

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.

Additional comments:/
Commentaires supplémentaires:

Wrinkled pages may film slightly out of focus.

Coloured pages/
Pages de couleur

Pages damaged/
Pages endommagées

Pages restored and/or laminated/
Pages restaurées et/ou pelliculées

Pages discoloured, stained or foxed/
Pages décolorées, tachetées ou piquées

Pages detached/
Pages détachées

Showthrough/
Transparence

Quality of print varies/
Qualité inégale de l'impression

Continuous pagination/
Pagination continue

Includes index(es)/
Comprend un (des) index

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

Title page of issue/
Page de titre de la livraison

Caption of issue/
Titre de départ de la livraison

Masthead/
Générique (périodiques) de la livraison

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

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



VOL. IV. No. 6.

TORONTO, UPPER CANADA, MARCH 15, 1867.

POSTAGE FREE.

The Field.

The Seed of Plants.

The seed is at once the starting point and the end of plant-life, and in its earliest development we may trace the whole history of the plant, the completed circle of the course, all subsequent stages of growth being simple repetitions of the first. For we may observe in the largest tree that each fresh addition to its bulk results from the development of a tiny bud, and we shall see, as we examine further, that the analogies between the seed and the bud are of the very closest character, and that if they are not almost identical in their nature, they are each, at least, simple modifications of the germ. In the leaf-bud, which is often large, easily taken to pieces with a little careful manipulation, and readily examined with the unassisted eye, we shall find, outside of all, a covering of scales enveloping other foliations, which, as we approach the centre, assume the appearance of minute but extremely perfect and beautiful leaves, the whole enfolding a soft spongy mass, the growing point, and presenting the type of a plant in miniature. In this condition the bud may remain dormant for a considerable time; but when at length started into activity, the central point shoots forward, developing as it advances the tiny leaves, which also simultaneously enlarge, and are separated from each other by the elongation and growth of the intervening stem. Just in proportion as this movement of the growing point advances in one direction, a corresponding production of plant tissue is going on in another; for from the base of the growing point, as its summit shoots forward into a stem, an opposite development of fibres, or rootlets, is sent back into the parent stock. By a repetition of similar processes, completed either in one year or extended and multiplied over many, the whole plant is constructed. While thus the leaf bud propagates the individual plant, provision is made for the continuance and diffusion of the species by the formation of another sort of bud, capable of retaining a separate vitality, and under favorable conditions of resuming an independent life and growth. These modified buds are the seeds. Proofs of the analogy in structure and development are numerous and conclusive, but would occupy too much space to discuss here. It may be mentioned, in passing, that the flower itself is in truth but a modified stem, compressed and compacted, and beautifully adorned indeed, but still a stem, with petals and analogous parts for leaves, and seeds for buds. It may be mentioned further, as an illustration of the analogy between buds and seeds, that in some plants of the lily tribe, the buds drop off into the ground, take root, and grow into a new individual, while in some other plants, as, for example, in the

mangrove, the seeds commence to germinate while still attached to the tree, and send down their delicate rootlets into the soft mud below, where they ramify and take firm hold before the new plant is finally detached from the parent stock.

With this analogy to guide us, let us now examine the structure of the seed. This in some instances can be readily done with the unassisted eye. In other cases the use of the microscope is necessary. By softening for a short time in water, the decomposition of the seed, or the separation of its component parts, is greatly facilitated. It will thus be seen that the seed consists of a covering more or less hardened, corresponding to the outer scales of the leaf bud, and an internal germ or embryo. This last again consists of three portions—the central growing point, called here the *plumule*, one or two minute expansions, or seed leaves, named by botanists the *cotyledons*, and opposite to the growing point, the base or *radicle*. These two portions of the embryo, the radicle and the plumule, have an inherent and irreversible tendency, when forced into activity, to shoot, the one upwards towards the light, and the other in the opposite direction, away from the light. No matter in what position the seed may lie in the ground, or what obstacles may be in the way, the appropriate direction is sure to be assumed by the opposite portions of the germ. This polarity of the embryo cannot be explained, but it is essential and unalterable. Besides the parts of the seed already mentioned, and which are present in all instances, there is sometimes another substance introduced between the germ and the seed-coats, and which occasionally forms the larger portion of the seed. Botanists call this substance *albumen*, from its supposed analogy to the white of egg. When present it is found under a great variety of conditions, being sometimes pulpy or mucilaginous, and sometimes almost stony in hardness. Between these extremes, it possesses in different species various degrees of firmness and texture, being, for example, mealy, leathery, or horny. In the first condition, it forms the bulk of the seed in wheat, barley, maize and other cereals. In another form it constitutes the edible portion of the cocoa-nut, and in still another variety it furnishes the hard and durable substance known under the name of vegetable ivory, which admits of being delicately carved, and is manufactured into a variety of useful and elegant articles. The use of this component part of the seed is to furnish the earliest nourishment to the young plantlet when it first germinates. When the albumen is absent, its place is usually supplied by the seed leaves, which in these cases are commonly large, and stored with an abundance of nutritious material—examples of this may be noted in the apple, almond, bean, pea, oat, and many other seeds, in some of which the cotyledons are so thickened as to lose all resemblance to leaves, and to be incapable of performing the office

of leaves. They consequently remain under ground, instead of being elevated on the growing stem and expanding into the first pair of green leaves. Such is the case with the pea, the oak, &c.

The presence, in some seeds, of but one cotyledon, as in corn, &c., and in others, as in the maple, of two, though apparently a trifling circumstance, is at the foundation of some important differences in the mode of growth and general characters of plants, a subject to which we shall have occasion to revert again, and will not therefore dwell on here.

Such, then, is a brief outline of the structure of seeds, when examined in a dormant state. When growth is started, that is, when germination takes place, important changes occur, to the consideration of which we will devote another article.

Familiar Talks on Agricultural Principles.

TURNIP AND OTHER ROOT CROPS.

THE cultivation of the turnip, carrot, and mangold, cannot be too highly recommended. They cleanse and mellow the soil. They feed on a different class of substances from most other crops, and if the soil in which they grow has been well manured, they leave it rich, and in the best order for other products. Beside these advantages, they form valuable articles of food for stock. Though they contain a large percentage of water, they are also made up of such nutritive elements as albumen, sugar, gum, (pectin), and starch. These constituents vary in proportion according to the character of the soil in which the roots are grown, and the description of manure applied to them. Well-rotted composts, bone dust, superphosphate of lime, and guano, are the best fertilizers for crops of this sort. They require potash, soda, lime, bone-earth, gypsum, and some vegetable matter, and hence the manures that supply these are best for roots. Manures rich in nitrogen and comparatively poor in phosphates promote the growth of the leaf rather than that of the bulb, and the heaviest crops will not be obtained by such treatment. Land enriched by previous high culture, or dressed with well-rotted manures or concentrated fertilizers, are those in which roots yield the most satisfactory returns, and farmers who have had no experience on the subject will be astonished to find what results may be obtained from this kind of husbandry, when properly performed. The culture of turnips and other roots is largely on the increase in this country, but as yet it is only to a very small extent that their beneficial effect on our agriculture has come to be felt. When a system of rotation shall be established on every farm, and root crops take their proper place in that rotation, a revolution of the most pleasing kind will have been brought about. We shall hear no more complaints about worn-out soils, want of manure, scarcity of money, or farming being a bad

business. Root culture.—chiefly that of the turnip, —has wrought just such a change in British agriculture, and is capable of effecting a similar improvement in this country.

To induce farmers to grow root crops, it should be sufficient to show the important place they occupy in a well-managed rotation. The lessons of a stern experience have taught our agricultural population that over-cropping with wheat is, in the long run, a most suicidal business. It is consuming the capital instead of living on the interest. But by alternating root and grass with grain crops, and manuring at proper intervals, this evil is avoided. No two plants of different kinds require the same substances in the same proportion for their nourishment, and by a succession of crops one description of plants will take what another leaves. It is thus that both labour and manure may be economized, for it is easier work to till a farm on the rotation plan, and as manure only requires to be put in once or twice during the course, it is made to go as far as possible. One of the greatest practical difficulties encountered in farming is that of obtaining a sufficient supply of good manure. This is partly surmounted by a well-arranged succession of crops, and partly by the increased production of manure, and that of a better quality, which results from growing root crops. For by the help of these more stock can be kept, and while the animals are being fattened they produce the best description of manure, and so help to maintain the fertility of the farm.

We earnestly counsel all our farming readers to pay more attention to the growth of roots. Whether your farm be new or old, large or small, you will find root culture profitable. Do not be deterred by the idea that it requires an enormous amount of labor to raise roots. This is a great bugbear with many. They suppose that sowing and hoeing turnips, &c., entails a vast deal of work. But this is a mistake. If the land be properly prepared, and suitable implements are used, the labour is not extraordinary by any means. The plough and horse or hand-roller, will put the soil in order for the seed. A drill costing from two to six dollars, will make sowing speedy and easy. Even a simple contrivance in the shape of an old tin dipper or long-necked bottle, will greatly help to lessen the trouble of sowing. Thinning the plants is the most tedious part of the work, but this is quickly performed by a man expert with the hoe. A one-horse cultivator, or even a plough driven between the rows, will leave but little to be done with the hand-hoe. If the work requisite be promptly done at the proper time, it will not be found so very arduous as many people imagine. A good crop of roots is well worth all the trouble it costs, even if it were much more than it is.

Many people who know the value of turnips, both as a renovating crop and an article of food for stock, are not so well acquainted with carrots, mangolds, and parsnips. All these are excellent plants to raise for feeding purposes, and they leave the land in equally good condition with the turnip. But the turnip has the great advantage of coming at a time when there is comparative leisure and freedom from the hurry of other crops, while carrots, &c., must be put in among the earlier spring seedings. Still, to all who can possibly squeeze them in, we earnestly recommend these roots. The carrot is a valuable food for horses, cattle and sheep. Horses are especially fond of it. It keeps up their condition, gives them a fine glossy coat, and helps greatly to supply the want of the juicy food so much relished in the summer time. Fed to cows it improves the quality of the milk, and is thought to give a richer colour to the butter, while it has the advantage of not imparting an unpleasant taste to the milk and butter. It is also a valuable food for sheep and lambs. The mangold is a desirable article for stock feeding, and cattle of all kinds are very fond of it. Toward spring it is considered especially beneficial for milch cows. The

parsnip is more nutritive than the carrot, and is even better than that root for milch cows. The farmers in the islands of Jersey and Guernsey are noted for the excellent winter butter they make, and it is said to be owing to their extensive use of the parsnip. This root endures the severest cold, and may be left in the ground all winter, so as to be dug up fresh in the spring and used for feeding stock.

The modes of culture suited to these various roots cannot be described in this brief talk, and we content ourselves at present with earnestly advising our readers to grow these important crops for the reasons above stated.

Fermentation in Barnyard Manure.

To the Editor of THE CANADA FARMER :

SIR,—An article appears in your issue of Feb. 1st on the subject of manures, of very great interest to the practical farmer, and in which you dissent, at least in the most material part, from the views of Prof. Voelcker, the lecturer, whose address you were reviewing. I have not had the pleasure of reading Prof. Voelcker's paper, and can, therefore, gather his views only from the very slight sketch with which you have favoured your readers; but conclude that he recommends the application of barnyard manure to the soil in an unfermented state, thereby preserving the azotised or nitrogenous principles, in the same form as when they were voided from the animal, and as contained in the fæces and urine; and I presume it will not be denied that almost the whole fertilizing principles in barnyard manure are due to these substances. It is quite true that a plant will absorb from the atmosphere alone sufficient nitrogen to perfect seeds enough to prevent the species from becoming extinct; but that which the soil contains is undoubtedly the great source of supply. There are no two principles better understood in animal and vegetable physiology than that azotised substances in the form of the perfected stems and seeds of plants are exactly fitted for the support of animal life, and are adapted in that state to enter into the animal economy; and also that the nitrogenous compounds contained in the droppings of animals, and in their bodies, are in a fit state to enter again into the composition of plants, the conversion being hastened and facilitated by putrefaction, while the compounds in question will be entirely changed and measurably lost by fermentation. We come now directly to the point at issue between you. You assume that the manure should be turned over, and put in large masses, so as to induce this very heat and fermentation, which, so far as relates to the fertilizing principles, makes them volatile, by transforming them into gases, whereas they existed previously as salts. Even in putrefaction alone, urea is converted into carbonate of ammonia, which, if the water is allowed to evaporate, escapes, except it be fixed by some substance such as chloride of lime, gypsum, or charcoal; and if such disastrous effects follow mere putrefaction, what must be the effect when complete fermentation takes place and a temperature of 100 degrees is evolved? A large share of the fertilizing principles is certain to be transformed into gas, which eludes the grasp of the farmer and wastes itself on the "desert air." There is very little plant food in the stems of plants, except carbon; and there is a large supply of this ingredient in the carbonic acid of the atmosphere, and this gas enters into the construction of plants, through the leaves, in connection with oxygen by the agency of the life principle. Straw is valuable as an absorbent of liquid manure in which the nitrogenized compounds are held in solution, and it operates on certain soils, particularly stiff clays, mechanically, where it slowly decays, the escaping gases being fixed by the soil. Where is the necessity, then, for the chemical changes induced by heating the manure in the barnyard, so far as the action of the manure itself on the growth of plants is concerned? On the contrary, are we not doing our best, in conjunction with the leaching process, to destroy it altogether? There is another point in your article to which I think

too much prominence is given, namely, the destruction of the vitality of the seeds of weeds by heating. It is known that the seeds of a great variety of plants will pass through animals uninjured. In doing this they are subjected to a heat of at least 98 degrees, which is seldom exceeded in a heap of fermenting manure, and which is quite sufficient to liberate all the gases contained in it. I think, therefore, that the advantages supposed to accrue from this source may be "counted out."

A PRACTICAL FARMER.

Sophiasburgh, February, 1867.

NOTE BY ED. CANADA FARMER.—We are very glad to find "practical farmers" taking up the subjects brought forward from time to time in this journal, and frankly discussing them from their own point of view, and with the advantage of their own experience. We have another letter from another practical farmer on the same subject, very strongly condemning Professor Voelcker's recommendations of fresh manure. When practical men as well as men of science are so diametrically opposed in opinion, we will not presume to dogmatize, and are willing to wait for the slow but sure disclosures of time and intelligent experience. In one point, our correspondent has mistaken the gist of the article in our former issue to which he refers. Great stress was laid on the necessity of destroying the vitality of the numerous seeds brought together in the manure heap; and this, it was contended, was effected, not by the mere heat to which the seeds were exposed, but by their germination and subsequent destruction.

Manure-Saving.

To the Editor of THE CANADA FARMER :

SIR,—Much has been said about manure, the merits of different kinds, how and when it should be used, and the best method of preparing barnyard manure; but I have not met with anything on this subject that could be accepted as of universal application. Professor Voelcker's lecture before the London Farmers' Club may in some points apply to agriculture in England, though I doubt very much his theory of spreading the manure on the fields in a green state. I will say this much, that if scattering the manure over the fields as it comes from the stables proves best in England, there must be as wide a difference between England and Canada, as there is between chalk and cheese; for a farmer might better save his labour here than to cart his manure out in winter. In my opinion, the best method of manufacturing manure in the Canadian barnyard is this, first I approve of sheds, but they should not be entirely close roofed over like a barn, but closed round the sides, with only half roof. Better manure can be made here than in a close air-tight cellar, because I consider air is very requisite in the process of rotting; and as I consider barnyard manure fit for nothing unless rotted, I will give my method of doing that, and the best time of applying it. I first prepare a tight shed that will hold from 100 to 150 wagon loads of any kind of dry mould, which any farmer can get during the months of July and August, by ploughing up a piece of high endlands, work it to a mould, and cart it into the shed, then shut the door for winter use, and in winter, once a week, give the barn-yard a coating of this, with some long manure or straw over it, to keep it from getting into a paste or becoming mud; this will prevent much of the leaching that takes place in spring. Another advantage from this earth is, that the frost will be much sooner out than otherwise, that is if the yard has been open. If it be a close one, this plan will prevent the manure from getting fire-fanged. As soon as frost is out in the spring, commence at one side, and turn it over, trenching it clean to the bottom, getting it well mixed; and as it is after this turning over that the greatest loss from leaching takes place, either drain this leaching into a cistern, or surround the pile with the rest of the dry mould, which will lick it up like a sponge. If the manure thus prepared is used as top-dressing, it will speak for itself more than I can write in its favour. If the leaching is drained into a cistern, keep pumping it on to the pile until it

is carted out to the fallow field. This field of course having been fall-ploughed, requires no kind of spring labour until the manure is first put on; and my method of doing it is this. Cross plough, commencing each piece, or fearing, 20 to 30 yards apart; then put the manure on one fearing, from side to side of the field; spread this evenly over the surface, and plough it down immediately. If a farmer has two teams, one can manure as fast as the other can plough down. This ploughing ought to be done with as much neatness as if it were for seed, because the finer the cross ploughing is done, the less work it requires afterwards. The best time for the work to be done is as soon as the frost will admit. If the farmer is too busy to attend personally to the turning of the manure, let him hire another man to do it. He can turn up with ease 200 loads in one week, and the extra expense will be amply repaid when the seeding is done, which will be time enough for the manure to be rotten, say 15th of June. It could be all ploughed in and a good crop of winter keep can be raised, such as Hungarian grass and corn, mixed, sown broadcast. The corn should be steeped 48 hours before sowing. Hungarian grass requires a good mould; 15th or 20th of June is time enough to sow. Another excellent crop for green fodder is obtained from tares and oats. Of the former I have raised four tons to the acre, and it comes off time enough for the fall wheat to be put in. By this process the land is in a much better state to receive seed than if it had been baked all summer with the sun, and fall wheat put in after this manner is not so liable to be winter killed. I have tried it, and speak from experience. Let any farmer try my method of making the barnyard manure and the time of applying it. The experiment costs nothing over any other way of handling, except the expense of a shed to house the earth or mould when dry, to prevent its freezing in winter. Let anyone try it, and I think he will want very little, if any, patent manures, for manure thus treated is fit for anything, and is applicable to either garden or field.

GEO. HENDERSON.

Comstock's Rotary Spader.

In reply to the inquiries in your paper and others, I do not consider this implement adapted for small farms, nor foul ground, nor stumps. It must have a clear, large field, reasonably level. It is easily managed. Any woman that can drive four horses can break up six acres a day with it, and she will leave the field deeper and more thoroughly comminuted than three men and six horses could with ordinary ploughs. It does not, however, reverse the soil, but mixes the top and bottom together. It easily chokes in foul ground. We attempted last spring to break a field in which crab grass and clover were allowed to grow unchecked the previous year, and the spade would choke in going seventy yards, so as to require five minutes to clear it. There being fruit trees in the field, we could not burn it off, but I believe it would choke even when the debris of previous loose husbandry is not thick enough to burn.

One inquires whether it is liable to break. Last year mine spaded, unscathed, over several loose stones several inches under the surface, and through some pretty stout elder roots. Fearing to risk it further on that ground, I substituted a Black's Gang Plough, which breaks nearly two feet wide. This had hardly gone a mile, when it struck a concealed walnut stump and broke one of the beams. Another beam was substituted and broken, and then another larger, stayed and braced with iron, which did very well.

This spring, the Comstock had spaded about ten acres without encountering any obstacle, when one of the thick steel bars, to which the lines are attached, snapped in two. We dug into the ground, but could find nothing to break it, and I therefore conclude it is not a substantial machine. I then started the Gang Plough, above mentioned, which did well for some fifteen acres, when it struck a stump and broke the other beam. We then had to finish the field in the most abject and despicable manner, on foot, with the ordinary plough.—*Cor. Country Gentleman.*

ENRICHING PASTURES.—Mr. Willard gives an account of rather a novel method of enriching pastures, practiced in England, consisting of feeding oil cake to grazing animals. The pastures where these experiments were conducted were small, and one or two bullocks more than they are intended to carry are put into each. The lots were then allowed four pounds of oil cake each per day. The oil cake not only paid for itself in the better condition of the stock, but in a couple of years entirely altered the face of the pastures, and thus two objects were gained without loss to the owner.—*Prairie Farmer.*

The Dairy.

T. Rearing of Calves.

THERE are two considerations that give special importance at the present time to the subject of rearing young cattle. The large exportation of stock from this country into the adjacent States that took place just prior to the termination of the Reciprocity Treaty, has no doubt considerably diminished the quantity of stock in the country, and especially of our cattle; and besides this, the introduction of the factory system into the dairy business of Canada, and the probable rapid increase of cheese factories in all parts of the country, will enhance the value of milk in rural districts, and direct the attention of farmers to the most economical methods of raising calves, and at the same time having a considerable surplus of milk for cheese making. We should be glad if men of practical skill in the business would, through this journal give their brother farmers the benefit of their experience on this subject; and the remarks we now make are offered with the view of calling attention to the matter, and eliciting the opinions and practice of those who are best qualified to give instruction in this branch of cattle husbandry.

Amongst cattle breeders whose exclusive object is to raise first class stock, it is probable that the most natural method of feeding calves, by the milk of the cow, will continue to be pursued. They think, and perhaps justly, that no artificial feeding will raise such thrifty, vigorous, and large animals as the food which nature has provided. Such persons will advocate the propriety of giving the calf all the milk it will take, fresh from the cow, and that amounts to pretty much all the cow will give, leaving no surplus even for domestic use. We have known this to be the case where a very large number of cows have been kept, and not enough milk spared to provide the family with butter. Now this may be the best plan for the calf; but is it the best for the farmer? Will it pay on ordinary farms, and as a rule for general adoption, to raise cattle in this way? Is there no method of rearing the calves and yet securing a considerable surplus of milk for the dairy? Is it necessary to sacrifice one or the other of these objects—to abjure the dairy business, or consign the calves to the butcher? This is the alternative, we know, with many; but we think it altogether a mistaken practice, and here we cannot but remark, in passing, that we believe there would be, under a wise economy, much less veal in the market than there is. It is far less wholesome and nutritious than beef, and it seems absurd that it should sell at the same price. The demand, however, will always regulate the price, and so long as people fancy veal and lamb, calves and lambs will continue to be slaughtered. But to return to the subject under consideration. The question of the raising of calves without milk has, we believe, been satisfactorily settled, by the successful practice of many cattle raisers in the old country, and not a few in our own. No doubt a considerable variety will be found in the methods pursued by different authorities, but the system most generally adopted, so far as we can learn, is somewhat like the following.

For the first ten days the young calf is allowed the milk of the cow exclusively. The milk of the newly calved cow, as every dairyman knows, is not fit during the first week for dairy purposes, and is the only suitable nourishment for the delicate digestive organs of its young. For a few days after this period, about two or three quarts of milk at a meal should still be given, gradually adding some other food in the shape of gruel, and at the same time diluting the milk with water, so as to obtain the requisite quantity of fluid. Some recommend whey, where it can be procured. The gruel is made with a mix-

ture of linseed-meal or oil-cake powdered fine, and meal of various grains, barley, oats, and a little wheat flour. The proportions recommended by Mr. Henry Ruck, in a paper read by him at one of the meetings of the Cirencester Farmers' Club, (England) are as follows:—Into a 6 gallon bucket pour 2 gallons of scalding water, stir into this 7 lb. of ground linseed cake; then add 2 gallons of hay tea, which should be fresh and sweet; next add 7 lb of mixed meal; add sufficient cold water to fill the bucket, and well mix together. Two quarts of this gruel, diluted with two quarts of cold water, will be about the right quantity, and of the right temperature, for one calf at one meal. The food should be given at regular hours, and twice a day, morning and evening, will be found sufficient. The hay tea, which seems to be an excellent preparation, is made every morning by filling a small tub with good hay, and pouring on scalding water; this should be used in the evening, fresh scalding water added, covered down, and used the following morning. After the first fortnight, when the calf begins to chew the cud, the chief difficulty and danger are over. As the calf begins to eat, the quantity of gruel should be gradually diminished. Solid food should be placed before them to train and encourage them to eat, which they will very soon learn to do. The best material for this purpose is good sweet hay, with a small supply of crushed corn and crushed oats. In addition to this, mangel wurzel will be found serviceable, and is very much relished by the young animals. Vetches also as soon as they can be had, are most useful.

During the first summer, after they are allowed to run out, care should be taken not to expose them too much; and it is advisable to bring them into the yard, and under shelter if necessary, at night. Some indeed recommend their being confined altogether in the yard, but the plan seems hardly adapted for this climate and country. To keep them thriving, some extra food in the shape of oil-cake or grain should still be given in small quantity when they are at grass. They should be brought from the pasture and confined to the yard, if not housed, before the end of Autumn, and before the frost sets in. During the first winter, Mr. Ruck's plan has been to give each calf daily cut straw, pulped mangold, one pound of oil-cake, and 2 lb. of crushed barley, with a very small quantity of hay. Some will doubt the propriety or the economy of the oil-cake; but experience must decide the merits of the diet. We think crushed corn one of the most serviceable grains that can be given, both during this period and at an earlier age.

In addition to this system with regard to the food of the young animals, great care should be paid to cleanliness, ventilation, regularity in feeding, and quiet. No foul straw or manure should be allowed to remain where the calves are kept. The temperature of the place should be carefully attended to. The proper temperature also of the food should be duly regulated. It should be about new milk warm. This is a point of no small importance. Sudden changes of the food should be avoided; in other respects also, the changes in treatment should be gradual.

By a watchful superintendence, and a due regard to the general principles involved in the foregoing method, if not to each particular detail (for each one's experience will suggest useful modifications) we think that strong, vigorous and well-grown young cattle may be raised, and at the same time a large proportion of the milk reserved for dairy purposes.

CURE FOR CARED BAG IN COWS.—The *New York Tribune* gives the following remedy, on the authority of T. D. Balderston, Bucks county, Penn.:—Take lime water, about the consistence of thick whitewash, put it in an earthen plate, and about the same quantity of flaxseed oil, beat them well together with a case knife till they are thoroughly mixed, anoint the bag two or three times a day, rubbing it well in. I have used it for many years. Last summer, a neighbour had a young sow with pigs; her bag was so hard she thought she would die. I prepared him some of the mixture, and in a few days she suckled and raised her pigs, they having fed them with a spoon while the mother was sick.

Stock Department.

Improved Mode of Slaughtering Cattle.

In a recent number of this journal we noticed the opening of a new establishment in the Village of Communipaw, on New York Bay, erected for the purpose of removing to a greater distance from the

tion. The principle which has led to the adoption of the new mode of slaughter is this. The seat of animal sensibility is the brain; the connection between the brain and the rest of the body is maintained by the spinal cord and nerves; and it has long been known to physiologists that, if this connection is cut off, all the parts beyond the division are instantly deprived of sensation. By dividing the spinal cord, therefore, at its base or junction with the brain, the

and can only be acquired, it is presumed, by considerable practice; but it should be remembered the fat and fleshy parts on the back of the neck are not, by any means, very sensitive, and if the spear point should miss its aim, it inflicts a wound which gives but little pain. Similar modes of slaughter, based on the same principles, have been for some time in operation in France and other parts of Europe. We believe also that, in the barbarous bull fights of Spain,



CATTLE SLAUGHTERING AT COMMUNIPAW.

by the unavoidable annoyances connected with slaughter-houses in thickly populated neighbourhoods. The healthy locality is not, however, the only distinguishing feature of this new establishment. The extent of its operations makes it an interesting and important undertaking. The use of machinery and a variety of appliances to save manual labour, the scrupulous cleanliness which is observed, and above all the humanity which is shown towards the animals to be slaughtered, both in the care taken of them on their first arrival, sometimes after long journeys by rail, or weary marches by road, and in the method adopted to inflict the least amount of suffering in despatching them at the last—all these peculiar features of this new abattoir, as it is called, are well worthy of note and, shall we not add, of imita-

sensibility of the entire body will be instantaneously destroyed; for the brain itself, it should be observed, though the seat and fount of sensation, is entirely insensible; no pain will, in consequence, be excited in its substance by the operation. Besides destroying sensibility, the division of the spinal cord in this situation at once arrests the process of respiration, by cutting off the connection between the respiratory nerves and the brain; speedy death is then the inevitable result. These observations will explain the advantages of the method of slaughter adopted at Communipaw, and which is illustrated by the accompanying large engraving. The animals are killed by being speared just at the junction of the brain and spinal marrow. Of course, to strike such a blow with precision requires the greatest accuracy,

the tortures of the inhuman conflict are terminated on the same principle. The *coup de grace*—the stroke of mercy—which puts an end at once to suffering and to life, is given by a sharp dagger which is thrust with the unerring precision of a practised hand into this vital spot, the junction of the brain and spinal marrow. In contrast with the merciful method dictated by science and humanity, we give another illustration of the barbarous practice still carried on, not only in many of the slaughter-houses of New York, but, we are told, in some places in Canada. This older method of butchery needs only to be seen, or even represented as we have now done, to convince any one of its needless cruelty. It would be extremely unjust, however, to a large proportion of the men in this country engaged in the necessary business of

slaughtering animals for food, to let it be supposed that the barbarous method here depicted is general amongst them. The practice more commonly adopted, as we understand it, is far less open to objection. A rope fastened to the head of the beast, is passed through a ring in the floor, and the head is by this means drawn down to the ground and securely fixed. While held in this position, the animal receives a blow from a pole-axe, which not only instantly stuns it, and thus deprives it of sensation, but also fractures the skull. A long knife is then sometimes inserted into the brain and all further pain is prevented. Still we think that if the plan represented in the first engraving, or some modification of it on the same principle, could be generally introduced, there would be the least possible amount of violence or terrifying accompaniments in the necessary business of the slaughter-house.

A Visit to the Barnyards—Both Sides of the Picture.

To the Editor of THE CANADA FARMER :

SIR,—If you have no objection, we will take a walk to see some of our neighbours' stock and barnyards. Perhaps we can glean a hint or two for our benefit.

First, let us call on Mr. A. It is always a treat to take a look at his stock. Let us go in and look at the cattle, for none are to be seen outside so early. Nothing to be seen there but a large straw stack, a well-littered yard, and perhaps a few store pigs taking a stroll for the benefit of their health, while there are no larger animals about to molest them. How pleasant it feels in the cow stable; you can scarce believe it is a cold frosty morning. There they lie, well-fed, comfortable animals, the very picture of contentment. They have had a good breakfast of hay and roots, have been bedded afresh with good clean straw, and now they are down enjoying their good fortune, and it gives us some trouble to get them up to have a look at them, and to have the pleasure of handling their fine glossy coats and soft skins. No such thing with him as taking care of the milch cows, and letting the young stock take care of themselves, like some who have got just a step ahead of taking care of none at all. But there they are, old and young, tied up with neck chains, the stalls partitioned off, and low mangers for their food. Two or three hours in the afternoon, to get a drink and a ramble in the yard, is all the out-door liberty allowed at this season, and a lively use they make of their privilege. It does one's heart good to see a lot of well-kept cattle turned out to frisk and gambol through the yard; they seem so thoroughly to enjoy it. Now let us have a look at the horses. It is just as might be expected: the stable nicely cleaned, the horses well groomed and fed, and looking as if they were preparing to go in with a will when the hurry of spring work comes on. And here are the colts, in a good roomy place, where they can also be tied up at pleasure, to accustom them to handling. They are provided with mangers for their food, and abundance of litter under them, out of which they will make a lot of the best manure through the winter.

Here are the sheep, just getting turned out of their

shed for a run in the yard before the cattle come out. How well they look, their long clean fleeces free of burrs and weeds, and their square, well-built carcasses showing that our friend don't believe in spending his food and care on a poor scraggy animal. The shed they have come out of is clean and dry, with plenty of light and air, good racks, water and grain troughs, and abundant evidence that there is no stint of good sweet clover hay for the flock. Even the pigs are well worth looking at. None of your long-legged, long-nosed landpikes will suit our friend. Such animals are ever getting into mischief, and make very costly pork, of poor quality. And then the large, nicely levelled heap of manure in the yard, that is getting prepared for spring, will be pretty sure to tell for some years where it goes. The more stock a man keeps, if he feeds well and uses the manure judiciously, the more he can afford to keep. Have you ever noticed the fact that a good feeder is almost invariably a good breeder as well? It has got to be a proverb that the greater part of the breed is in the feed; but the truth is, the man who feeds well finds that he cannot get the same return for his outlay from ill-bred animals of any kind as he can get from those that are well-bred; and of course he will raise those which yield the greatest profit. Besides which, the interest he feels in his creatures impels him to keep such as are worth looking at.



OLD STYLE OF SLAUGHTERING CATTLE.

Now let us go over to Mr. B's, and see how his stock looks. It will give us some trouble to find them, though, at this time of day, as they will be all scattered before now on foraging expeditions. Here we begin to meet the cattle away out in the lane, making for the corn field, a part of which was never cut, moving along, dropping the little, hard, worthless manure they make where it will be all washed away by the spring rains. Ill-bred and ill-fed they surely look, with rough coats, and staring ribs showing through the tight, hard skin; two-year-olds not as large as well kept six-months old calves; and none of the drove with enough spirit to get out of our way, and bad usage plainly depicted in the very expression of their faces. If you tell him it is poor policy to use his cattle so, he will say he does not know but it is, but they will soon make it up when grass comes, which I seriously doubt, as his cattle have always pastured on the highway until after harvest since I knew him. An average of $\frac{1}{2}$ of a ton to the acre of hay to sell is too great a temptation in the ready money line to let him run the risk of pasturing the cattle on it the returns from them are so slow.

Here we are at the barn. The only signs of shelter we can see around it are some rickety sheds, made of rails, on the top of which a lot of buckwheat straw or something of the sort has been thrown sometime, but it is getting rotted in holes now. The straw stack, what there was of it, has been all used up by the hungry stock before now, or, what is worse, hauled up to the paper mill, one of the very worst enterprises ever started in this section, on account of the temptation it offers for realizing some ready money.

We will find a pair of pretty good horses in the stable, and not so badly taken care of, as they are kept up for driving; all the rest, work horses, mares, colts and all, are away in the corn field, hunting a living along with the cattle. We can see in front of the barn-doors, where a little hay or oat-straw is doled out morning and evening, to be snatched up by the strongest of the stock, while the weak ones stand outside and look on. We shall not have to go very far to see the sheep; they are out in that meadow, scratching off the snow which the partial thaw has thinned somewhat, trying to get what they can off the grass roofs. Poor enough they look; long-legged, long-necked, thin on the back, and barely enough wool on each of them, if the burrs and weeds were out of it, to make two pairs of socks. And as for the pigs, you will meet them everywhere

you go, a whole swarm of them, from six to ten months old, which the deep snow has driven home from the bush, tearing about with their long snouts and sharp-raised backs, and so agile that if you were to go in the yard with a load of corn they would almost jump on the wagon to get at it, and if you began to throw down some each would seize an ear and run off to secure his prize from his neighbour, until the whole tribe had disappeared. As for manure, a good team would draw out in a day or two all there will be in that yard in spring. The above is no fancy sketch, but one that can be seen any day in this or almost any neighbourhood, between breakfast and dinner time during the winter.

A WORKING FARMER.

Niagara, Feb., 1867.

NOTE BY ED. C. F.—We are much obliged to our correspondent for holding the

mirror up to nature as he has done in the foregoing article. To see ourselves as others see us is often the first step toward amendment.

CURING LAMB SKINS.—A correspondent of the *Country Gentleman* gives the following directions: As soon as the skin is taken from the animal stretch it tightly on a board, flesh side out; then, before it begins to dry, I apply an equal mixture of fine salt and alum, thoroughly pulverized together, until the skin is slightly whitened by the mixture. I then take no farther notice of the skins until I want them for use (which is always a few weeks from the time of applying the mixture). I then take them and thoroughly wash them in warm soap suds, let them dry moderately, and just before they are fully dry, rub them soft with my hands. After rubbing they are soft and pliable as a kid glove, and will continue so.

Another receipt is the following, as we find it in an exchange: Wheat flour, 20 parts; alum, 8 parts; salt, 3 parts. Pulverize, mix and rub this compound over the skin, after nailing it out tightly. In about two weeks rub the hide together and dress off with a knife.

Veterinary Department.

Catarrh in Horses.

The organs of respiration in the horse are the nasal openings, the nasal chambers or cavities, the larynx, the trachea or windpipe, the bronchial tubes and the lungs. The nasal openings are two in number, a right and a left, and they are situated at the anterior extremity of the nose. They are made up of a cartilaginous basis, composed of several pieces of fibro-cartilage, which are moveable, and therefore tend to keep the nostrils dilated and allow a free opening, and also to protect the extremity of the point of the nose, or nasal peak. The cartilaginous substance is covered by muscles and the skin externally, and internally it is lined by a fine membrane called the mucous membrane of the nose, which is continuous with the skin. The nasal chambers are also two, and are separated by means of a division called the septum nasi, which forms the internal wall of each cavity, and the external wall is formed principally by the superior maxillary bone. The cavity is full of irregular windings, formed by small soft bones called the tur-nated bones. The whole of the nasal chambers are lined by a fine, delicate mucous membrane, of a pale rose colour, and this is called the pituitary or Schneiderian membrane, which is continuous with the skin and with the mucous membrane of the larynx, and also with the conjunctiva of the eye by means of a small duct. The mucous membrane is largely supplied with blood-vessels and with nerves. The nasal chambers open into five distinct cavities, and these are called sinuses, as the frontal sinus, &c., &c. The larynx is a fibro-cartilaginous box, and situated in the infra-maxillary space and suspended between two processes of the os hyoides, (or bone of the tongue. The larynx.) is made up seven of cartilages, all having different names, and these cartilages are covered by muscles and lined internally by the mucous membrane, which is very thin and highly sensitive.

The respiratory organs of the horse are very susceptible to disease at any time, but more especially during the winter and spring months, which is due to the frequent changes of temperature, and therefore a very common affection at this season is

CATARRH

Catarrh, or "cold in the head," is an affection of the lining membrane of the nasal chambers and cavities of the head and consists in either a congestive, or an inflamed state of that membrane, which is followed by an increased discharge of glairy matter from one or both nostrils, and when the mucous membrane of the larynx is implicated, is accompanied by a cough.

Catarrh in horses is of very common occurrence, and few horses under five years old escape an attack of it, in fact, up to that age, they may be said to be predisposed to this affection. The exciting causes are sudden variations of temperature, undue exposure to cold when the animal is in a heated state, as from the too common practice of allowing horses to stand shivering in the cold after a long or fast drive. It is often brought on by keeping horses standing in stables insufficiently ventilated; the foul air so generated is very injurious to horses, and particularly to their respiratory organs. Young horses that are purchased in the country and brought to the city are very liable to catarrh. It appears to be brought about by the change of stabling. If the animal has been running in a strawyard, and is then brought up and placed in a stable where there are a number of other horses, he is almost sure to have an attack. The change should be gradual. The symptoms of catarrh are well marked, and among the first is dullness, when the horse is in the stable he appears dull and languid, and stands with his head hanging over the manger; the mouth is hotter than usual, and the cir-

culatation is feeble and somewhat quickened; the hair is staring, as it were standing on an end, and the vessels of the lining membrane of the nose are reddened and injected. When the larynx is involved, the least pressure on that part externally will cause coughing. This is what is called the congestive stage, which very quickly passes off, and exudation takes place through the walls of the vessels, giving rise to a discharge from the nostrils, at first watery, gradually becoming thicker and thicker, and of a yellowish colour. In some instances the matter becomes pent up within the sinuses of the head, and comes away in large quantities at intervals of three or four hours. Another symptom of catarrh is a watery discharge from the eye, that organ participating in this affection through its connection with the mucous membrane of the nose by means of the lachrymal conduit. In severe cases the appetite becomes impaired, the secretions are also partly arrested, the bowels are costive, and the faeces passed are of a clayey colour. The legs and ears are cold, or they may be alternately hot and cold, and the breathing is accelerated. Catarrh in the simple form is a very mild affection, but if neglected or improperly treated, is a prolific source of many other diseases of a more serious nature, as "Pneumonia," inflammation of the lungs, or "Pleurisy," inflammation of the membrane which lines the internal walls of the chest, and which also covers the lungs. Many a horse has a slight catarrh or cold, and he is perhaps driven a distance of ten or twenty miles; at the end of his journey he is put into the stable, he refuses his food, and commences to tremble and shiver, and in a short time begins to breathe heavily. This is the result of catarrh, the inflammation having extended to the chest, and inflammation of the lungs is the consequence, which in many cases proves fatal in three or four days, and all this brought about from only a "cold." Horses suffering from catarrh should not be driven either fast or long, nor exposed to sudden changes of temperature. In the treatment of catarrh, the horse should be placed in a comfortable and well ventilated box, and the body comfortably clothed; the amount of clothing must be regulated according to the state of the temperature; the legs should also be well hand-rubbed and bandaged, the clothing and bandages to be removed twice a day, and the body well dressed over. A mild dose of laxative medicine may be given; and to encourage the discharge, the nostrils may be fomented with warm water several times a day; or the nosebag may be used, partly filled with scalded bran. This is what is called steaming the head, and proves beneficial in many cases, when properly used. In using it, care must be taken to allow a free current of fresh air, as horses are occasionally suffocated from the improper use of the nosebag in steaming. In mild cases it is not necessary to use the nosebag; sponging out the nostrils will generally suffice. The horse should be fed on food easily masticated and digested, as bran mash, boiled oats or barley, flax seed, &c. When the throat is sore, it should be rubbed externally with mustard, or any mild stimulating embrocation, and a few doses of febrifuge medicine may also be given. If the animal is low conditioned, a subsequent course of tonics is generally attended with benefit.

Poultry Yard.

Golden Spangled Polands.

A PAPER READ BEFORE THE CANADA POULTRY ASSOCIATION BY A. McLEAN HOWARD, ESQ.

The subject under consideration is the peculiarities and distinctive features of the Golden Spangled Fowls.

We need not enter upon their origin, as it is so obscure that nothing definite has been learned on the subject. I may remark, in passing, that according to a writer in the *Cottage Gardener*, the origin of the name has been derived from the peculiar disease confined to Poland exclusively, and known as *Phoca Polonica*, a disease affecting the head, causing the hair to become matted and stand out from the head.

The chief distinguishing feature of all Poland fowls is the top-knot, corresponding to the white face in the Spanish, the fluff in the Cochin, or the accurate feathering in the Hamburgs. Seeing that such is the case, we are led at once to the conclusion that no

bird with a defective crest can ever expect to compete for a prize with any chance of success. The Top-knot, to be sure, is not everything, but no matter how perfect in every other respect, if the bird is deficient in this, it can never expect to compete successfully.

Seeing, then, that the crest is a matter of so much importance in the Poland fowls, it becomes us to consider what a perfect crest should be.

First, as regards colour in the Golden Spangled variety, which we have under discussion. Some authorities insist that it should be a chestnut ground, each feather being accurately laced with black. Others prefer the crest to be yellow laced with white. Mr. Vivian, a distinguished breeder of Polands in England, says that white feathers in the adult birds are looked upon by him as an indication of purity of blood; though the light-crested birds are apt to throw white-tailed cocks. For my own part, after some ten years' experience, I find it almost impossible to breed birds that will not throw more or less white in the crest after each moult, though they never become entirely white. Upon the whole, I think it should be kept an open question. I would never discard a bird with a crest perfect in every other respect, on account of the colour.

The next point to consider, and one that is equally, if not more important, is the formation of the crest. In the Pullet it should be as nearly round, like a ball, as possible, in the Cock bird the outside feathers should be stiff enough to keep the inside and longer ones up, and prevent them falling over too much, leaving the crown of the head quite bare, as I have seen in some otherwise good specimens. It should fall over nicely and evenly all round the head, rather more in rear than front.

Another point to be considered is the comb, which some authorities contend should be in the shape of a horned crescent; while others contend that there should be no comb at all. For my own part, I rather incline to the latter opinion; considering that the crescent-shaped comb denotes a cross with what was formerly known as the crested Hamburg, a bird that was originally imported from Holland, and not the true Poland, which was a much larger bird, and without comb; but I may say that it is very difficult to breed birds with the absence of comb, so completely has the crested Hamburg usurped the place of the old Poland. I may remark, in passing, that many consider the comb an advantage, considering that it acts as a support to the bird's crest in front.

The next question that comes under notice is beard or no beard. From all I can learn on the subject, I am inclined to think that the birds without the beards are more pure, that is, more like the original Poland, though it is a point which I believe has never yet been fully decided. I think I would hold it as a mere matter of taste, preferring, for my own part, birds without beards.

With regard to the general plumage, the ground color should be a dark yellow or light chestnut, each feather spangled with black; the wing and tail feathers laced with black, ending with a spangle; the tail should be full and flowing, the larger feathers brown, though they are sometimes white, the smaller sickle ones laced with black, below the vent and round the thighs chestnut well spangled with black. The hen should be a rich golden yellow or chestnut, well spangled with black; the tail and wing coverts richly laced, and tipped with black. The legs in both sexes should be long and blue in color. It is extremely difficult to be very accurate in the shade of the ground color, as different strains will vary, some being much darker than others.

The Polands are non-incubators, very rarely wanting to sit, and when they do, making very poor mothers. Upon the whole, I have found them a most desirable breed for this climate, commencing to lay early in the spring, and continuing all through the summer; very hardy, moulting easily, and not liable to suffer from frost like the Spanish. I have also found the chickens very hardy, and raised with less difficulty than any other, with the exception of the Bramahs. They are, however, subject to wry tails and crooked backs; and intending purchasers would do well to examine carefully, as it is a feature that is very apt to be transmitted. I have also found them to be more liable to fall a prey to hawks than other varieties, on account of the crest obscuring the vision over head.

Entomology.

Grasshoppers, or Locusts.

A CORRESPONDENT in the county of Simcoe has sent us the following communication, with respect to our recent article on "Insects injurious to the Turnip crops":—

SIR,—In your article on "Insects injurious to the Turnip Crops," Vol. 4, No. 4, you have enumerated a long list of destructive insects, against most of which we have some remedy; but the grasshopper is the greatest enemy we have to the turnip; in no stage of its growth is it safe from attack, until the frost is severe enough to kill the insects. You have omitted to mention this pest. If you can, through the CANADA FARMER, inform us of any practicable and effectual preventive or cure, you would confer a great benefit upon this section of the country.

I have never lost a crop of turnips from the fly. If the seed be steeped in a solution of bitter aloes for a few hours, or over night, and dried sufficient for sowing with plaster or ashes, the fly will not eat the first pair of leaves, and when once in the rough leaf, with the land in proper order, they are safe from that insect. VESPERA.

In our remarks on the insects that feed upon turnips, we confined ourselves to those that prey exclusively upon this vegetable, and those akin to it; the "grasshopper" being an almost omnivorous insect, feeding upon every variety of plants and upon many other substances besides, did not occur to us as one of those that should be set down in the catalogue of the turnip's foes, we are, however, much obliged to our correspondent for drawing our attention to it.

It is much to be regretted that so much confusion exists in the popular use of terms in natural history, and particularly in entomology, in consequence of which very serious errors become matters of common faith, much mischief is allowed to go on unheeded, and the innocent are oftentimes punished for the guilty. The term "Bug," for instance, is almost universally applied in the neighbouring States, and very generally in this country, to every kind of insect, so that it is no uncommon thing to hear a beautiful butterfly or lovely moth designated by the odious name of "bug," whereas the appellation belongs exclusively to those foul-smelling, sucking insects of the order *Hemiptera*, which feed upon the juices of plants, and sometimes upon the blood of animals and man. Again, the larva of every kind of insect is called "the grub"; larvæ that burrow into the trunks of trees and timber, "the borer"; and so on to any extent. The consequence is that what is a remedy for one grub, or borer, or so-called "bug," is indiscriminately made use of for the destruction of every other grub, or borer, or "bug," forgetful that the old proverb may be read in this way also, "What is one insect's meat is another insect's poison," and that what will kill one injurious insect, will often be the best thing in the world for another.

This confusion of terms is particularly unfortunate in the case of the insect before us. Everybody in this country is perfectly familiar with what is commonly called a "Grasshopper;" but how very few are aware that what they term a grasshopper, and see too often to think much about, is really the same kind of insect as the much-dreaded, famine producing Locust, that constituted one of the plagues of Egypt, and that sometimes lays waste whole regions of the East. But a true Locust it nevertheless is, and no later than last September a vast horde of these locusts, or "grasshoppers," of a species only differing from that common in this country in its superior length of wing, came down like "a dark, continuous cloud of congregated myriads numberless" upon the wide regions of Kansas, Nebraska, and Missouri, and literally desolated the country. In agreement with the words of the prophet Joel, "the land was as the garden of

Eden before them, and behind them a desolate wilderness." In the year 1855, during a period of five months, these terrible insects "covered the entire territories of Washington and Oregon, and every valley of the State of California; the entire regions of Utah and New Mexico; the immense grassy prairies lying on the eastern slopes of the Rocky Mountains; the dry mountain valleys of the Republic of Mexico, and the countries of Lower California and Central America, and also portions of the State of Texas." They filled the air, we are told, like flakes of snow on a winter's day, and devoured in a single day whole fields of grain and vegetables, leaving the ground like a wilted, blackened desert; whole orchards, gardens, and vineyards were also consumed by them. The records of their ravages during that year are, indeed, of the most appalling description.

Such are a few instances of the incalculable amount of mischief inflicted in some parts of this continent by what are called among us "grasshoppers." Our common species, in consequence of its shorter wings, does not possess the power of suddenly migrating from one region to another, nor does it often appear in such vast numbers. Still it occasionally becomes greatly multiplied and proves very destructive. During almost every summer it is rather numerous, and commits depredations upon vegetables and grain; but its natural enemies, such as birds, toads, moles, and insect parasites, keep it greatly in check. Various remedies have been suggested and employed in different countries for the extermination of the locust, but never, as might be expected where the objects are distributed over so large an area, with complete success. The following methods may be advantageously adopted:—In the first place, when the locusts, or "grasshoppers," are numerous in summer, they should be watched when depositing their eggs, which they do in cylindrical holes that they make in the ground, and men or children should be employed to dig them out and burn them. Where it is possible, the places containing eggs should be deeply ploughed late in the autumn, and again very early in the spring; by so doing the eggs are exposed to the action of wet and frost, and can be more easily got at by birds. When hatched out, and before they obtain their wings, the young locusts should be crushed by beating with shovels or any other convenient implement, where the ground is bare, and captured in bags attached to a hoop, and fastened to the end of a staff, where it is advisable only to sweep over the tops of the herbage. Where very numerous, rollers are sometimes advantageously employed to crush them. The winged and full-grown insects are not so easily destroyed, though the same methods are useful in their case; turkeys and ducks, however, are very fond of them, and if turned into the infested garden or field will devour almost incredible numbers. But, as in most other cases, these remedies, to be of much utility, should be generally adopted by the inhabitants of a neighbourhood, so that one may not suffer from the negligence of another.

Insect Pests of Orchards.

At a recent meeting of the Southern Illinois Fruit Growers' Association, the subject of the various insects infesting orchards was discussed; and in reference to the apple-borer, hard soap, rubbed on the body of the tree, was considered a specific against this insect. Lime applied about the roots of the trees was recommended as a remedy for the peach-borer. To destroy the apple aphid, it was said that 10 cents' worth of chloroform, diluted with water, and applied to the trees, was effectual. Lime placed about the collar of the tree was also recommended. With regard to the curculio, no plan seemed so successful as jarring the trees to shake off the insect, and providing some apparatus to catch them as they fall—various contrivances for the purpose were in use.

The Apiary.

Bee-hive Dimensions.

To the Editor of THE CANADA FARMER:

SIR,—In mine of November last, I stated my impression that the object of bee keeping should determine the size of the hive. In this opinion I am supported by the perusal of a series of articles derived mainly from the writings of an experienced and highly intelligent German apiarist, now publishing in the *Am. Bee Journal*, where I find "store or honey hives must be of greater capacity than swarming hives. The latter, arc, with us, usually from ten to twelve inches in diameter, and from fifteen to twenty inches high. The former are from fifteen to sixteen inches in diameter and from twenty-four to thirty-six inches high." "So long as our chief endeavour is to increase the number of our colonies, we use the smaller divisible hives; but when our efforts are directed to the production of honey and wax, we resort to hives of ample dimensions." BRIAR.

Co. CARLETON, March, 1867.

A Great Invention in Bee-Culture.—How to Empty Combs.

The Bee papers of Europe and this country are filled with accounts of a discovery by an Italian Apiarist, of a method of emptying combs of honey without injuring them. The process is exceedingly simple and consists only in slicing off the caps of the cells, and then causing the combs to revolve on the periphery of a wheel or cylinder, which empties one side of honey—then the other side is turned and emptied. Liquids upon bodies which are whirled or revolved tend to fly off by what is called centrifugal force. In this case the revolution is so graduated that only the honey flies off, and dead bees, bee-bread, etc., remain behind, so that not only is the comb saved, but the honey is purer and better than that strained. The temperature requisite to success, is about 80° Fahrenheit, which is gained in a warm room or on a sunny day.

The value of this invention may be the better appreciated, when it is known that it requires the consumption by the bees, of 15 to 20 pounds of honey (estimates vary,) to make one pound of wax, consequently, that the comb requires for its construction the use of just about as much honey as it will contain when filled. It may be found that in the economy of bee life, it is essential for the bees to make or excrete a certain amount of wax in order to remain in good health—but this is hardly probable, for it has long been the practice of bee-keepers to save empty or partly filled combs with scrupulous care, and give them to the bees. And no bad results have ever been noticed.—*American Agriculturist*.

THE EGYPTIAN BEE.—Professor Gertsaker, of Berlin, Prussia, thus describes the Egyptian bee:

"The Egyptian bee (*apis fasciata*) is nearly one-third smaller than the common bee, or the Italian. Her abdomen resembles that of the latter, but her corslet or shield is yellow. The downy hairs of the thorax and abdomen are whitish.

"Her native home," he adds, is "Egypt, Arabia, and Syria; and she is found also, with slight variations, on the northern declivity of the Himalaya mountain, and in China. She was successfully introduced into Germany in 1863, by the Berlin Acclimatization Society, and carried thence to England in the summer of 1866."

BEES AND BUCKWHEAT.—"Bee-keeper" asks how it is bees cause blight in buckwheat. It may not be an easy matter to tell just how it is done, nor will it, perhaps, be an easy matter to convince "Bee-keeper" that it is so, for I presume his interest is in his bees and not in buckwheat raising. Should he sow one half acre of buckwheat for the sake of the seed, and during its blossoming, see it swarmed with bees from twenty hives, and when cutting see from one-fourth to one-half the crop fall blighted to the ground, he might conclude there was something the matter. But if the bees do not injure the wheat, what right has "Bee-keeper" to my honey? What right has he, having only land enough on which to set his hives, to the products of my farm? Is it any less encroaching on my rights to have another man's bees carry off \$10 worth of my honey, than it is for his sheep to carry off \$10 worth of my clover? I shall take the ground that no man should be allowed to keep bees, unless he makes provision for honey. Therefore, the English compelling all who keep bees to sow a certain amount of buckwheat, is just and right, and a similar one should be enacted here.—*Cor. Mirror and Farmer*.



The Rejected Sheep at the last Provincial Exhibition.

To the Editor of THE CANADA FARMER.

SIR.—In a letter which appeared in the CANADA FARMER of March 1st, 1866, I called the attention of the Board of Agriculture to their rules respecting the time and manner of shearing sheep intended for exhibition at the Provincial Fair, urging them, if they intended to enforce a by-law for restriction in the matter, to make it known in good time, and to see that their rules were strictly adhered to, and impartially carried out. I concluded that communication by saying "whether the Board or any Committee is competent to decide with certainty, in September, whether sheep were fairly shorn in April or not, I leave for themselves to say." The Board took early notice of the matter, and gave notice, by advertisement in the CANADA FARMER, that sheep must be fairly shorn bare after the 1st of April, and that a committee would be appointed to inspect all sheep presented for competition, to decide whether they were fairly shorn, and "their decision to be final." From this it appeared the Board did think a Committee of their selection would be competent to decide the matter. At the Provincial Exhibition at Toronto, a committee was appointed for this purpose, and the result is well known.

Now, without presuming to question the good intentions of the Board in taking the action they did in the matter, I think the result was anything but satisfactory to themselves, to exhibitors or to the public. You, sir, were right in your remarks upon the late exhibition, when you said the show of longwooled sheep was one of the most "brilliant features of the exhibition." So fine a display of this class of sheep was never before seen on this continent, and I question if the world could beat it. But the treatment which this important interest received at that exhibition made it, as you remarked in the same sentence, "one of the most humiliating features" of the show. I very much doubt if, after such treatment, such a collection of sheep will be seen at another exhibition for many years. You are aware that in entering sheep for exhibition the exhibitor is required to certify to the time his sheep were shorn, and he is supposed to be aware that the rules of the association require that they be fairly shorn bare after the 1st of April, so that he enters the contest with a fair understanding of what is required of him. But the Board is evidently unwilling to accept his word and written certificate in the matter, and accordingly appoints a committee entrusted with the duty of determining whether the exhibitor has certified the truth or not. At the late exhibition, the committee so appointed decided in effect that nearly all the exhibitors in certain classes had certified a falsehood. If their decision was correct, it certainly is a "humiliating" thought. Some of the exhibitors, when the first lots they brought out for inspection were rejected, refused to present any more, feeling that it was an insult to be thus publicly charged with falsehood, and I think they displayed the right spirit.

It is a delicate task to undertake to criticize or find fault with the decisions of gentlemen who consent to serve in the thankless office of judge at these fairs, and I am always willing to allow a wide margin for difference of opinion; but in this case the decisions were of such a sweeping character that I think no one, not even the committee themselves, will attempt to justify them. When the committee commenced their duties there were only two of them present, and they marked with paint such sheep as they intended to reject, and left others unmarked which were to be accepted; but on the arrival of the third member they changed their tactics, and declared all disqualified.

One of the members of that committee stated in my hearing, since that time, that they feared if they threw out some and accepted others the public would be dissatisfied, and that to avoid the charge of partiality they concluded to shorn all alike. Another member of that committee, placing his spectacles upon his nose, commenced picking the wool about the thighs of the sheep, which is always somewhat matted from their lying upon it, and declared that the 1st of April was too early to shear sheep, and that they were all too fat. A member of the Board here informed him that those were matters he was not required to decide—he was simply required to say whether they were fairly shorn after the 1st of April. This will serve to show whether such a committee was competent to decide in so important a matter. While I freely admit that some of the sheep shown at Toronto were very unfairly shorn, and richly deserved the fate which all met, yet I do say that on the whole we have not seen as much fair shearing for many years as there was at Toronto.

Since the veracity of sheep breeders seems to be so much suspected, one feels some delicacy in making positive statements; nevertheless, I will say that I know with certainty that many of the sheep thrown out at Toronto, professedly on account of unfair shearing, were fairly shorn bare after the 1st of April, and in two cases at least, after the last of April, and there were respectable men on the ground who had seen them shorn and were prepared to testify to the fact. But the committee seemed determined only to give prizes to the sheep that had grown the least wool since the 1st of April, as if that were a proof of excellence.

This question of shearing is one that has caused much trouble, vexation and dissatisfaction. It is plain that there are good grounds for complaint, and it is our duty to endeavour to find a remedy that can be effectually applied. The remedy that was tried at Toronto was too effectual—it killed the patient.

Reverting to the question whether it is possible to determine with certainty whether sheep were or were not fairly shorn, I have no hesitation in saying it is not possible to determine with certainty, because on some sheep the wool grows more rapidly than upon others, and some staples of wool retain their fresh and glossy appearance when quite old, while others appear dry and matted when not nearly so old.

One who has been a close observer may judge nearly enough for all practical purposes whether the shearing has been fairly performed or not, but the difficulty is, that the men who would be most competent to judge in this matter are those who are exhibitors, and of course their services are not available.

If the gratuitous advice of one who feels deeply interested in this matter, both from selfish motives and from a desire for the welfare of that eminently useful institution the Provincial Association, will be accepted by the Board, I would advise that the rule requiring fair shearing after the 1st of April be continued, and that it be left to the discretion of the judges to throw out such as they believe to have been unfairly shorn, and let it be impressed upon the judges as a duty in every case where they are satisfied there has been fraud to frown down, or "stamp out," if you please, this contemptible and dishonest practice of making up by art for the deficiencies of nature.

I will only add my humble opinion that, unless the Board can give to the sheep breeders of Canada some assurance that they shall not again be humbugged as they were last fall, many of them will be found absenting themselves from the Provincial Fair, and seeking another market, where Agricultural Associations give greater encouragement to the important interest they represent, and where more liberal provision is made for their transit and accommodation.

AN EXHIBITOR.

PEEL, 15th Feb, 1867.

Beet-Root Sugar.

To the Editor of THE CANADA FARMER:

SIR,—I perceive that the feasibility of the manufacture of sugar from beet-root, in Canada is thought impracticable by one of your correspondents, and I was astonished to read the expression of an opinion that this most valuable branch of industry could not be introduced in this country on account of the severe winters, which would make the storage of the beets impossible.

If the writer of that article had informed himself how they store beets in Russia and Sweden, (countries infinitely colder than the Canadas, and manufacturing

some 150,000,000 pounds of sugar per annum,) or how they deal with the article of potatoes for the manufacture of starch in the northern portions of the United States, he would have rendered a greater service to his country than by dissuading parties from an undertaking which would lessen the price of sugar for consumers some 30 per cent., give occupation to thousands of labourers, and add a lucrative crop to the farming community.

Any parties who are desirous of information concerning the manufacture of sugar from beet-root may communicate with me, and I will be most happy to furnish them with all necessary particulars, and do all in my power to have at least one or two factories started in Upper and Lower Canada.

CARL BECHERER.

P. O. Drawer 290.

MONTREAL.

NOTE BY ED. C. F.—If, as we infer our correspondent is practically acquainted with the manufacture of beet-root sugar, we shall be happy to receive from him a detailed account of the matter for the information of our readers.

COST OF DRAIN TILE MACHINE.—Messrs. Runciman and Randolph, of Bridgeland, Nova Scotia, enquire the price of a machine for manufacturing drain tiles. A machine for this purpose is made by W. Lindsay Newcastle, C. W. Price \$130.

DOMESTIC SPINNER. In reply to an enquiry respecting the Domestic Spinner, figured in our last number, we refer "a subscriber" to Mr. John Lazier, Belleville, C.W., who is the manufacturer, and would probably be able to furnish the information desired, respecting the Hand Carding Machine also.

MATHEMATICS.—We have received from "T. R. W.," Collingwood, a communication containing mathematical and engineering problems, which, however ingenious and interesting, are scarcely adapted for an agricultural journal. We shall be happy to hear from our correspondent on any subject within the province of the CANADA FARMER, but such a communication as that referred to is more appropriate to the columns of an educational than an agricultural journal.

A MEDLEY.—"James Greig," of Peterboro, sends us a communication in which physiology, political economy, prophecy and theology, are strangely blended, forming a most singular medley. If it were a less disjointed and mixed-up affair, it would hardly be suitable for our columns, as there is nothing agricultural, horticultural, or rural about it. Mr. G. should train his mind to more connected and logical habits of thought.

LICE ON HORSES AND CATTLE.—Jno. G. K., Laurel, asks "what is a good cure for lice in horses and cattle? and are there different kinds on the two varieties of stock?"

ANS.—One of the best remedies for this troublesome pest is a wash of tobacco water, made by infusing 1 lb. of tobacco in 2 gallons of water. It should be applied frequently, and little at a time. The species that infest the horse and ox are distinct.

RAPE SEED.—"W. F.," writing from Wolverton, enquires whether there are two kinds of rape seed, and where he can procure the kind for summer seed, and at what price.

ANS.—We believe that, as regards the season, there is but one sort suitable for this climate, though there are varieties of what we presume is meant by summer rape, each fitted for spring and summer sowing. The winter rape is not adapted to the climate, and is not imported. Such as are adapted for Canada, can be procured of Mr. Fleming, Agricultural Buildings, Toronto, or from other seedsmen; the price is \$6 per bushel. For small quantities the price will be about 15 cents per lb.

CANADIAN OIL CAKE.—William Gowanlock, writing from Cedar Hall, Saugeen, enquires if there is any oil-cake manufactured in our neighbourhood, and what it would cost per ton delivered at Guelph or Goderich.

ANS.—The Linseed Oil Company, Toronto, manufacture oil cake, which they sell at their factory for \$26 whole, or \$29 crushed, per ton. The cost of freight can be ascertained from the Grand Trunk Agents; or perhaps our correspondent could have that matter arranged for him by the party who supplies the oil cake, viz., either the manufacturers, or some of the respectable seed-merchants in Toronto, all of whom, we believe, supply the article both in wholesale and retail quantities.

PURCHASING FRUIT TREES, &c., FROM IRRESPONSIBLE PARTIES.—We have received from "Peter Shister" a flattering letter of commendation and thanks, for warning given in our columns against purchasing seeds or any agricultural articles from peddlers or other irresponsible parties. He illustrates the danger of the practice by the experience of a neighbour who purchased of an itinerating dealer from Buffalo, one hundred trees, purporting to be apple trees, which, on bringing home and commencing to plant, he found were merely wild cherry trees. Our correspondent expresses himself in favor of home enterprise of every sort, and recommends his brother farmers to avail themselves of home produce and home industry whenever it can be done. He believes we can thus make ourselves independent, and be comparatively indifferent to foreign tariffs or prohibitory duties, which hurt our neighbours more than ourselves.

LEACHED ASHES.—Mr. G. Parr, of Cufros, writes as follows:—"I have on my farm several thousand bushels of leached ashes. Will it pay to draw them out for manure? What kind of land and what kind of crops are they best suited for? or would it pay to mix them with barn-yard manure? would they be good to manure a young orchard with?"

ANS.—As the large quantity of leached ashes mentioned is already on the farm, and as the hauling therefore would not be any very great expense, there can be no doubt that our correspondent would find it profitable to apply the ashes in any of the methods he specifies, either alone or composted with other fertilizing materials. It would be suitable for almost any crop, but especially for root crops, though, of course, the benefits to be expected would be much less than in the case of unleached ashes. Being a loosening agent, it is most suitable for stiff soils, but may be applied to any loamy land.

THE SURPRISE OAT.—PRICE OF SEED.—A correspondent from Cobourg sends us the following:—"In the last number of THE CANADA FARMER is an article copied from the *Prairie Farmer*, headed *Surprise Oats*; we noticed a somewhat similar article in an account that we saw of the Illinois State Fair, and although we did not think the oats remarkably heavy, as we believe those shown at the last Provincial Exhibition were at least 7 or 8 lbs. heavier than these are stated to be, we thought that we would like a trial of them, and wrote to a friend that lives in the same county to try and get an ounce or two of them to send by mail. We received the following answer:—"As Sandwich is at the south end of the county (De Kalb), and about 20 miles from here, I wrote to Mr. Van Olinda, requesting him to send you an ounce of them, and offering to pay whatever he might charge for them, but he wrote back that he did not put up less than two quarts in a package, for which he asked the moderate sum of \$5." As I had considerable doubts of their being worth \$40 per bushel, did not send for any of them. It seems clear then, that, if their weight is not remarkable, their price is, and may be considered even more surprising than their quality. The same correspondent sends us another communication, which we defer till our next issue.

PLATT MIDGE-PROOF WHEAT.—"Giles Memberry," of Adolphustown, under date Feb. 22, writes as follows:—"As I still continue to receive numerous enquiries respecting the Platt Midge-proof Wheat, and applications for seed, I wish to reply to all through your journal. My wheat was disposed of long before any notice of it appeared in THE CANADA FARMER and as some doubt the quantity of yield from the two bushels and a-half sown, I will state the quantity sold, the name of the purchasers, and the price paid, viz. 82 bushels and 40 lbs. to James Wilson, Esq., Stone Mills, Marysburg, at \$1 15 per bushel, the price of Fife wheat at the time; 26 bushels, at the same price, to Parker Allen, Esq., Mr. Philip Dorland, Mr. McCormick, Mr. Henry Allison, and Mr. Joseph Allison. The remainder I kept for my own use. There is a kind of wheat, I am informed, lately imported from England, but no way identical with this. There was no wheat of this variety purchased of Mr. Platt till the spring of 1866; and but a small quantity for seed even then, on account of the high price at which it was held—\$3 per bushel. Perhaps, also, some prejudice was raised against it by the report of the inferior quality of the flour made from it. The bulk of Mr.

Platt's stock was sold to James Wilson, Esq., Stone Mills, who again bought a large quantity from Mr. Platt last fall, at a higher price than that of Fife wheat. Amongst the numerous correspondents who have written to me on this subject, some have enclosed stamps for postage, and others stamped envelopes addressed; to all these I returned samples for experiment during the coming season; and if any of your subscribers wish to know the names of parties thus supplied, I will give them through your journal. Any good wheat soil is suitable, I believe, for this variety. This is all the information I can give concerning it."

BROOKS AGRICULTURAL SOCIETY.—"An Old Country man," in forwarding a list of the officers of this Society for 1867, which will be found with other lists elsewhere in our present issue, remarks:—"This Society has only been in existence two years, and now, through the exertions of its officers, who have worked with a will and determination to overcome all obstacles, it is one of the strongest in the county. At the commencement the Society determined (and no doubt wisely) to forego the doubtful advantages of a Township Show, and devote the means at its disposal to the improvement of the live stock in the Township; and, with this view, purchased in the first year three first-class bulls, two being Devon and one Durham. One of the Devons was from the herd of Messrs. Pincombe, and the other from the Messrs. Peters; and last spring it was resolved that in order to accommodate every part of the Township, an additional bull be purchased; and another Devon bull was accordingly procured from the Messrs. Peters. So that the Society now own four splendid bulls, which cannot fail greatly to improve the stock of this township. It was at first supposed that some difficulty would be found in getting the animals kept at a reasonable price. But good and reliable parties were found who have kept the stock in good condition for the moderate price of thirty dollars each per year; so that the Society are now able to accommodate all its members on terms quite as reasonable as those charged in many instances for the most worthless stock in the country. Of course a great amount of carelessness and ignorance prevails amongst some parties in regard to the management of live stock, and it will be necessary to bring about a better system before the full benefit of the Society's efforts will be felt; but with the assistance of your valuable journal we hope to make some improvements in this matter also. At some future time perhaps I may send you a few remarks on my experience and observations in regard to the rearing of young stock."

The Canada Farmer.

TORONTO, UPPER CANADA, MARCH 15, 1867.

New United States Wool Tariff.

THE bill imposing yet higher duties on Wool, &c., which passed the American House of Representatives in July last, and has been since waiting for the Senate's action, received the sanction of that body on the 2nd inst., and having been signed by the President, is now law. It classifies wools into, I, clothing wools, II, combing wools, and III, carpet wools and other similar wools. On wools of the first class, valued at 32 cents or less per lb., the duty is 10 cents per lb., and in addition 11 per cent *ad valorem*; upon wools of the same class valued higher than 32 cents per lb., the duty is 12 cents per lb., and 10 per cent *ad valorem*. The duty levied on the second class of wools is the same as the first. Upon wools of the third class, valued at 12 cents or less per lb., the duty is 3 cents per lb., and upon those valued at more than 12 cents per lb. the duty is 6 cents per lb. It is provided, further, that the duty on washed wool shall be twice the amount of the duty on unwashed wool, and the duty on scoured wool shall be three times the amount of the duty on unwashed wool. On sheep skins &c., imported with the wool on, the duty charged is 20 per cent *ad valorem*; and on wollen rags, shoddy, mungo, waste and flocks, 12 cents per lb.

Woollen shawls and woollen manufactures gene-

rally, not otherwise provided for, are 50 cents per lb., and in addition thereto 35 per cent *ad valorem*. On flannels, blankets, knit goods, balmorals, woollen and worsted yarns, &c., from 20 to 50 cents per lb. according to valuation, and from 35 to 50 per cent *ad valorem*. On Aubusson and Axminster carpets, and carpets woven whole for rooms, 50 per cent *ad valorem*; on Saxony, Wilton, and Tournay velvet carpets, wrought by the jacquard machine, 70 cents per square yard, and in addition thereto 35 per cent *ad valorem*; on Brussels carpets wrought by the jacquard machine, 44 cents per square yard, and in addition thereto, 35 per cent *ad valorem*; on patent velvet and tapestry velvet carpets, printed on the warp or otherwise, 40 cents per square yard, and in addition thereto, 35 per cent *ad valorem*; on tapestry Brussels carpets, printed on the warp or otherwise, 23 cents per square yard, and in addition thereto, 35 per cent *ad valorem*; on treble ingrain, three-ply, and worsted chain Venetian carpets, 17 cents per square yard, and in addition thereto, 35 per cent *ad valorem*; on yarn Venetian and two-ply ingrain carpets, 12 cents per square yard, and in addition thereto, 35 per cent *ad valorem*; on druggets and bockings, printed, coloured, or otherwise, 25 cents per square yard, and in addition thereto, 35 per cent *ad valorem*; on hemp or jute carpeting, 8 cents per square yard; on carpets and carpetings of wool, flax, or cotton, or parts of either, or other material not otherwise herein specified, 49 per cent *ad valorem*.

On oil cloths for floors, stamped, painted, or printed, at 50 cents or less per square yard, 35 per cent *ad valorem*; valued at over 50 cents per square yard, and on all other oil cloths (except silk oil cloth), and on water-proof cloth, not otherwise provided for, 45 per cent *ad valorem*; on oil silk cloth, 60 per cent *ad valorem*.

This is confessedly a stiff tariff, and the woollen manufacturers all over the United States will receive its operation with huge satisfaction. How the mass of the people will take it remains to be seen. When the pinch of the shoe is felt in the cost of material for clothing, there will, unless we are greatly mistaken, be no little outcry. But the Americans are wonderfully meek about taxation, and seem only to work all the harder at money-making schemes as the burden of taxation is augmented. There is a limit, however, beyond which even Brother Johnathan's meekness under taxation must not be pressed.

We do not apprehend that our wool trade will suffer materially from this protective tariff. There are certain Canadian wools that United States manufacturers must have, and they will buy them in spite of the duty.

Canadian Contributions to the Paris Exhibition.

We noticed some time since the list of articles sent by the Board of Agriculture to the forthcoming Exhibition in Paris. In a similar list of contributions forwarded by the Board of Arts and Manufactures for U. C., we observe the following articles mentioned which come within the scope of our own department. A collection of stuffed Birds of Upper Canada, classified and named, contributed by the Board of Arts; from Rev. C. J. L. Bethune, a representative collection of Canadian Insects; from S. W. Passmore, Toronto, a collection of preserved Canadian Fishes, thirty-three specimens; from W. Saunders, London, C. W., a collection of native medicinal Roots and Plants, embracing one hundred and seventy species; from the Linseed Oil Company, Toronto, samples of Linseed Oil and Oil Cake; from Barber Bros., Streetsville, eighteen pieces of Winter and Summer Tweeds; from the Knitting Company, Ancaster, an assortment of Knitted Woollen Hose and Under Garments; from J. S. Rutherford, Stratford, one box of Bath or Scouring Brick, manufactured at Kincardine, C. W.

New Agricultural Fertilizer.

A GENTLEMAN who recently visited France called at our office a few days ago, to explain the properties of a new agricultural fertilizer, the Fecondateur Agricole, prepared by the eminent French Agriculturist, M. Guéraud, and now extensively used by him on his estate. By the certificates shown us from the Mayor and other officials of the town where M. Guéraud resides, and also from the Agricultural Societies of France, we are informed that the Fertilizer is a liquid composition, which, when greatly diluted with water, is put on the seed of the cereals intended to be sown, and after soaking in this preparation for a stated number of hours the seed is ready for sowing. It is said to stimulate the germination of the grain and promote the subsequent growth of the plant. As another recommendation of this preparation, it is considered a useful wash for trees, shrubs and flowers, to prevent disease and banish insects of all kinds. The results of various experiments are stated in documents submitted to us, and we select the following, dated 8th July:—"A piece of land sown with rye and wheat, the 1st and 3rd April, although on very poor soil and during excessive heat, was already in ear; and it may be remarked that the piece of land had not received the usual tillage. In examining the ears we found them well filled with grain in six rows, and much farther advanced in growth than some of the same grain not saturated with the preparation, but sown before winter. We subsequently went to a piece sown 6th March, after saturation with this preparation, and found an amazing crop. The straw was from five to six feet high, the ears, from four to five inches long, were filled with fine healthy grains in six rows, all free from smut, rust, and insect of any kind."

In addition to the foregoing, it is claimed for this fertilizer that it secures a saving of at least fifty per cent. in manure, a reduction of about one-half the seed usually required, and at the same time a considerable increase in the crop.

The gentleman who called informed us that he had a quantity coming to this country, and when it arrives he promises to show us by actual experiment the wonderful powers this preparation possesses. We shall be happy to report the result of a fair test of its merits. In the meantime, we think it worth a trial; and if it will destroy insects, and among others, banish the weevil, any one who shall be instrumental in introducing into Canada so valuable a desideratum, will well deserve the thanks of the community.

Snow's Canadian Super-phosphate.

WE have pleasure in drawing attention to this important fertilizing material, now manufactured by Mr. E. L. Snow, of Montreal, who has succeeded Mr. Coe in the business. Some complaints were made of the inferior quality of the samples last manufactured by the late proprietor; but the greatly improved article since offered to the public by Mr. Snow has, we understand, given general satisfaction. The testimony of a number of practical agriculturists who have given this artificial manure a trial is very much in its favour, and serves to show that it is a most efficient manure, imparting a vigorous growth, and a rich green colour to the crop: that it causes the crop to ripen from ten to twenty days earlier, increasing its quantity and improving its quality; and that the cost of this fertilizer is quite economical in comparison with other manures. In order to encourage the use of this fertilizing agent, Mr. Snow has offered to present to each Township Agricultural Society, whose members shall purchase and use, during the year, fifty barrels of his Canadian Super-phosphate, a gold medal, to be competed for annually upon such crops as each society may determine, and the additional sum of ten dollars, to be given to the competitor who shall produce the crop next in merit to that of the

winner of the gold medal. In such a competition, it is to be hoped that those who fail in winning either of the above prizes will, nevertheless, gain far more than the value of the premium in the improved condition of their crops.

The price of Mr. Snow's Super-phosphate in Montreal is \$50 per ton, in barrels of 225 lbs. each.

Canada West Poultry Association.

THE regular monthly meeting of the above association was held on Thursday, March 7th, at the Horticultural Rooms, on the corner of Queen and Yonge streets. A large number of members were in attendance. A number of new members were proposed, amongst whom were the following:—Messrs. Hugh Miller, J. S. McMurray, H. Stone, M. B. Hicks, Edward Hodder, Thos. Haworth, A. M. Smith, Jas. Graham, W. H. Boulton, T. S. Birchall, &c. An interesting paper on Hamburg fowl was read by the President, A. McLean Howard, Esq., which, at the request of the society, was sent to the editor of THE CANADA FARMER for publication. A vote of thanks was passed to the President for his paper. A discussion on the forthcoming Exhibition took place, by which it appeared that the committee had been very successful in procuring prizes and subscriptions in aid of the exhibition. The hon. Secretary reported that several entries had already been made, and a large number of applications for entry papers had been received, and that there was every prospect of a successful exhibition. The names of several gentlemen were proposed out of which to choose competent judges.

Exhibition of Poultry.

UNDER THE AUSPICES OF THE CANADA WEST POULTRY ASSOCIATION.

An exhibition of poultry will be held, as our readers will have learned from a notice in our last issue, on the 10th and 11th of April next, in the Agricultural Hall, Toronto. Our paper will hardly have reached its subscribers in distant parts, ere the entries for this exhibition will have closed, we hope well filled. The movement, we are glad to see, has been well supported by non-members of the Association, as in addition to the handsome donations of plate and other articles from the city of Toronto, the money prizes also have been nearly all subscribed. The small entrance fee should secure a large attendance at the exhibition; and as both birds and visitors will be under cover, and the street cars pass the hall in two directions, every facility will be afforded to the public to visit the show.

KELLEY'S ISLAND ITALIAN BEE APIARY AND BEE-KEEPER'S INSTITUTE.—We have received from Mr. W. A. Flanders, the inspiring and presiding genius of the above institutions, an illustrated circular giving a full account of the operations carried on under his supervision. In the first place, an apiary has been established on Kelley's Island, for the special purpose of raising pure Italian queens and stocks. There were no native bees on the island prior to Mr. Flanders taking up his abode on it, and as it is several miles distant from the main land there is no possibility of intermixture with common bees. The price list offers Italian queens at from \$5 to \$20 each, according to age, time they are sent, and the number ordered. Next, an institute for imparting instruction in agriculture has been opened in connection with the apiary, at which parties can be taught, on reasonable terms, the science and art of bee-keeping. The circular does not state the length of time necessary to make pupils accomplished apiarists, nor the actual cost of the term. Thirdly, Mr. Flanders advertises a moveable-comb hive, in which the frames are hung on hinges so as to open like the leaves of a book. Price of hive and right \$10 Am. cy. Finally, a compend of information has been prepared by Mr. Flanders, in the shape of a little book, entitled "Nature's Bee Book," which he mails to all applicants who remit 25 cents. For circular, further information, queens, hives, or bee-book, Mr. Flanders may be addressed at Shelby, Ohio.

Agricultural Intelligence.

Liverpool Trade Report.

We condense from the *Mark Lane Express* some items in reference to the Liverpool Trade in various agricultural products, during the year 1866:

WOOL.

It speaks highly for the healthy state of this branch of business, that it has been less affected by the various disastrous circumstances of the past year than any other; and the hope is gradually increasing that more favourable times are approaching, and without anticipating any material increase in value of the raw material, we may reasonably expect a more active demand, and a moderate and steady range of prices to rule during the present year.

Prices of all descriptions are lower than at this period last year, long combing Wools, both domestic and foreign, having suffered the greatest depreciation, varying from 15 to even 20 per cent. from the highest point; but it must not be overlooked, that at that period these descriptions had reached an unprecedentedly high range of value; while on short or clothing sorts, which had not reached these very extravagant rates, the depreciation has been proportionately less, not exceeding 10 per cent. from the highest range.

IMPORTS AND EXPORTS.—By the Board of Trade returns (which are, however, only made up on the first eleven months of the year), it appears that the quantity of Wool imported into the United Kingdom, as compared with the same period in the previous year, shows an increase of about 3½ million lbs. from Australia, 8½ millions from India, and 13 million lbs. from other quarters; while from the Cape of Good Hope the decrease is 2½ million lbs., or a total increase of 22½ million of lbs. In the exports there is a material falling off, both in foreign and colonial Wools—say, to the extent of about 20 million lbs., showing a very large increase in the amount left for home consumption, instead of a decrease, as was the case last year.

AUSTRALIAN.—The imports still continue to show an increase, and the quantity brought forward at the public sales in London during last year amounted to 358,798 bales. There has been a steady demand for these Wools throughout the year by the home trade, and about 150,000 bales have been taken for export, chiefly for France and Belgium, and the result, although not very profitable to importers, has proved quite as satisfactory as under the adverse circumstances of the times could reasonably be expected.

CAPE OF GOOD HOPE.—The total quantity offered by auction from this quarter during the year was 99,471 bales. These Wools show a decided improvement both in quality and assortment over former years.

SPANISH AND PORTUGAL.—Of the former there is nothing worthy of notice; Frontier and Alentijo washed Wools have met with pretty ready sale during the year, at a fair range of prices; but unwashed has been almost unsaleable. Oporto and Castellanico coming more into competition with English Wools, have been more adversely affected, both in demand and price.

PERUVIAN SHEEP'S WOOL.—Arequipa washed Wools have been in fair request; Lima and Chili Wools have been in good request, particularly the finer sorts. Alpaca has been in active request all through the year, being mostly sold for arrival as advised, prices chiefly ranging from 3s. to 3s. 4d. for fair and good qualities, and assortments.

BUENOS AYRES AND MONTE VIDEO.—The finer sorts of Merino and Mestizo, both washed and unwashed, have been in moderate, but never very active, demand.

EAST INDIA AND PERSIAN have commanded a steady demand, but fluctuating more or less with circumstances. The quantity offered for public competition at our quarterly auctions amounted last year to 79,420 bales. The selection has, however, we regret to say, been much inferior to former years, comprising a large proportion of low, half-washed, wasty wools; and on these sorts the depreciation is most marked, while fine true-bred and good-conditioned marks have commanded a fair competition, at comparatively more favourable prices.

EGYPTIAN.—Good true-bred wools have at times been very saleable, and realized high prices, while inferior descriptions have been almost unsaleable. Mohair, being a fancy article, and used for similar

purposes as Alpaca, has, like that article, maintained its value, and even at one time reached 3s. 10d., but is now only in moderate demand, at present quotations.

RUSSIAN.—The imports here have been unusually light, the greater portion having gone to London and Hull.

MOGADORE, BARBARY, &c.—The demand has been very dull, and prices irregular, the better qualities of washed being most saleable and showing the least depreciation; but heavy, sandy, unwashed wools have been, and are still, almost unsaleable.

DOMESTIC. The past year opened with a slack demand and drooping prices, which continued, with slight variation, until May, when, in the midst of the panic, prices received a further check, which continued until after the opening of the clip, when some animation took place, which, however, was only temporary; and the latter part of the year has been marked by unusual stagnation in this branch, with few and short intervals of improvement; and prices must now be quoted, on the average, nearly twenty per cent. lower than at the close of the previous year. We are glad, however, to notice some symptoms of improvement during the past week or two; and, as stocks in both dealers' and manufacturers' hands are light, with a fair consumption going on, we think we may reasonably expect to see more life in this branch of trade soon after the turn of the year.

From the same source we extract the following particulars respecting the trade in

LINSEED, LINSEED CAKE, AND OIL.

The value of linseed has ruled high, in consequence of the diminished supplies, but we are glad to learn that the prospects for the future are such as to warrant the hope of a lower range of prices after the close of the current season 1866-67.

The quality has been fair, as regards admixture, but there has been an unusual amount of country damaged grains in Black Sea parcels, and generally an allowance granted on this head. Other sorts have been of about average quality.

LINSEED OIL continues the favorite article for speculation. The exportation during the past year will be found short, as compared with 1865. America has, however, taken 8,500 tons, which has in some measure compensated for the exceptionally very small quantity shipped to the continent. It amounts to about 25,000 tons in 1866.

LINSEED CAKES.—Home-made as heretofore have been in very large consumption. Prices from January to early November, scarcely varied 10s. per ton. Cakes having been in steady demand at £10 15s. to £11 10s. according to quality, during that period; since then the exceedingly high rates paying for all other kinds of feeding stuffs have improved the value for best quality to £12 per ton, which is the current rate to-day. Of foreign the supplies will be found to be 20,000 tons in excess of 1865, amounting to 120,000 tons, of all kinds, into the United Kingdom.

RAPESEED has been in very large supply from the East Indies, and this, together with an abundant crop on the continent, has caused a continual fall, month by month, throughout the year.

The same authority furnishes the following statement in reference to the trade in

MANURE MATTERS' MATERIALS.

BONES.—The past spring there was only a moderate demand, and prices were therefore more regular than of late years, when towards the end of the season we have always seen a sudden and material advance, owing to buyers at a distance coming in against the grinders in the neighbourhood. The fearful ravages of the cattle plague had, however, this year the effect of reducing considerably the requirements of our local buyers, and there was therefore enough for all.

BONE ASH, when we made our last annual issue, was selling at £5 on 70 per cent.; during January it fell to £4 15s.; there is now little or no demand, and cargoes of Ash with a few Bones may be quoted worth £4 10s. on 70 per cent., and £5, while cargoes with a large proportion of Bones are quite unsaleable. The quantity coming on is ample.

ANIMAL CHARCOAL.—Almost all the spent produced here has been sold for France, at prices varying from £5 to £5 10s. as in quality. These figures cannot be got here while bone-ash is so low. Dust for ivory-black-making sells readily at £5 15s., and grey and white at £4 5s. on 70 per cent., at which it is cheap, as it tests in many instances 80 to 85 per cent.

NITRATE OF SODA.—Early in the past year speculators did their best to buy up this commodity; but,

the demand not being sufficient to take off the parcels as they arrived, with some slight exceptions, prices gradually fell from 12s. 3d. down to 10s.; and since June it has fluctuated only a little, never being under 10s. or over 11s. per cwt.; and now the stock is so formidable—13,400 tons, against 8,750 tons last year, and 8,200 tons in 1864—that it is not expected any operator will be likely to try and monopolise the article. Import, 27,000 tons.

GUANO.—Peruvian has not been so much called for during the past year; and the stock is very heavy.

BRIMSTONE.—Although the year's imports are nearly 5,000 tons in excess of those of 1865, the stock does not exceed 1,500 tons. Prices are now, however, 17s. 6d. to 20s. per ton lower than at this time last year.

SULPHATE OF AMMONIA.—The low price of nitrate has affected this article, and caused a fall of nearly 20s. per ton since this time last year. At this decline there is not much demand, and prices will still go lower. Dark is not saleable at anything over £10 10s., and white is hard to sell, at £11 10s. per ton.

FEEDING CAKES.—There was no material change in these until November, when prices advanced 20s. per ton, which advance has not, however, been maintained; but if the present hard frost continues, we are certain to see them higher. American still holds its ground in some quarters, and when the market has been bare, as in May, good cake has brought extreme prices, and equal to English. The imports the past two months have been heavy. It has not, however, given way much; and to-day £10 10s. may be considered the price for fine cake. Decorticated cotton-seed cake is again coming from the States, and sells well, at £7 15s. to £8 per ton.

Canada Produce Abroad.

We have often heard it remarked by parties connected with our export trade, that somehow or other, Canadian produce has not been held in that repute abroad which it ought to have enjoyed—that, in many cases, to say that a certain shipment was Canadian, was to effectually kill off the sale at anything like a reasonable price. That there is considerable truth in this statement, experience has frequently proven, and the question has of late been often propounded: Why does this prejudice exist? Our wheat and flour cannot be excelled—our pork and butter should be as good as that of the United States, and yet they do not stand alike even in the British markets. A well informed writer attempts to give the cause of this depreciation of our produce abroad, and contends that it has mainly arisen from the tricks of the American shippers, who have made it a practice to dub as "Canadian" bad or inferior lots. His own words are as follows—

"If a quantity of soft, oily pork reached Liverpool, it was ticketed 'Canadian.' Queer lots of flour, unsound in quality and deficient in weight, were sure to be 'Canadian,' and our butter has been quoted, for the same reason, from 'Canadian' to cart grease. The same with petroleum and other products, so that to have a lot of 'Canadian' on hand, no matter of what kind of produce, was as much as to advertise a discount in advance."

We fear there is too much truth in these remarks, and that Canada has frequently been tricked in this way to her serious injury. The fact is indisputable that prior to recent shipments of our flour to the Maritime Provinces, they had a very poor opinion of it. Brother Jonathan previously supplied them, and from the flour they had received from him, under the name of Canadian, it had obtained a very unenviable reputation. Our sly Cousins, very probably, ate our splendid white wheat flour themselves, and gave our blue-nose friends their inferior grades—the poorest of which being marked as if from us. However this may be, one thing is certain; since we began to ship direct to and from Halifax and St. John, so little wonder has been expressed at the excellence of Canadian flour, which is openly stated by many to be the best they have ever obtained. It is gratifying to know that this important staple has won for itself so good a reputation in the Provinces, for whatever changes may take place in the run of our trade hereafter, they can no longer be tricked into the belief that Canadian flour is second to any in the world.

Any prejudice which may exist against Canadian produce abroad, will, we are sure, ultimately pass away as it has done among our eastern friends. We believe nearly all descriptions of our produce to be quite up to the American standard, and frequently above it, and when our shippers begin to carry on a direct trade with Europe, the brand 'Canadian' will soon enhance, not decrease its value. We all know the story of the Quaker who gave the dog the bad name. If that has been done with Canadian produce, as this writer and many others suppose, it is conduct

exceedingly reprehensible, and it becomes our duty to counteract it as speedily as possible. The best way to do this is just to do what has been done in the Maritime Provinces—send our produce to foreign markets direct, and let them judge for themselves. Were this done, we have no fears of the result, or of the success of any future tricks which might be tried.—*Trade Review.*

A Scotch Turnip Match.

A TURNIP competition, held under the auspices of the Inverness Farmers' Society, came off on the 9th November last,—the judges being Robert Anderson, Esq., of Lochduh; Mr. William Arres; and Mr. William Cameron, who, after having carefully examined no less than forty-two fields, the number entered for competition, awarded the prizes as follows:—1st prize and the Highland Society's Silver Medal, Mr. James Cumming, Fingask, Bogroy; 2d, Mr. James Paterson, Knocknagael; 3d, Mr. Patrick Macdonell, Kinchyle; 4th, Mr. Baillie, of Leys; 5th, Mr. John Hendrie, Castleheather; 6th, Mr. John Robertson, Drynie; 7th, Mr. Alex. Garden, Viewfield; highly commended, Mr. Scott, Parks of Inshes, and Mr. Gair, Hiltion. On Mr. Cumming's farm there were 33 acres of yellow turnips and 14 acres under swedes. The former got 14 loads of farm-yard manure, 2 cwt. of Peruvian guano, and 2 bushels bones, and were sown between the 3d and 20th of June. The latter got fourteen loads of farm-yard manure, 2 cwt. of Peruvian guano, and 4 bushels soot, the date of sowing being from the 20th to the 26th May. The yellows yielded 29½ tons per acre, and the swedes 27 tons 17 cwt. Mr. Paterson, Knocknagael, had twenty acres of yellow turnips and 9 of swedes, the produce in both cases being of equal weight per acre—viz., 27 tons 17 cwt. The former got 24 loads of farm-yard manure, and 3 cwt. dissolved bones; and the latter 24 loads farm-yard manure, 1 cwt. Peruvian guano, and 2 cwt. dissolved bones. The yellow turnips were sown between the 1st and 14th June, and the swedes between the 15th and 22d May. The third prize-winner had 23 acres of yellow turnips and 5 of swedes, weighing respectively 27 tons 17 cwt., and 28 tons 16 cwt. per acre. The manure used for the yellows was 17 loads farm-yard manure, 1 cwt. Peruvian guano, and 2 cwt. dissolved bones. It is worthy of notice that the forty-two fields examined extended to 509 acres, while at a similar competition in 1859, the number of fields were thirty-two, extending to 392½ acres—the produce of all the fields being far inferior in weight to those examined this season.—*The Farmer (Scottish).*

NEW WOOLLEN FACTORY.—Arrangements are being made by Messrs. Armstrong, McCrae & Co., for the erection of a new woollen factory in Guelph, on a somewhat extensive scale, next spring. The factory will be built on the site of what is known as Jackson's old tannery, below the Drill Shed. The factory will be a handsome stone structure, 80 feet by 34 feet. The firm intend to manufacture hosiery, such as drawers, undershirts, &c. In this branch it will be merely an extension of the business so successfully carried on by two of the partners, Messrs. Armstrong and Anderson. To this end the new firm will increase the number of knitting machines. But in addition to this they intend to commence the manufacture of yarns of all kinds, plain and coloured, and their present intention is to put in 240 spindles, and all the other necessary machinery for dyeing, scouring, &c., will be put up.—*Guelph Advertiser.*

THE CENTAL SYSTEM.—The Cental System, or buying and selling grain by the 100 lbs., was first recommended by the Albany Board of Trade, and has since been adopted by the Boards of Trade in all the large grain marts of the country. It is to take effect on the first of March. For a time there may be some confusion in the quotation of prices, but people will very soon become accustomed to the new method. Some papers have published long tables, giving prices per bushel, and at the same rate per cental. Such tables are not always accessible, and we therefore give a rule by which buyers and sellers can make their own calculations. The standard weight of wheat per bushel is 60 lbs.; corn and rye, 56 lbs.; barley, 48 lbs.; oats, 32 lbs. The price per bushel being given, to find the price per cental multiply the price per bushel by 100 and divide by the number of pounds in the bushel. For instance.—At \$1 50 per bushel for wheat, what is the price per cental?— $150 \times 100 = 15,000 \div 60 = 250$, which is the price per cental. Again: The price per cental being given, to find the price per bushel multiply the price per cental by the number of pounds in the bushel and divide by 100. Example: At \$2 50 per cental, what is the price per bushel of 60 lbs.?— $250 \times 60 = 15,000 \div 100 = 150$, the price per bushel.—*Rural New Yorker.*

Crops in Nova Scotia.

The *Journal of Agriculture for Nova Scotia* gives, in connection with the annual reports of various agricultural societies, the following notices of the crops during the past year:—

LUNENBERG.—The grain crops throughout this county have been very light the present year. The potato blight was very general throughout the county, particularly among the early kinds; and had it not been for the well-timed importations from P. I. Island, the supply for the winter would have been very short. Our market has been well supplied with beef, notwithstanding the extensive shipment of cattle to Halifax from the port of Lunenburg. The steamer *Emperor* took away thirty head of beef cattle in one trip. The hay crop is short, but the open winter will help out the young cattle.

GLENELEA.—The crops during the past year were generally abundant. Hay has not been more abundant for many years, but in consequence of continued wet and unfavourable weather during harvest, a considerable quantity was secured in a bad state, and more on low meadow land not mown at all, but on the whole there has been more saved in good condition than for many previous years. Oats are well filled, and heavy in straw, and will, no doubt, be an average crop. Wheat, so far as we can learn, is an inferior crop, in many instances not being sufficient to repay the husbandman for his labour in growing it. Buckwheat is considered rather above the average. Potatoes generally were an abundant crop, and so far as we can learn are doing well in the cellars.

WEST CORNWALLIS.—The hay in this section of the country was a fair average crop, but owing to the wet weather in the latter part of the season some of the hay on the low meadows was injured. Wheat was very little sown in this district, owing to the fly, which still continues to injure the crops. Rye, oats, and barley, were a full crop, but some loss was sustained by the wet weather at the time of harvest. Buckwheat and Indian corn were good crops on lands that were well prepared. Beans good. Potatoes were rather below an average crop, and considerably diseased. Turnips, carrots and other roots gave a good return for the labour expended. Fruit was rather below an average yield, but the quality good.

A BIG BIRD.—An eagle, measuring 12 feet from tip to tip of wings, recently attacked a large dog of mixed mastiff and Newfoundland blood, in Marquette, Wis. The dog had disabled the eagle just as a boy came up with a pitchfork, when the bird attacked the boy, but was eventually captured.

SPRING EXHIBITION IN STRATFORD.—The Spring Exhibition of entire horses, bulls, spring grain, seeds and roots, in connection with the Agricultural Society, of the County of Perth, will be held at Stratford on Thursday, the 4th of April next. Prizes are offered for three classes of horses, and four classes of cattle.

GRAIN AND FLOUR BY THE CENTAL.—The New York Produce Exchange, which voted, Dec. 6th, to abrogate the system of buying and selling grain by the bushel, and substitute the cental of 100 lbs. after May 1st—at a meeting Feb. 7th, adopted a resolution in favour of making the weight of a barrel of flour hereafter 200 lb.

A revolution in trade anticipated through the working of the Atlantic telegraph, begins already to be realized. English orders on the California markets for wheat pass under ocean and over land, and advices of the purchase return by the same path, within the business hours of a single day.—*Journal of Board of Arts.*

CHEESE FACTORIES IN LOWER CANADA.—We learn from the *Montreal Witness* that Nelson Davis, of Montreal, is erecting a new cheese factory at St. Andrew's, Argenteuil County, C.E., which will take the milk of six hundred cows. Similar enterprises are on foot at Laclute, and several parties in Missisquoi are about to apply for an Act of incorporation for the Bedford Cheese Manufacturing Company.

KILLED BY THE FALL OF A TREE.—William Gleason, while engaged in chopping on his farm lot 2 in the 3rd concession, Madoc, was instantaneously killed about 5 o'clock on Tuesday morning last. A tree which he had just felled, in falling caught upon a high stump, and glancing off, in the rebound struck the unfortunate man, who was standing some feet off. He was instantly killed, his neck and shoulder being broken by the force of the blow. The deceased, who was about 27 years of age, leaves, we are sorry to say, a widow and three or four young children, totally unprovided for.—*Madoc Mercury.*

Exports of the World.

FRANCE exports wines, brandies, silks, fancy articles, Jewelry, clocks, watches, paper, perfumery, and fancy goods generally.

Italy exports corn, oil, flax, wines, essence, dye-stuffs, drugs, fine marble, soap, paintings, engravings, mosaics and salt.

Prussia exports linen, woollen, zinc, articles of iron, copper, and brass, indigo, wax, hams, musical instruments, tobacco, wines, and porcelain.

Germany exports wool, woollen goods, linens, rags, corn, timber, iron, lead, flax, hemp, wines, wax, tallow and cattle.

Austria exports minerals, raw and manufactured, silk thread, glass, grain, wax, tar, nut-gall, wines, honey, and mathematical instruments.

England exports woollen, glass, hardware, earthenware, cutlery, iron, metallic wares, salt, coal, watches, tin, silks and linen.

Russia exports tallow, flax, hemp, flour, iron, copper, linseed, lard, hides, wax, duck, cordage, bristles, fur, potash and tar.

Spain exports wine, brandy, oil, fresh and dried fruits, quicksilver, sulphur, salt, cork, saffron, anchovies, silks and woollen.

China exports tea, rhubarb, musk, ginger, zinc, borax, silks, cassia, filagree works, ivory-ware, lacquered-ware and porcelain.

Turkey exports coffee, opium, silks, drugs, gums, dried fruits, tobacco, wines, camel's hair, carpets, camlets, shawls and morocco.

Hindustan exports silks, shawls, carpets, opium, saltpetre, pepper, gum, indigo, cinnamon, cochineal, diamonds, pearls and drugs.

Mexico exports gold and silver, cochineal, indigo, sarsaparilla, vanilla, jalap, fustic, campeachy wood, pimento, drugs and dyestuffs.

Brazil exports coffee, indigo, sugar, rice, hides, dried meats, tallow, gold, diamonds and other precious stones, gums, mahogany and india-rubber.

East Indies export cloves, nutmegs, mace, pepper, rice, indigo, gold dust, camphor, benzoin, sulphur, ivory, ratans, sandalwood, zinc, and nuts.

Switzerland exports cattle, cheese, butter, tallow, dried fruit, limes, silks, velvets, laces, jewelry, paper and gunpowder.

Japan exports tea, leather, silks, lacquered ware, gold, silver, and fancy ornaments.

West Indies export sugar, molasses, rum, tobacco, cigars, mahogany, dye-wood, coffee, pimento, fresh fruits and preserves, rubber, wax, ginger, and other spices.—*Et.*

BET-ROOT SUGAR IN FRANCE.—An official return shows that the quantity of beet-root sugar made from the beginning of the season, 1st. September, to the end of December, was 155,338 tons, being 27,208 less than in the corresponding period of the season preceding. Adding the quantity on hand on 1st. September to the make, the total to be disposed of was 170,179 tons. Of this, 105,579 tons were taken for consumption, export, distilleries, or entrepots. In 1865-6, the quantity so taken was 46,830 tons. The stock remaining on hand was consequently 64,000 tons, in round figures. There were, besides, 40,654 tons in the entrepots.

THE STEAM PLOUGH AT THE SOUTH.—New Orleans papers announce the arrival there of one of Fowler's English Steam Ploughs. We quote:

Mr. Max Eighth, formerly chief engineer on the staff of Pasha Mahn, when that Pasha held the viceroyalty of Egypt, comes with the machine to superintend experiments made with it. Having witnessed in Egypt the operation of the plough, he is convinced that it will be as successful here as it was on the Nile, and yesterday his favorite implement was tested on the fair grounds. A large company witnessed the trial, among whom were several gentlemen whose occupation from boyhood has been that of a planter.

SUPPLY OF COUNTRY MILK TO LONDON.—The monthly supply of milk from the country into London is 508,000 gallons. The western counties contribute 140,000 gallons, the eastern counties 125,000 gallons, and the northern counties 95,000; Hants and Berks send 55,000 gallons; and from other districts the daily supply is augmented by 18,500 gallons. Kent and Sussex are the lowest contributing counties; and at the present daily averages, 6,604,000 gallons of milk are annually brought from the country to London; and this is increased by metropolitan dairymen to an extent of another third, and is daily retailed out to about 260,000 customers. The aggregate supply of milk consigned to London is the produce of 20,000 cows in the country. The wholesale prices charged are at an average of 2s. per barn gallon (eight quarts), and the value of milk brought to London for consumption represents a sum of £660,400 per annum.—*Mark Lane Express.*

Officers of Agricultural Societies for 1867.

Since our last issue we have received the following additional lists of officers of Agricultural Societies for the current year:—

WEST NORTHUMBERLAND AGRICULTURAL SOCIETY.—President, Wm. Roddick; 1st Vice President, John Henderson; 2nd do., Glover Bennett; Secretary, Charles Bonn; Treasurer, Walter Riddell; Directors, Geo. Carruthers, John Cullis, Wm. T. Fish, Henry Wade, James M. Carruthers, Hon. A. A. Burnham, and Wm. Beatty.

TOWNSHIP OF HAMILTON AGRICULTURAL SOCIETY.—President, John Underwood; Vice President, Wm. Mason; Secretary, Richard Cullis; Treasurer, Trueman McEvers; Directors, Wm. Alcorn, Wm. Eagleston, John McKinley, Robt. Sutton, Peter Sidey, jur., Wm. Defoe, Glover Bennett, James Dickson, and Geo. Kent.

REAPPEARANCE OF RINDERPEST IN LONDON (ENGLAND).—By recent accounts we learn that an outbreak of this disease occurred in a dairy situated in a suburban portion of the English metropolis; from a single case the disorder rapidly spread, till in ten days seventeen animals had been attacked. Fearful of a still further extension of this terrible plague, the Metropolitan Board of Works ordered the whole of the animals in the premises to be killed. The remaining stock, forty-five in number, were accordingly slaughtered, the bodies of the infected animals burnt, and the rest sent to the market. It was hoped that these vigorous measures would have the effect of preventing the further spread of the disease.

ANOTHER PROPOSED CHEESE FACTORY.—We learn that Mr. John Shortreed, Guelph Township, is making preparations for putting up a cheese factory this spring. Our informant states that some of the materials are already on the ground, and that operations will be commenced as soon as possible, so that the factory may be in operation by the month of May. Mr. Shortreed expects to get the milk of 200 cows, including his own. We are glad to find that farmers in this section are beginning to give their attention to this matter. If the two factories proposed to be put up by Mr. Shortreed and Mr. George Rudd go on, we shall then, counting Mr. Harland's, have three in this district, and the advantages of such factories will be thoroughly tested. There is every encouragement for men of enterprise to go into the business. With the English and South American markets open to our dairy products, we shall have the advantage of the Americans with their oppressive tariffs and internal taxes; and, therefore, we may expect to see a great extension of the dairy business, in both Upper and Lower Canada, in the course of two or three years. It is admitted to be the most profitable business in which the farmer can engage. The Canadian cheese is now quite equal in quality to the far-famed cheese of Duchess County, New York.—*Guelph Herald.*

IN QUEST OF FOOD.—The Council of the Society of Arts have passed a resolution that a committee be appointed to inquire and report respecting the food of the people, especially but not exclusively of the working classes of the people. The Board of Trade have promised a vast amount of valuable information. The Secretaries of State for Foreign Affairs, the Colonies, and India, are to be asked to circulate questions about food, or modes of preparing it, among foreign ministers, consuls, and governors. The methods of drying and preserving meat, and milk and fish, the introduction of new descriptions of food, the teaching of economical cooking, the issue of medals and prizes, will successively occupy the committee's attention. Our London meat and milk supply are insufficient, so that we have not the materials to give healthy flesh, and bone, and muscle to the rising generation. Scientific men are dining into the public ear that this state of things cannot last. The generation that is rising must be feebler than that which is at work; and the generation born of the feebler one must be still less endowed with vital force. The gravity of the question has forced it upon the attention, at length, of public men of various parties, and we find on the committee just appointed under the auspices of the Society of Arts political men of all shades of opinion. We shall watch their labours with the greatest interest.—*Lloyd's Weekly Newspaper.*



Farmers' Gardens.

PERHAPS there is no one thing connected with the culture of the soil so badly and universally neglected by farmers as their gardens. How many in your neighbourhood, reader, have what may be strictly termed a good garden from year to year? How many grow an abundant supply of small fruits for the use of the family? How many have asparagus, radishes and salads plentifully or at all, early in the season; melons, cucumbers, squashes, tomatoes, cabbages, peas, beans, green corn, &c., in the summer months; and celery, vegetable oysters, parsnips, turnips, horse-radish, &c., in the fall, winter, and early spring? All farmers should and can have them; nothing which they eat is cheaper, more grateful or healthful than these, together with the summer fruits. If we can persuade you to take the pains and incur the slight expense necessary to their production, we shall be amply rewarded for our labour by the gratitude and satisfaction which we know those feel who are dependent on you for support, and who eat daily at your table.

Have you a garden spot? It should be a choice piece of land; not large, but rich, dry, warm, near the dwelling, and enclosed to prevent the depredations of fowls and animals. If the soil is poor you have the means at hand to make it rich; if heavy and wet, thoroughly underdrain it—as it is small, you can afford this expense. We repeat, it need not be large, for a small garden well tilled is much better and less costly than a large one overrun with weeds and cultivated like your fields. Leaf mould from the woods, with ashes, lime and plaster, are the best manures you can use, unless you can spade or plough in deep fine barnyard manure. This year you should make a compost heap, and have it on hand for the next.

If the garden is small, it is best not to plough, but rather spade it. First of all lay it out well; make a bed or border, as they are called, four or five feet wide, all round the outside. Next to this a walk; then one or two broad cross-walks, and reserve the rest for beds and walks, as crops and circumstances shall dictate. Make up your mind now to have a good garden this year; and in our next article we will try and tell you how to start the early vegetables and seeds in a cheap and simple manner.—*Rural New Yorker.*

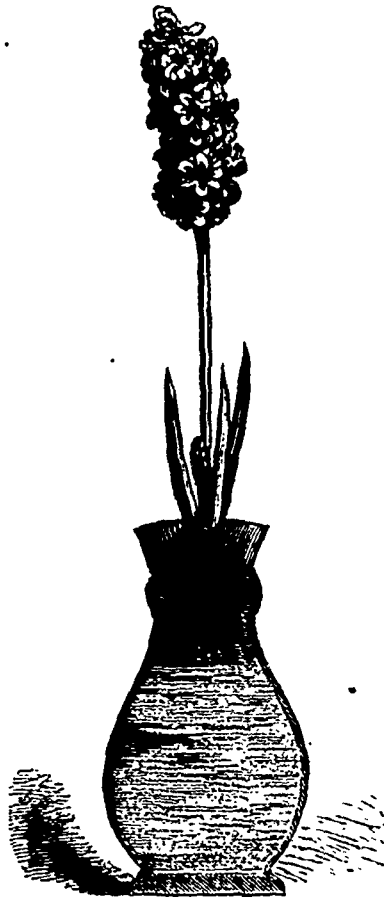
CRANBERRIES.—William Parry, in a paper read before the Pennsylvania Horticultural Society, makes some interesting statements, some of which we quote and condense as follows: He thinks there is at least one million dollars invested in the culture of cranberries in the county of Ocean; and in Monmouth and Burlington counties the culture is still more extended. At Shamony, portions of bog have yielded at the rate of 220 bushels per acre, which, at the price last fall, would amount to \$1,250. W. R. Braddock, of Medford, has about 100 acres, twenty of which yielded last year an average of 100 bushels per acre, amounting to \$3 per bushel, clear of all expenses, or \$6,000 from the 20 acres in berrying. T. and A. Budd purchased a tract of cedar swamp, five years since, at \$10 per acre, for which they have since been offered \$600 per acre. Last year 28 acres of it yielded 1,800 bushels of fruit, or 67 bushels per acre, and amounted to \$7,200, at \$1 per bushel.

Improved Culture of Hyacinths in Water.

PROBABLY the greater number of our readers have upon their mantelpieces, or in their windows, some of the pretty plain or ornamental glasses in which hyacinths are flowered in water. During the chilly days of winter, these plants, by their fresh verdure, remind us of the summer that has gone, and also foretell the promise of the coming spring.

Last year (1864) there were exhibited by Monsieur Vavin, at a horticultural show in Paris, two hyacinths grown in water, in full growth early in November. The leaves and the roots, as is usual, grew before the

flower-spike, which remained stationary. He then conceived the idea of cutting off the roots about an inch below the plate of the bulb, as we see in the following figure:—



In a few days, the flower stem developed wonderfully; while the plants, with abundance of foliage, bloomed badly. The fact seemed worthy of notice; but the season was too far advanced to permit of experiments on different varieties, and the experiment



did not seem sufficient to warrant the adoption of a new rule of culture. This year (1865), the experiment has been tried with many varieties, and the experience of last year is fully confirmed; in every case the finest blooms have been developed from bulbs of which the roots have been cut off; they

being grown side by side with bulbs of the same variety, with uncut roots. These latter have in many instances failed, as is usual, to develop a flower-spike; and in other cases have thrown a spike, of which the second figure is a fair example.

Here, then, we have a new rule of culture introduced, which applies not only to hyacinths, but also to other bulbous plants.

The rules of culture are simply to allow the flower stalk to develop in a cool and perfectly clean vessel.

When the stalk is about three inches high, if it is well formed, expose the plants to a great heat.

If the leaves grow faster than the stalk, cut off the bunch of roots about an inch below the base of the bulb. This is the experience of Monsieur Vavin, the exhibitor. Let us see if the experience of others confirms it.

The bulb of the hyacinth, before it pushes, contains in its centre the future flower, perfectly formed. For its development, a little heat and moisture are sufficient; and this development is independent of the organs of growth. The leaves, on the contrary, take strength and transmit it to the bulb by a call upon the roots, under the influence of light and air. We can easily see that they absorb the greater part of the nourishment, and that they impoverish the flower.—*Ed. André, in "Revue Horticole."*

Celery.

The following is extracted from the proceedings of the New York Farmers' Club:—

Aaron Wright, Salem, N.J., asks: "Will the Club please give some information in regard to the cultivation of celery—the soil best adapted to its growth, the best fertilizer to be used, and the probable and possible yield per acre?"

The Chairman called upon P. T. Quinn to answer these questions. Mr. Q. said it might be interesting to the inquirer and some others, although it seemed to him like a thrice-told tale. It makes but little difference whether the soil is clayey loam or sandy loam; it will grow in pretty stiff clay. There are two requisites, however, that cannot be dispensed with. The ground must be extremely rich, and deeply and finely cultivated. I would not recommend using an excessive quantity of manure with the celery crop; but I care not how much has been used with the preceding one.

Around New York a celery crop follows early cabbage, early peas, or early potatoes. Then the ground being deeply and finely pulverized, it is manured with compost or some special manure, such as guano, super-phosphate, flour of bone, etc.

A gardener does not think he gets a paying crop unless he can make his celery plants grow two and a half feet high. The seed is sown early in spring—indeed it is one of the first sown in open ground. It is a common practice when the plants are a few inches high, to cut off the tops to make them grow more stocky. They are not ready to set out until June or July; they are then planted in rows three to four feet apart, three-and-a-half or four inches between plants. The trench system of planting is entirely abolished. When the plants have grown 14 or 16 inches high, they are worked by what is termed hand handling, that is, the stalks being held close together, the earth is drawn up and pressed around them. Later in the season they are earthed up so as to form ridges two or three feet high. The quantity and price vary so much that it is difficult to state it. The range is from \$200 to \$400 per acre. For keeping celery so that it can be always obtained during winter, a narrow trench is made 14 to 16 inches deep, upon a spot that has a slight inclination, and in this trench about the last of October, or before freezing weather, the plants are packed as closely as they can stand, and lay placed along each side, so as to be convenient for covering whenever a freezing night threatens; and before the ground freezes it is hauled up on each side of the row, the plants being previously closely pressed together, and then so banked up that only the center of the tops stick out. The whole ridge is then covered with coarse manure sufficient to prevent freezing. In filling the trench always commence at the upper end, and in taking out the celery whether for use or to send to market always work up from the lower end.

Window Flower Gardens.

THE gradual extension of the movement for fostering a love of wild flowers among the working classes, and for diffusing a charm over their too often ill-conditioned residences, is matter for congratulation. Not only in London, but in Dublin and other large towns, efforts are being made in this direction; and from a report before us, we learn that Hull is not behindhand in the good work. Nearly 4000 plants have been distributed among 724 applicants, under the superintendence of Mr. J. C. Niven, the curator of the Hull Botanic Garden, and Mr. Peak, the superintendent of the People's Park in the same town. The directions for the culture of these plants, drawn up by Mr. Niven, are so well adapted to the end in view, that we republish them here in the hope that they may serve as hints to others who are engaged in a similar task.—*Eps. Gardeners' Chronicle*

WATERING.—The first and most important point is to guard against over-watering; this remark is more especially applicable to the first month or two—as it will be readily understood that in the process of removing a plant from the ground where its roots are widely spread, and placing it in the narrow limits of a flower-pot, a certain amount of injury is unavoidable, and in order to allow the roots to recover their power of healthy action, just sufficient water must be given to keep the soil moist, not wet—and to insure this a watering once a week will be quite sufficient until about the beginning of the year—or, if the plants are in a room where there is no fire, once a fortnight may suffice. One maxim in connection with watering which ought always to be borne in mind is, when you do water, do it well and thoroughly, allowing all the surplus to escape at the bottom of the pot. It is usual to stand the pots in saucers, and as a matter of cleanliness it is advisable to do so, but never allow the surplus water to remain in those saucers for any length of time, as the air is thereby prevented from acting on the soil, and the result is that it becomes sour and rots the roots.

DECAYED BRANCHES.—Should branches decay, as some will do even under the most favourable circumstances, cut them back to a sound joint, that is, to that part of the stem where there either is or has been a leaf. This being neglected, the decay may from a single branch extend itself through the whole plant. For the same reason it is advisable to remove any decaying leaves, or those that have turned yellow—the latter, by a gentle pressure downward, will generally break off at the bottom of the leaf-stalk.

VENTILATION.—A word now about ventilation. Let the window be open as much as possible during the day, especially if there be a fire in the room, and at night, when it would be impracticable to have the window open, place the plants on the floor, where they will be coolest. Above all things avoid putting them on a high shelf for the oft-repeated reason that "they are nicely out of the way,"—such a course would lead to their being very soon out of the way altogether.

SPRING GROWTH.—As the spring advances, and the plants show signs of growth in the form of healthy young leaves, take every opportunity of setting them out of doors during the day, in a sheltered corner, where they will get a little sun, and above all things never miss an April shower, which will be all the more acceptable should it occur in March. (We are not responsible for this Irish bull.—*Ed. C. F.*) A nice genial shower will do them more good in an hour than all the artificial waterings and washings you can give.

AIR PURIFIED BY PLANTS.—There is with many persons a prejudice against having plants in a bedroom, under the erroneous impression that they poison the atmosphere. The very reverse is the case. The leaves of plants purify the air, filtering all the poisonous matter out of it, and appropriating that poisonous matter to their own growth. The same remark does not, however, apply to cut flowers. These, beautiful as they may be, do to some extent add to the impurity, and consequently ought always to be removed from a sleeping apartment at night. I mention these facts for the reason that a bedroom window is generally better adapted for the growth of plants than a kitchen window, owing to the atmosphere being less hot and dry.

EFFECTS OF FROST.—A word now as to frost—the arch-enemy of floriculture. When it is at all severe, the plants should be removed from the window-ledge, either to a warmer room, or, failing that, to the warmest and farthest-removed corner from the window. As soon as you see those beautiful crystals form on the glass you may be sure that it will not be long before the frost makes itself felt in the inside. Should this precaution not be taken, and the soil and plants become frozen, let them thaw gradually; and the most effectual way to do this is to place them in a dark cupboard (not a warm one), and sprinkle them well overhead with cold water.

Grape Vines for Temporary Bearing.

Geo. L. Pratt, Orleans Co., N. Y., writes the *Rural New Yorker* as follows on planting out grape vines for temporary bearing:—"I would advise setting double the number of vines in the row that you intend to let remain permanently. Fruit the temporary vines the third, fourth, fifth and sixth years, and then dig them out of the way. You can thus favour the permanent vines by not fruiting them until the fourth year, and then but lightly, giving them an opportunity to get well established for a long-lived vineyard. The past season I set two and one-half acres to Iona, Isabella, Delaware, and Clinton, planting the vines ten by twelve feet apart. Between each vine I set an Isabella, at a cost of five dollars per hundred, with the intention of fruiting the latter heavily for about four seasons, then removing them and leaving the first-named vines in full possession of the ground. With my experience I am satisfied that ten feet by twelve is near enough together to have strong growing vines when they are seven years old."

The Household.

Food Value of the Potato.

THERE is, probably, no other vegetable food, except wheaten bread, of which so much can be fairly said in its favour. Its merits, however, vary much with the kind of seed, the period of maturity, and the soil in which they are grown. That kind should be preferred which becomes mealy on boiling, and which, when well cooked, can be thoroughly crushed with the finger. The potato which is known as "waxy," and those which remain somewhat hard when boiled, do not digest so readily as the mealy kind, but for that very reason they are said to be more satisfying. * * * It is not material in reference to nourishment whether the potato be boiled or roasted, since in both methods it should be well cooked. In point of economy and convenience, however, it has been found better to boil than to roast them; for whilst the loss in boiling upon 1 lb. of potatoes scarcely exceeds half an ounce, that in the most careful roasting is 2 oz. to 3 oz. It is also more economical to cook them in their skins, and to peel them immediately before they are eaten, but this is not very convenient in many families, and the colour of the potato is not quite so agreeable as that of those which have been boiled after peeling. When they are peeled before boiling, and particularly when they are small and the operation is performed carelessly, from one-third to one-fourth of the whole weight of the potato is lost, and if there be no pig to eat the peelings the whole is wasted; whilst the weight of the peel which is removed after boiling would not amount to more than 1 oz. in the pound. When potatoes have been roasted the loss in weight from the skin and drying is more than one-fourth of the weight before cooking. An average sample of potato, after it has been peeled, contains 11 per cent. of carbon and 0.35 per cent. of nitrogen; and hence in each pound there are 770 grains of carbon and 24 grains of nitrogen, and it is greatly inferior to bread. The economy of its use depends upon its cost, so that in times when potatoes are sold at 2d and 1d per pound they are very dear food as compared with household flour, whilst they are a very cheap food when produced by the labourer at the cost of the "seed" and the rent of land. Thus, at 2d per lb., only 1024 grains of carbon and 32 grains of nitrogen will be obtained for 1d; when the cost is 1d per lb. the quantities will be reduced to 770 grains and 24 grains. When the labourer, however, can obtain 50 bushels of potatoes from a quarter of an acre of land, at a cost of about 30s for seed and rent, he will have more than 7 lb. of potatoes for 1d., and the quantity of carbon and nitrogen thus obtained for that sum would be 5770 grains and 200 grains. If, however, he were to sell a large part of his crop at the market price, he could procure with the money thus obtained far more nutriment in the form of flour than would have been derived from that portion of his potatoes. The weight of potatoes which alone would supply the daily nutriment required by a man would be about 6 lb. in reference to the carbon and 8 lb. in reference to the nitrogen; but when a labourer in the West of Ireland lives upon this he is allowed 10 lb. daily, besides a large supply of buttermilk, and as both of these kinds of food are cheap in that locality, the proceeding is even then an economical one.—*Dr. E. Smith's Practical Dietary.*

Canadian Scouring Brick.

In the February number of the Journal of the Board of Arts and Manufactures for Upper Canada, we find a notice of a new scouring brick of very excellent quality, manufactured by Mr. J. S. Rutherford, of Stratford, at his Bridgewater Brickworks, Kincardine, County of Huron, C.W. Samples of this brick have been sent to Paris for the coming exhibition. In reference to this home-manufactured specimen of an article which has hitherto been wholly imported from the mother country, Professor Chapman, of University College, Toronto, says:—"The sample of scouring brick prepared by Mr. Rutherford, of Kincardine, is of excellent quality. It compares very favourably with the ordinary 'Bath brick' of England, and is equally suitable for scouring purposes, and as a polishing material for knives, &c. Its manufacture reflects much credit on Mr. Rutherford's skill and enterprise." Hitherto, we believe, these bricks have only been made in Bath, or Bridgewater, England, and it will be a great advantage to Canadians if the native clay, and native manufacture, can furnish an article of such utility for domestic and other purposes. We shall be glad to learn that Mr. Rutherford's enterprise, which has received such favourable notice, is being rewarded by the general adoption at home of the new material produced by him, and its extensive exportation abroad.

CLEANING TAINTED MEAT BARRELS.—Fill the barrel nearly full of well cured clover hay. Herdgrass or timothy will do in the absence of clover. Then fill the barrel part full of boiling water, and cover up and let it stand until cold, when the barrel will be found clean and sweet.—*Cor. Co. Gent.*

Poetry.

When Will the Winter Pass Away?

Softly falls the feathery snow
Over the valley and on to the hills,
Into the silent lake below,
As the delicate shower the wide air fills,
Dropping so gently without a sound,
And lying so white on the frozen ground

Pure and beautiful seems the snow,
Falling so noiselessly out of the sky,
But I long for the Winter days to go,
For the barren months to hasten by,
And bring me the Summer, fresh and green,
When the woods are hung with their leafy screen.

Close to me there will the wild bee hum
His drowsy tune in the meadow grass,
And the wandering winds will go and come,
Gently fanning my face as they pass,
Then haste, sweet Summer! my whole heart longs
For the beautiful flowers and the birds' gay songs.

Oh, glorious Queen of the halcyon year!
By vernal paths of the joyous Spring,
On rose footsteps, my love, draw near,
Oh, haste, sweet Summer! hasten and bring
The warmth that lives in the sunbeam's light,
And the dews, which drop from thy lids at night.

Oh, hasten with showers of silver rain,
Bright, flashing rain from the skies above,
To ripen the folds of bearded grain,
And teach us the lesson of God's great love!
Oh, glorious summer, Queen of the year,
On the viewless pinions of Time draw dear!

With crimson and gold will the sunsets burn
Far down in the west at the close of day,
Oh, haste, sweet Summer, haste to return!
Ah, when will the Winter pass away?
My heart with a passionate yearning longs
For the beautiful flowers and the birds' gay songs.

—*Harper's Monthly.*

The Heart's Seed Field.

We all, in journeying on through earth,
Might thick with pleasures sow it—
Plant joy in many a heart of worth
That also can never know it.

Far other seed hath man too long
On every side been sowing,
Far other gifts on life's road through
With open hand bestowing.

How much of mingled care and strife,
The hand by friend and foe,
Might weed from others' life,
Were souls but less divided!

Be ours the part to soothe distress
In hearts long worn with weeping;
And though ours then our name shall bless,
No more earth's sorrow reaping.

Advertisements.

**LAMB'S
SUPER-PHOSPHATE
OF
LIME!**

WARRANTED TO EQUAL ANY IN THE WORLD.

\$10.00 per ton.

Fine Bone Dust, - - \$27.50 per ton.
Half-inch Bone Dust, \$22.00 per ton.

SEND FOR A CIRCULAR.

PETER R. LAMB & Co.,
TORONTO.

**RICH'S
SHEEP DIPPING COMPOUND**

Pronounced Superior to all Others!

IT has now been used in Europe for many years with great success, and for the past six years in the counties of Elgin, Middlesex, Kent and Norfolk. It will free your sheep from ticks, produce you more wool, and the sheep will thrive much better on the same feed.

Price 35 cents per tin; will dip 20 sheep.
70 " " " " will dip 40 sheep.

For sale wholesale and retail by

CHARLES DAWBARN & CO.,
124 King St. East, Toronto.

**GREAT EUROPEAN SEED STORE,
CHARLES DAWBARN & CO.,**

124 KING ST. EAST, TORONTO.

DESCRIPTIVE Catalogues of choice FIELD, GARDEN, and FLOWER SEEDS, with full directions for their successful cultivation, post free to all who send their address.

Agricultural Societies will find it greatly to their interest to write for special prices.

Le FECONDATEUR AGRICOLE.

JUST ARRIVED, a large supply of the above new but

WONDERFUL FERTILIZER.

It reduces the quantity of manure required, and the quantity of seed required by one-half, and at the same time increases the product immensely, and banishes smut, rust, and insects of all kinds from all grains, all diseases from all agricultural plants, and also insects of all kinds from trees, shrubs and flowers.

Extract from testimonial of the Agricultural Society of Fribourne, France - Upon one sowl of wheat sent to this Society by M. Gueraud, the eminent agriculturist, we count 140 ears, containing 5,299 grains free from smut, rust, or insect of any kind.

Price \$2.50—a bottle containing sufficient to plant about 2 acres of grain.

For sale by all respectable Seedsmen and Druggists.

**THE NORTH RIDING OF OXFORD
AGRICULTURAL SOCIETY**

OFFER the following premiums, at Woodstock, April 18th next, viz:—

Best through-bred blood stallion, with pedigree.....	\$12 00
2nd do	8 00
Best heavy draught stallion.....	12 00
2nd do. do	8 00
Best stallion for carriage purposes.....	12 00
2nd do. do	8 00

Conditions.—Prize horses to serve in the Riding the ensuing season. This county is an excellent field for the services of a good thorough-bred blood horse, and the directors pledge their influence in its behalf.

R. W. SAWTELL, Secretary.

Woodstock, March 9th, 1867.

FARM FOR SALE.

AS the subscriber intends leaving the country, he offers his well-known farm for sale, being Lot No. 6, 11th concession N. Dumfries, containing 150 acres, within one mile of Galt. 120 cleared, the rest in bush—well watered, with stone cottage, good out-buildings and good orchard.

Will be sold on reasonable terms.

Apply to JOHN GOODALL, Proprietor.

Galt, 22nd February, 1867.

IN THE PRESS,

AND WILL BE ISSUED ABOUT 11TH MARCH, THE

"CANADIAN FRUIT CULTURIST";

OR,

"Letters to an Intending Fruit Grower,"

ON THE

PROPER LOCATION, SOIL, PREPARATION, PLANTING AND AFTER-CULTIVATION OF ORCHARDS, VINEYARDS, AND GARDENS;

WITH DIRECTIONS for the best mode of Culture of each variety of Fruit, and select descriptive lists of the best varieties of the Apple, Pear, Plum, Cherry, Grape, Peach, Nectarine, Apricot, Quince, Gooseberry, Currant, Blackberry, and Strawberry, suitable for UPPER AND LOWER CANADA.

By JAMES DOUGALL,
Windsor Nurseries, C.W.

Price: Soft Paper Covers, 25c; bound in Muslin, 50c. For sale at the principal Bookstores.

WANTED TO HIRE,

Three Good Men and a Stout Boy to Work on a Farm.

TO thoroughly good Farmers, liberal wages will be paid. Apply, post-paid, A. C., Box 224, Cobourg.

DAIRYMEN!

On hand and manufacturing,

**CHEESE PRESSES, SCREWS, HOOPS, VATS,
ALL SIZES,**

VAT COUPLINGS and TAPS, &c., &c.,

OF the best material and workmanship. Being the first to engage in the manufacture of the above, I am prepared to guarantee satisfaction to those who may favour me with their orders. Orders promptly filled at the cheapest rates.

R. WHITELAW, Oxford Foundry

BEAMSVILLE, 11th March, 1867.

BEE HIVES!

BEE HIVES!

BEE-KEEPERS, and persons intending to keep bees, will find it to their advantage to use

J. H. THOMAS'S

First Prize Movable-Comb Hives,

Manufactured by J. H. THOMAS and BROTHERS, BROOKLIN, C.W.

They are acknowledged to be the best hive in use, and are too well known to require further recommendation. Send in your orders early and they will be filled promptly. Bee-keepers would save freight by clubbing together and ordering in lots of three, six or more, as three hives may be sent to one address for the same freight as one hive.

"The Canadian Bee-Keepers' Guide."

The second edition of the "GUIDE" being exhausted, parties ordering just now will wait patiently, a few days, until the third edition, now in the printer's hands, is published, when their orders will be filled without delay. No bee-keeper should be without this practical little work. Price, post-paid, 25 cents.

J. H. THOMAS & BROS., Brooklin, C.W.

Imported Riga Flax Seed.

THE UNDERSIGNED have received instructions to sell the balance of the

FLAX SEED

Imported last season by the

CANADIAN GOVERNMENT,

at a greatly reduced price. The stock now on hand has been well cleaned.

PRICE, \$8.00 PER BARREL.

TERMS: Cash:

JAMES FLEMING & Co.,

Seal Merchants, Toronto.

Goodrich's Seedling Potatoes.

Early Goodrich.....	\$4 00 per barrel
Gleason's	\$5 00 " "
Cuzzos	\$2 50 " "
Calico	\$3 00 " "

The four varieties in one barrel \$4. All warranted true to name.

Address, ADOLPHUS C. CASE, Hamilton,

v4-5-11.

Peruvian Guano Substitute.

BAUGH'S

RAW BONE

SUPER-PHOSPHATE OF LIME.



BAUGH & SONS,

Sole Proprietors & Manufacturers,

Delaware River Chemical Works,

PHILADELPHIA, U.S.A.

For Wheat, Rye, Barley, Corn, Oats, Potatoes, Tobacco, Buckwheat, Sorghum, Turnips, Hops, Garden Vegetables, and every Crop and Plant.

Especially recommended to the growers of

**STRAWBERRIES, RASPBERRIES, BLACKBERRIES,
AND ALL SMALL FRUITS.**

MORE than 13 years of regular use upon all description of Crops grown in the Middle and Southern States, has given a high degree of popularity to this MANURE, and places its application, now, entirely beyond a mere experiment.

BAUGH'S RAW BONE

SUPER-PHOSPHATE OF LIME,

is eminent'y a success as a Substitute for Peruvian Guano and Stable Manure—and is offered to the Agriculturists of the Northern and Eastern States and British Provinces, as a fertilizer that will cheaply restore to the Soil those essentials which have been drained from it by constant cropping and light manuring.

IT is very prompt in its action—is lasting in effect to a degree unattained by any commercial manure in the market, and is afforded at a much less cost than bought Stable Manure, or Peruvian Guano. The labor involved in its use is far less than that of applying stable manure, while there is no risk from the introduction of noxious weeds.

Farmers are recommended to purchase of the dealer located in their neighborhood. In sections where no dealer is yet established, the Phosphate may be procured directly from the undersigned. A Priced Circular will be sent to all who apply.

Our NEW PAMPHLET, "How to Maintain the Fertility of American Farms,"—90 pages, giving full information in regard to the use of manure, &c., will be furnished gratis on application.

BAUGH BROTHERS & CO.,

GENERAL WHOLESALE AGENTS,

No. 181 Pearl St. and 4 Cedar St.,
NEW YORK.

v4-5-6t

FRUIT AND ORNAMENTAL TREES

FOR THE

SPRING OF 1867.

ELLWANGER & BARRY have the pleasure of offering for Spring planting, their usual large and well grown Stock of Standard and Dwarf Fruit Trees, Ornamental Trees, Shrubs and Plants, Greenhouse and Hothouse Plants, Bedding Plants,

Including the splendid large leaved Cannas, Colocas, &c. Each of these departments contains all of real value, old and new.

The following Catalogues, which give full particulars, will be sent pre-paid upon the receipt of postage stamps, as follows:—

No. 1.—A Descriptive and Illustrated Catalogue of Fruits, 10 cents.

No. 2.—A Descriptive and Illustrated Catalogue of Ornamental Trees, Shrubs, Roses, &c., &c., 10 cents.

No. 3.—A Catalogue of Dahlias, Verbenas, Petunias, and select new Green-House and Bedding Plants, published every Spring 5 cents.

No. 4.—A Wholesale Catalogue or Trade List, 3 cents.

ELLWANGER & BARRY,

Mount Hope Nurseries, Rochester, N. Y.

v4-5-2t

NOW READY!

J. A. SIMMERS'

CULTIVATORS' GUIDE,

OR, descriptive Illustrated CATALOGUE OF SEEDS, for 1867. Intending purchasers of Seeds may have a copy on application, and to parties at a distance, it will be mailed on pre-paid receipt of their address, enclosing two cents in postage stamps.

J. A. SIMMERS, SEED MERCHANT,

Toronto, C. W.

v4-5-2t

PURE SOUTH DOWNS VALUABLE FARM FOR SALE.

ONE RAM AND THREE EWES,

PURCHASED from H. G. White, Esq., South Framingham, Mass., all bred through importations of Samuel Thorne, Esq., and others...

C. V. W. TRUMPH, 'The Highlands,' Quebec, Canada.

v4-6 1t

MILLER'S

INFALLIBLE



TICK DESTROYER FOR SHEEP!

DESTROYS the TICKS; cleanses the skin; strengthens and promotes the growth of the wool...

It is put up in boxes at 35c, 70c, and \$1, with full directions on each package.

HUGH MILLER & Co., Medical Hall, Toronto.

167 King Street East.

v4-4-3t

FEATHERS,

FEATHERS, FEATHERS.

THE subscribers will pay 45 cents per pound for good

LIVE GEESE FEATHERS

delivered at their Warerooms, Toronto.

v3-23-10t

JACQUES & HAY.

THE FARMER'S GATE!

CHEAP, LIGHT, AND DURABLE; with no hinges to get out of order, cannot sag and stick in the ground...

So Simple of Construction that every Farmer can make it, if supplied with the plans.

We consider this, on the whole, the best farm gate we know of. It is made without mortar or tennon, and is perfectly adapted to all gate purposes...

Plans and Specifications for all sizes, from a 3 foot wicket gate to an 11 foot waggon gate...

v4-5 1t

BOX 96, GUELPH P.O.

WANTED.

TWENTY good energetic men to canvas for the LAND and BOOK, or TWENTY YEARS in PALESTINE...

J. R. RANDALL, Publisher, Port Hope.

v4-4-4t

Seeds Direct from the Growers.

CHAS. SHARPE & CO.,

SEED GROWERS AND SEED MERCHANTS,

SLEAFORD, ENGLAND,

Will be glad to send, on application, special quotations of FARM AND GARDEN SEEDS...

v3-11-24t

VALUABLE FARM FOR SALE.

SITUATED within 4 miles of AINLEYVILLE, being Lots 16 and 17 in 10th concession of the Township of Grey, Co. Huron...

The BUILDINGS are all NEW and EXTENSIVE, and the soil of the best quality, and in a good state of cultivation...

Grey Post Office, Saw Mill, Blacksmith Shops, Stores, &c., within 1 mile.

For further particulars apply to the Proprietor on the premises, or to

BLAIRIE & ALEXANDER, Corner of King and Jordan Streets.

Toronto, 6th March, 1867.

v4-6-3t

Markets.

Toronto Markets.

"CANADA FARMER" Office, March 14, 1867.

REVIEW OF THE PRODUCE MARKET.

Flour—the receipts have been fair. The market was quiet and firm. Holders were demanding full prices and there was no disposition to force sales.

Wheat—There has been considerable demand for good spring, under which the market ruled firm. Prices show an advance over last week, closing with an upward tendency.

Rye—This grain continues in very active demand. Prices are advancing, and tending upwards. The flour made from this grain is now coming into general favour.

Galt Markets.—F. W. flour, per 100 lbs, \$4 25, spring wheat flour do, \$3 50 to \$3 75.

Guelph Markets.—Fall Wheat, per bush, \$1 60 to \$1 75; spring wheat do, \$1 35 to \$1 50.

Chatham Markets.—Flour, per 100 lbs, \$3 25 to \$4 25; wheat, No 1 white, per bush, \$1 55 to \$1 65.

London Markets.—Fall Wheat, \$1 50 to \$1 75; spring wheat, \$1 30 to \$1 50.

Hamilton Markets.—Wheat—red, \$1 40, to \$1 50; spring, \$1 30 to \$1 60.

Boston Markets.—March 11—Flour—the receipts since Saturday have been 1,700 bbls. The market is rather firmer, with a better demand.

Contents of this Number.

Table listing contents of the issue: THE FIELD: The Seed of Plants, Familiar Talks on Agricultural Principles, Fermentation in Barnyard Manure, etc. THE DAIRY: The Rearing of Calves, Cure for Caked Bag in Cows, etc. STOCK DEPARTMENT: Improved Mode of Slaughtering Cattle, A Visit to the Barnyards, etc. VETERINARY DEPARTMENT: Catarrh in Horses, etc. THE POULTRY YARD: Golden Spangled Poland, etc. ENTOMOLOGY: Grasshoppers and Locusts, Insect Pests of Orchards, etc. THE APIARY: Bee-Hive Dimensions, A great Invention in Bee-Culture, etc. CORRESPONDENCE: The Rejected Sheep at the Last Provincial Exhibition, Beet-Root Sugar, etc. EDITORIAL: New United States Wool Tariff, Canadian Contributions to the Paris Exhibition, etc. AGRICULTURAL INTELLIGENCE: Liverpool Trade Report, Canada Produce Abroad, etc. HORTICULTURE: Farmers' Gardens, Cranberries, Improved Culture of Hyacinths, etc. THE HOUSEHOLD: Food Value of the Potato, Canadian Scouring Brick, etc. POETRY: When will the Winter Pass Away?, The Heart's Seed Field, etc.

THE CANADA FARMER is printed and published on the 1st and 15th of each month, by GEORGE BROWN, Proprietor, at his Office, No. 26 and 28 King Street East, Toronto, L. C. where all communications for the paper must be addressed.

Subscription Price \$1 per annum, (POSTAGE FREE) payable in advance. Bound volumes for 1864, 1865, and 1866, may be had for \$1 30 each.

CLIPS will be furnished at the following rates:—TEN COPIES for... NINE DOLLARS. TWENTY COPIES for... SIXTEEN DOLLARS. FORTY COPIES for... THIRTY DOLLARS. ONE HUNDRED COPIES for... SEVENTY DOLLARS.

Communications on Agricultural subjects are invited, addressed to "The Editor of the Canada Farmer," and all orders for the paper are to be sent to GEORGE BROWN, Printer and Publisher.