so high bred as some others, they are less expensive to purchase, and require less judgment in their choice than those of a more ambitious character. They possess one recommendation which the farmer should never lose sight of—I mean power. Let his object be to produce a colt, which, if it fails as a hunter, will be useful in harness; or if some accident unfit him for fast work, will at any rate take his share of work on the farm. I know no better test of success than this, viz: That the colt which loses a portion of its conventional value, should yet retain its real usefulness. Always make strong well-set-on forelegs a primary object. They should be placed forward, so as to be an efficient support to the animal; and the shoulder ought to stand backward. in order to allow the legs liberty of action; but it must be somewhat round and full, not thin and confined, which some persons conceive to be a *fine* shoulder. Never breed from either mare or stallion with a decidedly bad shoulder. An animal may dispense with almost every other point of excellence, and yet be of some value; but if he has a bad shoulder, it bears so thoroughly the stamp of worthlessness, that nothing else can make amends for this fundamental malformation. If your mare is tolerable in her shoulders, but not very good, endeavor to find a stallion which is particularly excellennt in this respect. The forelegs and shoulders being right, action usually follows. But this being a very important point, do not take it for granted, but subject it to your strictest scrutiny. For my part, I almost think as highly of action in a horse, as Demosthenes did of it in reference to an orator; at any, not even the fabulous combination of beauty, breeding, temper, and shape would induce me to buy a horse which did not possess it.

The foot ought to be taken up straight, by a graceful bend of the knee, and set down again flat, without any deviation either outwards or inwards. the most common faults of action are a sort of shovelling movement forwards, with the knees almost straight, and a sideways motion, either outwards or inwards, with one or both feet. But it is quite possible for the knee to be to much bent, and the foot to be apparently pushed backwards when taken up instead of forwards, thus causing it to be set down too near the place whence it was raised. Objection-

*A "nag" is a roadster. He is less in size than a coach-horse, and better bred.

able, however, as such stand-still action may be in a hack, I should prefer it in a brood-mare to the opposite defect.

The great reason why action in a mare is so essential is, that she having the roadster blood ought to supply it; whereas, it is not always possible to find it in a stallion; it is, indeed, very rare to see a thorough-bred horse whose action is such as would be desirable in a park hack, the roadster, or the hunter. The racing man cares not, provided his horse's head is first seen at the winning-post, in what form he moves his forelegs The qualities which win fame for the racer are speed, endurance, and pluck. The conformation most conducive to speed depends more on the back, loins and hindlegs, than on the forelegs; it is therefore by no means uncommon to find horses, whose performance on the turf have been above mediocrity, with forelegs such as would not wear for three months on the road, and with action such as no man would willingly endure in his hack or his hunter. Thorough-bred horses, with every point such as the breeder would desire, combining power and beauty, equally excellent in their forelegs, their ribs, and their hindlegs, are not to be met with in every neighbourhood, and even when found will seldom cover half bred mares at all, and then only at exorbitant prices. These are the magnates of the stud that will not condescend to mates of decent less illustrious than their own. If, then, you cannot secure their services, you must avail yourself of the best within your reach. Supposing your mare has the forelegs of the action which I have recomended, you may safely put her to a horse which has tolerable forelegs, provided he is in general power, in pedigree, and in performance such as you desire. I mentioned, in a former letter, that I once put some mares of my own to "Tom-boy;" his forelegs were by no means first-rate, and his front action was decidedly scrambling and bad; but my mares being excellent in both these point, their stock showed no traces of their sires deficiency. To breed colts with bad forelegs and insufficient bone, is to encumber your land with stock neither useful nor saleable. With mares of first-rate excellence in that respect, you greatly extend the range of stallions which it is safe to put to them.

I shall not enlarge upon other points of the mare in detail, for the reason that their selection may be in general be left to the discretion of the breeder; and also, because there are many of them which in practice will be more frequently supplied by the horse than the mare. I must say, however, that I should not like to breed from a mare with a bad head or small eye. Natural soundness especially in the feet, is very important, and so is good temper. With mares, as with cows and ewes, there is a certain character difficult to describe, but which the experienced breeder knows by instinct, as belonging to those likely to produce good stock. It is not the largest, or the most showy, but those which have a certain refinement of form, and a gracefulness of outline (which are as characterestic of the well bred female, as power and muscle are of the male,) which will most faithfully reflect in their offspring their own merits, and those of its sire. Many a large showy mare, on the contrary, will be provokingly uncertain in her produce; one year bring in a foal as much undersize as next year it is overgrown. Such a mare ought to be discarded at soon as possible

By observing the course which I have recommended, farmers who exercise ordinary judgment will make as safe an investment as they would in the breeding of any other kind of stock. Their colts will make either hunters, carriage horses, or hacks of a useful and powerful kind.

There is a class of mares much higher than that which I have described above; I m an those which combine great power with a pedigree little short of thorough-bred—mares which have in their youthful days been foremost in the hunting-field, and contended, perhaps not unsuccessfuly, in the steeple chase. Such are the dams of the cracks of the Melton field and of the victors at Liverpool and Leamington. But they are so difficult to buy, and so rarely in the market, that the majority of breeders have but little chance of trying their luck with them. Their owners naturally desire to secure a foal, when it may be a great prize, won at a small cost, and will therefore seldom be disposed to part with them. It requires, moreover, a more ripened judgement, and more mature experience, to select mares fit for the production of firstclass hunters and steeple-chasers than for the rearing of a less ambitious character of stock. The stallion to which they are put ought to be one of superior class to the majority of the itinerant animals which secure the custom of so many *farmers, simply because they save them the trouble* of further enquiry. It may be laid down as a general rule that the horse ought, if possible, to be a better animal than the mare. Then there is the difficulty, even when a horse of tried excellence is found, of discovering whether his points and his blood suit the mare. The art and the science of breeding first rate horses, are not to be mastered without much thought, trouble and research. There is no royal road to it. He who is wise, in spite of every obstacle, to attain golden results, must adopt a course the very antipodes of the too common one. of putting some mare, because he happens to have her. to some horse, because it happens to come into his yard He must never breed from a bad mare or a bad horse; nor must he grudge a few pounds spent in securing the best of either sex within his reach. A judicious outlay of capital will here assuredly not fail to reap the reward which has attended the improvement of every other description of stock.

GROUND OATS.

The Drought which has prevailed for many weeks up to the present time, will cause an *upward tendency* in the price of *fodder*; consequently, every farmer and yeoman must study practical economy in that important department of husbandry termed *feeding* and *rearing*.

The first experiment we shall advise them to make in view of *feeding* and *rearing* horses, is, to have their oats ground. *Ground* oats furnish more nutriment, and keep the bowels in better condition, than when served out whole. By grinding the oats we separate them into a myriad of particles, and pre-

sent them to the gastric solvents in a form calculated to secure their speedy digestion—in fact, they are in a condition favorable to a speedy insalivation.

Ground oats are more nutritous than *whole*, for the same reasons, that flour is more so than unground wheat.

Ground oats contain more of the nitrogenous, or flesh-making principle, than any other kind of horse food; at the same time they furnish a mixture of *coarse* and *fine* food—the husk of oats constitute the first, and the meal the latter. The coarse material serves to keep the bowels in a soluble condition—irritate and excite the mucous coat, and thus obviate the necessity for drastic medicine. This kind of food is decidedly the most economical for working horses. They require, however, a certain quantity of sweet hay, in view of distending the stomach to a healthy capacity.—*Am. Veterinary Journal.*

CONDITION OF CATTLE BEFORE WINTER.

It is of great importance to the farmer that his domestic animals are in good condition at the setting in of winter. A goodly quantity of fat, "well laid on," as the sentence runs for flogging a culprit, will carry an animal through a hard winter, when another, equal in constitution and in all other respects except the one mentioned, would be certain to perish. One of Nature's own provisions against a frigid clime is an abundance of fat. Fur outside and grease within characterize nearly every class of animals which live in the polar zone. The farther north we go, even to the limit of animal existence, the more this peculiarity manifests itself; and the whaler is never so successful in laying in a cargo of oil, as when he manages to escape the icebergs and pursues the leviathan far within the Arctic circle. The Polar bear is the fattest of his race; the seal, the walrus, and even the birds of those regions have these peculiarities. These things are mentioned for the purpose of verifying a general principle, viz., that abundance of fat is one of the provisions of nature against the rigors of climate. Any farmer who has half an eye for observation, has not failed to perceive with how much more ease and comfort, and with how much less sensibility to cold, a fat animal, over a lean one, gets through the winter. Turn them out of shelter while a keen gale is blowing from the north; let them drink at a hole cut in the ice, were the water is thick with mingled snow, and while the latter shivers in every joint as if seized with an ague fit, the former really seems to enjoy it as a recreation, drinks his fill with perfect deliberation, and then returns leisurely to his stable.

It costs a farmer more to keep poor animals than it does those in decent flesh. This may seem paradoxical, but it is true notwithstanding. We grant that less grain and fodder may be fed in the former case, but the returns will be diminished a hundred fold. Is it the prosperous farmer, who does the most work and does it best with his teams, the man whose horses are mortgaged to the crows, and whose oxen are scarcely decent food for dogs? Is it the money-making dairyman, whose milch cows are so thin that all the juices of their carcases would secrete little else than a few gallons of water? Is it the owner of lean swine, whose pork when brought to the market commands the highest price? We leave each of our readers to answer these questions in the light of his own experience.

The loss of animals by disease and casualty is no mean item in the account; and the rule will be found invariable, that the farmer who keeps his stock in best heart by providing abundant and wholesome food and warm shelter, will suffer least in this respect. It may by some be deemed unworthy of mention, but not by farmers who save their manure and apply it carefully to their fields, that the excrements of well fed cattle are much more valuable than those of ill fed ones. If an animal is fed on hoop poles, of course the manure would be about equal in value to mod rated sawdust. French chemists have demonstrated, both by the vegetable results of its application and by analysis, that the night-soil of a well fed population, into whose food meat and the better grains enter largely as a component, is vastly more valuable as a manure than that of a people whose chief aliment is vegetables and fruit composed in a large part of water and woody fibre. The same rule holds good of animals,—the richer and more valuable will be their manure. This of course is a small argument compared with others in favour of generous feeding, but it points in the same direction, and is cumulative evidence in that behalf.

Now is the time to have an eye especially turned to the condition of our animals, as the winter is nearly upon us. They will as yet pick up much of their living on the field, but partial auxiliary feeding earlier than usually resorted to, will be very beneficial. —*Rural N. Yorker.*

THE TURNIP CROP IN GREAT BRITAIN.

It appears that the Turnip crop over a large part of England has turned out but poorly the present season, thus tending to keep up the price of food. The following extract from the *Mark Lane Express*, the leading English authority on crops, markets, &c, will be read with interest in Canada. The remarks on the evils of a succession of the same or like crops upon the same land for a series of years are worthy of consideration by many farmers on this side of the Atlantic:

The injury sustained by the turnip crop must ultimately be felt severely. Throughout the eastern and home counties, a failure will be found to exist greater than has happened for many years. First came a defficiency or total destruction of plant by the fly; then drought and mildew, accompanied by another fly [*aphides*] succeeded; and in many localities the leaves have become withered and dried up so entirely, that scarcely any vegetation is now apparent. We are speaking of the Swedish variety; but the common or white turnips are little better. What with failure of plant, excess of drought, black caterpillar, fingers-and-toes, besides other pests, consisting of grubs in the crown and at the roots, the injury is general, and the crop upon the whole, worse than we have witnessed for many years; and, whether in our gardens or fields, the entire *Brassica* tribe has failed beyond a precedent. Fortuately, the mangold wnrzel is more extensively grown than usual; and, owing to the prevalence of exceedingly fine weather in the spring months and at the present time it promises to become a most abundant crop.

The potatoes also become rather generally attacked with disease; but, fortunately, very few of the bulbs have become affected: and the crop, upon the whole, may be pronounced a good one.

We have been induced to enter upon this subject for the purpose of showing that the difficulty of obtaining

large crops of turnips from the same land is yearly increasing, and to point out the advantage to be derived by a more extended cultivation of mangold wurzel, for on all descriptions of soil too heavy for producing turnips, its cultivation may be adopted with the utmost certainty of success, of all the known cultivated root-crops it is less liable than any other to become attacked by insects or by meldew or blight of any description. Provided the temperature is high enough, and the moisture moderate, it flourishes almost without interruption; and its keeping in perfection for so many months together without the slightest deterioration, places it, in our opinion, at the head of our winter supplies of cattle food.

An opinion has become prevelent that mangold-wurzel is not calculated for feeding cattle before Christmas, and not even then with advantage until Feburary is past; and we confess that for many years we ourselves laboured under the same misconception. But we have since discovered that the cause did not arise with the roots themselves, but in the mode of their application; and if instead of feeding cattle upon them alone, they are combined with sufficient cut-straw chaff, none of that violent scouring will ensue, and both roots and leaves may be used with decided success by the combination.

With the Swedish turnips, the same mode of application may be made, with advantage; but it does not become in their case, absolutely necessary that such practices should be followed, as they are not liable to produce relaxation of the animals to any extent so as to become injurious when used alone. But it must have become notorious that they yearly become more difficult to produce upon land on which they have been continuously grown for many years, whilst the numerous deseases to which they are liable, and the attacks of insects to which they are subject, renders them more and more difficult to obtain as we proceed; and that upon most land which has been devoted to their production, a progressive depreciation, both in quality and quantity, has been for a long time taiking place; and with the common turnip a similar depreciation is equally apparent.

The potatoe is also another example of a root depreciating in quality, and becoming liable to diseases which a few years ago were not known to prevail; and the extreme difficulty that we now have to secure a crop of this valuable esculent has become so apparent, that, under certain conditions of temperature and moisture ensuing, little chance exists of securing a crop of healthy tubers.

The attack that has taken place this season has, we believe, been almost as universal as in other years when nearly all the tubers were destroyed, and would doubtless have been attended with like results had the temperature fallen as low as upon previous occasions. The amount of rain that has fallen during their growth has also been less—not, perhaps, in precise quantity, but less in saturating property, owing to the extreme dryness of the sub-soil, consequent upon the absence of almost any rain having for nearly a year previously penetrated to any considerable depth and it is entirely to these circumstances that we attribute the successful result that is this season accomplished.

From the closest observations we have been able to make, we have invariably found, upon the same plot, that those plants least exposed to cold and moisture uniformly escape with least injury; and in several instances that have come under our notice this season, we have observed that the stems have not been affected where the plants were growing next a wall or other shelter, whilst those that were farther removed from such protection, suffered to a greater or less extent in proportion as they were removed from it. In the memorable blight that first occurred, the same result then took place as regarded the greater or less injury ustained by the tubers; and although the latter this season have escaped injury, had the temperature fallen a few degrees lower for two or three days at the period when the rain had become prevalent in July, the same catastrophe would most probably again have happened.

It is not our intention to urge this subject unnecessarily. Our object is rather to show that the continuous propagation of any description of plant upon the same land for a series of years tends to a depreciation of its productive qualities, and that such depreciation is pretty certain to be adopted to prevent such a recurrence? We hold that a change either of the land or description of crop is that obviously the best to secure that end. If after Swedish turnips or cabbages mangold wurzel or potatoes were grown in the next rotation, and then common turnips or rape, and so on from year to year, so as to obtain the longest period possible betwixt the cultivation of any description of crop in particular, the oblect would to a great extent become attained. Upon a proper rotation of crops the main success of all cultivation depends; the cereals alternating with the legumes, root crops, and grasses, constitutes the true application of the science of agriculture. Will it not, then, be attended with corresponding success to produce an alternation with our root crops, as before stated? So firmly are we convinced of this, and so rational must it appear to others, that we believe we should hardly be accused of making converts to our opinions, but we trust, notwithstanding, that we may calculate upon being the means of directing investigation and inquiry into its right channnel, and also for a beneficial purpose.

CURE OF DESEASED POTATOES.

On Tuesday last, we witnessed the experiment of Mr. Meekins, in the cure and preservation of diseased potatoes, in Leinster Lawn, the premises of the Royal Dublin Society, according to the public announcement. The experiment was made on half a ton of potatoes, in the proportion of two hundred-weight diseased, to four hundred-weight sound potatoes, and has been conducted in the following manner:—The sound and unsound potatoes are mixed, and packed in a potato pit on the common plan, in layers of single potatoes, like eggs for transit, and then some finely-pulverized subsoil, from Mr. Meekins' farm, spread over them so as to fill the spaces between, on which another layer of potatoes are packed, and so on till they are built up in the shape of the common potato pits, covered with straw, and then again with earth in the usual manner, where they are to lie entombed till February next. Such is Mr. Meekins' mode; the subsoil has not been mixed with any composition, and Doctor Davy, the chemist to the Society, has got a parcel of it for analysis, as also a parcel each of the diseased and sound potatoes, on which he will report hereafter. It will be recollected that Mr. Meekins exhibited some potatoes at one of the evening meetings of the Society during last session, and also a large parcel at the last spring show of the Society, which were perfectly cured. He has now made the process public, and we hope many of our readers will this season put the above simple process to the test of actual experiment. That it succeeded with Mr. Meekins, at Glasthule last year, there can be no doubt, but that it will

continue to do so remains for further experiments to prove. Mr. Meekins says it may or may not succeed, but that it has done so; and the mode he has laid before the public, who will enjoy the benefit of it if it does succeed."—*Irish Farmer's Gazette.*

PROSPECT OF THE GRAIN MARKET.

We copy the following able and interesting article, in relation to wheat growers especially, from the New York *Tribune*, one of the best conducted Journals in the United States:—

Believing that the true position of our supply of wheat for the ensuing year is not properly understood either at home or abroad, and that it is the highest consequence, both here and in Europe, that a thorough knowledge should be had at an early day, we proceed to lay before the public some facts and figures which seem to us to cast light on this important subject.

The United States census for 1850 gives the whole product of wheat in the Union for 1849 at 100,485,944 against 84,823,272 bushels in 1839. The annual gain during the ten years was equal to about one and a half millions of bushels. Those ten years were a fair average as to productiveness and increase of population. It will therefore be safe to base estimates of future products upon these results. But that we may better understand the subject, we give below a table showing the amount produced by States in the years 1839 and 1849—putting those States together which produced less than half a million of bushels:

	1849. bushels.	1839. bushels.
Arkansas, California, District of Columbia, Connecticut, Delaware Florida, Louisiana, New Hampshire, Rhode Island, Mississippi and Texas	1,125,373	1,442,499
The Territories	517,5562,	
Alabama	294,014	838,052
Georgia	1,088,534	1,809,830
Illinois	9,414,575	3,335,393
Indiana	6,214,458	4,049,375
Iowa	1,530,581	154,693
Kentucky	2,142,322	4,803,152
Maine	296,259	348,163
Maryland	4,494,080	3,345,783
Michigan	4,925,880	2,157,308
Missouri	2,981,652	1,037,386
New Jersey	1,691,190	774,203
North Carolina	2,130,102	1,960,855
New York	13,121,493	12,286,418
Ohio	14,487,351	16,571,661
Pennsylvania	15,367,691	13,213,677
South Carolina	1,066,277	968,354
Tennessee	1,619,386	4,569,692
Vermont	535,955	495,800
Virginia	11,212,616	10,109,716
Wisconsin	4,286,131	212,116
Total	100,485,944	34,823,272

By this table it appars that there was a loss in eighteen States during that period of about eight millions of bushels, while in fourteen there was a gain of about twenty-four millions, making the actual gain as before stated at about sixteen millions in the ten years. Thus, if there be no disturbing cause, we might expect that the wheat crop of 1855 would reach about one hundred and eight or ten millions of bushels; we will assume it to be the outside figure.

The present population is twenty-five millions, from which should be deducted the slaves as they do not consume much wheat; this leaves at least twenty-one millions of consumers of wheaten bread. Allowing half a pound of flour per head per day, the annual individual consumption would be equal to four and a half bushels of wheat, and this would require ninety-four millions of bushels for home consumption. The census estimates the number of acres sown in 1850 at eleven millions. At the same estimate the number for 1855 would be twelve millions, and as two bushels per acre is the usual quantity sown, it would require twenty-four millions for seed. If, therefore, the price of wheat was down to its lowest point, there would not be enough raised by the above estimate, to meet the demand by about eight millions of bushels.

Since 1850, however, there have been disturbing causes that did not exist previously. Wheat has been in great demand for three successive years, and has borne good prices during all the past five years. This has stimulated its cultivation, and probably there were more acres in wheat in 1855 than ever before. It may be safe to admit that in nearly all the States where there was a loss before there has now been an equal gain. This would give about eight millions of bushels from that source. The other ten millions which we admit to be gained in the natural course of events, must have come mainly from the new States. For, the older States have nearly all their wheat lands under cultivation, and cannot materially surpass the yield of 1850, unless there should be an uncommon season in which larger quantities than usual are grown to the acre. This is particularly the case with the great wheat growing States of New York, Ohio, Pennsylvania and Virginia, whose crop in 1839 was 52,180,872, and in in 1849, 54,189,156 bushels, being in the latter year more than one-half of the whole crop of the Union, while the gain in the ten years is only a million and a half of bushels. From their proximity to the Atlantic markets, these States must be the great exporting States, and upon their crops more than upon the others the surplus depends.

But while there have been such inducements to increase the cultivation of wheat, there are some countervailing considerations which must not be overlooked. In the first place, most of those States which show the largest increase in the production of wheat are not naturally wheat-growing States, Indian corn being their most certain and staple crop. If, then, there has been any inducement to an increased cultivation of corn, wheat will be neglected. This is particularly the case with portions of Wisconsin, all of Indiana and Illinois, and most of Kentucky. During this time, corn has borne a high price, and beef and pork have gradually appreciated in value until they have reached such a point that there is little inducement to grow wheat to any great extent in those States. It is undoubtedly true that the cultivation of wheat has not materially increased in either of them. So, too, the tide of emigration has been sweeping past Michigan so rapidly that no marked increase, probably in the first of three millions and in the latter as much more, making possibly in these two States an increase of six millions of bushels. Thus, allowing the States which lost before to make up the loss, and that the other States have increased at the rate of a million and half of bushels per year, and that we have this year a full crop, the most that can be claimed with any show of truth is one hundred and twenty-four millions of bushels for the entire crop of 1855. As the old stock is exhausted, we must look to the present one alone. In ordinary years, this would show a fair surplus of about six millions of bushels that might be exported without affecting the market.

Thus far, we have assumed that there was a full crop in the year 1855. But we will now proceed to show

that there was not even and average crop. To the casual observer, the crop of Winter wheat gave, during the Spring, all the tokens of being a remarkably heavy one. The observant farmer, however, when he examined his fields, could discover that his wheat was more than commonly thin, and that the plant did not tiller as well as usual. This was owing to the dry weather last fall; which prevented a good deal of the seed from germinating, and enabled the fly to destroy more; and also to the severity of the winter, which k'll d more or less in the best soils. The only hope for good crop lay in having a cool, moist season to enable the heads to fill well. Beside, the ravages of the midge in New York, Ohio, and Pennsylvania, and the joint-worm in Virginia, during the past two years, so discouraged the farmers in many parts of those States, that less land was laid down to winter wheat than usual, though the deficiency was more than supplied, by spring-sown wheat. Finally, when the time came for harvest, there was a fair promise for an average crop, and nothing more. But the result of the weather in New York, and much of Pennsylvania, Ohio, Michigan, Indiana, Illinois and Wisconsin, was such that in quality and quantity it is deficient at least one-third. This would give at the lowest estimate full twenty millions, so that in reality there are about one hundred and four millions to supply our own population with bread, and seed for next year's crop.

There is then in reality no surplus in the Union All that is taken away must be at such prices as will induce or compel the people to substitute other food for wheaten bread. Potatoes, corn and buckwheat are reasonably abundant and, should the price of wheat warrant, will be largely substituted. But with the present high price for beef and pork, there must be limit to their consumption. That with an increased price for wheat and flour a surplus to the amount of ten or fifteen millions may be obtained we have no no doubt; but we do not believe that in addition to what is to come from Canada, the surplus can be forced beyond twenty millions, unless prices rise much higher than ever before.

PRICES AND WAGES IN ENGLAND.

The following is from the *Mark Lane Express* of the 22nd Oct.—: The average price of wheat for the six weeks ending October 6th was 75s. 11d. per qr. The average for the corresponding period of last year was 56s. 7d. Wheat is therefore 19s. 4d. per qr. higher than it was this time last year. It was then little above that mystical 56s. which when we were in the lowest depths of agricultural distress, all looked up to as remunerative, while there were even some, and those not amateurs, but men whose sole dependance was upon farming, who did not hesitate to declare that they would be satisfied with 50s. per qr. No man can deny that present prices are remunerative, or that if they are not, a further rise will be powerless to make them so. The prudent farmer dreads a futher advance. He knows that, sooner or later, it must be followed by a decline, and he knows that in many items of the cost of cultivation expenses must increase as prices rise. He sees that landlords are more interested in high prices than tenants, unless, which is impossible, those high prices can go on indefinitely increasing. His rent, he knows too well, must ultimately follow prices. If he holds as tenant-at-will, he may be certain that his landlord will not continue to pay 30 per cent. more than he has been accustomed to pay for bread, meat, butter, cheese, and other articles of agricultural produce, without looking for an advance of rent. If the farmer holds under a corn rent, and we know many who do, he looks with anxiety to every rise of the markets, lest he should have to pay rent on a scale higher than that at which he has sold a large portion of his crop. And he knows that, with the experience of the past before them, landlords are unwilling to grant leases at a fixed money rent which they know will only bind them while prices are expanding, and that when the times of depression come they have to make abatements. The prudent farmer, again, is unwilling to bind himself to a fixed money-rent for a term of years based on prices which may not be permanent.

Then again, seed and horses consume as much of the produce whether wheat and oats be selling high or low. As for manual labour, too, the farmer knows that, instead of two men looking after one master two masters are now looking after one man. Those districts which depended on a periodical influx of Irish labourers for their harvest, receive them no more. They have solved the problem of a self-supporting emigration. The Highlanders who performed in the same way the periodical labour of the Scottish lowlands are emigrating to Canada, where they can obtain land of their own. The English rural population are shaking off their dread of foreign parts; they are acquiring a better knowledge of them, and of the prospects they afford the poor man of becoming a landowner, and employer of labour himself. We cannot take up a local paper, be it English, or Irish, or Scottish, but we meet with statements of the scarcity of hands and the rise of wages. Under this state of things the landlords, with a few insignificant exceptions, are quite as much disposed as the farmers to let bygones be bygones, and to accept the change as an accomplished fact. We consequently rarely hear at our agricultural meetings declarations on agricultural grievances from that class: on the contrary, they appear more disposed to devote their energies to improving the moral and social condition of the agricultural labourer. The clergy are zealously seconding their laudable exertions, if indeed they did not originate the movement,

TURNIP SWEEPSTAKES.

We give below the report of the Judges appointed to decide the Sweepstakes, amounting to £27-10,—for the best two acres of Swedish Turnips, taking quantity and quality into consideration. This competition was got up under the auspices of the Township of Etobicoke Agricultural Society, one of the most flourishing Societies in the Province, each competitor depositing $10. Last spring eleven farmers entered the lists, but it appears that all did not compete.—Mr. Alexander Shaw, of Toronto, who is so favourably known as a successful cultivator of root-crops in general, was the winner. From the details given in the Report it will be seen that with proper care and treatment, the soil and climate of Canada are far more favorable to the culture of the Swedish Turnip than is generally imagined; and there is good reason to hope that this important department of husbandry will continue to receive increasing attention. —We shall be glad to hear that similar enterprises are commenced in other districts. A widely extended benefit must be the necessary result:—

Toronto, Nov. 13, 1855.

Report of the committee appointed to decide the sweepstakes for the best two acres of turnips among the undermentioned competitors:—

E. Musson, Esq.: President, Etobicoke, Agricultural Society,—

Sir,—We the undersigned, Judges of the Sweepstakes for the best two acres of Swedish Turnips, beg respectfully to report as follows:

On Tuesday November 6th, we commenced a tour of inspection, calling on the different competitors in the following order:

1. Mr. W. R. Scott, of Mimico; but as he declined competing, and being anxious to proceed with as little delay as possible, we did not see his turnips.

2. Mr. Richard Withers also declined competing. We saw his turnips, which in some places were good, but as a whole very uneven; they were sown too late and had not received the cultivation necessary for procuring a large crop.

3. Mr. Wm. Duck, near Port Credit. A pretty piece of turnips, but few vacant places, bulbs of medium size, of good quality well adapted for the table, rather too thick and in a growing state; sown broadcast July 9th, manured with barn yard dung, of about 15 waggon loads to the acre; soil, a pretty loamy clay; cropped the previous year with oats; well cultivated and quite clean. Measured off a square of 25 feet, or 625 square feet, being within a fraction of the 70th part of an acre, as a fair average of the two acres; topped and rooted them in the ordinary way, and found the yield to be 5 bushels, or at the rate of about 360 bushels per acre. Mr. Duck's crop would evidently have been much larger in weight if he had sown earlier and in drills. The variety was the Purple top, and pretty pure.

4. Mr. Donald McFarlane, Etobicoke. As Mr McFarlane declined competing we took only a general view of his turnips, a large portion of which, under ordinary circumstances, would be pronounced good. It was a heavier crop than Mr. Duck's but not near so even nor so well cultivated. Weeding and hoeing had not been sufficiently attended to during the harvest. Notwithstanding it will be a paying crop. Purple top, a portion quite pure—sown in drills from 10th to 13th of June. Soil fresh and rich but rather heavy and wet.

5. Mr. John Clayton, Mimico. A beautiful looking piece of Purple-top, sown broadcast June 13th, after a good dressing of barn yard manure; well cultivated and set out, but the plants generally were too thin. Fair sized bulbs of excellent quality. A square of 25 feet, taken as an average of the whole, yielded 10 bushels, being at the rate of very nearly 700 bushels, per acre.

It is proper to remark that Mr. Clayton's soil is a light sand, which in its natural state produced nothing but pine and inferior brushwood, and was considered a few years since quite worthless for cultivation. The present result cannot be otherwise regarded than as highly creditable.

6. Mr. Wm. Gamble, Milton Mills. We found here about six acres of turnips in a field of very uneven surface, which must have required no small amount of skill and capital to have brought it into its present highly productive condition, from a recent state of comparative worthlessness. The soil like the former case, is a light sand, forming a part of the Humber plains, Purple-top and Laing's improved, sown in drills about 30 inches apart, after a liberal dressing of manure, consisting, we understand, of farm yard dung and a slight dressing of Guano.

The bulbs on the top and drier part of the field were of great size and pretty uniform, but there were many blank places. Laing's improved, although not so large as the Purple-top, looked beautifully, so true and even. This was a specimen of turnip-culture, which would be rarely exceeded in the finest parts of Britain. A space of 26 feet, taken as an average of the upper portion of the field, including both Purple top and Laing's improved, yield 12 bushels; or at the rate of 875 bushels per acre. Night coming on we had to postpone examining the remainder to another day.

In consequence of the extreme wetness of Wednesday, we did not resume our task till Thursday morning, November 9th, when we visited—

7. Mr. E. W. Thompson, of Aikenshaw, township of York. The soil, like that of the two preceding cases, is a loose sand, formerly thought little of and neglected, but by judicious manuring and proper treatment, it is capable, as is apparent on Mr. Thompson's farm, of producing remunerating crops. The turnips consisted of Purple-top and Laing's improved, drilled in rows about 27 inches asunder. The whole of the ground had been manured with farm yard dung—about 40 cart loads to the acre, with about 250 lbs. of Guano in one part, and 8 bushels of fine Bone-dust in another. The difference was not very preceptible but the bones seemed to have increased the growth of the tops. From some cause or other the plants did not come up thick enough, consequently there were numerous blanks—so much so as to diminish the crop—probably 25 per cent.; 25 feet square yield 10 bushels, being at the rate of 700 bushels per acre. The crop proved much better than mere appearance indicated. The seed was sown too thin, only 1 lb. to the acre. We would generaly recommend 2 lbs. per acre, at the least.

8. Captain Shaw, Toronto. The field lies near Trinity College, consisting of a rich, sandy loam, the lower part rather wet. It was manured with farm yard dung, about 35 cart loads per acre, and sown in drills 24 inches apart on June 7th, with the Purple-top kind. The whole appeared all but perfectly uniform, with scarcely a blank worth mentioning. Every thing evincing the most skillful and attentive management.

The first average taken, yielding only a peck over that of Mr. Gamble's, we were induced to try two others with the following results:—

1. 25 feet square—12 bushels; at rate of 892 bushels per acre.

2. 25 feet square—14 bushels at rate of 1015 bushels per acre.

3. 25 feet square—13 bushels; at a rate of 945 bushels per acre.

9. R. A. Goodenough, Toronto, Soil a strong loam resting on clay, highly manured the previous year, and cultivated in the most thorough and perfect manner. Purple-top and a few of Laing's improved sown in rows 33 inches apart the last week in June, and nicely set out in the drills at wide and uniform distances. Everything denoted that no labor or expense had been spared, and to appearance the crop looked remarkably luxuriant,—the tops being green, juicy and growing. It was a pattern of neat and exact cultivation. There were no blanks worth noticing, and the whole crop was evidently so uniform as to render a choice for an average a matter of indifference. We selected two, which yielded as follows:—

1. 25 feet square including a relative proportion of each sort yielded—10 bushels, or 700 bushels per acre.

2. 25 feet square, (all Purple-top) yielded—10 bushels, or 825 bushels per acre.

We are of opinion that the great width of the drills and heavy manuring of this kind of soil, have acted injuriously on the crop. The spaces between the turnips were too great, and the vacancies were in a great measure hidden from the excessive growth of tops, stimulated by the richness of the soil, which was much better suited to cabbage than turnips.

Having now completed our assigned task, and having ascertained that the competition lay between Captain Shaw and Mr. Gamble, and although we felt pretty well assured that the former was the winner, yet as we had taken only one average of Mr. Gamble's turnips, and feeling anxious not only to satisfy ourselves, but also all others interested in the result we might bring out, we determined to go back to Milton at once, and take two more averages of Mr. Gamble's crop. The result was as follows—

1st—25 feet square (formerly taken) yielded 12 bushels, or 875 bushels per acre.

2nd—25 feet square, yielded 13 bushels, or 945 bushels per acre.

3rd—25 feet [taken at the lower end of the field], yielded 9 bushels, or 665 bushels per acre.

Having, as we believe, fairly ascertained the above mentioned facts, we feel it to be our duty to award the sweepstakes to Captain Shaw, of Toronto, whose turnips appear to have been sown and set out at those distances, suited to the soil and season, so as to yield the greatest amount of produce on a given space. We have been much gratified in witnessing the results of several of these specimens of turnip culture, and cannot but hope that the tendency of such kinds of *competition will be highly beneficial. And we would* respectfully suggest, in case of any similar enterprise for the future, that two, if not three prizes should be awarded.

GEORGE BUCKLAND.
JAMES FLEMING.
GEO. LESLIE

THE MONTHS—DECEMBER.

"Nor field nor garden now invites
The rambling step to new delights,
Nature to man, and bird, and beast,
Proclaims a dull unwonted rest.
Aside the inactive plough is laid.
The adhesive mould the clotted spade
Defies. Beneath the sheltering hedge,
Beneath the starks o'erhanging ledge,
The herds and flocks, each cautious form,
Turned backward to the driving storm,
Crowd fearfully. Their guardians nigh
In folded cloak, close mantled lie;—
And nigh the dogs, still wont to share
The master's comforts as his care,
Beneath the well-known refuge creep,
Lull'd by the storm to transient sleep."

—MANT'S BRITISH MONTHS.

The ancient Romans commenced their year in March, and December was so called by them as being the tenth month. Our Anglo-Saxon forefathers gave it the name of *Christmonat*, or the month in which our Saviour Christ left his abode in heaven to visit our earth and sojourn among men.

We have now arrived at the closing month of the year, when all out-of-door operations, so far as the cultivation of the soil is concerned, have ceased. What a change do a few weeks bring over the scenes of nature and the pursuits of man! A short period since, all was bustle and activity on the farm, laborers were busy in the operations of harvest under the oppresive heats of a fervent sun; now all is still and silent, with winter's characteristic white mantle covering the face of nature. Although in Canada we have frequently intervals of blue sky and clear sunshine in this month, so as to render Shakspeare's expression,

"The rain and wind beat dark December,"

less applicable to us than to the old country, yet the rapid shortening of the day, with not unfrequent snow-storms and biting frosts, the change is a decided advance towards the stagnation and apparent death of nature, towards universal gloom and desolation.

"No mark of vegetable life is seen,
No bird to bird repeats his tuneful cal,
Save the dark leaves of some rude evergreen,
Save the lone redbreast on the moss-grown wall."

Our Canadian winters are not privileged with the sweet chirping of the redbreast, a bird with which old country people have such pleasing associations from their earliest childhood. Our forests are painfully silent during winter, and their grave-like stillness is only broken by the noise of the woodsman's axe. Many of our most beautiful of the feathered tribe are now basking under warmer skies, and the wild quadrupeds and amphibious animals have retired to their winter quarters, which they are destined to occupy till the return of spring. Some of these become entirely torpid, laying up no stores of provisions, such as frogs, lizards, bats, &c., which subsist on insects or vegetables. The roots of tender plants are protected by a thick layer of snow, which, from its non-conducting power, prevents the warmth of the ground from escaping, as otherwise it would do, into the cold surrounding atmosphere. The chief attention of the farmer is now devoted to the feeding and sheltering of his cattle, a matter rendered alike imperative by the dictates of humanity and the various considerations of sound economy. It is a well-ascertained fact, not so well known, or at least not so well attended to in practice as it might be, that all the domesticated animals thrive and fatten better, even on a less quantity of food, when kept in a state of uniform warmth

The primeval forest is now subject to the warfare of the chopper, who is the great pioneer of agriculture and civilization. The farmer finds now opportunity for collecting materials for fencing, firewood, and various matters of agricultural and domestic economy.

On the 21st of December happens the *winter* solstice, or the shortest day; and now old winter may be expected to assume all his characteristics, and govern with his icy sway The social and inspiring festival of Christmas occurs very seasonably to cheer this cold, if not dreary season, for in Canada the weather is sometimes anything but dreary and depressing. And it is impossible to describe the buoyant feelings of delight with which one welcomes the first merry sound of the sleigh-bells, the infallible precursor of social visitings and merry-makings. In the old country, this season has been thus truthfully described:—

"Dreary would December be, did it not bring with it merry Christmas, with its holly, and ivy, and mistletoe, through the leaves of which peep the scarlet and purple, and dull white berries, giving a green and summer appearance to our rooms, and throwing a cheerfulness around our hearths. We see the laden coach rolling past our window, piled high with game, hares and pheasants, and great white geese, and black turkeys, whose plumage the wind blows back as they swing suspended from the roof; conjuring up visions of huge comfortable fires, well spread tables, and happy faces, all congregated to do honour to good old Christmas, whom Southey has beautifully drawn as seated beside the high-heaped hearth, in his great arm-chair, watching the children at their sports, or pausing at times to stir the huge fire, and every now and then sipping the bright brown ale."

For nights before this happy season arrives, we hear the village bells awakening the surrounding silence by their silver music, and throwing a cheerful sound over the wild wintry landscape. When the morning of that old and holy day arrives, we hear the rustic waits chanting some simple Christmas carol, as they stand in the grey moonlight, at the front of the picturesque parsonage house, telling them how Christ was on that day born, and that while shepherds were attending their flocks by night, the Angel of the Lord descended, and proclaimed tidings of peace and good-will to all mankind. How plaintive and tremulous do those old chants fall upon the ear, sinking noiselessly and peacefully into the heart, and filling the soul with a holy and reverential awe!

In our eye, Christmas never looks so beautiful as when it has been ushered in by snow and frost and rime; when the thatched roofs of the cottage are whitened over, and the branches of the trees are laden with feathery flakes; when the ivy that covers the grey and weather-beaten church-porch is half buried beneath the weight of accumulated snow, as if

"Nature, in awe to Him,
Had doffed her gaudy trim,
With her great Master so to sympathise,
Hiding her guilty front with innocent snow."

Such a scene, witnessed under one of those cold, clear, blue skies, which *sometimes hangs over the* earth in December, with the cottage chimneys sending up their columns of pale silver smoke, and a group of happy faces emerging from the ancient village church, sighing or smiling alternately as they recognise a child or a relation who has walked miles to bid them a merry Christmas,—or as they glance at the surrounding graves, and think of those who will never more sit at the high-piled table, over which the mistletoe-branch *again hangs*, as it did in the days of old."

A few words in reference to the misletoe, which is a parisitic shrub, attaching itself to the body of other trees, particularly the apple; when found on the oak, a circumstance which rarely occurs, it was held in peculiar reverence by the ancient Druids It is by no means a common plant, but may be found in considerable abundance in the extensive orchards of Herefordshire and Worcestershire, where, in severe winters, its branches are sometimes cut and given to sheep. This shrub, with a few others, such as the yew and the holly, have, from the remotest times, been associated with social and sacred feelings by the inhabitants of the British Islands. The custom which still survives of decking churches and private houses down to the smallest cottages with these characteristic evergreens at the holy festival of Christmas, is of very ancient date. The poet Gay remarks:—

"When Rosemary and Bays, the poet's crown,
Are bawl'd in frequent cries through all the town;
Then judge the festival of Christmas near,—
Christmas, the joyous period of the year!
Now with bright Holly all the temples strow,
With laurel green, and sacred Misletoe."

With reference to the same old customs, another poet has sung:—

"On Christmas Eve, the bells were rung;
On Christmas Eve, the Mass was sung;
That only night in all the year
Saw the stoled priest the chalice rear.
The damsel donned her kirtle sheen;
The hall was dressed with holly green;

Forth to the woods did merry men go,
To gather in the misseltoe.
Then opened wide the baron's hall
To vassal, tenant, serf, and all."

Christmas carols, candles, yule-logs, and other symbols of this joyous season have been evidently observed in Britain from the commencement of Christianity. The candles were formerly of immense size, and both houses and churches were illuminated with them; indicating thereby *Him*, who is emphatically, "the light of the world." It is related of the buttery of St John's College, Oxford there is yet to be seen an "ancient candle socket of stone, ornamented with the figure of the *Holy Lamb*. It was formerly used to burn the Christmas candle in, on the high table, during the twelve nights of that festival."

For similar reasons they lighted the *Yule-log*, which, at this cold and gloomy season, not only afforded warmth and social comfort, but reminded them of the light and warmth of Christian truth and goodness. The log was usually as large as the wide, open, fire-places of our ancestors would admit of, and in many places it was the custom to allow servants ale as long as the log lasted;—what remained being carefully put away to light the Christmas fire of the succeeding year; a circumstance to which Herrick thus pleasantly refers:

"Come, bring with a noise,
My merrie, merrie boys,
The Christmas-log to the firing,
While my good dame, she
Bids ye all be free,
And drink to your heart's desiring.
With the last year's brand
Light the new block, and
And for good success in his spending,
On your psaltries play,
That sweet luck may
Come while the log is a teending.*"

It was also deemed requisite that the maidens who blew or lighted the Christmas-fire should perform the operation with clean hands.

"Wash your hands or else the fire
Will not tend to your desire;
Unwashed hands, ye maidens, know
Dead the fire though ye blow."

"A custom (observes a modern author) no less general is the dressing-up of houses, particularly in the halls and kitchens, with branches of holly, ivy, bays, and rosemary. Nor must the misletoe be forgotten, for, whatever it may do in these refined days, it used to play a conspicuous part, less than a century ago, when it was regularly suspended both in hall and kitchen, that the young folks of whatever rank, might daily kiss and be kissed beneath its mystic branches."

In Yorkshire, and other parts of the north of England, many of the old customs still exist, but slightly changed by the stream of time. The good house-wife always presented a *cheese* at Christmas, specially preserved for the occasion, who, with great ceremony before she allowed it to be tasted took a sharp knife and scored upon it rude resemblances to the cross. To this were added the mighty wassail-bowl brimming with *Lambswool*, and furmity made of barley-meal, which last was also an essential of the breakfast table. In the cathedral town of Ripon the singing boys used on this day to "come into the church with basketfuls of red apples with a sprig of rosemary stuck in each, which they present to all the congregation, and generally have a return made them of 2d., 4d., or 6d., according to the quality of the lady or gentleman."

And now our annual task is done. If anything we have said or culled in these hasty sketches of the months, has awakened, however feebly, a spirit of curiosity and kindly feeling, our object will have been gained. To our readers, one and all, we wish "a merrie Christmas and a happy New-Year!"

—*B.*

---

* *Teending*,—from the Anglo-Saxon, *Tendan*,—to set on fire.

Popular Errors.—It is astonishing to witness the degree of ignorance that prevails in the land upon the diseases of domestic animals, and the consequent barbarity that is too often practised upon them, with a view to alleviate their distresses. If we take for instance, what is termed "*horn ail*," or "hollow horn," we venture that more than nine-tenths of those who own neat cattle regard this as a disease, when in fact it is but a symptom of disease If the bases of the horn are cold, it is only an evidence that the animal is laboring under some disease which disturbs the natural circulation of the blood, and causes the extremities to be cold, and the remedy should be applied to the seat of the disease, and not resort to that cruel and almost universal practice of thrusting a gimblet into the horns and thereby mutilating that most delicately formed organ. Another practice, no less barbarous, and also the result of the ignorance which prevails of animal physiology, is that of splitting open for six inches in length, the lower extremity of a cow's tail, and, to complete the cruelty, cramming the incision with salt, to cure some *imaginary* disease, because that portion of the animal's tail is found for a space of three inches lacking of bone. This is the case with the tails of all animals of that class, whether in sickness or in health, and is only an evidence of the wisdom displayed by the Creator in so peculiarly adapting that instrument (the tail) to the purpose for which it was formed.—*Farmer's Journal.*

Horticulture.

HINTS TO THE PURCHASERS OF TREES, SEEDS, &c. BY J. BARRY, Nurseryman, Rochester, N. Y.

[From the "Horticulturist" of June.]

No pursuit or profession in life, however useful or honorable it may be, or however purifying and ennobling its tendencies, is wholly exempt from the evil of dishonesty. Not even the most sacred of all human vocations can escape the misfortune. Will any one wonder, then, that there should be dishonest nurserymen and seedsmen, and dishonest dealers in trees, plants and flowers? Surely not. A great deal has been said about the dishonesty of nurserymen, seedsmen and florists; but if a rigid comparison were made between them and any other class of dealers, we care not which, we have not the slightest hesitation in saying that the results would show that no other branches of trade are on the whole, conducted with greater honesty and firmness. It may be said that we are an interested party in the case, and therefore not competent to judge, but we take it upon us to say that we are. We believe we are as well acquainted with those who are engaged in horticultural commerce in the United States and have enjoyed as many and as favorable opportunities of studying their characters as most other men, and on the strength of this knowledge, we are willing to place them for honesty of purpose, for energetic and industrious habits, and the general usefulness of their lives against any other class.

We have no desire to make invidious distinctions or comparisons or to put one class or profession against another, but we would remind those who are ever prating about the tricks of nurserymen and seed men, that there may be as many short comings chargeable to their own calling. Who does not hear every day of his life about, false and short measures? Look at the imposition practised by the manufacturers of all sorts of cloths, by the substitution of one material for another, so that a person who is not thoroughly skilled in all their devices, is sure to be cheated. We have ourselves been sold cotton for woollen goods by men who are so careful of their reputation that they would either knock down or institute a suit for slander against any one who would question their honesty. Look at the thousand deceptions of food and drink—in teas, coffee, sugar, wines and liquors of all sorts—and in tobacco. Indeed one can scarcely think of an article, whether of use or luxury, that can safely be bought from a stranger by an inexperienced person. The very *saints* of the world are engaged in the traffic in spurious commodities unbeknown to them. Yet these same hypocrites will cry out about the dishonesty of the poor nurserymen and seedsmen who happen by mistake or carelessness to sell one variety for another.

Let us not be understood as justifying the frauds or errors of nurserymen or seedsmen far be it from us to do any such thing. We shall rather expose and condemn them. But it should be remembered that it is an easy matter for them to make mistakes and exceedingly difficult to avoid them. They are handling a great number of varieties of the same article, and their sales being huddled into a few weeks renders impossible that leisure and circumspection which can be given to ordinary trade. A boy entrusted to attach a label may set it on the wrong tree or package, and the error may escape notice until too late. In packing, which must be entrusted to workmen, there are many chances for mistake even when the most rigid surveillence is kept up. Indeed, throughout the whole routine of the business—in propagating, digging, cutting and packing—there are an almost infinite number of small operations which require exactness, and all of which expose to error. Be charitable, then, and do not call every error a trick or a cheat. Every year our professional nurserymen and seedsmen are becoming more systematic and more careful as well as more discriminating and skilful, and thus the chances for error are rapidly decreasing, except among new beginners, who have everything to learn.

There is growing up, however, in this country, a system of dealing for which respectable nurserymen are not responsible and to which it is our present purpose to call attention. The extraordinary growth of horticultural commerce within the two past years, has attracted the attention of that large class of speculating individuals who are ever on the look out for a profitable field of operation—men who are peddling gravestones to day, lightning-rods to morrow, patent medicines the next day, and so on from one thing to another. The country is filled with dealers in trees and plants. Beyond a doubt many of them are honest and honorable—men who may fairly be trusted; but it is equally true that very many of them lack honesty, and will not hesitate to misrepresent and deceive wherever they consider deception necessary to success. We have in our hands the most ample evidence of this. Letter upon letter has been for some time past addressed to us upon this subject from all parts of the country, begging us to expose the frauds, and propose some remedy. But what can we do? The world is full of credulous people, ever ready to be made victims to the crafty stories of unscrupulous rogues, people who read but little, and whom our warnings will never reach and who, even if they did would give them no heed,—people whom even dear bought experience would fail to teach wisdom. They are the penny wise and pound foolish, and will run a thousand risks of being cheated for a single chance of making a good bargain. The authorities of New York city caused flaming placards to be carried

around the streets, in the most conspicuous manner to caution country people against being decoyed into mock auction rooms, where they are certain to be fleeced by a set of stool pigeons; but while these placards are carried up and down all day long, every morning brings to light some mock auction frauds, and thousands are daily perpetrated that are never made public All that can be urged against the folly and madness of swallowing patent medicines avails nothing; for as we see the country full of travelling medicine chests and vast fortunes realized from the business. All manner of frauds are perpetrated, day after day, and year after year, upon a credulous public, and yet the last reaps as rich a harvest as the first. We have therefore but little hope that anything can be done to stay deceptive trading in trees, plants, or seeds. Our correspondent "M" of Maumee, Ohio, related, in our last number, some of the tricks of foreign adventurers in the West, and we have seen the very same things in this enlightened horticultural city of ours (Rochester) a few years ago. Large quantities of the merest trash were sold at exhorbitant prices to persons who were never known to patronize respectable nurserymen and florists at their own doors to the amount of a dollar. A short time ago a gentleman from one of the Eastern States called on us, and inquired for a person who, he said, had sold large quantities of Apple trees in his neighborhood, representing himself to be the proprietor of one of the oldest and most extensive nurseries in Western New York, and representing also that his trees were propagated by some superior method which was known to him only, and which gave them a decided superiority over trees grown in the ordinary way. On inquiring, we found this man did not own a single foot of land, had never been a nurseryman nor had he any interest whatever in any nursery establishment, had bought such trees as he could make the largest profit on. He was a crafty rogue, however pretended more than ordinary piety, and victimized the religious people of New England handsomely A few weeks ago a nurseryman of Rochester received intelligence that he was represented in some parts of Ohio by a person who claimed to be his agent and *son*, while he not only did not know such a person, but had never seen him or heard of him before, and he was compelled to incur the trouble and expense of advertising him as an imposter. Is not this a high-handed piece of deception to be attempted in such a business, and among an intelligent people? The man who will do such a thing is not a particle better than he who counterfeits a bank bill or a silver dollar, or who will forge a signature to a bank check We have it from perfectly reliable authority, that a company of tree dealers bailing from Ohio, purchased at a small nursery in Western New York, a quantity of seedling unworked fruit trees, [Peaches and cherries] knowing them to be such—for the nurseryman we believe to be a perfectly honest man—and they took them up, tied them in parcels, and attached labels to them bearing the names of all the best fruits in the catalogue. We were informed that these spurious articles were to be carried to Tenessee. There is a piece of villainy for you! Such men richly deserve the penitentiary, and we cannot understand how any honest man could conscientiously refrain from exposing them and thus aid in bringing them to punishment.

In every part of the country people have been outrageously deceived by itinerant *grafters*. They traverse the country, and take orders to do grafting at so much apiece for all that live. When the season of grafting comes, a few workmen come along with a wagon-load of scions, containing every variety that could possibly be called for, all procured from the most responsible source; and as a proof of this, a catalogue of some well known nurserymen is exhibited, and it may be, a forged bill or invoice, while the scions were most likely cut from some of the orchards they had been grafting in. Thousands of orchards have been ruined in this way. We have now one in our possession which the previous owner had had grafted by one of these rogues and insisted on having some three or four select sorts as he ordered he had a collection of vile rubbish, mostly natural fruit, and in some cases, three or four different sorts on a tree.

We might go on and cite cases of this sort which have come to our knowledge enough to fill a dozen pages of this journal, but it would be a waste of time and paper. In this part of the country people, are more cautious and careful than formerly, and few men now are willing to trust unknown irresponsible persons with the important duty of grafting their fruit trees. Not so, however in some parts of the West and South, where we are informed the speculation is in full blast. We hope this word of warning may find its way there, and prevent at least a few from allowing themselves to be victimized It is but just to say, in this connection, that there are honest men engaged in the business of grafting—men in all respects worthy of confidence, and the service they render to fruit culture is very great. What we have said will be no detriment to them, for they have characters to sustain them and inspire confidence.

Quite as bad as any of the frauds we have mentioned, is that of palming off indifferent and worthless varieties of fruits and flowers, as something new, extraordinary, and valuable, at the most exorbitant prices. Crafty fellows perambulate the country with exaggerated colored drawings and bombastic descriptions, and thus deceive thousands of people.

The common Alpine strawberry has been peddled for years with the word *Mammoth* [very captivating] prefixed. The *Charter Oak* Grape—a great fox Grape, utterly worthless, except, as Mr Longworth says, that it might serve for cannon balls if lead were scarce—for two or three years has had a fine run in almost every part of the country, at three or five dollars per plant. The "*Excelsior*," and several others puffed and paraded about, are no better.

Strange to say, very many of those who purchase such articles would not be persuaded to purchase those of real merit. Nothing else will serve them but to be *humbugged*, to use a vulgar but expressive term.

Newspapers lend themselves unwillingly, as a general thing, to these frauds, and do a great deal of harm. The family newspaper is looked up to as authority; and when these speculators get their glowing descriptions published, their work of deception is half accomplished.

The only thing that can remedy this evil is the dissemination of intelligence; and we call upon the friends of horticulture and of honest and honorable dealing, in all parts of the country to lend their aid in exposing and arresting this system of fraud. It is a disgrace to the trade and to the morals of the country. A most unpleasant duty it is for us to give such a subject this importance; but we cannot shrink from it. Paris is not the only place where such dishonesty is practised, the same game is played on a smaller or larger scale all over Europe, as the pages of their journals prove.

If there be anything about which people should exercise extraordinary care and caution in purchasing, it is that of trees seeds, and plants. What a loss of time and money, and what a disappointment and mortification, to be deceived in these matters! It is not difficult to avoid impostors, if we but determine on so doing. There are honest tradesmen enough everywhere, from whom a supply can be obtained,—men who have a character at stake and who feel that their success depends upon their good reputation. These harpies who go about the country deceiving are here to-day and there to-morrow. they seek patronage but *once*.

Our advise to all parties who desire to purchase trees, seeds, plants, or flowers—anything pertaining to horticulture in which frauds are or can be committed, is to place their orders in the hands of men whom they *know* to be trustworthy. Reliable tradesmen are well known, and those of them who have travelling agents, provide them, or should provide them, with the requisite testimonials with which they may give the fullest satisfaction to those whose patronage hey solicit. On this head a rigid inquiry should be made. No statement should be listened to that appears anywise suspicious.

Our reason for giving the above well written article a space in our columns is because the same deceptive game has been practised for years in our vicinity and all over the Province by persons of the very same character as described by Mr. Barry's able pen. Thousands of dollars are every year extorted from the credulous good country people in Canada by Yankee Peddlers ransacking both Provinces in all directions and pretending to be appointed agents for some respectable neighboring establishments, with no other intention but to deceive those who place confidence in their deceiving stories, such as the promise to make up all losses caused by unfavorable seasons, &c., but never showing their faces again in the same locality. The neighborhoods of Collingwood and Owen Sound in particular have of late been a large field for their skilful manœuvres and we are assured by good authority that it is really shameful to see the way they have used the public, selling them trees that were dead before planted.

We would therefore earnestly recommend our readers to apply at some respectable nursery, such as Mr G. Leslie's to whose advertisement we would refer them, whose long experience and extensive connection may with safety be relied upon as a guard against deceit. Moreover he keeps Agents in most parts of the Province to take up orders for his establishment, thus to facilitate to purchasers the transacting of business with him. As the conveyances by steam to all parts of the Provinces are now so easy, parties in want of Nursery Productions would do best to apply direct, to secure their trees in good order, and without delay.

Communications.

UNBURNT BRICK FOR BUILDING.

The following communication was received in answer to enquiries in the February Number but got mislaid, and was not discovered until a few weeks since. It may be interesting to some of our readers and we therefore publish it, even at this late period:—

WESTWOOD, Sarnia, C.W.,
June, 25, 1855.

SIR,—Your querist (in your February number) Mr. Knowlson, asking for information as to the manufacture of unburnt brick, is, I perceive, not yet answered.

Having been a settler in this country when my nearest white neighbour was twenty miles distant, I have, in former years, been compelled to try my hand at almost every trade, this one in question, among the rest; and th[illegible] ght

have more confidence in a professional man, my experience, such as it is, is at his service.

Presuming, therefore, that the plan I propose I have personally tried and found to answer, I begin. In the first place, as to grinding and preparing the clay,—for which purpose a pug-mill, made of a hollow button-wood log, or, in the absence of this stout plank will be found speediest and most effectual. For the admixture of hay or straw I found the longest and finest the best; I used red top; prairie-grass might be still better. As to size, this of course must be a matter of taste; those I made were 18 inches, by 9 inches and 6 inches thick, and, when dry, were heavy enough to lift with comfort. To mix the hay with the clay—Place your wheelbarrow under the mouth of the mill, and, as the clay runs into it, sprinkle in also the hay, from time to time, as you see fit, until it is full. It is then wheeled off to the yard, and the clay from it, with a spade, thrown into the mould and pressed down with the foot until the mould is full in every part; the superabundance is then struck off with a straight edge, and carefully lifting up the model (which has neither bottom nor top) a brick will be made, so that one in fifty will not be lost by fracture in drying, if the yard is kept well sanded. Plaster will adhere to a wall built of these as well as to any other material. Two men and a boy will make 100 of these bricks in a day, one man to feed the mill and wheel the barrow to the other, who moulds them.

To your querist, or any other of your readers who might be inclined to adopt this material for building, I would suggest, that, though this mode of using it is good and cheap, there is another, equally good and infinitely cheaper, as old, I believe, as the hills, called the Pisé mode. It has also this advantage over the other, that any earth almost will answer for the purpose that is not pure sand or vegetable matter. The plan consists in ramming the earth between two boards, properly secured and adjusted on the wall, which, when filled, admits of being removed and adjusted again at pleasure. To descend to particulars would, I fear, occupy too much of your time, while it is also unnecessary, inasmuch as the whole process, describing soil, tools, &c., are fully set forth in *Rees's Encyclopædia* in the clearest manner. I may, however, state, that I am now residing in a house built on this plan, a story and a half high, and 35 by 26, which answers admirably. The walls, 18 inches thick, were carried 9 feet high in a week, being the short days in November, by three men, though the material had to be carted from some distance. It is indispensible that the foundation be kept dry; but with a stone wall, 8 inches or a foot above the surface of the ground, it would last as long as the foundation itself, with or without plaster, and granite would do no more. There can be no doubt but that this is the quickest and cheapest mode of building, and well adapted for all rural dwellings, root, and ice-houses, garden walls, &c. In the case of open walls, the top would have to be covered by boards or clap-boards projecting two or three inches over them.

To go from building to ploughing. I have been shown a plough, by a neighbour lately from England, for ploughing in a sod, which, I think, worth notice. It consists in skinning the top to the depth of two or three inches, and, by shifting the clevis, and following again in the same furrow, throws five or six inches more of the sub-soil on the top of it. As soon as the first furrow is opened, the thin sod falls completely upside down into the bottom of it, and is, on the return of the plough, as effectually buried as could be done with the spade. Several lands might be kept going at once, so as to shift the clevis as seldom as possible, though the most obvious method would be to have two teams. In ploughing a single furrow, especially on a red top sod, the grass not only springs up between the furrows, but through them, and a hoeing crop is quite out of the question. On the double furrow plan I here propose, you will never see a green blade of the sod again, and can cultivate potatoes, corn, or other heavy crops to advantage. No doubt the method is known to, and practised by, many, yet, as I have never seen it mentioned in your paper, it is also possible that it may never have occurred to several of your readers.

With sincere good wishes for the prosperity of your paper

I am,

Sir,

Your obedient servant,

JOHN H. JONES.

Our Correspondent will see in the excellent address of Mr. Christie, Pres. Pro. Association, at Cobourg, a plan recommended very similar to his, but more economical. It is to use the Michigan Double Mould Plough.

PATENTS FOR INVENTIONS IN ENGLAND.

We have been favoured with the following copy of a letter lately received by one of our correspondents, from the Chief Clerk of the English Patent Office. The information may be useful to many of our readers:—

"SOUTHAMPTON BUILDINGS,
LONDON, 13th *August*, 1855.

SIR,—The Lord Chancellor has transmitted to me your letter of the 30th ultimo, addressed to him on the subject of Patents for Inventions.

In answer to your first question I beg to inform you that copies of drawings accompanying specifications required by the public are made out of the office by draughtsmen employed by me, and are examined and duly certified by a clerk in the office; however, such copies are rarely asked for, and for this reason: Every specification filed under the Act of 1852, is printed, published, and sold at the cost price, within three weeks of its deposit in the office.

The specifications enrolled previous to the Act of 1852, fourteen thousand in number, are also in course of publication in subjects; and it is expected the whole fourteen thousand will be finished within six years from this time.

In answer to your second question: There is no such office as Examiner of Patents in England, nor is there the most remote chance of any such officer being appointed. It would be worse than useless. The indexing, printing, and publication of the specifications according to subjects, affording the person applying for the patent, full and sufficient means of reading, examining, and understanding all that has been previously done upon his particular subject. If he does not choose to read and understand, he simply wastes £25 upon a useless and valueless patent: others interested will read and understand, if he does not; and no one is injured by his folly except himself. This is undoubtedly the only true examination. An official examination to be of any service whatever, would require an officer for each particular subject: an engineer for steam engines, for who else could touch such a subject; a gunsmith for fire-arms; and so on.

The system of official examination, lately got up in the United States, is, I understand, found to be both useless and obstructive. The arrear is very large, and is daily increasing; and there can be no doubt that official examination will be very shortly abolished; and that the English plan of publication, leaving each inventor to examine for himself, must be adopted.

The Commissioners of Patents have given copies of all their publications indexes, specifications, reports, rules, &c, to the public libraries of all the principal towns in the United Kingdom; and they propose very shortly to send the same to each of Her Majesty's principal Colonies, to be placed in the Public Library of the principal towns of the Colony.

I have the honour to remain, Sir,
Your most obedient servant,
L. EDMUNDS,
Clerk of the Patents.

ALEX. KIRKWOOD, Esq."

AN AMIABLE GOBBLER.

(To the Editor of the Agriculturist.)

SIR,—The following trait of paternal solicitude may, perhaps, merit a corner in your journal, affording, as it does, a somewhat curious freak in natural history:—

My neighbourhood is much infested by vermin, such as kites, polecats, &c., and the rearing of poultry is attended with many hazards and losses. To afford some better chance of escape to the turkey department, the eggs were placed under some motherly Dorking, and the wandering turkey hens were left to their own pursuits. The old gobbler kept a close eye upon these proceedings, and, as turkey chicks came forth, strenuously claimed them as his own. He took no notice whatever of common poultry, but would bear no refusal from his own tribe, and eventually secured nine turkey chickens, over whose growth and welfare he has watched with a tender mother's care,—nestling them at night under his wings, and anxiously guarding them from all danger during the day. It is perhaps not a very generous return, to add, that his young family are now in the highest perfection making their appearance from time to time upon our family board.

Yours truly,

ADAM FERGUSON.

Woodhill, Nov. 8, 1855.

SAUSAGE MEAT is best preserved in cotton bags a foot long and two or three inches in diameter, which, after filling, are dipped in and coated with melted lard. When used, the bag is sliced off with the meat, as it is much easier to make new ones than to preserve the old.

Scientific.

AN IMPORTANT DISCOVERY.

The scientific correspondent of a Montreal journal (probably one of the officials at the Paris exhibition), gives a very interesting account of a new process for obtaining steel from iron ore, discovered by a French chemist. We have no doubt the subject will be interesting to the scientific, and instructive to the general reader —

Among the curious scientific inventions which are brought forward at the Exposition the metallurgical processes of Adrian Chenot are entitled to a prominent place. The art of extracting metals from their ores is one which is so intimately connected with that of mining that it might have naturally been expected to have kept pace with the great progress of that science during the last century. Such however, has not been the case; and the processes which are to-day employed in melting the ores of Etna and the tin ores of Cornwall are essentially the same as those employed twenty centuries since by the Romans who then employed the same mines, the conquerors of the world and before them the Phœnician merchants, sought at the *Ultima Thule*, the same silvery metal, which now forms the stock in trade of their successors (of the Phœnician) Dorian, the Yankee tin peddlars—We may even say that in metallurgy, as in many other arts we have lost the secret of those olden times so much so that to-day the blades of Damascus are only known in history and the temper of the swords of King Arthur and his gallant knights is attributed to fairy skill. Well Adrian Chenot, skilful chemist and accomplished metallurgist at the same time, felt the reproach that all these facts cast upon modern science, and set himself at work with that enthusiasm and self-denial which alone accomplishes great things to remove this reproach and to endow his art with those rich advantages which his favorite science had already conferred upon so many of the other arts of life. He saw in the commencement that there were two great points to be kept in view—excellence and cheapness. In these days of cent per cent, the servant who neglects no sacrifice to mammon may win the favor of Olympus but not of the Exchange, and he learns not to overlook the all important question of economy. Now it is precisely in this respect that the art of metallurgy is the most behind hand. When the Roman wished a few tons of iron to mould swords and battle axes, and to fashion their armour, they asked no questions as to expense, and since wood abounded, labour was of little account; their only problem was to obtain strong bright steel, without regard to cost. But where our ancestors demanded a ton of steel or iron for their limited wants, we require a hundred, not only for our cutlery but for our cannons and balls, for our engines and our iron roads, to say nothing is high, wood is rare, and for coal we must sink expensive mines, and the eight tons of coal which are required to fit one ton of steel for the market, add immensely to the cost of the metal

Chenot's first question was, then, the economy of fuel. The smelter of iron has not only to reduce the oxyde which constitutes the ores to the metallic state but to fuse the metal; to accomplish the first, a moderate red heat only is necessary, but the subsequent fusion of the metal requires a greatly increased temperature and a vast expenditure of fuel. Nor is this consumption of coal the only objection to the fusion: the iron takes up certain impurities from the coal, which make it more fusible, it is true, but which give it the brittleness that characterizes cast iron. To remove these foreign materials and to give the iron that softness and toughness which enables it to be wrought at the forge, and serves to distinguish iron from all other metals; another long prolonged fusion and a peculiar process is required to convert the cast metal into malleable iron and finally to give to their product the fine edge, hardness, and elasticity which characterizes steel. The malleable iron must undergo a kind of operation in the furnace before it has realized that condition of highest excellence, which fits it for the cutler's art.

To produce at will malleable iron or steel directly from the ore, was then a great problem for the metallurgist; since he might hope by this means to reduce to one half or one third the amount of fuel and of labor; and Chenot soon found that, in attempting this, another most important economy was attained. In a word, the great heat requisite for the fusion of the metal, was no longer necessary, and it became possible to convert the crude ore into *wrought iron* and steel without ever once melting it. Such is the discovery which he now claims to have perfected, after twenty years of painful and self-denying labors, and which he now offers to the world.

I will endeavor, in a short space, to give you some idea of the nature of this process as I learned it from the inventor himself at his works at Chely, where this worthy representative of the old alchemists—venerable, bearded, and enthusiastic as they—labors, though with the agencies and instruments of modern science, which in many respects more than realize the wildest ideas of those early savants. Modern chemistry has taught us the use of gases of which the alchemists knew little or nothing. They looked upon them as immaterial essences or spirits which escaped their modes of research; and it is only within less than a century that we have learned to control these subtile powers and make them available to light our cities, inflate balloons, and serve a thousand other purposes of life. I indulge in this digression upon pneumatic chemistry, because it is solely by means of gases that Chenot obtains his surprising results. In the first place he makes use of gas as a source of heat. In his process the fuel is never brought in contact with the ore, which is enclosed in a huge upright case or crucible of fire-brick. It would be impossible to heat this great crucible in a uniform manner by any other fuel than gas, and here Chenot has made for the first time an economical application of a cheap and very common-able gas which has hitherto been known only in the laboratory of the chemist. When the air passes over a mass of ignited fuel, its oxygen combines with a portion of the coal, and is converted into a dense incombustible gas, known as carbonic acid, which is the ordinary product of combustion; but if this gas passes over an additional body of red hot coal it takes up as much more carbon as it held before, and and becomes combustible, burning with a pale blue flame, without smoke, such as may be seen playing upon the surface of an ignited mass of coke or authracite. By a peculiar construction of the furnaces, which receive a limited supply of air Mr. Chenot converts the whole of his fuel into this carbonic oxyde gas, which is conveyed by chimneys to the surface of the retort, and there being supplied with air, is burned for the purpose of heating to redness the

ene osed iron ore. So much for this novel and cheap mode of converting any kind of coal into a gas which may be employed with advantage wherever heat and not light is the object, and which is doubtless destined to find many valuable applications in the arts

The ore of iron being now heated to redness in the crucible, is to be reduced to the metallic state and here a gas is again the reducing agent in place of the coal which is generally mixed with the ore. and serves at once as a combustible and de oxydizer. Hydrogen. coal gas, or almost any other combustible gas may be employed for this purpose, but after many experiments, Chenot has fixed upon carbonic oxyde gas which we have just described as the most available It is important for this object that the gas be pure. and as that obtained from the furnace is mingled with the nitrogen of the atmosphere. another means. admirable for its ingenuity is made use of. In the first place, a portion of pure carobinic acid gas, is prepared. as by the makers of soda water with chalk and oil of vitriol. This gas is passed through a cylinder of ignited charcoal, and without change of volume is converted into the combustible carbonic oxyde.which is conveyed by a tube into the crucible of ignited iron ore, and at once reduces the metallic iron, while it is, in its turn, converted into a quantity of carbonic acid gas, having double the volume of the carbonic oxyde employed. This gas is drawn off, by a simple apparatus from a tube in the side of the crucible, and being again passed over the ignited charcoal we have twice as much carbonic oxyde as before, to be again conveyed into the crucible and to renew the process, each time doubling in volume, so that in a few minutes the little leaven has multiplied itself so much that only a small portion of the carbonic acid is required to act as a vehicle for the ignited coal which, in a small cylinder apart, is to perform the work of reducing the iron.

The crucible, which is some thirty feet in height, is charged from above with the ore in large masses. The operation when once commenced is constant. The ore slowly descending is gradually heated until it comes within the sphere of ignition. where it encounters the reducing gas, and thence continuing its downward course the metal, when cold, is removed from below without in any way deranging the operation. The action of the gas converts the ore throughout into a dull gray spongy mass of metallic iron, which is soft and may be readily cut with a knife or condensed by pressure. The iron thus obtained possesses many remarkable qualities, of which M. Chenot avails himself, in the working of other metals. but which need not be mentioned here; its inflammability is, however, remarkable, for the sponge kindles by a spark and burns like German tinder; it is for this reason necessary to cool the metal before removing it from the bottom of the crucible.

Having obtained the iron sponge, it is reduced to powder and subjected to pressure, when it consolidates in a coherent mass, copying exactly the forms of the mould. It is now only necessary to subject this condensed sponge, which has lost its inflammability, to a welding heat, in a forge, and the solidification of the iron is completed with a slight shrinking of the mass, which is now pure malleable iron, capable of being forged or rolled into plate. I have seen in this way castings of soft iron of the most delicate patterns, and horse-shoes, both made from the same metallic sponge, moulded in the cold, and consolidated without fusion, while by the side were large consolidated ingots, fit to be wrought into bars or drawn into wire.

The next step is the conversion of this pure malleable iron into steel. This, you are aware, is generally effected by a prolonged heating of the iron with powdered charcoal, of which the metal absorbs a portion which changes its texture, and gives it the hardness and other precious qualities of steel. But Chenot was aware that if he could introduce the carbon in a liquid state into his metalic sponge the transformation could be more easily effected and he moistens the spongy iron with oil before compressing it. Heat now being applied, the volatile portions are expelled, the carbon unites with the metal, and by a process similar to that which we have just described for malleable iron, a perfect steel is at once obtained. Hitherto in this important manufacture, much has been left to empiricism, and it was not easy to produce any variety of steel, but it is now found that by varying the quality of the oils, it is easy to produce a metal of any degree of hardness; the coarsest oils, or even tar may be used for steels of great hardness, while, for the finer varieties, the purest and most delicate oils are employed. Such is the outline of the processes of Adrian Chenot. His patent has just been purchased for England and France by some capitalists who are now constructing works in the vicinity of Paris, where, taking advantage of the furnace already erected by the inventor. They are about to commence the manufacture of iron and steel on a large scale. It is said that the consumption of fuel required for the production of malleable iron from the ore, is equal to only about one-tenth of that required by the old method, while the length of the process and the amount of labour is very much abridged. Another time I may describe to you the curious alloys of iron with titrnium and with chronium obtained by Chenot, which promise to find important applications in the arts, for a new alloy is often in effect a new metal added to our previous list of available materials. The same thing may be said of his alloy of iron and aluminum, not to speak of the marvelous character of the pure aluminum of St. Clairdevile and of its alloy with copper, whose history I reserve for another occasion.

Chenot has a curious collection of his products in the exposition, where they will not fail to attract the attention of those charged with the examination of minerals and metallurgical processes. This Jury, of which M. Elie de Beaumont is President, is composed besides of Dufrenoy, Le Play, Callon and Chancourtois, of the Imperial School of Mines. W. J. Hamilton, President of the Geological Society of London, and Warrington Smyth of the British School of Mines, with Jevaix, Inspector General of the Mines of Belgium, Oversveg of Prussia and Tunner of Austria. Director of the School of Mines of Leopen, to which, as supplementary jurors, have been added Kittinger, Inspector-General of Mines from Austria, Hunt, of the Geological Survey of Canada, and Rainbeaux of Belgium.

ALUMINUM.

Quite an excitement has taken place among the chemists of France. in consequence of a discovery made by Sainte Claire Deville, by which he has been enabled to extract the metallic principles of clay, known by the name of aluminum. Although enough had been known from the researches of Sir Humphry Davy, years ago. that there was a metal in clay. or in other words that common clay in its purity. was a compound made up of a distinct metallic substance and other matters united with it, this metal has never been obtained in sufficient quantities to enable one to ascertain all its peculiar characters.

has at length been done and it has been found to possess valuable properties.

I may seem very curious to many, that our common clay banks contain a valuable metal of peculiar characteristics, which if separated, could be used instead of gold or platina, in many of the arts. The brick maker as he tempers the mortar for his bricks, or the potter as he moulds a jug, would be surprised to see the chemist extract from the brick or jug a bright shining hard and unmixed metal; and yet it can now be done. The following is an account given of some of the properties of this metal, called as we before said, aluminum.

"As aluminum is nine times lighter than platina, and possesses a surface nine times greater than the latter metal with an equal thickness. Its substitution for platina should be productive of great advantage; above all, that its price has become very low. The aluminum here spoken of is very difficult to forge. In order to roll it, it has been found necessary to anneal it at each pass. By depositing copper electro chemically on a plate of aluminum, they have succeeded by the aid of rollers in reducing it to very thin plates. Hard aluminum acquires by sulphuring an elasticity which would make it of use in the suspension of all kinds of scales for assays or analyses. Its metal is so light that, the weights of the system being the same, the arms of the beam can be elongated a great deal, and long blades can be placed even at the extreme points of suspension, as on the center of oscillation. The author does not count that in weighing 20 grammes, the sensibility of the balance would not raise a half milligram."

Miscellaneous.

CRUELTY TO ANIMALS.

"I would not enter on my list of friends,
(Though graced with polish'd manners and fine sense,
Yet wanting sensibility,) the man
Who needlessly sets foot upon a worm"— *cowper.*

(For correspondence of the New England Farmer.)

He who knowingly would injure the harmless creature God has made, can have little feeling for human kind. Injury to creatures may sometimes be done by accident, or through necessity which acts "leave no blame." But he, who, for the sake of gratifying his own passions, cruelly treat those animals God has placed here for the benefit and service of man, is justly deserving no claims to humanity. It is not the man who beats with a good will his ox or his horse in toil may be called the most cruel or unmerciful; for he who neglects to provide for the comfort and health of his dumb creatures is equally censurable. But in most cases it is pretty true that he who is guilty of the one act, is equally guilty of the other. I have reason to believe, however, that a greater degree of kindness is shown towards dumb animals now, than formerly—that less beating and brutality is resorted to in the training of young horses or oxen; yet there are many who still adhere to former customs, although late discoveries and observations prove that gentle means and mild measures may be more *satisfactorily* used towards subduing the brute creation. The "whip for the horse" will be but frequently used if the hand that plies it is associated with a kind and feeling heart. However great a reformation *has* been made in the mode of training animals to service, too harsh measures are still used.

The horse, the most noble of all the animals used by man, is the most cruelly treated. Even in the present state of civilization, I presume no one horse in five is treated in such a manner as that he lives out the term of his natural life. My opinion is, *that if* his animal wants were properly supplied, and kindly treated, he would live as fit a condition to labor, at the age of twenty as he now is with present treatment, at twelve. Very few horses at the proper day ever arrive at the latter age in good condition with soundness in body and limb. Hard labor and improper care render him unfit for service at an early age. The constitution of the horse is very similar to the constitution of man, hence, the former is no more fitted to bear excessive labor and unkind treatment, than the latter. It is as injurious to the constitution of the horse to keep him at labor in stormy weather, as it is injurious to men; hence it is as necessary for humanity (if we would preserve to the health and comfort of his team,) to us the same care for them that he does for himself.

There is one cruel act of which too many are guilty, and about which I am of fearful apprehension. I have reference to the practice of putting off horses which have become unfit for service, in consequence of old age, to cruel and inhuman persons. Such horses thus put off have served their masters faithfully and doubly paid, perhaps, for all they have received, yet still, for the sake of a few paltry dollars, they are sold to those who will cruelly treat them in the last moments of their existence. It appears to me that the man who will *thus* part with his horse, is as virtually cruel as he who abuses him after he has him in his possession. Is not more of act of mercy to take the life outright of a worn-out beast than to dispose of him to an individual who will kill by degrees?

I have never been the owner of but one horse, and although he is considerably on the down hill of life, money would not tempt me to part with him unless I felt sure he was going into the hands of a merciful man. I have respect for the aged; and verily kindness is actually due these animals whose services are so beneficial to mankind.

Who would see an aged father or mother (whose lives had be spent for their children) turned off with hard usage and unkind treatment because their infirmities advanced and rendered them unfit for service? Of course the kindest treatment is their due in consideration of what they have been, and what they have done.

Cruelty to animals, is a subject deserving special attention. Parents ought to make it a point of duty to train their children to be merciful to animals, as well as to human kind. If this were more generally done, certainly there would be less hardening and cruelness. The boy who is suffered to grow up with the privilege of inflicting pain upon every animal that comes in his way, is pretty sure to be a cruel and hard master, over whom and whatever he has the control.

"Mercy to him that shows it is the rule
And righteous limitation of its act,
By which heaven moves in pard'ning guilty man;
And he that shows none, being ripe in years,
And conscious of the outrage he commits,
Shall seek it and not find it in his turn."

It is supposed that water containing phosphates and other earthy matters is apt to induce, *in the systems of predisposed horses, an ossific diathesis* resulting in bony enlargements.

Editorial Notices.

DEATH OF WILLIAM MATTHIE, ESQ.

It is with feelings of deep regret that we record the decease of this excellent man, who departed this life at his residence, in Brockville, on the 9th November, 1855. Notwithstanding that Mr. Matthie had been for several years in a state of feeble health, he was enabled, in consequence of his aptitude for business and great decision of character, to conduct successfully a large commercial establishment, of which he was the head; while he continued to evince an unabated interest in whatever promised to promote the interest of his locality or the welfare of the country. From his well known patriotic spirit and liberal views and feelings, Mr. Matthie (although never, we believe, practically engaged in farming) was chosen President of the Agricultural Association of Upper Canada in 1853. Ill health, at that time, prevented him doing all that he desired, but his munificent donation to the funds of the Association, during his period of office, will be long and gratefully remembered. The writer of this short and very inadequate notice, had abundant means of knowing the deep and abiding interest which Mr Matthie felt in the welfare of the Association; and during the recent exhibition at Cobourg, he received from the deceased a telegraphic message stating that he was too ill to attend, but felt desirous of knowing whether the show was progressing satisfactorily.

The removal of such a man in the prime of life is an irreparable loss to his family, his friends, and his country. His example however, will continue to live; and it is one peculiarly calculated to animate and guide the young. The following facts and remarks, taken from the *Brockville Recorder*, will interest not a few of our readers:—

Mr. Matthie was a native of Alloa, Scotland. He came to this country, while yet a boy, with his father, who settled near Lanark, in the Bathurst district. In 1827 Mr. Matthie, then a lad of only 15 years of age, came to Brockville, a friendless stranger, to push his way in the world. He commenced his active career as a clerk in one of our mercantile establishments. In that capacity he continued, giving the greatest satisfaction to his employers, until the year 1835, when, with no capital except his character for inflexible integrity, he embarked in business on his own account; and since that time he has been widely known as one of the most enterprising and honourable merchants in Canada. Like most men in business, he had, at times, great difficulties to contend with, but his indomitable energy of character carried him through them all, and his reward was a handsome competency, which, however, in the inscrutable dealings of the Almighty, he was not long permitted to enjoy.

In the death of Mr. Matthie this community has sustained a loss well nigh irreparable. In every project for the improvement of the town and surrounding country he took the lead, and there was no charity to which he was not the first contributor. In times of difficulty, when almost daily appealed to by business men and others for advice, he would cheer them on by recounting his own experience in life, and enjoining on them frugality, diligence, and self reliance. Fervid and unwavering in his attachments, his friends found no limit in his exertions to serve them, and nothing appeared to gratify him more than to aid the deserving poor, in whose welfare he always manifested a warm solicitude, and by whom the loss of his counsel and its elevating influence will be severely felt.

In politics, Mr. Matthie was a reformer, and his purse and person were ever ready, when required, in forwarding the interests of the Reform party, of which he was an energetic and talented member. In every leading question of the day, Mr. Matthie took a warm interest, and the late ministry were frequently under obligations to him for advice in relation to commercial matters.

In the agricultural progress of the country, the deceased always took an active interest; an interest which continued unabated till the day of his death, and was strongly evinced in a conversation he had with the editor of the *Recorder* the last time the writer ever saw him alive.

No man can pass through the scenes of an active life faultless, yet we believe whatever faults Mr. Matthie possessed will speedily be forgotten, while his virtues will live embalmed in the hearts of the many friends he has left behind him, so long as the lamp of their lives holds on to burn. Peace be to his ashes. Take him all in all, we may not look upon his like again.

Mr. Matthie was in the forty-fourth year of his age. He has left a wife and four children to mourn the loss of an affectionate husband and a kind and tender father.

His funeral took place on Monday afternoon; the procession of carriages was the largest we ever saw in Brockville, and, while the funeral procession passed through the town, every store was closed.

THE POTATO ROT.

The rot this year is very general in this part of Canada, and threatens to ruin a large portion of the crop. The old varieties are the most affected. The Pinkeyes are almost a total failure except on dry soils, and in most places they are very small. Judging from what we hear the crop in the townships near this city will be two-thirds less than an average. This will tend to keep up the price of flour, and provisions generally. We may remark, as a point of

some interest to potato growers, that of some thirty varieties of seedlings grown by the writer, six miles north of Toronto, not a single rotten potato has been detected. The soil was the same, in quality and position, as an adjoining patch of Cups, which have rotted badly. So far as we can judge from one year's cultivation, and the test of the table, we have obtained six or seven varieties of great promise. Another season we may have specimens of these for distribution.

CANADIAN SETTLER'S GUIDE.

By Mrs. C. P. Traill. 1855.

We noticed this useful work as it issued from the press in Parts. Our attention has been again drawn to it, by its appearance in the shape of a very neat book of some 260 pages. The authoress is a sister of the well-known writer, Agnes Strickland, and has experienced in her own person all the trials, hardships, and difficulties of the "settler's" life. Her book is intended especially for Immigrant's wives and daughter's, but may be read with profit by all newcomers to this country. Though Mrs. Traill is not unknown to fame as a writer of pleasant tales and other more ambitious productions, she has nevertheless succeeded in compiling an amount of practical information, suited to the every day wants of the immigrant settler, that is not to be found in any other single work with which we are acquaintd. The appendix contains numerous tables of great value such as routes, distances, and rates of passage from Quebec, to all parts of the Province and Western States; money tables, showing the equivalent values of sterling, currency, and federal money, or dollars and cents; rates of wages; value of live stock, &c,. at different periods; legal weights, of produce; information in regard to land, census, returns, &c, &c. We do not know a more useful book relating to Canada which a person here would transmit to his friends "at home" who may contemplate emigrating. It can be sent by post, and costs only $1. The work is published at the office of the *Old Countryman*, Toronto.

Canada: Physical, Economical, and Social.—By A. Lillie, D. D. Toronto: Maclear & Co. 1855.

Accidental causes have prevented us giving this very valuable publication an earlier article. We learn from the preface that it was prepared for the Committee of the Paris Exhibition, and sent in to compete for the prizes offered by that body for such Essays or Reports on Canada as might be accepted. On the alleged ground, however, of the manuscript being difficult to make out, it was passed by unread; a circumstance much to be regretted as whatever proceeds from Dr. Lillie's pen on "*The growth and prospects of Canada*," as well as from the work in question, is justly entitled to a candid and respectful consideration. The author, however, has judged properly, we think, in publishing his essay on his own responsibility, thus affording the public an opportunity of forming a judgement on his performance; and it is much to be desired that the labor and example so patriotically bestowed in preparing and bringing out the work should not be allowed to pass unrequited. For notwithstanding the many excellencies of the successful essays, none of them appear to convey so complete a view of this extensive and prosperous Province as Dr. Lillie's report, which is admirably adapted to meet the various wants of the intelligent and enquiring stranger, who may be looking, or induced to look, to this portion of the British Empire, or the North American Continent, as his future home.

The work is neatly printed, consisting of 300 pages and a well executed map. It should be in the hands of every Canadian who is desirous of possessing full and complete information of the land in which he lives. Much good would result if our people would send copies of Dr. Lillie's publication to their friends in the Old Country; for besides the valuable information it contains, it would in other respects be an acceptable New Year's Gift. It can be procured in stiff paper cover, well suited for going through the post, at the low price of three quarters of a dollar.

TORONTO MARKETS.

Toronto, December 6, 1855.

Wheat, in poor supply, at 9s. 11d. to 10s. per bushel; Oats very plentifully supplied from the other side of the lake and from farmers—they sell at 2s. 8d. to 3s. per bushel; Barley, 5s. 8d.; Peas, 4s. 6d.; Potatoes, 4s. to 4s. 2d. per bushel; Hay, $18 to $30 per ton, and plenty. During the past eleven months there have been exported from Toronto, 621,322 bushels of Wheat; 146,820 barrels of Flour; and 23,035 bushels of Barley and Peas—in all equal to 1,378,457 bushels of grain. This immense quantity is the produce of the Counties of York, Ontario, and Peel, for, if a small portion came from Simcoe, a still larger quantity, the growth of the United Counties, has been exported from Port Credit, Whitby, &c. Over *two-and-a-half millions of dollars* have thus passed into the hands of the farmers of these counties during the present season for grain alone!

ENGLISH CATTLE
IMPORTED ON COMMISSION,
BY
Messrs. THOMAS BETTS & BROTHERS,
OF LIVERPOOL AND HERTS, ENGLAND,
EMBRACING
Pure Blood Horses; Short Horned Cattle; North Devons, Herefords, Ayrshire and Alderney Cows; Pure Bred Southdown, Cotswold and Leicester Sheep; Suffolk, Essex and Berkshire Swine;
HADHAM HALL,
BISHOPS STORTFORD, HERTS, ENGLAND,
Residence of Messrs. Betts & Brothers,
Two Miles from Bishops Stortford Station, on the Eastern Counties Railway, and 32 Miles from London.

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

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

Messrs. Betts will always deliver with the cattle an authenticated pedigree.

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

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

Commission Charged.

Horse,	each,	$80
Bulls or Cows,	"	60
Ram or Ewe,	"	30
Three Sheep from the same owner, each,		2
Ten do	"	11
Twenty Ewes,	"	8
Three Swine from the same owner, each,		22
Ten " "	" "	11

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

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

Expense by Sea on Board the Steamers

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

Keep and attendance across the Atlantic on board the Steamer provision for 10 days.

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

Expense by Sailing Vessels.

Horse,	each,	$100
Bull or Cow,	"	80
Sheep or Swine,	"	18

Keep and attendance by Sailing Vessels, provision for 60 days

Horse,	each,	$75
Bull or Cow,	"	50
Sheep or Swine,	"	15

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

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

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

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

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

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

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

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

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

		$.	$.	$.	
Thorough Bred Horses, from	-	1 [illegible]	to 2 [illegible]	12 [illegible]	
Short Horn or Durham Bull	-	4 [illegible]	" 15 [illegible]	7 [illegible]	
Do	Cows -	2 [illegible]	" 800	400	
Do yearling	Bull -	2 [illegible]	" 1 [illegible]	600	
Do do	Heifer -	175	" 4 0	250	
Herefords	Bull -	3 [illegible]	" 8 [illegible]	5 [illegible]	
Do	Cows -	2 [illegible]	" 6 0	250	
Devons	Bull -	3 0	" 8 [illegible]	4 [illegible]	
Do	Cows -	200	" 500	250	
Ayrshire	Bull -	15	" 3 [illegible]	3 0	
Do	Cows -	1 0	" 250	2 [illegible]	
Alderney	Bull -	15	" 225	175	
Do	Cows -	100	" 150	125	
				Will weigh when killed and dressed	Will shear washed wool
Cotswold Sheep	Ram -	100 to	3 [illegible] 13 lbs	125 12 to 15lbs	
Do	Ewe -	25	" 100	3 [illegible]	
Leicester Sheep	Ram -	100	" 2 12 lbs	1 [illegible]	
Do	Ewe -	2	" 8 [illegible]	25	
South Down Sheep	Ram -	100	" 3 112lbs	125 6 to 9lbs	
Do	Ewe -	25	" 100	3 [illegible]	
Hampshire do	Ram -	75	" 125 12 lbs	1 [illegible] 6to10lbs	
Do	Ewe -	15	" 25	21	
Swine	Boars -	25	" 50	40	
Do	Sows -	15	" 40	25	
Merino Sheep from Spain					
Mules from Spain.					8

SUFFOLK PIGS.
(Directly from Imported Stock.)

THE Subscriber offers for sale, a few of these incomparable Pigs, singly, or in properly selected pairs.

PATRICK R. WRIGHT.

CASTLETON FARM,
Cobourg, C.W., July, 1855. 8—tf.

UNIVERSITY COLLEGE, TORONTO.

THE Lectures on the History, Science and Practice of Agriculture will commence early in November. Young men from the country can attend during Winter, other classes such as Chemistry Geology, Natural History, &c. for a very small outlay. Particulars may be obtained of Professor Buckland, Board of Agriculture.

Toronto, Sept. 25th, 1855.

UPPER CANADA STOCK REGISTRY.

To Owners and Breeders of Thorough Bred Horses and Cattle.

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

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

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

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

G. BUCKLAND, *Secretary*

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

DRAINAGE AND SEWERAGE PIPE MACHINE

CHARNOCK'S PATENT.

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

A man and three boys can turn out from 5, 0 to 1,y 00 feet of pipes per day, according to sizes; and if worked by horse, steam or water power, a proportionate increase will be obtained.

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

By the Yorkshire Agricultural Society, at its annual meeting, 1845, as the first Tile Machine with a continuous motion, - £5 0 0
By the same Society, the following year as the best Machine of the day, - - - - - - - - - - - - - - - - - - 10 0 0
By the Lancashire Agricultural Society, at its annual meeting, 1845, - Silver Medal.
By the Highland Agricultural Society, at its annual meeting in 1846, as the best machine - - - - - - - - 5 0 0

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

The price of the Machine is £50, (half cash and remainder at six months), with five Dies for Pipes. Brick and other Dies at a moderate charge.

☞ The Patentee guarantees the effective working of the Machine.

☞ All orders to be addressed to

JOHN H CHARNOCK,
Drainage Engineer, Hamilton, C. W., the Patentee.

Hamilton, March, 1855.

SPRING STOCK OF IMPLEMENTS.

THE Subscribers beg to inform Agriculturists and Horticulturists, that they have received a large and varied assortment of

FARM AND GARDEN IMPLEMENTS

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

McINTOSH & WALTON.

TORONTO, 1st May, 1855.

TO BREEDERS.

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

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

Terms for Service—Thorough bred, Five Pounds; if grade, 5Cs.

Parties wishing it, can have pasture at a reasonable rate. No risk by subscriber.

His sire, "John O'Gaunt" (1621 English Herd Book), was sold in 1853 for $4,00 .

FREDERICK WM. STONE.

Guelph, April 24, 1855.

COMBINED REAPER AND MOWER.

Manny's Patent with Wood's Improvement.

THE Undersigned are now manufacturing the above Machinery which has been thoroughly tried through the United States, and have given entire satisfaction In the frequent trials made with every machine that has any claim to reputation it has proved the best in the following points, viz.:

Its perfect adaptation to uneven surfaces—its means of adjustability to various heights of cutting—its lightness of draught—the ease and facility with which it can be removed from field to field upon its own wheels, and changed from a reaper to a mower, and vice versa—the constructinn, for strength and durability—and its capacity for doing business.

By means of suspending the frame to the axle of the wheels the joint and lever, the driver is enabled at his will to elevate or depress the cutters from one to fifteen inches from the ground; and with the oblique platform the raker is enabled to discharge the grain in gazels, at a sufficient distance from the standing grain to allow the team to pass, so that the whole field may be cut without removing any of the grain.

Price, with two setts knives, $13 . We are also manufacturing Burall's Reaper, price $120; and Ketchum's Mower as improved, price, with two setts of knives, $110, warranted.

These machines are capable of mowing or reaping from ten to fifteen acres per day on smooth land, as well as can be done with scythe or cradle.

H. A. MASSEY & Co.

Newcastle, May 6, 1855.

THE CANADIAN AGRICULTURIST.

IS PUBLISHED MONTHLY, at TORONTO, Upper Canada, and devoted to the improvement of *Agriculture Horticulture Farm Mechanics*, and to the advancement of the *Farmers' interests generaly* It commences its Eighth Volume this year, 1855. Each number contains 32 large octavo pages.

The *Agriculturist* is Illustrated with Engravings of Cattle, Implements, Farm Houses, Farm Buildings, &c., and is the *only* Agricultural paper printed and published in Upper Canada. Receiving as exchanges the leading Agricultural Journals of the United States and Great Britain, the Editors are able to select and lay before their readers every thing of value that may appear in these papers.

The *Agriculturist* contains, beside Editoral and Miscellaneous matter, Reports of Farmers' Clubs Essays, Proceedings of the Board of Agriculture, Prize List of the Agricultural Association, Information and Hints to Agricultural Societies, &c. &c. It is strictly a CANADIAN work, and should be taken in by every Farmer who desires to improve himself, or who feels any pride in the advancement of his country.

Professor BUCKLAND, of Toronto University, continues to assist as Editor.

Some of the most intelligent Practical Farmers in the Province are contributors to this journal.

The *Agriculturist* is not a second edition of the *Genesee Farmer*, nor of any other foreign publication. It is a *home production* and asks no man's support under a false name. It is a true not a spurious *Canada Farmer*.

TERMS

Two copies or upwards, each - - - - - 2s. 6d.

*** The *Agriculturist* is not liable to *Postage*.

☞ Newspapers inserting the above will do us a favour, and entitle themselves to a copy without exchange

WM. McDOUGALL,
Publisher, Toronto.

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