

Technical and Bibliographic Notes / Notes techniques et bibliographiques

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

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

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

- Coloured pages/
Pages de couleur
 - Pages damaged/
Pages endommagées
 - Pages restored and/or laminated/
Pages restaurées et/ou pelliculées
 - Pages discoloured, stained or foxed/
Pages décolorées, tachetées ou piquées
 - Pages detached/
Pages détachées
 - Showthrough/
Transparence
 - Quality of print varies/
Qualité inégale de l'impression
 - Continuous pagination/
Pagination continue
 - Includes index(es)/
Comprend un (des) index
- Title on header taken from:/
Le titre de l'en-tête provient:
- Title page of issue/
Page de titre de la livraison
 - Caption of issue/
Titre de départ de la livraison
 - Masthead/
Générique (périodiques) de la livraison

Additional comments:/
Commentaires supplémentaires:

Wrinkled pages may film slightly out of focus.

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

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



VOL. III. No. 8.

TORONTO, UPPER CANADA, APRIL 16, 1866.

POSTAGE FREE.

The Field.

A New Grub-Harrow.

The implement shown in the accompanying illustration is a recent invention of the Messrs. Howard of the Britannia Iron Works, Bedford, England. As will be observed, it clears two rows of turnips at once, and works close up to the growing plants, cutting off the weeds. What is more important, the patentees state that "it checks the ravages of the fly; it has been found that these troublesome insects will not stay where this harrow is kept at work."

It may be used with advantage as soon as the young plants are above the ground, and also after heavy rains to break the crust and expose a fresh surface of earth. It is adapted for the flat as well as for the ridge, can be expanded or contracted to suit the rows, and with it a man and horse will grub about ten acres per day. The price of the implement is, we understand, £4 10s. sterling.

Familiar Talks on Agricultural Principles.

FERTILITY AND BARRENNESS.

SOME soils are naturally productive. Others are barren; not indeed absolutely so, for the poorest soil will produce something, unless it contains substances poisonous to plants. But we call that land barren, which will not produce useful plants in sufficient abundance to pay for their culture. A poor soil may be made productive by adding fertilizing material to it, but it will not always answer to do this. In some cases it would cost more to make a barren soil fertile, than it would to buy land already rich in plant food.

The presence or absence of those materials which are found in the ashes of cultivated plants, will show whether a given soil be productive or not. Sometimes, from various causes, a soil has never contained those materials which secure fertility; in other cases, land has been deprived of them by successive croppings. Every crop raised on a piece of land takes up a portion of this material which renders soil fertile. Successive crops consume the mineral and atmospheric elements that form the food of plants, and year after year, the yield grows smaller, and the land becomes poorer. It is the object of manuring to make

up the loss occasioned by the raising of crops, and if manure be supplied in sufficient quantity, a soil will retain its productiveness, and even grow more fertile, notwithstanding the harvests that are reaped from it. A soil may be barren for one plant, and yet productive for another. It may be unable to produce wheat, and yet bear an excellent crop of clover, beets, or carrots. There may not be enough of the particular material needed by one sort of plant, while a plant of another kind may find plenty of food suited to its wants. That may be succeeded by still a third description of crop, requiring different food from either of the other two. "Weathering" as it is called, will sometimes restore a particular element of fertility without a supply of manure furnished by the hand of man. It is on this principle that fallowing improves land. By leaving it idle, and allowing the weather to act upon it,—sun, air, moisture, and even the decay of weeds, help to restore a lost vitality. But it is far better to manure land at regular intervals, and then grow a succession of crops differing from each other in the kind of material craved by them. By this means without losing the use of the land while it lies fallow, its productive power is preserved.—This is the system of *rotation of crops* which is now pursued by all farmers worthy the name.

In our last "Talk" something was said about the mechanical texture, and leading characteristics of

soils. But stiffness or looseness, the predominance of sand or clay, and such things,—will not alone determine the question of fertility. A clay soil may be barren, and a sandy one productive. The character of a soil must be determined by the question "does it contain all the materials found in crops?" If it does, it will be productive whether it be stiff or loose in texture,—whether clay, sand, gravel, or lime be the chief ingredient in it.

The following table from Johnston, gives the ingredients of three different soils, with their relative properties:

COMPOSITION OF SOILS OF DIFFERENT DEGREES OF FERTILITY.

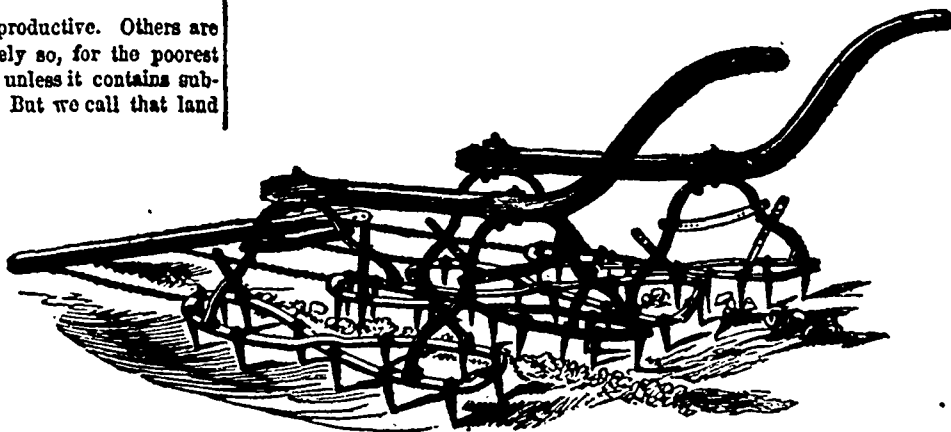
	Fertile without Manure.	Fertile with Manure.	Barren.
Organic matter.....	97	50	40
Silica, (in the sand and clay,).....	648	833	778
Alumina, (in the clay,).....	57	61	91
Lime.....	69	18	4
Magnesia.....	8½	8	1
Oxide of iron.....	61	30	81
Oxide of manganese.....	1	3	½
Potash.....	2	trace.	trace.
Soda.....	4		
Chlorine, } chiefly as common salt... {	2		
Sulphuric Acid.....	2	½	
Phosphoric Acid.....	4½	1½	
Carbonic Acid, (combined with the lime and magnesia,).....	40	4½	
Loss.....	14		4½
	1000	1000	1000

An attentive study of the foregoing table will suggest several valuable lessons.

1. It shows the difference between fertility and barrenness. The column devoted to the naturally fertile soil, shows a supply of all the substances found in the ashes of plants. The column exhibiting the soil fertile with manure, though deficient in some of the required material, is in a degree productive, and can be improved by the ordinary course of agriculture. The barren soil is, however, so defective, that it can hardly be made fertile, except at ruinous cost.

2. The true function of the soil is exhibited in the above table. It is not itself plant food, but only the store-house for that food. The soil both holds in readiness for use the material of which plants are formed, and gives protection and support to the plants while they grow. Crops do not devour the soil, but the nutriment of which the soil is a convenient reservoir and repository. The elements that form the ashes of plants exist in the soil in very different proportions from what they do in the plants. Moreover, some of the constituents of the soil, alumina for example, do not find their way into the plant at all.

3. It is possible to change a soil from fertility to barrenness without materially altering its apparent qualities. The weight, bulk, and mechanical texture of a soil may remain unchanged, and yet it may have lost, wholly or in great part, its productiveness. Those elements which exist in a very small proportion in fertile soils are very important, and their absence, will lead to the most disappointing results. This insensible and unapparent deterioration of soils, is a perfect trap to many unreflecting farmers. They



see no change in their land, and often blame the seed the season, or something else, for poor crops, when the true cause is that the land is more or less exhausted. Some of the substances that form plant material appear in the table in very small proportions. But what looks insignificant in the table, is really a large quantity, when an acre of land is the amount to be estimated. Multiply the acre by fifty or one hundred, and you have a serious task to accomplish, in supplying the deficiencies of a partially or completely worn-out farm

4. The mineral matter, on which fertility depends, is most essential. How important must be the presence of potash, soda, chlorine, sulphuric acid, and phosphoric acid, when these, even in such small quantities as shown in the table, make the difference between a fertile and a barren soil. Of these, potash and phosphoric acid are at once the most important and most difficult and expensive to supply.

5. Light is thrown by the foregoing table upon the philosophy of manuring. Its aim is to supply what is known to be lacking. It would greatly improve the soil described in the second column to add to it a quantity of bone earth, potash, soda, gypsum, and common salt. What land needs may be ascertained by making a chemical analysis of the soil—by experimenting on a small scale with special manures—by taking account of the crops that have been raised on it, and judging of the particular substances that have been removed, and by trying a variety of plants to find out which succeed the best. It is well not to shoot in the dark. Farm-yard manure never comes amiss, because it contains all the materials necessary to make a universal fertilizer. But if special manures are to be applied, they must be adapted to the wants of the soil. If sulphuric acid be wanting, gypsum should be applied. If phosphoric acid be lacking, bone earth is the specific. Much care and study are needed in the adaptation of fertilizers to soils. Practical men often make mistakes which discourage them and shake their faith in scientific farming, for want of thoroughly knowing what they are about. Nor must it be concealed, that even with careful study and persevering attention to the most thorough established rules, a degree of uncertainty attends the culture of the soil. As with all other human pursuits, so with this, there will sometimes be failures and disappointments, even when we do our best. This, however, ought not to repress energy, but stimulate it. Since our task is one of difficulty, let it be prosecuted with the greater vigour. If we do our part in the best way we can attain, enough of success will assuredly be secured to encourage expectation and reward toil.

An Act to Prevent the Spreading of Canada Thistles in Upper Canada.

[Assented to 18th September, 1865.]

HER MAJESTY, by and with the advice and consent of the Legislative Council and Assembly of Canada, enacts as follows:

1. It shall be the duty of every occupant of land in Upper Canada, to cut, or to cause to be cut down, all the Canada thistles growing thereon, so often in each and every year as shall be sufficient to prevent them going to seed; and if any owner, possessor, or occupier of land shall knowingly suffer any Canada thistles to grow thereon and the seed to ripen so as to cause or endanger the spread thereof, he shall, upon conviction, be liable to a fine of not less than Two nor more than Ten Dollars for every such offence.

2. It shall be the duty of the Overseers of Highways in any Municipality to see that the provisions of this Act are carried out within their respective highway divisions, by cutting, or causing to be cut, all the Canada thistles growing on the highways or road allowances within their respective divisions, and every such Overseer shall give notice in writing to the owner, possessor, or occupier of any land within the said division whereon Canada thistles shall be growing and in danger of going to seed, requiring him to cause the same to be cut down within five days from the service of such notice; And in case

such owner, possessor or occupier, shall refuse or neglect to cut down the said Canada thistles, within the period aforesaid, the said Overseer of Highways shall enter upon the land and cause such Canada thistles to be cut down with as little damage to growing crops as may be, and he shall not be liable to be sued in action of trespass therefor; Provided that no such Overseer of Highways shall have power to enter upon or cut thistles on any land sown with grain; provided also, that where such Canada thistles are growing upon non-resident lands, it shall not be necessary to give any notice before proceeding to cut down the same.

3. It shall be the duty of the Clerk of any Municipality in which Railway property is situated, to give notice in writing to the Station Master of said Railway resident in or nearest to the said Municipality requiring him to cause all the Canada thistles growing upon the property of the said Railway Company within the limits of the said Municipality to be cut down as provided for in the first section of this Act, and in case such Station Master shall refuse or neglect to have the said Canada thistles cut down within ten days from the time of service of the said notice, then the Overseers of Highways of the said Municipality shall enter upon the property of the said Railway Company and cause such Canada thistles to be cut down, and the expense incurred in carrying out the provisions of this section shall be provided for in the same manner as in the next following section of this Act.

4. Each Overseer of Highways shall keep an accurate account of the expenses incurred by him in carrying out the provisions of the preceding sections of this Act, with respect to each parcel of land entered upon therefor, and shall deliver a statement of such expenses, describing by its legal description the land entered upon, and verified by oath, to the owner, possessor or occupier of such resident lands, requiring him to pay the amount; in case such owner, possessor, or occupier of such resident lands shall refuse or neglect to pay the same within thirty days after such application, the said claim shall be presented to the municipal Council of the Corporation in which such expense was incurred, and the said Council is hereby authorized and required to credit and allow such claim, and order the same to be paid from the funds for general purposes of the said Municipality, the said Overseer of Highways shall also present to the said Council a similar statement of the expenses incurred by him in carrying out the provisions of the said section upon any non-resident lands; and the said Council is hereby authorized and empowered to audit and allow the same in like manner; Provided always that if any owner, occupant, or possessor, amenable under the provisions of this Act, shall deem such expense excessive, an appeal may be had to the said Council (if made within thirty days after delivery of such statement) and the said council shall determine the matter in dispute.

5. The Municipal Council of the Corporation shall cause all such sums as have been so paid under the provisions of this Act, to be severally levied on the lands described in the statement of the Overseers of Highways, and to be collected in the same manner as other taxes; and the same when collected shall be paid into the Treasury of the said Corporation to reimburse the outlay therefrom aforesaid.

6. Any person who shall knowingly vend any grass or other seed among which there is any seed of the Canada thistle, shall for every such offence, upon conviction, be liable to a fine of not less than Two nor more than Ten Dollars.

7. Every Overseer of Highways or other officer who shall refuse or neglect to discharge the duties imposed on him by this Act, shall be liable to a fine of not less than Ten nor more than Twenty Dollars.

8. Every offence against the provisions of this Act shall be punished, and the penalty hereby enforced for each offence shall be recovered and levied, on conviction, before any Justice of the Peace; and all fines imposed shall be paid into the Treasury of the Municipality in which such conviction takes place.

Plaster of Paris.

The Maryland Farmer and Mechanic publishes an interesting article (editorial) on Plaster of Paris, as follows:

Ever since the German workman in a gypsum quarry first discovered the fertilising effects of plaster, from the ranker herbage which had been sprinkled with plaster dust as he walked across the field to his daily labours, the modus operandi has been a subject of dispute among agricultural chemists. Sir Humphrey Davy ascribed its fertilizing qualities to the sulphur which it contains. Chaptal, to its regulating the solubility of salts in the soil. Liebig to the fact that it possesses the property of fixing the ammonia in rain water, whilst Dr. Mose, of Maryland, many

years ago stated the theory that the chief efficacy of plaster arose from its tendency to produce phosphoric acid. All of these investigators were right, as far as they went, but all were wrong in ascribing to plaster a single property, when its action, as we have reason to believe, is complex. Plaster, in our opinion, possesses two distinct and separate functions, and whilst it acts directly as nutriment to a certain class of plants, it also acts indirectly by fixing the ammonia contained in the atmosphere, and in the dew and rain and snow which are thence derived, and thus furnishes additional food of a stimulant nature to the same plants. In an article which we had occasion to write, upon this very subject, some five years ago, we took occasion to say that "when the physiology of plants comes to be better understood, it will be found that their leaves play a much more important part in the vegetable economy than is generally ascribed to them, and that they serve not merely as lungs, but as mouths also; absorbing the food supplied by the atmosphere, just as the fine fibrous roots collect the food supplied by the soil. How else can we account for the fact that plaster acts more beneficially upon clover when its leaves have fairly expanded, and with the least advantage when applied directly to the soil?"

Sir Humphrey Davy established the fact that the measure of absorption in any given soil was the measure of its fertility—that the richest soils possessed this capacity in the highest degree, and the poorest soils in the lowest. By analogy of reasoning the same rule will apply to plants and animals. "A feeble and sickly plant can no more collect and assimilate from the atmosphere the large share of nutriment that it contains, than the feeble and sickly animal can digest the food that is offered it. Stimulants and tonics are required in both cases to restore the system to its natural vigour," and only such a class of stimulants and tonics as the peculiarities of each case may seem to demand. A large amount of salt, for instance, is excellent for the production of beets and asparagus; but the same quantity applied to other plants would be very apt to destroy them altogether. And these are the effects of plaster, so far as clover and the leguminous plants are concerned. "Now when Dr. Mose attributed the efficacy of plaster to its tendency to become phosphoric acid by exposure to the atmosphere, he was perfectly correct so far as his statement went." So was Davy in ascribing its fertilizing properties to the sulphur which it contained, although the lime should also have been taken into consideration. So also was Chaptal, in saying that plaster regulated and controlled the too rapid action of soluble salts—and so was Liebig when he pointed out that it fixed that ammonia and conserved it for the uses of the growing plant, which, by its volatility, would otherwise have escaped again into the atmosphere. They were nevertheless all of them wrong in ascribing its virtue to a single property or to a single function.

"Plaster acts principally upon the leaves of plants, increasing the stem and foliage, and is therefore much better adapted to certain forage crops than to the cereals." It produces but little effect when buried in the soil, except when spread upon a clover ley before it is turned down; when, by arresting the volatile ammonia—regulating the action of the salts, as Chaptal has it—it exerts a remarkable influence upon the succeeding wheat crop—especially as the constituents of wheat and clover are very similar, as chemists have frequently shown by analysis of the ashes of those plants respectively.

We subjoin the following tables as drawn up by us some years ago, for the further elucidation of this interesting subject:

An analysis of plaster shows that it is composed as follows:

Sulphuric Acid.	43 parts.
Lime.	33 "
Water.	24 "

100

Analysis of the ashes of red clover, upon the basis of the product of an acre of land—the clover being dried and cured in the usual way:

Nitrogen.	78 lbs.	Our Comments. { Drawn in part by the plaster from the atmosphere in the shape of ammonia.
Potash and Soda.	37 "	
Lime.	70 "	

Magnesia.	18 "	—Contained in the plaster.
Sulphuric Acid	7 "	

Phosphoric Acid.	13 "	{ Ascribed by Dr. Mose to the conversion of plaster into a phosphate by atmospheric influence.
Chlorine	7 "	

—&c., &c.
There is no sensible difference in the action of white or blue plaster where both are pure. A field once plastered with from 250 to 400 lbs. per acre will not need a similar top dressing for four years.

Hawthorn Fences.

To the Editor of THE CANADA FARMER :

Sir,—In a former communication, I gave an account of my mode of setting quicks, or thorn plants, to form a live fence, and promised at some future time to give my experience of the cost and management of the fence while growing. I have made two importations of plants, viz., in 1862 and 1865, at an average cost of \$7.75 per thousand; this number will set thirty rods, at an average expense of 25 cents per rod, and 15 cents per rod will pay the labour of planting that amount. We may, therefore, say that 40 cents per rod will cover any outlay, except for its protection from stock. Sheep in particular, are extremely fond of the young shoots, and will entirely destroy the hedge, if they are permitted to have access to it, for the first two or three years after planting. After that time the plants will have, under ordinary circumstances, grown sufficiently large to protect themselves. After the first year the plants should be kept clean from weeds and grass, as they, if permitted to grow, will draw that sustenance from the ground that should nourish the plants. No pruning is necessary for two or three years, unless an extraordinary growth should take place, and some of the plants should exceed its fellows, in which case the larger should be cut, to correspond with those of lesser growth, the object being to keep the hedge in as uniform height as possible; and also to encourage the growth of lateral branches, which adds to the beauty and permanency of the hedge. My land is strong clay soil, and not so liable to give as large a growth as a more genial soil, (say a sandy loam,) yet mine have made such growth that the third year I have been obliged to cut them back, for the purpose above described. It is not desirable that the hedge should be allowed to exceed three and a half or four feet in height, as it is necessary to prune or cut off each year's growth, causing it to grow thicker at the bottom, by throwing new shoots and lateral branches to gain strength.

The expense of trimming may be an objection to some, under the belief that it would be a laborious operation. Such, however, is not the fact, as less time is required than the annual expense of the repairs necessary of a common rail fence, not taking into account the furnishing of new material, which is evident to all is necessary to be incurred. The cost of protecting the hedge is certainly an item of expense, but this would be necessary if no hedge were planted, and where you have an orchard, or lands which you do not intend for stock to graze, it would not be required to put an inside protection. The plan I have adopted for outside fence, is post and rail. The posts are set ten feet apart, and in line with each other, and a stake set on the opposite side of the post, using two wires to keep them to the rails; seven rails for each point, and three back from the hedge. Quite a dilapidated worm fence will furnish material for this, and when the hedge has become a fence, they will still be of use for repairs of other fences on the farm. When I have been obliged to allow stock to run, I have driven stakes seven feet from each other, and nailed on them three by one inch oak boards, fourteen feet long, and find three boards a sufficient protection for all stock, except sheep. I have been thus explicit, although many of the readers of THE FARMER have had more experience than myself, but if these communications induce some farmers to follow my example, I shall be pleased to give any further information in my power.

C. YALE.

St. Catharines, C. W.

DIGGING WELLS.—HOW TO DETERMINE WHERE WATER IS.—At a recent meeting of the American Institute Farmers' Club, a member related his experience in this matter as follows:—"An Irishman in his employment, in order to ascertain where he ought to dig to obtain water soonest, got a stone and buried it over night in the ground, next to the hardpan. In the morning he found it quite moist, but not sufficiently so to suit his fancy. Next night he tried it in another spot, and it was found very wet on the following morning. 'There,' said Patrick, 'you will find water not many feet deep, and plenty of it.' Sure enough, in a few days' digging, Patrick confirmed his prediction, notwithstanding the jeers of the workmen,—finding a vein which filled the well to overflowing, and rendered it exceedingly difficult to bail out the water so as to stone it. The philosophy of the operation seems to be that as great evaporation takes place from the surface of the earth during the night, the water rises up from the depths below to supply the loss, and accumulates in the vicinity of the stone, often making quite a puddle."

Lime.

SOILS TO WHICH LIME CAN BE EMPLOYED WITH ADVANTAGE.—All stiff clay soils nearly, and those in districts where the old red sandstone rocks prevail, are much benefited by it. It is of the greatest utility on the clays of the granite and clay-slate. Heavy doses are of extreme utility on new land or that which has been long pastured; as much as 150 to 300 bushels per acre may be applied. Peaty soils are greatly improved by lime. Good as are the effects of lime on heavy land, they are no less striking on light land. Indeed, all soils deficient in this essential element, are rendered more productive by the use of lime.

SOILS NOT BENEFITED BY LIME.—As a general rule those which contain more than 4 per cent. of lime should not have lime applied to them. Such is the opinion of Dr. Voelcker who gives the following means:—

TO ASCERTAIN THE SOILS LIKELY OR NOT LIKELY TO BE BENEFITED BY LIME.—"Put a small quantity of soil in a tumbler, and pour upon it, first a little water, and then a good deal of spirits of salts, or muriatic acid. If this addition produces a strong effervescence, there is no need of applying lime to the land: if no effervescence is produced, in all probability liming or marling will be useful. However, this simple test cannot always be depended upon, and it is much safer to have the proportion of lime determined in the soil, which at no great expense can be done by an analytical chemist."—*Ex.*

THE DANGERS OF AN ABUNDANT MANGOLD CROP.

The distinguished agriculturalist, Alderman J. J. Mechi, of Tiptree Hall, writes to a British contemporary on this subject, as follows:—"Experience has taught me the necessity for being very careful as to the safe and proper supply of mangold to my live stock, having regard to their age, sex and condition. I know that much illness and many losses have occurred this season by the too free use of mangold. The crop is so abundant in our southern and eastern counties that it has led to a too lavish and injurious use. My veterinary tells me of no end of cases which he traces to this cause. I am at present feeding horses, cattle, and sheep with it, but have to watch closely how much they can bear with safety. We never give it alone, but always with dry and varied food, especially hay or straw chaff, bran, malt combs, cake, corn, or meal. To breeding animals we never give any until some time after parturition. We have to administer it very cautiously to lambs. In the spring it is less dangerous than in autumn. I have good reason to believe that it is the large quantity of common salt in it that causes the mischief; it irritates and inflames the neck of the bladder, especially where sheep are confined. The analysis of the ashes shows that common salt (chloride of sodium) forms 24½ per cent. of the ash of the bulb, and 37½ per cent. of the ash of the leaf of the Yellow Globe, while the Long Red only contains 14 per cent. in the bulb, and 30 per cent. in the leaf. We can therefore easily understand why the latter is to be preferred for early feeding, and may be much more safely given to cows or young stock. Both Long Red and Globe contain in their ashes about 40 per cent. of potash and soda. Swede Turnips, which contain only 6½ per cent. of salt in their ash, and 14 per cent. in the leaf, may be given in almost unlimited quantity without evil result, and are much preferable for cows and breeding animals. Carrots also contain but 8 per cent. of salt. Mangolds contain more soda than either carrot or swede, and less lime. Mangold is the most nutritive root, but less of it can be safely consumed either than swede or carrot. Mangold carefully given to our farm horses does wonders for their condition—of course mixed with plenty of chaff, and their corn ground into meal; but horsemen must not be allowed to give unlimited quantities, which they are too ready to do. Sheep, deprived of exercise, suffer more from mangold than when roaming at large."

A TON OF HAY BY MEASURE.—It is a matter of considerable dispute how much hay in the mow ought to be allowed as a ton in weight. In some of the agricultural journals, figures widely apart are given as correct. Some assert that a cube of ten feet square is required, or 1,000 cubic feet; while others place it as low as six feet square and eight feet deep, or only 288 cubic feet. Now, both of these cannot be right, neither can any measure be fixed upon to hold good under all circumstances. Hay at the bottom of the mow will be more solid than at the surface, and the whole be very much affected by the quantity of grain put on top of it (if any) and the depth of the hay.

But, having occasion to sell a ton of hay in my barn, to be sure of the quantity for future reference, I measured off a space 8 feet square on one corner

of the mow, and cut down 7 feet deep, and found the hay removed weighed 2,020 lbs., thus making 448 cubic feet, a good measure for a ton of average hay; it was taken from the surface, upon which 200 dozen of good oats had been stored. The hay was twelve feet deep.

In this country, when hay is sold in the barn, it is generally calculated 392 feet to a ton, which I am confident will always fall short. On the contrary, 448 is as near the number as actual trial will give me.—*Ex.*

SOMETHING OF A PASTURE LOT.—The Valley of San Louis is a famous park. It had been settled by the Spaniards for a hundred years up to 1760, when they were compelled to fly southward by an insurrection among the Indians, whom they had overtaken in their mining operations. Since our government obtained possession, people have again flocked in, and about 24,000 white inhabitants now reside in the park. One-half of this interesting region is in Colorado. This great pasture was once the bed of an inland sea, and is surrounded by lofty mountains. Into it flows thirty-four small streams, as well as the Rio Grande. Nineteen streams in the north part flow into a lake which apparently has no outlet. Abundance of salt is found on its borders. The park has 9,400 square miles of level land—nearly one-quarter of the area of Ohio. It is, at its extreme points, 200 miles long and 75 wide. On a clear day nearly half this whole park can be seen from one of the surrounding elevations. The mountains on its borders rise from 5,000 to 7,000 feet above the surface, and from 13,000 to 15,000 above the sea. The northern portion is irrigated in the spring by high waters, and during the summer an immense quantity of hay can be cut. It is said that 1,000 mowing machines, kept busy during the season, would make scarcely an impression.

WHAT IS PROGRESSIVE AGRICULTURE?—The *New York Observer* answers this question in few words, but very comprehensively, as follows:—"Under its influence, spring up tasty and convenient dwellings, adorned with shrubs and flowers, and beautiful within with the smiles of happy wives, tidy children in the lap of thoughtful age—broad hearts and acts, as well as words of welcome. Progressive agriculture builds barns and puts gutters on them, builds stables for cattle and raises roots to feed them. It grafts wild apple trees by the meadow with pippins or greenings—it sets out new orchards and takes care of the old ones. It drains low lands, cuts down bushes, buys a mower, house-tools and waggons, keeps good fences and practices soiling. It makes hens lay, chickens live, and prevents swine from rooting up meadows. Progressive agriculture keeps on hand plenty of dry fuel and brings in the oven wood for the women. It ploughs deeply, sows plentifully, harrows evenly and prays for the blessing of heaven. Finally, it subscribes for good religious, agricultural and family journals, and pays for them in advance, advocates free schools, and always takes something besides the family to the county fair."

RAPE OR COLZA SEED CULTURE.—From a communication to the *Northern Farmer* we condense the following facts respecting the culture of the Rape plant for seed, from which a valuable oil is manufactured.

In Northern Wisconsin it has been grown as a market crop for several years, with success. The average yield of seed is estimated at sixteen bushels per acre for a series of years, over a considerable extent of territory, and the price is generally double that of wheat. It is considered easier to grow and fit for market than any other grain crop. The straw is valueless except for manure. It is also an excellent crop for wheat to follow.

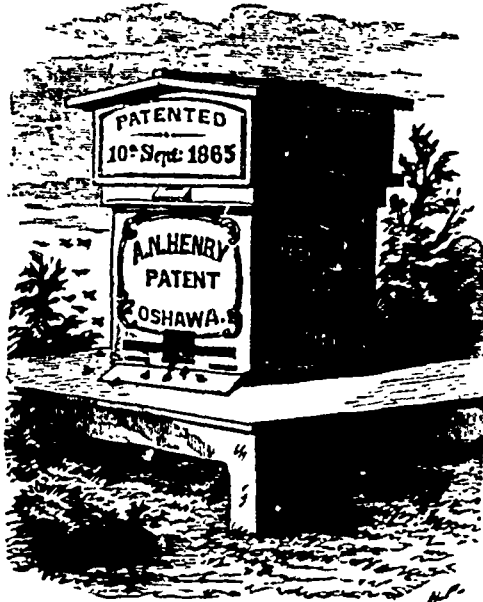
The time of sowing is from the 10th to 25th of June when the time of danger from frosts has passed. Two quarts of seed are sufficient for an acre—sown broadcast and lightly harrowed in. During the first half of September it is ready to harvest, and the scythe, cradle, or mower may be used in this work. Let it lie upon the ground until dry enough to thrash, when it can be trodden out with horses or beaten with flails as fast as hauled in. When cleaned in a fanning mill it is ready for market. It will not, as some imagine, remain in the land, as the plants are too tender to endure the winter.

BONES.—An exchange says there is nothing the farmer wastes that is so valuable as bones. The phosphorus contained in them is the richest matter for farming purposes. They should never be thrown away; either break them up as fine as you can and apply to the soil, or burn and pulverize them. Treated in this way, or reduced by acid or alkalis, they are the most direct stimulants the soil can have. They rank among the superphosphates. Save the bones, and give them to your garden in some form or other.

The Apiary.

The Peoples' Bee-Hive:

It is very gratifying to find that bee-keeping is attracting an increasing measure of attention in Canada. As one evidence of this, new hives are being brought before the public, and since each competitor for favour from apriarians has some new feature or features peculiar to itself, there will naturally be difference of opinion as to their respective merits. Anxious to encourage this interesting and important



branch of rural economy, we take pleasure in giving publicity to the views of practical bee-keepers on the various questions connected with their art, and also in making known the improvements in the construction of hives. Already, illustrations of two Canadian-made hives have appeared in our columns, and we now present our readers with engravings of a third.

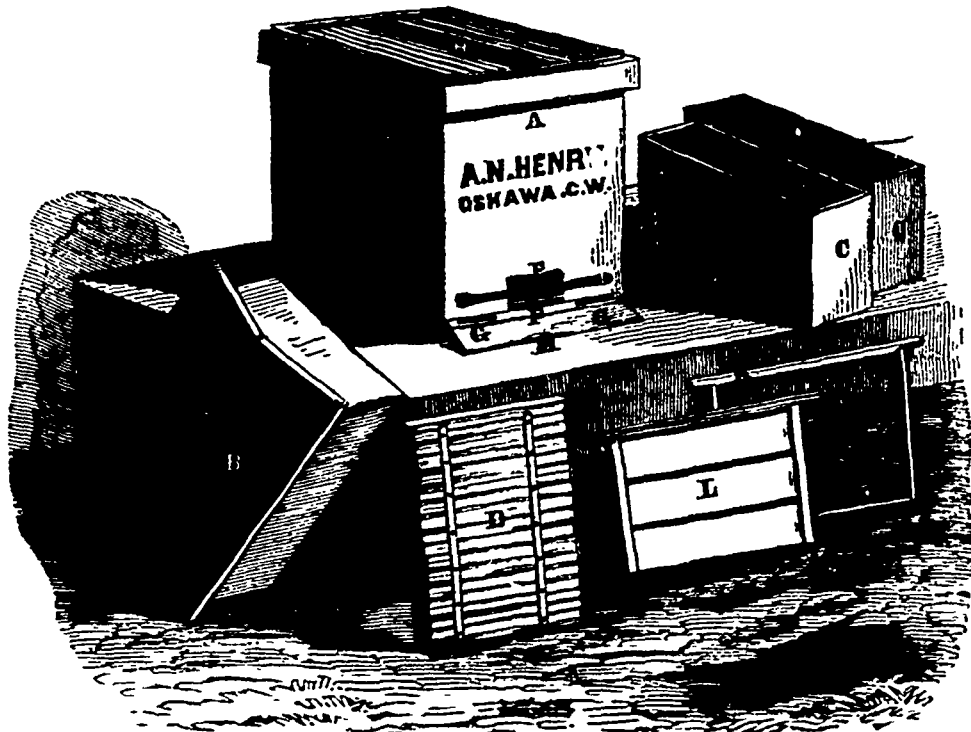
able frames, which can be readily taken out for the purpose of inspecting the interior. One of the advantages claimed by its maker for this hive is in connection with those frames, and consists of a movable partition between each pair of frames, the object of which is to compel the bees to build their comb straight. It sometimes happens that the bees will make the comb crooked, or will connect two cards of combs, thereby rendering the removal of the frames for purposes of examination difficult or impossible. These "comb guides" are meant to obviate this. A second peculiarity of this hive, is what is called the "miller trap." An entrance will be seen in the engraving on each side the main or bee entrance. These two entrances lead into a sort of drawer cut off from the hive by wire cloth. Chippings of comb fall through this wire cloth, into the drawer, or pieces may be laid therein. These attract the miller, and the eggs are laid among these bits of comb, instead of being deposited in the solid frame-work of comb. Mr. Henry, as will be seen by turning to his letter above-mentioned, speaks of this arrangement as a most effectual safeguard against that pest of the apiary, the moth-miller. A third feature in the "People's Hive" is the mat, or condenser, intended to absorb the moisture that rises in a hive during cold weather. The congelation of this moisture is a frequent source of loss to bee-keepers. Mr. Henry guards against it by means of a corn-stalk mat, about half an inch or so in thickness, fastened down by a couple of strips upon the under side of the honey-board. In summer, the wooden side of the honey-board is turned down. The honey-board is removed altogether when boxes for the surplus honey are put at the top of the hive. In winter, the honey-board is put on with the mat side down. For the cost of this hive, with the right to make, and other particulars, we refer our readers to the advertisement in our last issue.

The Gardener's Chronicle advises not to paint beehives; as moisture is more liable to collect inside; and the bees never do as well as in unpainted

Veterinary Department.

Paralysis in Horses.

During the past three months there has been a disease prevalent amongst horses in this district, causing a partial paralysis of the posterior extremities. The coverings of the spinal cord, seem to be the immediate seat of this affection, as on a post mortem examination, that part of the cord over the loins shows unmistakable evidences of congestion. The kidneys and peras muscles are also implicated in the disease. In geldings and stallions, it is a most serious and fatal complaint, running its course with alarming rapidity. In mares it is of a milder nature, and but seldom proves fatal. The exciting causes, in many instances, are changes in the state of the temperature of the atmosphere. Horses are most liable to be attacked when they have been hard wrought, and then allowed to stand in an insufficiently ventilated stable, for a week or ten days, and still highly fed. By this treatment the circulation becomes impaired, and when they are put to work they are seized with a shivering fit—the invariable precursor of many serious disorders. The ears and extremities are cold, and a peculiar weakness of the loins is exhibited. The animal walks with a straddling gait, and begins to crouch his back and moves his hind limbs with great difficulty, gradually losing all control of his hind quarters, he falls down and is unable to rise. The pulse is variable and acute, and in severe cases quick, ranging as high as eighty to one hundred beats per minute. In other cases the pulse at the jaw is almost imperceptible. The horse turns his head towards his loins pointing to the seat of his pain. The bowels are unmoved, and the urine is retained within the bladder. The visible mucous membranes look natural, not being reddened and injected as in inflammation of the bowels. The animal is in extreme agony, rolling about and making ineffectual attempts to rise, whereby the pain is increased. In cases terminating fatally, these symptoms are continued for twenty-four or thirty-six hours, when death supervenes. At the commencement of the attack he will drink freely of cold water or gruel, and even eat a little. When recovery is taking place the animal shows signs of amendment by lying easily, and with assistance may be able to get on to his feet; when he will stand quivering at his flanks, and almost unable to move. He will, perhaps, lie or fall down, and remain quiet, and in the course of from six to twelve hours, will again get up, and without assistance. The treatment must be energetic, and regulated by the state of the circulation, the pulse being our guide. If the pulse is strong, and the animal in high condition, we recommend blood-letting in the early stage, followed by the tincture of aconite, (Fleming's,) in doses of ten to 20 drops, every two hours. If the pulse is weak, we advise the free use of stimulants. An oleaginous purgative should be administered, and clysters of soap and water, or an infusion of tobacco must be regularly given.—Counter irritants must be applied to the loins, as mustard poultices; or hot clothes wrung out of boiling water. In mild cases a newly flayed sheepskin applied over the loins is useful. In geldings or stallions, when once paralysis sets in to such an extent that he is unable to rise or stand, it invariably proves fatal. In mares, however, it is different, we have had them paralysed for three or four days, and then recover. If the patient will eat he should have a decoction of linseed, or oatmeal gruel, or it may be necessary to drench him with it. During convalescence, great attention must be paid to the proper temperature of the stable or box; the clothing either increased or lessened, according to the state of the atmosphere. Small doses of the bicarbonate of potash may be given twice a day, and the feed carrots or bran washes; not forgetting good grooming, so essential to the preservation of health.



Some account of the peculiarities of the hive represented on this page, has already been given in a communication from its maker, Mr. A. N. Henry, which appeared in our issue of March 15; and it will require but a brief description in addition to the cuts, to enable our readers to understand "all about it." Like all really good modern hives, it has move-

- A.—Body of hive.
- B.—Removable cover.
- C, C.—Honey-boxes for surplus honey.
- D.—Honey-board, with mat, or condenser, attached.
- E.—Sliding door.
- F.—Entrance to hive.
- G, G.—Entrances to miller-trap.
- H.—Vacancies for K and L.
- K.—Movable frame.
- L.—Comb-guide.
- M.—Lighting-board.

Canadian Natural History.

The Osprey, or Fish Hawk.

(*Pandion Carolinensis*.)

THE American Osprey, popularly known as the Fish Hawk, has been considered by some writers as identical with the European species. It is said, however, to be somewhat larger, the female measuring thirty inches, and the marks on the breast being heart-shaped and circular, instead of narrow and lanceolate, as in the European Osprey. It is found in abundance in the sea-coasts of this continent, as well as on the shores of the interior lakes. Wilson says: "This formidable, vigorous winged, and well-known bird subsists altogether on the finny tribes that swarm in our bays, creeks, and rivers, procuring his prey by his own active skill and industry, and seeming no further dependent on the land than as a mere resting place; or, in the usual season, a spot of deposit for its nest, its eggs, and its young." In Europe the Osprey builds in the ground, or in rocks, or old ruins; but in this country it makes its nest in the top of decayed trees. A huge mass of sticks are employed in the formation of this, and when complete, the structure may be seen at a distance of half a mile.

The female Osprey is about twenty-five inches in length, with an extent of wings of about five feet, the male being rather smaller. In the adult "the head and under parts are white; upper parts, wings and tail, deep umber brown, the latter having about eight bands of blackish brown; numerous spots of pale yellowish brown on the breast; bill and claws bluish black; tarsi and toes greenish yellow; the young have the upper parts edged with white."

It is one of the most sociable of the hawk family, migrating in considerable numbers along the coast in spring and autumn. It generally arrives about March; and its return is regarded as a happy signal by the fishermen who expect vast shoals of herring, shad, and other fishes on which it preys to accompany it. When fishing, it flies with a slow and rather heavy and laborious flight along the water until its attention is arrested, when it balances itself by a rapid motion of the wings, and with the tail expanded. Before striking a descent, is generally made nearer the water, and a renewed inspection is continued, after which the dash or plunge is made with closed wings, and the body is sometimes immersed, and generally quite obscured by the spray of the plunge. If successful, the bird rises, shakes the water from its plumage in the air, and after a circle around, returns to resume its survey. If the prey has been struck, it generally carries it to some distant hill or rock where it is devoured. It is seldom carried to the shore and immediately eaten, but occasionally it soars to a considerable height, and sports with its victim before coming to its resting place.

As we have already stated, the Osprey is social in disposition, rarely quarrelling with its mates, and even nesting on the same tree with birds which other members of its family would chase or destroy. We have before alluded to the readiness with which it yields its prey to the bald Eagle. How the poor bird is robbed of the result of its morning's labour by this

thievish depredator, is well known through the graphic descriptions of Wilson and Audubon. Mr. Webber, author of "Wild Scenes and Wild Hunters," gives an admirable description of the same proceedings, from which we extract the following:—"The bald Eagle makes his appearance sometimes suddenly on his wide visiting wings amidst these solitudes that seem rightly to belong to the fish Hawk alone. His hoarse bark startles the deep silence from afar, and every natural sound is mute. Wheeling grandly amidst the dim blue cliffs, he subsides on a slow and royal spread upon some blasted pine beside the lake-river, and with quick, short screaming—while he smoothes his ruffled plumes—announces to awed nature that its winged monarch has come down to rest. The friendly fish-Hawks, in silent consternation, dart hither and yonder in vexed uncertain flight, the tiny songsters dive into deep thickets, and



the very cricket underneath dead leaves, pauses for a moment in its cheerful trill, while the shadow of that drear sound passes over all." The writer then goes on to state that the Eagle sinks into an "attitude of deep repose," and the fish-Hawks resume their wonted avocations of seeking their finny prey. The capture of the fish by the Hawk, and the swift and terrible pursuit immediately instituted by the Eagle, are finely pictured. We are pleased to learn that after all the generous and social fish-Hawk "recognises that point beyond which forbearance is no virtue." When the plundering outrages of the bald Eagle have been carried to an intolerable extreme in any locality, the fish-Hawks in the neighbourhood combine in a common assault upon the tyrannical robber. "There was always," says the writer, "a desperate battle before the savage monarch could be routed, and I have seen them gathered about him in such numbers, whirling and tumbling amidst a chaos of floating feathers through the air, that it was impossible for a time to distinguish which was the Eagle, until, having got enough of it amid such fearful odds, he would faint turn tail, and with most undignified acceleration of flight, would dart toward the covert of the heavy forest to hide his

buffed royalty, and shake off his pertinacious foes amidst the boughs, as do the smaller hawks when teased by the little king-birds."

The eggs of the Fish-Hawk, from two to four, are laid in May, and are of a "creamy white, marked with brown spots, and are somewhat larger than those of a common fowl."

Nature's Adaptation of Vital Forces.

THE natural history of a wheat grain shows us that the leaf is only a modified portion of the stem, and the flower, with its pistil and stamens, and coloured leaves or corolla, is only a modification of leaves. In this interesting feature of what is termed the morphology of the plant we find an instance of a law which pervades the whole of organized nature—viz: *the adaptation of similar means in the production of widely different results.* And it is a law which, as far as our reason can tell us, is one of necessity. Were man, for instance, with his knowledge and experience, and assuming him to have the artistic skill, called upon to make a plant, he would form the roots and the stem; he would then modify the material of the stem into flat expansive processes, through which the vital fluids of the body could circulate, and become aerated by the atmosphere. He would then alter these processes into the complex and beautiful arrangement by which the species would be propagated. It would not be consistent with the unity and perfection of the plan were he now to introduce new textures. He would make use of the leaves, and would modify one into a bract, another into a calyx, another into a pistil, another into a stamen, and thus constitute a flower. And the necessity of this is apparent, for the flower has to be nourished through the medium of leaves, and therefore on just the same plan throughout. And so we find that Infinite Wisdom has adopted that which our reason calls perfection in the creation and organisation of the world. But He has done much more, for He has endowed created things with a law by which they are not

only perpetuated in time, but are also adapted to the purposes of existence. Thus, under the operation of that law, the roots, the stem, the leaves, and the flower of the plant act in perfect harmony with each other, and seldom vary from their primitive form. If, however, man steps in and alters the circumstances of existence, the law which is immaterial and cannot change, refuses to co-operate with a non-natural condition of the being. Take a plant, for instance, out of its wild and natural locality, and cultivate it highly: it is charged with a greater amount of nutrition than it was designated to assimilate, and we now see that remarkable change of the conversion of the stamens of the single plant into the leaves of the corolla of the double. But "naturam expelles furca, tamen usque recurret." Take away the excess of nutriment, and the plant will return to its original form, the leaves will become stamens, and the flower single again.—DR. BREE, F. L. S., in *The Field*.

DIDN'T KNOW IT.—The head of the turtle, for a long while after its separation from the body, retains and exhibits animal life and sensation. An Irishman had decapitated one, and some time afterwards was amusing himself by putting sticks into its mouth, which it bit with violence. A lady who saw the proceeding, exclaimed, "Why, Patrick, I thought the turtle was dead!" "So he is, ma'am but the crabbin' not sensible of it."

Stock Department.

Care of Sheep.—Ascertaining Age.

It is well known that the ewe goes five months with young, therefore the proper time of lambing should be regulated by the nature of the climate and the supply of natural and artificial food available for nourishing the ewes during gestation, and in the lambing season. It is very injudicious to permit lambing to commence too early in Spring, and thus to expose the ewes and their progeny to the severity of the season. It is also objectionable to have the lambing commence late, as in this case the lambs will not be sufficiently strong before Winter, nor will the ewes be well recovered from the effects of rearing them. It is bad economy to breed from any but the best ewes and bucks, and to fall in furnishing plenty of nutritious food, good shelter and dry litter to the ewes, before and after lambing.

It is said that ewes go with young for a longer period with males than females. In order to test the accuracy of this opinion, an extensive breeder of sheep kept an accurate account of the time his ewes went with young, and he found that the longest time of gestation was as follows:

With a ram lamb.....	22 weeks 4 days.
The shortest with do.....	21 " "
The longest term with a ewe lamb.....	22 " "
The shortest with do.....	20 " "

Although the age of the ram may in some cases be ascertained by the number of rings or knobs on his horns, yet from the large number of hornless sheep, and many other reasons, it is safer and more satisfactory to determine the age by the teeth. The sheep has eight cutting teeth in the front of the lower jaw, and six molar, or grinding teeth in each jaw above and below. When the lamb is born it sometimes has no cutting teeth, but it generally has two, and before it becomes a month old, the full number, eight, appear in the front of the lower jaw. When the sheep is sixteen months old, the two central cutting teeth are shed, and in process of time replaced by others, which attain their full size when the sheep is two years old. Between the age of two and three years, the next two incisors, or cutting teeth are shed, and slowly replaced by others, which also attain their full size when the animal is three years old. At four years old, the sheep has six full grown cutting teeth, and at five the front teeth are all of an equal size, being fully developed.

In the sixth and seventh year the teeth become discolored, as the enamel begins to wear off, and they exhibit symptoms of decay. For this reason ewes should not be kept for breeding after they are seven years old. Sometimes they are kept much longer than this, but it is well known that old ewes seldom produce strong and vigorous lambs. The culling out of old ewes and replacing them with choice well-bred young ones, is a very important part of sheep husbandry.

MEADOW HAY—FEEDING STOCK.—A correspondent of the Massachusetts *Ploughman*, writes that paper as follows:—I used to think that swale, or low ground hay, was poor stuff, hardly fit to be fed to cows or oxen. The little that we had was scattered about to the cattle and sheep; they would pick up what they liked, and waste the remainder. I was brought up to feed and take care of stock, and used to think that they must be fed at least five times in a day, twice in the morning, once at noon, and twice at night—that was the least that would answer; and I can remember before I was old enough to fodder the cattle myself, of going to the barn every night at 9 o'clock, to carry the lantern for my older brother to fodder the cattle. But I have learned by experience, that stock will do very well being fed three times a day. I fed my cattle three times a day, as much as they will eat up clean; they hardly ever leave any. I am situated now so that my hay is the largest share of it low ground, or swale hay, some of wild grass, and I find that where at early, and properly cared, cows will do well on it, in the winter. Of course, in the spring, when they are giving milk, they require something better. I think that my cattle look as well feeding three times, as they used to on six or seven times a day. It is not necessary that they should eat all day; all they require is their regular meals. My cows eat all my oat and barley straw, after they are dried off in the fall. They are fed once a day on straw while it lasts, and twice on hay, and they always gain until they begin to give milk again.

JOSHUA BILLINGS ON HORSES.—Pedigree is not important for a fast trotting horse. If he can trot fast never mind the pedigree. There is a great money fast men even who ain't got no pedigree. There ain't much art in drivin' a trotting horse; just hold him back hard, and holler him a head hard that's awl. A horse will trot the faster down hill, especially if the birchin breaks. Kuller is no criterion. I've seen awful mean bosses of all kullers, except green. I never seed a mean one of this kuller. Horses live tew an hon orabil old age. I often seen them that seemed fully prepared for death. Heathens are awlus kind to horses; it is among Christian people that a horse has to trot three-mile heats in a hot day, for 25,000 dollars counterfeited munny.

LUPINE SEEDS AS FOOD FOR CATTLE.—We learn from an English Journal that Professor Voelcker has directed the attention of the Committee of the Royal English Agricultural Society to the value of the Seed of the Lupine, grown on sandy soils, as a food for cattle. The flavour is bitter, but they are a good tonic, and act actively in cases of diarrhoea in sheep. The annexed is the analysis:

Molature.....	12 69
Oil.....	5 66
*Albuminous compounds (flesh forming matters).....	29 69
Gum, mucilage, bitter principle, and digestible fibre.....	6 43
Woody fibre (cellulose).....	12 04
Mineral matters (ash).....	2 50
	100 00

*Containing Nitrogen, 4.75

The Dairy.

DISINFECTING SHEDS WHERE CATTLE PLAGUE HAS PREVAILED.—We learn from the *Mark Lane Express*, that at the recent meeting of the Monthly Council of the Royal Agriculture Society of England, Mr. Dent, M. P. reported that "Professor Voelcker had called the attention of Committee to the fact that sulphurous acid is probably the simplest and readiest disinfectant that can be used in purifying the sheds where cattle plague has existed. He recommends that 1 lb. of sulphur should be spread upon a shovel full of hot coals for any shed which would contain from 18 to 20 animals. The empty shed should be closed as securely as possible, and the sulphur having been spread upon the hot coals, the empty building may be left closed up for from 12 to 24 hours. The use of diluted carbolic acid, in the Professor's opinion, will tend rather to preserve than to destroy organic substances. He also strongly advises the immediate mixture of manure, in which any infection may be supposed to exist with earth; if it cannot be immediately ploughed into the soil, he advises compost heaps to be made of alternate layers of earth and manure, and the heap finally covered up with a thick coating of soil or quick and lime."

TWO MILK DISHES INSTEAD OF ONE.—A Dutchman in Albany, some time ago, went out to his milkman in the street with a dish in each hand, instead of one, as usual. The dispenser of attenuated milk asked him if he wished him to fill both vessels. The Dutchman replied, saying the action to the word, "Dis for the milk, and dis for the water, and I will mix dem so as to shute myself."

TO CURE CAKED UDDERS IN MILCH COWS.—Put the animal over night in a horse stable, and the next morning will usually find her restored, if not, one more night will complete the cure. I have never known it to fail, in recent "cake" or inflammation of the udder.—*Cor. of Rural American.*

Poultry Yard.

Taken to Black Bantams.

Taking them for all in all, after having kept nearly every variety of fowls, I do not think a more useful and ornamental or less destructive breed of fowls can be allowed to take their liberty as insect foragers in a garden. Our poultry space here is circumscribed, and the quantity we keep, the mere shadow of that which we had when we lived in Shropshire; still the yards here became so tainted, that we were fain to desist from the pursuit, and in two years afterwards we found ourselves overrun with woodlice, earwigs, and innumerable creeping things, notwithstanding a constant warfare against them. The rector was one of the first who was presented with some of Sir John Sebright's Bantams, after that breed had

been originated, and we kept steadily to them for nearly twenty years, till from high keeping, &c., they became quite as fine as the generality of fowls then to be met with in a farm yard; and now our minds again began to dwell upon the sort, but they had become much degenerated. Accident came to our aid by casting us on the Isle of Wight, where we were offered some Black Bantams, and we closed with the offer at once. They had been bred by Major Verner, and by him presented to a young lady, to become a constant source of vexation to her and her mother, on account of a lady who lived next door to them at Ryce, repeatedly complaining of the effect which Chanticleer's proclaiming the dawn had on her nerves. The quality of the birds was as good as it could be, but to provide against degeneration Mr. Baily was commissioned to procure a hen that he could strictly recommend; and when the rector called upon him in Mount Street, Lord Bollingbroke happened to be there making a purchase of some rabbits to turn out on his estate, and he added his approval with the rector's to Mr. Baily's selection.

From three such good judges the result is quite satisfactory. We do not aim at diminutiveness, but hatch early in June in order that the chicks may meet with no check, and attain their largest size. We keep those that grow the largest, although in this class of Bantams those who prefer them may easily choose small birds the Illiputian appearing in most of the broods. We have a minute cockerel rejoicing in the name of "Dod." He was flattened like a pancake when hatched, and I threw him aside as being dead; but a female hand rescued the castaway and placed him in the foot of a woollen sock upon a warm hob. Soon lively chirpings made us aware of his vitality. "Dod" grew up to become a pet; he perches upon my shoulder at tea-time and at breakfast, and makes complainings in my ear unless I frequently supply him with bits of toast and bread and butter. "Dod" is not to be parted with; I have a diminutive pullet for his harem. His big brothers are becoming very pugnacious.

I have an ulterior object in thus gossiping: I am a bee-keeper as well as a poultry-keeper, and can well understand the feeling of annoyance that your correspondent Mr. Edw. Cadogan, at page 245, experienced when he returned home after a three months' absence, and found his improved cottage hives infested with thousands of earwigs. Allow a crop of these vermin to remain on the top of a hive for a week only, and notice how fat and plump they will become as they scamper away on being disturbed. Certain enough it is that the bee grubs and the honey are the cause of that *embourgeoisment*, and it was one chief cause of our taking to Bantams again; for notwithstanding all the precautions which I have frequently detailed in these pages as having been taken against the entry of insects into my hives, earwigs are the most sought for of morsels, and during this season, which has been a peculiarly favourable one for these insects, no woodlice or earwigs have had a chance of congregating with me. Along with them spiders, beetles, caterpillars, slugs, small snails, ants and their eggs, &c., have all been devoured by the untiring searchers for insects, and there is no variety of fowl that does the searching more gently, or works less harm amongst flowers and plants. My system of netting over strawberries, gooseberries, &c., is so simple and secure that I am never concerned about the birds interfering with them. When I wig my hives—viz., take the pans and covers off the supers for the purpose of whisking away with a goose's wing insects that may be concealed there, the fowls instinctively know all about it, and are generally there on the look-out. If they should not be, "Boys, boys!" is sure to bring them, and woo betide the marauders; but these fowls never touch a bee. I would earnestly advise Mr. Cadogan to take to Black Bantams. He informs us that his garden is a large one. Then what can be better for his bees than borage planted wherever the room can be spared? What a perpetuity of bloom it gives, and what a quantity of seed it will produce! There is no food that Black Bantams are more fond of. They will nearly subsist upon it, and search it out from the pods as zealously as the bees do the honey from the blossoms. I rather like the borage as a weed, for it is precocious, and compels one to be constantly stirring the ground to do away with it where it is not wanted, and so every other weed shares the same fate before it can well be seen, still less produce seed, and the soil is benefited. Then what capital and prolonged layers, and excellent sitters, without being inconveniently so, Black Bantams are. Besides, a couple, or even three of them, when well fed, properly cooked, and placed on a dish at one end of a dining table, with a pig's cheek *vis-à-vis*, might satisfy a more gastronomic individual than—*Obsequy Gardener.*

Entomology.

Insects for Identification.

"A. A. B." of Guelph, has recently sent us some entomological specimens for identification; they consist of (1) some twigs belted with clusters of eggs, and (2) a large silken cocoon. The first of these are the eggs of the well-known, and too widely-distributed Ten: caterpillar of the apple tree; an illustrated article, containing full descriptions of this noxious insect, will be found on page 237 of the First Volume of this Journal; it is needless, therefore, to repeat the history of it here. We gladly, however, take the opportunity of calling our readers' attention to the necessity of at once examining their orchards and gardens, (if they have not already done so,) and destroying all the clusters of eggs they can find. No time should be lost in delaying to perform this necessary piece of work, as ere long the trees will be putting forth their leaves, and then it will be impossible to discover these belts of eggs. The young caterpillars, too, come forth almost simultaneously with the leaves, and are then, of course, much more difficult to exterminate completely. The first dull, cloudy day should be selected, and the orchard and garden thoroughly examined. A practised eye will soon detect the swelled appearance of the twig where these eggs are placed, by standing underneath the tree, and looking upwards, bringing the branches into relief against the sky. The clusters of eggs are sometimes at the very end of the twig, sometimes a foot or two from the extremity, and not unfrequently more than one belt of eggs may be found on the same branch. They can be gathered either by cutting off the twig; or, where that is not desirable, by tearing them off with the finger and thumb-nail; when removed from the tree they should be burnt in the fire, to make sure that none escape.

We wish to call attention to this matter particularly at the present time, as we have observed in the neighbourhood of Toronto, and in other parts of the country, an unusual number of these clusters of eggs. If they are allowed to remain unmolested, we shall have such a crop of caterpillars as will almost completely denude our orchards of their foliage, and very materially lessen the produce of fruit. Let us all bear in mind the old adage that "An ounce of prevention is worth a pound of cure." It should be mentioned also, that these eggs may be found upon the wild and cultivated cherry-trees, the wild plum, and some species of thorn, as well as upon the apple.

The second specimen sent us for identification, by our correspondent at Guelph, is the large silken cocoon of the Emperor Moth (*Saburnia cecropia* Linn), the largest of our Canadian insects, individuals sometimes measuring no less than seven inches across the expanded wings. The specimen before us had never attained to maturity, the caterpillar having been attacked by a species of *Tachina*, a parasitic race of insects that much resemble the common house fly. It is very remarkable that a caterpillar, although attacked by a multitude of these parasites (we have obtained nearly a hundred from a single cocoon of the emperor moth) has still strength enough left to spin its double envelope of silk, and complete its transformation into the pupa state; here, however, its foes soon become too many for it, and cause its silky wrapper to become a veritable winding-sheet, instead of merely a protection from the winter's frost and cold.

Since the above specimens were received, Professor Buckland has kindly handed us a letter from a gentleman at Markham, enclosing two nests of eggs of the Tent caterpillar (*Glisiocampa Americana*, Harris) mentioned above. These, we are informed, were gathered some days ago, and placed in a room of moderate temperature, in consequence of which a multitude of the tiny caterpillars have become hatched out; too soon, however, for their own welfare, as they have since perished for want of food. The letter states that "on placing the enclosed, recently collected nests, under the glass last evening, and allowing an intense light to fall for some time upon the interior surface, it began to teem with life foreign to the nest, so small as to require several seconds of active locomotion to cross the surface of one of the eggs." We have been unable to discern this example of 'life within life,' even with the aid of a powerful microscope; we shall take care, however, to obtain a fresh supply of these tiny eggs, and then, perhaps, we shall be able to determine what these minute organisms are—the eggs sent by our correspondent had all become hatched out, and are now but empty shells.

British Cleanings.

A farmer bearing the name "Acts Apostles Pegdon," recently died in Kent, England.

EGGS EXTRAORDINARY!—A recent British paper has the following: "Mr. David Davidson, slater and plasterer at Thornton, Fife, has a hen of the Dorking breed, which has dropped a number of eggs which weigh 3½ oz. and 4 oz. each."

A FRUITFUL EWE.—*The Farmer* (Scottish) has the following:—"Alexander Montgomery, Esq., who resides near Antrim, has a ewe thirteen years old, which has produced twenty-four lambs during the last twelve years. She reared them all, and has not had a tooth in her head for the last seven years."

THE IMPLEMENT TRADE.—We learn from the *Mark Lane Express* that considerable sensation has just been caused amongst the makers of steam-engines in consequence of a leading firm having reduced their prices from the first of February at least ten per cent., and other houses, of course, having to follow this lead."

SALMON AND TROUT FOR AUSTRALIA.—We learn from a British exchange, that "the *Lincolshire*, a fine, fast-sailing ship, which left the East India Docks, London, on the 20th ult. for Melbourne, took out 87,000 salmon ova, 15,000 sea or white trout ova, and 600 brown trout ova—in all, 102,500, which were packed with moss and charcoal in 141 boxes, and stowed away in the midst of upwards of 50 tons of ice."

WEEKLY COST OF THE KEEP OF A HORSE.—We find the following paragraph in a recent issue of *The Farmer*, (Scottish):—"Professor Low, in his 'Elements of Agriculture,' gives this at 6s. 6d.; Mr. H. Stephens, in his 'Book of the Farm,' 6s.; Mr. Gibson, Woolmet, 9s.; Mr. Binnie, Seaton, 11s. 6d.; Mr. Thomson, Hanginside, 9s. 6d.; Mr. W. C. Spooner, in the *Agricultural Society's Journal*, 4s. 9d.; Mr. Baker, Woburn, Bedfordshire, 8s. 8d.; Mr. C. Howard, Biddenham, 8s. 6d.; J. J. Mechi, Tiptree, 7s. 6d.; which gives an average of 7s. 11d."

WAR AGAINST ROOKS.—We learn from *The Farmer*, (Scottish), that the sapient members of the Easter Ross Farmers' Club, have discovered that the Rook is an uncompromising adversary of the farmer. The chairman had "suffered so severely as to have serious thoughts of giving up sowing winter wheat altogether. And another member having said that he considered them a heavier burden to the tenantry of the county than the poor-rates, it was agreed, after some little discussion, to give £10 and a subscription of 2s. 6d. a-plough for their extermination."

CHEMICAL CONSTITUENTS OF FEATHERS.—A correspondent of the *Irish Farmers' Gazette* writes to that journal for information on the following points:—"What are the chemical constituent of feathers, and what quantity may be used to the statute acre? May they be used alone? Should they be mixed with stable manure? If so, what quantity, say, for Swedish turnips, mangels, or carrots? Would not superphosphate mix well with them? Are not woollen rags the same chemical combinations?"

The reply of the Editor is as follows:—"The rays or pinnae of feathers consist of 50.434 per cent. of carbon, 7.110 of hydrogen, 17.682 of nitrogen, and 24.774 of oxygen; the quills, 52.427 of carbon, 7.213 of hydrogen, 17.893 of nitrogen, and 22.467 of oxygen. When rotted, they are good manure, either alone or combined with any other manure, and suitable for all farm crops, in any quantity, at pleasure. Woollen rags, hair, &c., possess the same elements."

THE BIRMINGHAM PRIZE OX OF 1865.—*The Farmer* (Scottish,) supplies the concluding particulars of the life of this magnificent specimen of the bucolic race as follows:—"We went to have a last look at Mr. Wood's famous shorthorn when we heard it was doomed to be slaughtered. This was a few days before its being killed, and it then looked handsome and healthy, moving freely about in its pen, and falling and rising its enormous bulk with an ease that shewed its strength matched its unparalleled size. If it shewed by its breathing and the majestic slowness of every motion that it was stout—very stout—it only imitated the example of that stoutest of philosophers, Dr. Johnstone—"Sir, it is a grand thing to be the finest ox in all England, the pride of a proud race; my name, Sir, is Prize-taker."

The following note—furnished, we presume, by the butcher—concludes the history:—"I had the ox slaughtered on Friday last; he is the most extraordinary ox I have ever seen. He weighs 240 stones, and carried 26 st. 4 lbs. of loose fat."

DOINGS IN ENGLISH GAME PRESERVES.—We find the following paragraph in a recent issue of *The Farmer*, (Scottish):—"Is it SPORT OR SLAUGHTER?—At a recent *batus* in the North of England, 4611 pheasants, and 5000 hares and rabbits were slaughtered. This number was estimated as only a third of what was in the preserve, which must have been 14,000 pheasants and 16,000 hares and rabbits."

NOTE BY ED. O. F.—In order to form an approximate conception of the immense destruction of farm produce on this estate, we may state that to grow grain for the support of the birds would require the cultivation of 246 acres, and for the hares and rabbits 1,100 acres. Four hares are supposed to eat as much as a sheep, and seven rabbits eat and destroy as much as four hares.

THE BICTON ARBORETUM.—Respecting this magnificent collection of trees and shrubs, Ellhu Burritt in his *Walk from London to the Land's End*, says: "Let the most scientific and enthusiastic of American arboriculturists travel from the Rio Grande to the St. Lawrence, and from the Atlantic to the Pacific seaboard, and he will find here at Bicton more varieties of American trees and shrubs than he named and noted on the western continent. When he has seen the pines of California, of the Rocky mountains, of Michigan, Canada, and Maine, and heard the solemn sigh and murmur of their branches in the forest breeze, he will indulge the self-complacent sentiment that no one can tell him or show him anything new in the race of conifers. He may boast that he has seen twenty, perhaps even fifty, kinds of that tree in his explorations. Let such a man visit Bicton, and run down its tree roll and read its record after this rate." And he goes on to enumerate the trees beginning with Pinus, two hundred varieties.

INTERNATIONAL HORTICULTURAL EXHIBITION.—*The Mark Lane Express* "understands that the prospects of the Grand International Exhibition and Botanical Congress, to be held at South Kensington in May next, are most encouraging. The ground to be occupied by the Show, which is a portion of the site of the Exhibition of 1862, is already under preparation for the erection of the monster tent; and, according to the plans which have been adopted, the interior arrangements will be made most effective. The complimentary banquet to the learned foreigners who are invited to take part in the proceedings, or to attend as delegates from foreign Governments, and which, thanks to the City Corporation, is to be held in the Guildhall, is drawing in as subscribers to the fund many who are anxious to do homage to the distinguished visitors who will honour the occasion with their presence; while the Botanical Congress, which is to be under the patronage of M. de Candolle, is assuming, from day to day, a more practical shape. Several eminent botanists, both at home and abroad, have already joined in working it out to a successful issue. The meetings of the Congress are to be held in the Raphael Cartoon House, at South Kensington, by permission of the Committee of Council on Education. This great horticultural movement, it should be remembered, is wholly of an independent character; and it must be a source of great gratification to the friends of scientific horticulture in this country that it has attracted so large an amount of voluntary pecuniary support; without which, indeed, it would never have been attempted."

CATTLE PLAGUE RETURNS.—The Second Report of the Royal Commissioners appointed to inquire into the origin and nature of the cattle plague, contains the following:

"Since our First Report was submitted, the disease has continued to spread, the ratio of its advance fluctuating much in different places, but presenting something like uniformity on the whole. The total number of reported cases from the commencement was:

October 1	11,300
November 4	20,897
December 2	39,714
December 30	73,549
January 27	120,740

It has thus nearly doubled itself at intervals of four weeks.

These figures, however, formidable as they are, by no means represent the real amount of loss and suffering inflicted by a calamity which ravages some districts while it spares others. A pressure which would be less if distributed over a large area is ruinous and crushing when those on whom it rests are comparatively few. Cheshire, for instance, which depends in great measure upon its dairy stock, has had, up to the 27th of January, 17,971 cases of disease, Forfarshire 10,099, Lanarkshire 4,371, Cambridgeshire 4,364, Lincolnshire 4,930, Norfolk 4,063, Yorkshire 19,331, and the records of particular villages and farms where the disease has raged would tell a still more distressing tale."



A Week in Peel.

To the Editor of THE CANADA FARMER:

SIR,—Having a few days since visited this fine county, and lectured before its several agricultural societies, a few remarks in connection with my tour may not be devoid of interest to a portion, at least, of your numerous readers.

I attended meetings at the following places:—Brampton, Cooksville, Edmonton, Carleton, Bolton, and Claireville. The attendance on the whole was satisfactory, particularly when the state of the roads and weather is taken into account. The principal officers of the societies were mostly present; and in all cases considerable time was spent after the lecture in hearing and answering questions growing out of the same, and of matters relating to the improvement of agricultural societies.

At Brampton the subjects that came up for subsequent consideration, related chiefly to the causes of, and remedies for, the exhaustion of the soil, and farm-yard manure, its properties and management, with the carbonate and sulphate of lime, were specially referred to. At Cooksville, the cultivation of flax occupied more attention, as the Messrs. Gooderham have in successful operation, a linen factory, in the neighbouring town of Streetsville. Last season was unfavourable to flax, and some of the farmers began to be disheartened. Others, under more favourable circumstances, obtained fair crops, which paid better than any others, particularly wheat, which was seriously injured throughout the southern townships of this county by midge. There is evidently a mis-giving in the minds of some farmers as to flax, which they regard as peculiarly exhausting to the land. I think, however, that as the subject becomes better understood in all its bearings, this fear is abating, and that further experience will show that, under proper management, the raising of flax may be profitably introduced generally into our Canadian course of agriculture. In other parts of the county this matter is occupying considerable attention, and several farmers seem disposed to give flax culture a fair trial. Where that has been done, as far as my observation or information has gone, the result must be regarded as encouraging.

At Edmonton, among other matters that engaged the attention of the meeting, was the importance of clean culture. Much curious and useful information was elicited as regards the growth and eradication of Canada thistles. Row culture, in connection with a thorough and liberal treatment of the land, thus ensuring thick and heavy crops, will generally destroy this now too common pest of the farm. The claims of the dairy were next considered, and I was glad to learn that Mr. Chester, of this township, is making preparations for establishing a cheese factory on his own farm, and that he is likely to receive the active co-operation of his neighbours. The subject of dairy stock occupied much attention at the meeting at Charleston, in the township of Caledon. Grade Durhams were considered, on the whole, as the most profitable stock for the dairy and the butcher; and wherever one goes the employment of a *pure male*, of any breed, becomes at once manifest in the improved appearance of the stock of the neighbourhood. If this principle could be generally carried out, the live stock of the country would soon be doubled in money-value.

The meeting at Bolton was more numerous than I anticipated, and the before mentioned subjects formed the basis of an interesting discussion after the lecture. Draining, too, received attention, as it did to some extent, at most of the previous meetings. Pipes or tiles are now manufactured at two or three places in

the County, and can be procured at reasonable prices. As yet, underdraining on system, has been only partially introduced. Of its necessity and benefits I heard not the whisper of a doubt. This, however, must be a *progressive* work. The first thing should be to improve, where required, the natural drainage, and the making of ditches and surface drains; and underdraining will follow in due course, as the land becomes level, and cleared of stumps, and the means of the farmer increase. In Claireville the meeting from various causes, was but thinly attended, but an agreeable hour or two was spent in the interchange of thought and experience on several of the more important subjects affecting the interests of agriculture.

During this tour I had the pleasure of spending a day with Mr. John Snell, of Chinguacousy, who farms extensively, and is well known as one of our principal importers and breeders of sheep and cattle; the former comprising Leicesters and Cotswolds, and the latter Durhams and Galloways. Mr. Snell has a fine lot of young animals; both sheep and cattle, which cannot fail to attract the attention of purchasers wishing to increase and improve their flocks and herds. His five years old Durham bull, "Baron Solway," is a large, well bred and proportioned animal, and is widely known as a good and sure stock-getter. Mr. Snell purchased last fall in Kentucky a fine red yearling Durham bull, "Duke of Bonabon," got by the celebrated "Clifton Duke," calved Dec. 31st, 1864. Though at present not of extraordinary size, his expression denotes high breeding, and his symmetry is almost faultless. If all goes on well, he cannot fail to prove a highly valuable acquisition, both to his enterprising owner and the country. He cost, I understand, when only nine months old, \$600 currency! Mr. Snell has a number of fine young Galloways, a breed that is extending in some parts of this Province, to the climate and pastures of which it seems well adapted. Upon our lower and richer lands, the Durhams and Herefords will be found generally more profitable. I was pleased with Mr. Snell's arrangements for wintering his stock,—sheep as well as cattle,—plenty of room and dry bedding, with ample ventilation, the animals well fed, but not pampered, and in good, healthy breeding condition. Mr. Snell usually raises from 30 to 40 acres of Swede turnips, carrots, &c., every year.

I observed on this and neighbouring farms some attempts to raise live fences of the English hawthorn, which appeared to have a healthy growth, though from insufficient attention, these hedges are not so thick and strong as they might have been. I observed some that had been carefully cut back and kept clear of grass and weeds that were uniformly symmetrical and strong enough to turn cattle. The successful raising of live fences in this new country requires more time and persevering attention than most farmers are able, at present, to give; yet it is plain that this branch of husbandry, in our older settled districts, must before many years receive more attention, and a considerable outlay of both time and money will have to be given to it. I observed elsewhere some healthy specimens of our native thorn, and also of buckthorn, which, with perseverance and proper attention, bid fair to make a strong and enduring fence. In another place the English black-thorn seemed to do remarkably well. In the moist and equitable climate of the British Islands the raising of hedges is a work of time, care and expense, and we cannot expect to succeed in Canada in accomplishing this desirable object without employing similar means—a work, at present, beyond the reach of most of our farmers. It would be quite practicable, however, as in some instances is proved, to raise live fences round the garden, orchard and homestead, thereby affording practical illustrations of the best materials and kinds of management suited to the country, as well as aiding materially to the beauty of the landscape and the comfort and adornment of our dwellings.

As I have long had a conviction that our agricultural societies might render a still greater service to agriculture than they do by their members meeting together at stated intervals for the consideration and discussion of practical questions pertaining to their art—an object that I always keep steadily in view in my perambulations in the country—it was particularly gratifying to learn that a number of enterprising agriculturists have recently formed a Farmers' Club for the County of Peel, and have already held several meetings in Brampton. Sheep husbandry, cattle breeding, manures, the dairy, and other subjects, have been treated of and discussed—judging from the reports that I have seen in the *Brampton Times*—in an able and practical manner. And it is gratifying to observe a number of young farmers—

among the principal is Mr. Snell, Junr.—taking a lively interest with their seniors in awakening the agricultural mind. It is to be hoped that such meetings for mutual encouragement and improvement in the noble and all important pursuit of agriculture will increase and prosper.

The soil of the lower portion of this county, comprising the townships of Toronto, Chinguacousy, Gore of Toronto, parts of Albion and a little of Caledon, consists for the most part of a rich clay or strong loam, admirably adapted to the mixed system of husbandry, and the greater portion of this tract has been renowned for the production of large crops of the finest winter wheat. Towards the lake, on the south, the land becomes sandy and broken, and consequently, as is all land on the northern margin, of less agricultural value. The township of Chinguacousy possesses a remarkably fine, uniform soil; the surface being very level, and the subsoil frequently tenacious, underdraining proves highly advantageous.

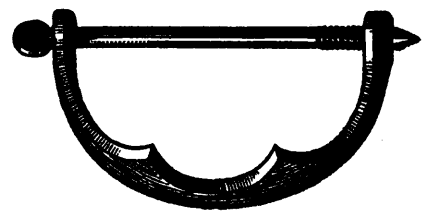
In ascending the escarpment of the limestone hills in Caledon and Albion one reaches quite a different country in appearance, and the scenery becomes, as the ascent is made, more varied, bold and picturesque. An extensive table land, more or less undulating, occupies the northern portions of the county, with the adjacent parts of Simcoe and Wellington; constituting the great water shed of this part of Upper Canada, reaching an altitude of seven or eight hundred feet above Lake Ontario, and is the source of the principal streams and rivers. There is, I am informed, some good farming in portions of this district, and I was pleased with the intelligence and enquiring spirit of the people. This region must be particularly interesting to summer tourists; it having several small lakes and crystal streams, abounding in trout, and the air is clear and salubrious.

I am under many obligations to the officers of societies, and other individuals, for the hospitality which I received in going over this interesting and comparatively well cultivated county, and for the valuable information which was so willingly given me. To particularise might be deemed obtrusive or invidious, but I may be allowed to express my grateful acknowledgements to John Lynch, Esq., the veteran Secretary of the County Society, who has in a quiet but most efficient manner, devoted more than half a century to the agricultural improvement of this section of country.

Yours truly,

UNIVERSITY COLLEGE,
April 2, 1866.

RING TO PREVENT PIGS ROOTING.—"Belmont" of Ottawa forwards for our inspection a contrivance to effect this object, of which the accompanying cut is an exact representation. Our correspondent writes:—"The enclosed 'ring' I received some time ago from England, where it is called the 'Carhead Pig Ring' I



have tried it for a short time, and find it to answer the purpose admirably. The wire is put through a hole in the upper part of the snout, and the ring drops on the front of the nose, it soon stops him digging. Any blacksmith can make them for less than 10 cts each."

VETERINARY SCHOOL.—"Henry Culley" of Toronto, writes:—"It would be considered a favour by several subscribers to THE CANADA FARMER, if you would give some information about the Veterinary School.

1st. Length of course of study.

2nd. Class-books used.

3rd. Charges, &c., for attendance."

ANS.—1. Before a student can present himself for examination, or obtain a diploma, he must have attended the lectures for three sessions, and have dissected at least one whole subject.

2. The class-books used are ANATOMY—Percivall's Anatomy of the Horse. MATERIA MEDICA—Dun's Veterinary Medicines, Morton's Veterinary Pharmacy, Wilson and Fowne's Chemistry. PATHOLOGY—Percivall, Blaine, Zonat, Stonehenge, Dick, &c., &c. PHYSIOLOGY—Carpenter, Kirk and Paget, &c.

3. The charges for attendance may be learned by applying to Mr. A. Smith, Veterinary Surgeon, Temperance street, Toronto,

PLOUGHING-IN TURNIPS FOR MANURE.—"P. Murison" writes:—"I would like to know if ploughing-in a turnip crop, half grown, is a good plan for manuring ground? I generally take in the turnips themselves, and plough in the leaves. Which is the best?"

Ans.—If you have cattle to consume the roots, the latter is clearly the more judicious course.

TRANSMUTATION OF GRAIN.—A Malvern correspondent has favoured us with a communication on this subject. The "curious phenomenon" related by Elisha Burritt, has already been discussed in the pages of this journal, as our correspondent will observe if he refers to Vol. II., p. 90. As the present communication neither contains any new idea, nor diffuses any additional light on the subject, it would serve no useful purpose to publish it.

GRAPE CULTURE.—"J. K." writes as follows:—"I should take it as a particular favour if one of your late correspondents on Grape Culture, Mr. W. S., of Woburn, would have the kindness to state through the medium of THE FARMER whether he still adheres to the system of training and fruiting, which he described in the fifth and six numbers of the first volume of your paper, viz. his 'single stem dwarf and renewal system,' and whether he still recommends it as one of the best modes for our climate?"

MILLER'S TICK DESTROYER.—"A Reader," of Walford, makes the following enquiry:—"Will you, or some of your numerous readers, inform me, through the columns of your valuable paper, if Miller's Tick Destroyer for Sheep has proved beneficial?"

Ans.—The preparation to which you allude is decidedly the most effective tick destroyer before the public at the present day. It has been thoroughly tested by flock-masters of our acquaintance, and in every instance the result has been highly satisfactory.

SAWDUST AS LITTER.—"Julius," of Newton Brook, writes as follows:—"My father has a saw-mill about a mile from the farm-yard, and he has not a large quantity of straw. Would it pay to haul it to the yard, as much of the liquid manure is lost for the want of some absorbent? Is sawdust of any use as a manure?"

Ans.—The course you propose is highly judicious. Sawdust is extensively used in Britain as a substitute for litter, and being an excellent absorbent of ammonia, it afterwards forms a valuable manure.

WHAT NEXT.—The verdant communication which we append is from a "W. E. R." of Asphodel:—"The following simple and at the same time most effectual remedy for 'Bellyache' in horses, may, perhaps, not be deemed unworthy of a corner in the columns of your valuable paper. I obtained the prescription from an intelligent and practical farmer in this neighbourhood, and it is considered by him an infallible cure. It is as follows:—Take about a 'thumbful' of common salt, and grind or bruise it to a fine powder; then, with a goose-quill or other small tube 'puff' smartly a portion of it, first into one eye, and then into the other, of the horse affected, and in from 15 to 20 minutes a certain cure will be the result, no matter how severe the attack. The eye of the horse is not at all injured by the application."

Ans.—Will "W. E. R." please try a practical illustration of his "effectual remedy for Bellyache" on his own eyes, and report the same to us at his convenience? The experiment might also be repeated with advantage on the optics of the intelligent (?) farmer, who considers it such an infallible cure.

BOOKS ON ENTOMOLOGY.—"A. S. C.," writing from Brewer's Mills, County of Frontenac, desires to know (1) whether there is any book to be had in Toronto that would give the names of the Canadian Insects. (2) Can any person who wishes to study entomology become a member of the Entomological Society of Canada?"

Ans.—The best book on Canadian (as well as American) Insects that we can recommend is "Harris' Insects Injurious to Vegetation," a new edition, edited by Charles L. Flint, Secretary to the Massachusetts Board of Agriculture, with eight large coloured engravings, and 278 wood-cuts; published by Messrs. Crosby & Nichols, Boston, U. S. This handsome

volume, which can be procured through any bookseller in Toronto, is well worth its cost to any one who desires to investigate and learn something about the insects of this country. A cheaper and more elementary work, but one not to be compared to the above mentioned, is "Jaeger's Life of North American Insects," published by Harper & Bros., New York; it is illustrated by a few inferior wood-cuts, but may be useful to a beginner in entomology.

2. Any one interested in the study of insects can become a member of the Entomological Society of Canada, by being properly proposed at a regular meeting, and afterwards elected. Any information desired respecting the Society can be obtained on application, by letter or otherwise, to the Secretary, the Rev. C. J. S. Bethune, Cobourg, C. W.

OBSTRUCTION IN COW'S TEATS.—"J. W. B.," of Oxford Mills, writes:—"For a number of years, I have noticed a little kernel or lump obstructing the passage in cow's teats. This spring I have seen several of them. They seem to be about the size and shape of a kernel of Indian corn; and they locate themselves about two-thirds of the way up the teat. In some cases they entirely close up the passage, and the cow is thereby deprived of the use of the teat. Do you know of any remedy?"

Ans.—The little tumours referred to by our correspondent are not uncommon, and often prove very troublesome. They arise, in most cases, from rough handling of the teat in milking, but are often seen in young cows at their first calving. In most cases it consists of a scirrhous thickening of the membrane lining the teat, and in others, the formation of a glistly tumour, sometimes not larger than a pea, and sometimes filling up the duct completely, and extending downward to within an inch of the end of the teat, producing partial or complete obstruction.

They are in general very difficult of removal, and often produce a "blind teat." They are best treated by passing up a teat bistoury, and dividing their substance, then by inserting a silver teat syphon to draw the milk off,—this way be either left constantly in, properly secured, or used three or four times a day as long as it is needed.

The Canada Farmer.

TORONTO, UPPER CANADA, APRIL 16, 1866.

Horticultural Enterprise in the United States and Canada.

No one can even glance through the columns of the rural journals published in the United States, without being struck with the evidence they furnish as to the activity of mind and business energy which are being put forth in the department of horticulture. Floral novelties, new fruit seedlings or hybrids, ornamental shrubs, for which distant parts of the earth have been ransacked, rare seeds and choice bulbs never before heard of, are constantly pressing into notice; and while, of course, many of them are mere pretenders to excellence, and trumpeted forth for money-making purposes, it cannot be gainsayed that we have obtained some very valuable horticultural acquisitions from our neighbours across the lines. In strawberries and grapes alone, American horticulturists have greatly distinguished themselves. Of the former, it is only necessary to name Wilson's Albany Seedling, a treasure of untold value to the gardeners, professional and amateur, of this continent. A little acid, it has nevertheless qualities which place it immeasurably in advance of all competitors thus far. Yet this magnificent berry will doubtless, ere long, be surpassed by some of the seedlings which enthusiastic horticulturists are testing in their grounds. Of grapes, we have several most valuable varieties. The originator of the Concord, Mr. Ball of Concord, Mass., has lived to see his vine planted by millions from Maine to Minnesota. Dr. Grant, of New York, and Mr. Rogers, of Salem, Mass., have also achieved important triumphs in grape seedlings and hybrids. The grape for America has, however, yet to be produced,—if, indeed, our fellow countryman, Mr. Arnold

of Paris, has not already accomplished what so many have long been aiming at—the combination of the luscious flavour of a glass-grown grape, with the hardiness of an out-door vine. Hon. M. P. Wilder, of Boston, Mass.—very high authority—in a letter that we have seen, expresses the opinion that Mr. Arnold's will prove the grape of this continent, and that posterity will cherish the name and bless the memory of its originator. To all which we artfully respond, "So mote it be!" When it is considered that thousands of seedlings must be grown and tested ere a single variety worth anything is obtained, and also that the process of hybridizing is a very slow and difficult one, some idea will be formed of the amount of thought and labour necessary to the production of any real acquisition to our horticultural treasures. While our American neighbours are busily engaged in the search for novelties and improvements in the regions of floral and shrub beauty, they are especially diligent in the realm of fruit. They have produced apples, pears, peaches, plums and cherries, that leave nothing further to be desired. In the department of small fruits, they have been very assiduous, and have succeeded in obtaining a gooseberry that defies the mildew, that bane of imported gooseberries,—some valuable raspberries, the Rochelle and Kittatimy, the former a great success in all the Midland States, and the latter hardly enough for the most northerly situations. It is questionable if any country on earth be better supplied with fruit in variety and succession than is the United States at the present time.

These brilliant successes would not have been achieved but for the existence, in pretty considerable development, of horticultural tastes among the people. There has been a healthy demand for everything really valuable, whether it be for ornament or use. Eminently a practical people, the Americans are nevertheless an æsthetic people. They are often extravagant in their outlays for matters of taste, ornament and display. They cultivate the beautiful, in dress furniture, and the surroundings of their homes. Were there not a demand for the expensive novelties we see continually advertised in their agricultural and horticultural journals, they would not be offered. A seed of the Victoria Regia for one dollar—a fine lily bulb newly from Japan for eight dollars,—a Yeddo grape vine also from Japan for ten dollars, a new gladiolus bulb or dahlia tuber at three or five dollars, a new species of spruce seed three dollars per ounce,—are specimens of advertisements by no means rarely to be found in the journals referred to. The large scale on which some things are raised and sold cannot fail to attract attention. Grape-cuttings are sold by the million, cranberry vines by the barrel, and a nursery of two or three hundred acres in extent is not uncommon. As for the sales of such common nursery articles as apple, pear, plum, and cherry trees, they are past enumeration.

Is the rage for these things excessive and reprehensible? We are not prepared to say that it is. Of all extravagance that can be possibly be committed, surely there is none so excusable as that which is expended on the beautiful and useful things of nature. Condemn, if you please, costly dressing, flashy jewelry, splendid equipage, expensive cookery, and lavish architecture,—but respect the eagerness to collect and plant about one's house the lovely and valuable creations of God,—the flowers and fruits that declare his glory and show forth his handy-work.

We in Canada need no checking in this direction, but rather urging. We have thousands of rural homes that haven't a beautiful thing in all their surroundings, except the landscape and the sky. Many a farm has no fruit upon it except a few strawberries on the edge of the woods, a straggling patch or two of raspberries in the fence corners, or may-hap a few huckleberry bushes in some neglected spot. Our nurserymen are very poorly encouraged. Any travelling irresponsible pedlar of fruit trees is patronized by well-known persons who have a stake in the

country and a character to maintain. And we have plenty of farmers who have yet to buy and plant their first fruit tree. Matters are improving somewhat, but we are very far behind-hand in all matters of taste and refinement. There are, we are glad to know, many attractive country homes in various parts of Canada, and some neighbourhoods are fast acquiring a reputation for the culture of fruits, flowers, and rural beauty in general. But these are exceptions. We hope they will ere long become the rule. For natural advantages, we have a land that cannot be surpassed. Let us enrich and adorn it with fruits and flowers, with shrubs and trees. Much may be done at but little cost. The taste once exercised will improve, and busying itself to multiply the delights of home, will enjoy them with an ever-increasing relish.

The Barley Question.

Our last year's crop of barley brought us about five millions of dollars. Four-fifths of it found a market in the United States. The question, whether it is safe to sow as large a breadth of this grain the present season as last, is, therefore, one of no slight importance to the farmers of Canada. We have been at some pains to collect information on this subject, and see no reason to modify the views expressed in our last issue. On the contrary, we find confirmation of those views in quarters entitled to the utmost respect and confidence. Mr. Collins, of the firm of Collins & Co., of Philadelphia, the largest dealers in this grain on the American continent, and who bought, last year, nearly 2,000,000 bushels, chiefly Canadian, have written a letter on this subject, from which we make the following extracts:—

"Though the termination of the Reciprocity Treaty will, undoubtedly, limit and diminish business between the Canadas and the United States in some of your productions, yet we will continue to use some largely, and among these your barley. Its superior quality, especially that grown in your vicinity, and in the countries bordering on the lakes, has led to its being used by many of the larger brewers to the exclusion of all other barleys. Notwithstanding the quality of that grown in the State of New York was very good last season, the Canada West barley has maintained prices ranging from 20 to 30 cents per bushel above it. The farmers of New York are substituting the two-rowed for the four-rowed grain, which is much less liked than the four-rowed. It was recently stated to me by a commission house in New York, that of 700,000 bushels of barley bought by them the past season, only 50,000 bushels were other than Canadian barley. The brewers generally throughout the Northern States are petitioning, at this time, Congress for a reduction of our tariff on barley to five cents per bushel. Should we not succeed in accomplishing this, we believe we can make use of the best Canadian barley to the extent we have done this year, and pay such prices for it as will remunerate your farmers better, probably, than any other description of grain they will produce. We have no substitute for it, unless we look abroad to Great Britain and Germany, and without it we would be greatly inconvenienced. I will be happy to learn that you accept the views I have hurriedly expressed, and advocate the sowing of barley to the usual extent. Each year the consumption of barley becomes greater in the United States, we must, therefore, to a large extent, rely on the barley grown in northern latitudes for the production of our best beers."

The following extract from the petition of the brewers to Congress, referred to above, is also confirmatory of the views we have expressed:—

The memorial of the undersigned brewers of the United States of America, respectfully represents:—

"That they are large consumers of barley, in the manufacture of malt liquors, and that by the terms of the Reciprocity Treaty between the United States and Her Britannic Majesty, proclaimed Sept. 11, 1854, and which will expire on the 17th day of March, 1866, barley was imported into the United States from Canada and the British Provinces in North America free of duty; but that on the termination of said Reciprocity Treaty, barley will, by operation of the revenue laws now in force, be subject to a duty of fifteen cents per bushel. Your memorialists further represent that the crop of barley annually harvested in the United States, by reason of the large increase in the manufacture of malt liquors, is wholly inade-

quate to furnish a supply for them and others who make use of it in various ways; and that as a peculiar soil and climate are necessary for the growth of barley, not more than about one-third of the amount required by them can be raised in the United States. That the barley grown in Canada, owing to the perfect adaptation of the soil and climate to its production, is superior in quality to any raised in the United States; and the best malt liquors are made from the imported article, and it is used extensively in more than two-thirds of all the States in the Union. For some years past they have obtained more than one-half of their supply of barley from Canada free of duty, while all that has been raised in the United States has been sold by the farmers at remunerative prices. That they are therefore, and must continue to be, dependent upon the crop raised in Canada to carry on their business."

The memorialists proceeded to express the fear that the tariff now in force will retard the cultivation of barley in Canada, and they state that should the quantity usually grown in this country fall off one-half, it will cripple the manufacture of malt liquors to so great an extent as to involve a loss to the United States Treasury, annually, of about \$2,000,000. On these grounds, they pray Congress to adjust the duty on barley imported from Canada and the British Provinces of North America, "so that it may not exceed the sum of five cents per bushel."

It would seem, therefore, that there can be no great risk incurred in sowing our usual breadth of barley the present year. According to Mr. Collins, Canadian barley brought last season from 20 to 30 cents per bushel more than that grown in New York. We have no cause to fear competition from any other State in the Union. Even if the quality of Wisconsin and Iowa barley were equal to our own, which it is not, their distance from the market renders their rivalry harmless. It will be well for our farmers to bear in mind that it is the four-rowed barley which is preferred by American buyers. So long as the Canada-grown grain maintains its excellence, there is little doubt of its commanding ready and remunerative sale, tariff or no tariff.

Even supposing the United States demand to fail utterly, there are various modes in which we ourselves can consume our crops. It is first-rate horse feed. Barley-meal is fine for fattening cattle. As intimated in a previous article, there is an opening for a large trade with Britain in barley, after it has undergone the malting process. There is no better grain for fattening hogs than barley. Apropos of this use for it, we have a letter from Mr. W. Davis, of the Toronto Packing House, which we subjoin:—

"I have read with interest the pros and cons of yourself and correspondents on the barley question. You recommend the farmers to sow liberally of this grain, while your correspondents fear it will be unprofitable to the husbandman to do so."

"Now, sir, should the Americans not want so much barley as last year, and in consequence it should depreciate in price, why should not our farmers do as their brethren do in England, viz. grind and feed it to pigs? Believe me, it is as good, if not better than any other food. Perhaps some may think it too good for swine; but I think that at the average price of pork this last season, it might be fed to them with profit. Barley and peas ground together, is allowed by all conversant with the business to be the best food that can be given to hogs, especially if it be mixed up with skim milk or whey."

"Dressed hogs are worth to-day \$8 50, and I doubt not that the three or four largest firms in the trade would cheerfully buy from 5,000 to 10,000 if they could be had within four or five weeks. Our farmers need not be afraid to breed and feed hogs of the right sort. The trouble with us in the trade is, we cannot get enough to keep our business running steady."

"Canadian pork is beginning to be appreciated in England, and if our farmers would pay more attention to Breed and Feed, it would command not only a preference, but a higher price."

Canada Thistles.

We have received a communication on this subject from "L. J. P.," of Bentinck. Touching the action of our Government in this matter in the Bill passed at the last session of Parliament entitled—"An Act

TO PREVENT THE SPREADING OF CANADA THISTLES"—which we publish elsewhere, the writer says: "The said Act will do some good in preventing Canada Thistles going to seed wherever it is enforced, yet I am convinced that the said Act will, in many places, be unheeded, particularly in new districts. The result will be that many who use every endeavour to keep the pests down, will suffer from the negligence of others." The writer then goes on to "make a suggestion which in his 'humble opinion would not only stay the spreading, but would ultimately altogether exterminate the Canada Thistle from this Province.' Our editorial heart swelled as we anticipated the valuable agricultural intelligence which awaited our perusal. "Eureka!" we were tempted to exclaim; but we restrained our emotions, and read on. We found the "suggestion" to be as follows:—"Suppose that our Hon. Minister of Agriculture were to offer a reward or premium of say One Thousand Dollars for a Recipe for destroying the Canada Thistle," &c., &c. A "recipe" for destroying Canada Thistles would probably be about as valuable as that highly practical "old country" suggestion to juveniles eager to possess a hare—"put a little salt on her tail." Does our correspondent expect that the reward would evolve some noxious distilment wherewith to deliberately poison every single thistle, or would he expect to treat them wholesale? We wot not. Thistles can only be eradicated—like all other vegetable pests—by deep tillage, thorough culture, and unwearied perseverance in preventing them from running to seed. To our view the recent action of our Legislature very fairly meets the requirements of the case; and we trust that the proper authorities will see the Act strictly and impartially enforced.

Oshawa Small Implement Factory.

In addition to the mammoth establishment of the late Joseph Hall, at which threshers, reapers, mowers, clover hullers, and other large agricultural implements are manufactured, the little town of Oshawa counts among its institutions a factory at which scythes, forks, hoes, and others of the smaller tools required by farmers are produced. This factory is carried on by Messrs. A. S. Whiting and Co., a firm which has now attained a world-wide celebrity for the excellence of the articles made by it. Their long list of First Prizes at our Provincial Shows, extending over nine successive years, and gained in competition with the best United States as well as Canadian manufactures; their First Prizes at the World's Fair in England in 1862, and in Ireland last year, proclaim, as far as exhibition testimony can do so, that the articles turned out by this firm are of unrivalled merit. These implements are not only obtaining a large and increasing sale throughout Canada, but in spite of a hostile tariff of duty, are working their way among our neighbours in the United States, than whom there are no better judges of farming tools on the face of the earth. In short, the establishment in question is one of which we may justly be proud, and well deserves to have its fame still more widely diffused. Having visited the works, and both inspected and tested the tools of Messrs. Whiting & Co., we only speak our honest convictions when we bestow upon them the highest praise.

A brief account of the origin and progress of this concern, will doubtless interest our readers. Many years ago, Mr. A. S. Whiting, the principal of the firm, then a young man, was engaged as travelling agent in this Province for a manufacturer of farming tools in the Eastern States. After a time, he conceived the idea of manufacturing some of these articles in Canada, and fixing upon Oshawa as a suitable place for commencing operations, set to work by organizing the "Oshawa Manufacturing Company," a joint stock association, of which he was the principal member. Buildings were erected, machinery set up, hands employed, and for several

Agricultural Intelligence.

The Proper Objects of Agricultural Societies.

An address on this subject was recently delivered before the Central Michigan Agricultural Society, by Sanford Howard, Esq., the able Secretary of the State Board of Agriculture. It is scarcely necessary to remark that the lecture was thoroughly practical, and to the point. We gladly make space for a few extracts. Speaking of the "trial of speed" feature of agricultural exhibitions in the United States, the lecturer is reported to have said:—"It seems to me that horses, or a particular class of horses, have, in many cases, occupied more than their legitimate share of attention. It is well known that some so-called agricultural associations have, under the name of "trials of speed," made racing and trotting-matches the principal feature of their exhibitions. It is not unusual that the largest premiums offered by a society are those for the fastest trotting, or in some cases for what is more properly called racing. A great display is made of this in the bills, and it seems to be relied on as the strongest inducement that can be presented to the public to attend the show. The arrangement of the grounds, and the most expensive fixtures for the accommodation of the people, have special reference to these so-called trials of speed. So much space is frequently given up to this, that other departments of the exhibition are incommoded for want of room. The excitement incident to these displays is naturally attractive to those people who attend the exhibition merely for amusement, especially the young of both sexes, and the crowd which lingers round the stand shows that the benefit which might be derived from close examination of other parts of the exhibition is chiefly lost. But is any real improvement effected, or even contemplated, by these premiums on trials of speed? It has already been remarked that premiums are offered for the fastest trotting at short distances. It might be added that only very light weights are drawn; so that the contest is reduced to a mere test of speed, wholly irrespective of other properties. It follows, of course, that the horse is in many cases of little value for any purpose of usefulness—that in some instances he would not bring in the regular market, as much money as is awarded to him in a single premium. It is true that this is not always the result of these trials. Horses that are valuable for something besides speed at short distances and light weights, do sometimes win; but when they do, they stand no higher in the scale of honours than the mean scrubs which have done the same thing; and it must be evident that the offering of premiums for mere speed, if it has any influence at all, tends to the production of horses in which the more useful properties are found only in an inferior degree. But the worst aspect of the case has not been noticed. Disguise it as you will by any soft name, these contests are in principle nothing more than those instituted by gambling associations, where horses compete for purses, in sporting phrase. Indeed, as the public mind becomes accustomed to the spectacle, it approximates nearer and nearer to the gambler's scheme, until even now, we see, at the exhibitions of some of our leading agricultural societies, the most open betting on these "trials of speed."

The lecturer then proceeded to discuss the best course for agricultural societies to pursue in order to improve the farm horse and the roadster respectively. To the objection that "people will not attend purely utilitarian exhibitions" Mr. Howard replies:—"Admitting this to be true, does it justify societies in pandering to a depraved taste, or adding in the corruption of the public morals? Is it not rather the duty of societies to direct public sentiment,—to educate the people up to correct standards,—to lead them in the way they should go?"

To show that the objection is groundless, the example of Great Britain is quoted. "In that country," said the lecturer, "agricultural exhibitions have been held for a longer period than they have here, and where they are of late years very numerous, every-

thing the manufacture of threshing machines, forks and hoes, was carried on with a degree of success. This career of promise was, however, arrested by a time of commercial straits, during which dissatisfaction sprung up among the stock holders, which terminated in a resolution to wind up the affairs of the company. This was done, and the premises were sold to Joseph Hall, then of Rochester since deceased. In these premises now greatly enlarged and improved, a very extensive business employing from 150 to 200 men, is being efficiently carried on by Mr. F. W. Glen, on behalf of Mr. Hall's heirs and assigns.

Nothing daunted by the failure of the joint stock plan, the originator of the enterprise, Mr. A. S. Whiting, associated himself with Mr. E. C. Tuttle of "all-over America" notoriety as a hoe-maker, and made arrangements to begin business on a new footing. A piece of land having a water privilege, and located about two miles distant from the old premises, was purchased, and the necessary buildings and machinery were put up. The spot chosen was a rough, lonely-looking cedar swamp, but a wonderful change in its appearance has been effected. A range of substantial workshops, and a number of neat dwellings, the homes of the principal and workmen, constitute a pretty miniature village, replete with indications of thrifty industry and busy life. Entering the workshops, a scene of noisy activity greets both eye and ear. About a hundred first-class artisans are employed in the various processes by which rough iron bars are transformed into sharp blades and points of polished metal. The steady, heavy rumbling of a powerful driving wheel,—the fizzing flames and sparks from a score of furnaces,—the incessant, clanking din of as many trip hammers,—the hoarse roar of the ponderous grinding apparatus,—the fire-spitting buzz of the gauges of polishing wheels,—and the sharp ringing of hedges upon the anvils,—form a not very musical chorus, but still give you a lively idea of the din and whirl of busy industry. Among the implements manufactured by Messrs. Whiting & Co., we may mention hoes of various sizes, among them an excellent style of turnip hoe, forks of different kinds, among them a four-tined digging fork, the very thing for loosening the soil about fruit-trees, digging potatoes, and turning up garden soil;—a four-tined manure fork, very light and yet strong;—also three-tined straw and hay forks, and an excellent barley-fork with three wooden prongs like short cradle fingers, a capital tool, we are told, for harvesting barley; garden rakes of large and small size, among them a very nice hoe-rake, just the thing for weeding vegetable beds; last, but not least, there are scythes and scythe-snaths, of which there were sold last season upwards of four thousand dozen.

The success of this establishment is due to the indomitable energy and perseverance of Mr. A. S. Whiting, and had we more men of his stamp, the country would be richer and better for it. One secret of the success of this concern has been the determination to manufacture only first-class articles. It is the wear and tear of use that settles the reputation of the implements made at a particular factory. A tool may look well, and be convenient to handle, but if it be not of really good material and workmanship, it will not endure the strain to which it must be put. Poor tools may be cheaply made, and obtain a short run of patronage, but in the end, quality will tell. We have no hesitation in saying that tools with the brand of Messrs. Whiting & Co. upon them will be found to bear the brunt of service. They can be had of all our hardware merchants and implement dealers. We sincerely wish this enterprising firm all the encouragement and success they so well merit. At a period in our history as a county when we need above all things to develop manufactures, it is very satisfactory to be able to point to such an establishment as an example of what energetic and patient labour will accomplish. There is many a wild valley in Canada, with an idle stream flowing through it, where factories ought to be started, and the hum of busy industry set going. We do not yet supply all our own wants. When this is done, the world's market is all before us, and with timber unsurpassed in excellence, the best of iron at hand, and mechanics as skillful as can be found anywhere, why should we not become a manufacturing as well as an agricultural people?

thing that has not a direct bearing on the improvement of agriculture, is rigidly excluded. Yet the people attend in as great numbers in proportion to the population, as they do in this country. I am sorry to be obliged to say, that the visitors to those shows generally study them more closely than our shows are studied by our people. The women of England are admirers of the horse, but they do not give their countenance exclusively to that class in which speed is the chief characteristic."

The following complimentary reference was made to Canadians and Canadian agricultural exhibitions:—"Our Canadian neighbours, who are earnestly devoted to the improvement of agriculture, make exhibitions of a highly credible character, and which are numerous attended by the people. They have no trials of speed, and allow no private shows to occupy their grounds. Their exhibitions are as well attended as ours. At the last Provincial show of Canada West, held at London, upwards of a hundred teams engaged in a ploughing match. Land suitable for so extensive a competition could not be found nearer than six miles distant from the show-grounds; and yet the contest was witnessed by 10,000 people or more. Unusually large premiums were, to be sure, offered on this occasion—the highest being nearly a hundred dollars. But in reference to practical or useful results, who will say that it was not better to use money in this way than to pay it out for so-called trials of speed?"

Mouries' Process of Preparing Wheat Flour.

We extract from the *Edinburgh Courant* the following report of a paper read before the Royal Society, on this interesting topic, by Professor Wilson, the eminent occupier of the Chair of Agriculture, in the University of "Modern Athens."

The Professor said: "Some twelve years ago M. Mége Mouries had had his attention directed to the composition of the grain of wheat, and to the processes of grinding and panification. The object of that gentleman's investigations was to show the defective knowledge and waste of material in the ordinary practices of the trade; but although these were fully proved by the results, there appeared to have been trade and other difficulties in the way of its general adoption. Having last year acted as juror on "Food Substances" at the Dublin Exhibition, he (Professor Wilson) had had his attention recalled to the subject by an article which was submitted to their notice under the name of "Cerealina," purporting to be a preparation of wheat flour by the process indicated by M. Mége Mouries, and which on examination confirmed the opinions which had been previously formed of its food value. On further inquiry, it was found that a simple mechanical process had been devised in the United States, where the flour had been prepared, for effecting the most difficult part of M. Mége Mouries' process—that of decorticating the grain. This rendered the operation of preparation so easy and so inexpensive as to make it desirable that attention should again be called to the process. In examining the composition of the grain of wheat, M. Mége Mouries found that it was a far more complicated structure than was commonly supposed—that it consisted of (1) an outer covering or epidermis, (2) epicarp, (3) endocarp, and that these three layers consisted chiefly of ligneous tissue, and formed the exterior covering of the grain or true bran, and had no food value. Together they averaged from two to three per cent. of the weight of the wheat. Beneath these came (4) the testa or seed-coat proper, which was a distinct cellular tissue of a dark colour—yellow or orange, according to the description of the grain; and (5) the embryo membrane, directly connected with the germ, which, indeed, it supplied as soon as the vital principles of growth were excited. These two coats or layers contained nitrogenous matters in large proportion, and enveloped the mass of starch cells which formed the body of the grain. Ordinary flour was composed entirely of these interior starch cells—the remaining portions of the grain being separated in the shape of bran, and carrying away with them at the same time a proportion, generally five or six per cent. of the flour also. M. Mége Mouries found that the gluten contained in the grain was very unequally divided; that while in the epidermis or the true bran it was least, it existed in larger portions in the two next layers than it did in the starch cells or flour of the interior. He therefore recommended that the grain should be merely decorticated previous to grinding, and that the layers of cells so rich in gluten as the testa and embryo membrane should be ground up with the starch cells and form part of the flour used for bread or other food purposes. From an analysis which had been made by Dr. Lyon Playfair, he (Professor Wilson) found that by this process the true

bran contained only 4.571 per cent. of gluten instead of 15.019 by the ordinary process. The flour made by M. Mège Mourié's process contained 15.672 per cent. of gluten, as compared with 9.795 in the ordinary flour. By merely taking off the outer covering of the grain, which is perfectly valueless as an article of food, instead of following the ordinary process, which takes off at least 11 per cent. of bran, fully ten per cent. was added to the food portion of wheat, while the nutritive value of flour was increased by about 60 per cent. This upon the wheat consumption of the kingdom—say 20,000,000 of quarters—was a matter of considerable importance. Another important advantage was secured by M. Mège Mourié's process in regard to the storage and preservation of wheat. It appears that the outer covering—the epidermis—absorbs moisture far more readily than the regular cellular tissue of the inner layers, and thus renders the grain more or less liable to mould and other injuries by keeping, unless great care be taken by occasionally shifting, &c. By the process of decortication this is entirely removed, and a hard smooth surface given to the grain, from which every particle of deteriorating matter, in the shape of dirt, smut, &c., has been removed, diminishing its bulk, and leaving it ready for the miller whenever it may be required. The following is the method adopted for the preparation of the grain by M. Mège Mourié's process:—

"Wheat is carried up to the topmost floor, then passing through a screen or riddle, it falls through a

spout into a second cylinder, where it undergoes the same process; and, finally, is carried into the drying chambers, composed of a series of iron troughs, along which the grain is propelled by screw shafts, a current of dry warm air being driven along them in an opposite direction. It then, quite dry, receives its last friction in the polishing cylinders, where the friction is limited to that of the grains themselves, and leaves it in a dry, smooth, rounded form. As this generates a considerable elevation of temperature, it requires to undergo a cooling process before sorting or using. This is effected by carrying it up to the upper floor, and allowing it to fall down inclined planes through a flat shoot, up which the blast of cold air is driven."

Cirencester Agricultural College.

The accompanying illustration represents what may be aptly termed the English "School of Ceres." It is situated near the River Churn or Quern, whence comes the other name of Cirencester, or Cirencester in the county of Gloucester, and within the precincts of the broad vale of King Alfred's White Horse. "The Royal Agricultural College," it is almost needless to say, is a fine Elizabethan building, possessing its Gothic Chapel and its eighty feet tower. The

ing the mouths of living animals. The laboratory is also an interesting sight, and is one of the best arranged and best furnished branches of the establishment. The names of Way, Voelcker, and Church have lent a lustre to its Chemical department, and it is now the birthplace of a recently discovered mineral, a compound of cerium, named after its discoverer Churchite. The botanic garden is another great feature in the advantages and facilities presented for scientific study at Cirencester. The methods of instruction are admirably described by a correspondent of *The Farmer* (Scottish). He writes:—"I made out that nothing fanciful or pedagogic, nothing of mere book-learning separated from practical application, is permitted in the teaching of this College. Your chemical lectures you reduce to practice in the laboratory; every student going steadily through analyses of soils, manures, and feeding materials, and obtaining experimental acquaintance with all that chemistry has done for farming. Your botanical lectures you make practical to yourself in the garden, the park, and the farm fields. Your course of geology you apply in long geological excursions, observing dips, strikes, and anticlinal axes, faults and cleavages, dykes and curvatures, and rummaging every quarry, gravel-pit, and railway-cutting for fossils. Your veterinary lectures you make available in the College Veterinary Hospital, which, with its boxes, dissecting rooms, and pharmacy, stands about a quarter of a mile from the College. Your mensuration and surveying class fits you for actual field-work with



ROYAL AGRICULTURAL COLLEGE, CIRENCESTER, ENGLAND.

hopper into a long narrow trough which contains water, and is traversed through its length by an Archimedean screw. This carries the wheat slowly along the trough to the discharge end, where it now in a moistened state falls down a tube to the unbranning or decorticating cylinders. These are formed of cylinders of cast-iron, ridged on their interior diameters and with closed ends. A screw shaft traverses the centre of them, carrying broad arms or floats set at an angle diagonal or 'aslant' to the face of the cylinder and with a diameter so much less than that as to cause friction, but to allow the grain to pass without crushing. A rapid rotation is given to this central shaft, and, owing to the angle at which the floats are set, a slight progressive motion is given to the grain. The friction causes a large proportion of the true bran—epidermis, epicarp, &c. to be separated, and this is removed as it is separated by a blast driven through the cylinder in a direction contrary to the motion of the shaft, which also has the effect of drying the excess of moisture of the grain. It then passes along a

dormitories are neat and airy, and the private apartments, long rows of studies, libraries, reading rooms, large dining hall, are constructed on the most approved principles and heated by hot water pipes. The business of the institution is conducted on sound collegiate principles. Breakfast at the regular hour, after the short prayers in the chapel, dinner, with precision to a minute; tea at six o'clock; and then your final meal before bed-time. The museum is well furnished with everything requisite in the way of geological, chemical, botanical, and veterinary specimens and models. Indeed, some of the best sources of information are displayed here, such, for instance, as the abundant samples of grains and seeds of all sorts, from a mixture of which the students can pick out all the several grasses, weeds, &c., in a manner surprising to the uninitiated. This power of discrimination is invaluable to the farmer in the seed markets. Again, the casts of the mouths of animals, exhibiting their dentition at different ages, form a fine preparatory study before investigat-

chain and theodolite, for timber-measuring, and so on, around the neighbourhood. Then, while strict science is drilling and disciplining your mind, a large share of your time is engaged in the more strictly professional part of your studies. Drawing and account-keeping are, of course, items of great importance; keeping note-books of farm operations is another, and daily there is the practical "farm-class" instructed by the Agricultural Professor in some manipulation of tillage, some field or farmstead process, some detail in the management or commercial valuation of live stock. For the College has not only retained a few fields under its own control, for experimental purposes, but has the privilege of walking over and inspecting every inch of the 500 acres of what was (till lately) "the College Farm." Everything that goes on is open to the observation of the students, and everything receives its practical explanation on the spot."

Such an institution cannot fail of dispensing innumerable advantages to a community.

The Household.

Homedale Farm.

THE MARCH OF IMPROVEMENT

Work went on apace at Homedale. Mr. Perley pushed his rural affairs with the same energy he had been accustomed to throw into his city business. He was no sluggard, or idler, and he refused to have people of that character about him. With that intrinsic sagacity which characterizes a true man of business, he soon took the measure of a labourer or mechanic, and was careful to employ only such as were industrious and efficient. Improvements of various kinds were set on foot, and vigorously carried forward, in consequence of which Homedale usually so quiet, was for a time a scene of no small bustle and stir. Very soon after the removal, the enlargement and adornment of the dwelling came under discussion. After sundry consultations it was wisely resolved that the best method of procedure would be to call in the advice of a competent architect. Mrs. Perley, in her girlish days, had been fond of the pencil, and had attained some proficiency in the art of drawing. Her subsequent duties and cares had not taken away the taste and skill of which she had been mistress in her younger years, though her opportunities for practice had been but few and small. She felt, therefore, quite competent to sketch Homedale as they found it, and this drawing accompanied by a statement of the alterations wanted, would, it was thought, enable an architect to supply them with such a plan they desired. The question whom to employ, was at once met by a suggestion of Mr. Perley's practical mind. "We are farmers now, and what we want is a building in keeping with the rules of rural architecture. Some very nice plans of country homes have appeared in the CANADA FARMER, and we cannot do better than send our sketch, and an account of what we want, to Mr. Smith of Toronto, who I see by referring to the first number, has charge of the architectural department of that paper." Mrs. Perley at once fell in with the suggestion, and remarked, "I quite fell in love with the pretty log-house that appeared in the second number of the FARMER, and that was a very tasteful suburban villa which appeared in the last issue. I have no doubt Mr. Smith will send us a good plan for our improvements if we apply to him." Accordingly the sketch of Homedale, accompanied by a letter setting forth the alterations desired, was forwarded to Mr. Smith, and in the course of a few days, an answer was received, accompanied by a plan, which at once won the approval of all the Perleys, both old and young. It was, indeed, an astonishing transformation that was proposed. A wing almost equivalent to another house was added on the west side at right angles with the old building, and as the roof of the old house was pretty steep, an ornamented gothic gable was put to the wing, and a pediment made to rise out of the old roof. Ornamental tracery ran round the cornice. The square porch was taken away, and a nice verandah put in its place, which extended along the east side of the house, as well as the front. A little simple ornamentation was given to the windows and chimneys, the whole forming a very pretty and even elegant structure. The building already up was by no means an old one, though it was natural to call it "old," in distinction from the new part intended to be added to it. It had not been built many years, and though perfectly plain and devoid of all ornament, it was a substantial house, and rested on a solid stone foundation. It was better, therefore, to enlarge and improve it, than go to the expense of putting up an entirely new building. With as little delay as possible, the contract was let according to specifications furnished by Mr. Smith, and simultaneously with farm and garden operations, masons, carpenters, plasterers and painters, were kept busy.

Some weeks elapsed before Homedale farm-house received its finishing touches. Meantime other matters demanded and obtained attention. Walks and flower beds were cut in the greensward between the house and the road. Though not stocked with the right grasses for the smoothest kind of lawn, it was better to take the turf already formed, than to tear all up to form a proper velvety lawn. The paths were gravelled, and the flower-beds planted and sown. Evergreens, ornamental trees, shrubs, and bedding-out plants were set out. A neat fence was built in front of the dwelling, in place of the unsightly old snake-fence of decayed and worm-eaten rails, that had been such a disfigurement to the premises. The dilapidated and rickety log-house was taken down with some reluctance, Mr. Perley feeling a natural attachment toward it as his birthplace. It was, however, becoming unsafe in consequence of the rotting away of the logs next the ground. Prudence, therefore, dictated its removal. Not far from the site on which it stood, a neat carriage-house was built. Clumps and rows of evergreens were planted to cut off the kitchen yard and back premises from view, and to furnish protection from the keen nor-westerly winds which Mr. Perley well remembered were wont to sweep across those exposed plains. Nor must we forget movements about and within the kitchen garden. Not only was it well and deeply ploughed, but top-dressings of leaf mould from the woods, clay from the neighbourhood of the creek, and well rotted manure, of which there was considerable about the barn and outbuildings, were teamed upon it. A tight board fence, six feet high, was put round it. The little folks found plenty, not of amusement merely, but of real hard work in the front and back gardens. At first their young muscles, unused to labour, ached sadly, and they were weary enough when bed-time came. But children have a natural fondness for country life and rural pursuits. Under judicious management and wise instruction such as the little Perleys were blessed with, their natural liking for out-door occupations becomes an intelligent preference, and a rational enjoyment. Our young friends grew deeply interested in sowing and planting, raking and hoeing. The growth of every plant, tree and seed,—the budding and blooming of every flower and fruit blossom,—were closely watched and duly trumpeted as important news. Their time was divided between play and work out of doors and study, together with other duties, indoors. Homedale gave them plenty of scope for exercise and amusement in the open air, without the danger of evil company, such as besets the young in the streets of the cities. They were not prisoners as they used to be, to a great extent, in their city home, most thoroughly did they enjoy their freedom.

"Like sportive deer they cours'd about, and shouted as they ran,
"Tuffing to earth all things of earth as only childhood can."

To give an idea of boy and girl life at Homedale, we must narrate some of the pursuits and pastimes which occupied them while the improvements that have been spoken of were in progress. Some snatches of their history from spring to midsummer, will prepare the way for the appearance, in the proper order of time, of our promised engraving of "Homedale as improved by the Perleys."

(To be continued.)

SMOKING HIM.—"You look," said an Irishman to a pale, haggard smoker, "as if you had got out of your grave to light your cigar, and couldn't find your way back again."

NOR SO STUPID.—John was thought to be very stupid. He was sent to a mill one day, and the miller said "John, some people say you are a fool! Now tell me what you know and what you don't know." "Well," replied John, "I know millers' hogs are fat!" "Yes, that's well, John. Now, what don't you know?" "I don't know whose corn fats 'em!"

HOW TALL.—Dean Swift, "It with little-sooled people as it is with narrow necked bottles—the less they have in them the more noise they make in pouring it out."



Shelter for Gardens and Orchards.

In exposed situations, it is very necessary to provide, by artificial means, for the protection of gardens and orchards from the action of strong and cold winds. Our climate is such that we are liable all through the growing season, to be visited by turns of weather, endurable enough in sheltered places, even by the tenderest plants of out-door growth, but almost sure to exert an injurious influence, if chilling blasts have unrestrained sweep. In winter too, shelter is very important. Experience has proved that plants, fruit buds, and young wood, will bear a much lower temperature if the air be still, than they will if it be in motion. Just as the human frame suffers from piercing winds far more even than from severe frost, so vegetable fibre will resist much intenser cold in calm weather, than it will if exposed to fierce wind. It is commonly believed by the best gardeners and orchardists on this continent, that the wintry blasts have much more to do in killing out tender plants, trees and fruit buds, than steady frost and intense cold.

The importance of shelter should be kept in mind in planing out farms, deciding on sites for buildings, and laying out gardens and orchards. It is never desirable to build a house or barn in a low, flat place, but there are often locations sufficiently high, part of the way up a slope, or so surrounded and protected by rising ground, as to be considerably shielded from the wind. In clearing up new land, provision may be made by leaving timber belts to encompass the area on which it is proposed to put the house, barn, orchard, and garden. We believe that in many, if not most cases, it would be wise policy to have the farmer's wood-lot near the dwelling, instead of its being as it usually is at the farthest remove from it. The falling timber would nearly, if not quite, suffice for the supply of firewood for some time, and as openings were thus made in the reserved piece of forest, the undergrowth of young saplings would come on, spreading out their branches on every side, and making beautiful specimens of ornamental trees, which in their turn would be thinned out by the axe for purposes of fuel. Taste and economy would thus go hand in hand.

But generally speaking, a clean sweep is made of the natural timber when land is cleared, and living shelter can only be had by artificial planting and long waiting. Partial protection, very useful and helpful so far as it goes, may be obtained by board fences and screens, which though unsightly, can be erected quickly, and are at once available. For small gardens, these have the advantage of not taking up a large amount of room. But where land can be spared, living shelter should be had by all means, and for this nothing is comparable to a thick growth of evergreens. Retaining their foliage all the year round, these furnish a most valuable screen in winter when the fiercest and coldest blasts are abroad.—Their slow growth is an objection to them, and for this there are no remedies but careful planting, good attention, and patient waiting. After all they come on steadily, and in a few years astonish you by the dimensions they have attained. A farmer of our acquaintance was prudent enough to plant out a belt of native balsams on the north side of his house and garden, shortly after he settled upon his land, and now, in the course of some fifteen years, they have grown to magnificent proportions, and tower far above the buildings, affording ample shelter, and

presenting a most beautiful appearance. The objection to them now is that they are too high, and cannot be shortened without spoiling their looks. That noble evergreen the Norway Spruce, grows more rapidly than the balsam, and a belt of it will form in less than ten years a dense barrier against the wind, full twenty feet high. Tastefully planted groups or belts of evergreens have a most lively and pleasant appearance in the winter time, when other trees are despoiled of their foliage. If a living screen is desired as quickly as possible, a single line of evergreens may be planted, the trees being placed within three or four feet of each other; but if immediate shelter is not so necessary, they may be planted farther apart, say eight or ten feet, and even at that distance, they will ultimately, nay speedily, form a close and continuous belt. Where land is no object, and a strip several rods wide can be spared, it is better to plant somewhat loosely and irregularly, so as to give the screen a grove-like appearance. Where land is precious, a belt of evergreens may be made to occupy a comparatively small amount of space as to width, by pruning the trees flat-wise, and so confining them within a narrow compass. This, of course, mars their beauty somewhat, and gives them a utilitarian, hedge-like look, but it affords the desired shelter, while it economizes ground.

Evergreen trees may be removed directly from their natural places of growth, and with great care, made to live, but there will always be a percentage of loss. They incline to grow in moist and sheltered spots, and miss the advantages to which they are accustomed when moved to a dry and exposed situation. In some cases young trees can be got upon the edge of swamps that have sprung up in comparatively dry places, and there bear removal better. But it will pay, generally speaking, to go to the nursery-man. Trees raised from seed in open grounds, or transplanted when very small from the woods, may be safely moved. Evergreens are offered very cheaply by nursery-men, and for the comparatively small number usually required, no great outlay will be occasioned.

Fruits Suitable for Cultivation in Upper Canada.

To the Editor of THE CANADA FARMER.

SIR,—In your issue of February 15th, you give a list of fruits recommended for growth by the "U. C. Fruit Growers' Association." Owing to the "Electoral Division Society" having an Exhibition on the same day that the Association met for the purpose of completing the list in question, several parties residing in Toronto, who otherwise would have been present, were prevented thereby from attending. This we suppose accounts for the partial nature of the list given; speaking rather of varieties grown south of Toronto, than in this and more northerly portions of the Province. We submit the following alterations and additions, and beg your insertion of the same. Our experience relates more especially to the neighbourhood of Toronto. Duchess of Oldenburg and Alexander apple, added to the list of "very hardy" kinds; each of them succeeding well where either the Snow or St. Lawrence will. Yellow Bellefleur, Canada Reinette, and Holland Pippin in addition to the list for "general cultivation," both being well known profitable sorts. Fall Jennetting, Porter, Swezie Pommé Grise, and Swaar should also be added to the list with Yellow Bellefleur, (marked by the Association for trial.) They have been thoroughly tested in this neighbourhood, and found to succeed well.

Among the list of pears for trial, are many which we should place for general cultivation, and many varieties not mentioned at all, which have been tested here. We recommend the subjoined list for general cultivation, in addition to those given by the Association, and we could add a great many more

for trial, but refrain from fear of trespassing too much on your space.

Swan's Orange, Ott's Seedling, Vicar of Winkfield, Howell, Doyoune Boussock, Napoleon, Stephen's Genesee, Easter Beune, Doyoune Sienl, Glout Morecean, Jaminette, Doyoune d'Alencon, Duchesse d'Angouleme, Beuno Clairgeau, Osband's Summer, Bourre Giffard, Grey Doyeune, Beurro Diel, Rostieger, Doyeune d'Ete, Buffam, Winter Nellis, Lawrence, Beurro d'Anjon, Sheldon. The last named 13 varieties are on the list for trial by the Association, but have all been sufficiently tested here to warrant us in speaking confidently of their merits.

We would recommend that the following varieties of plums, marked by the Association for trial, namely, Jefferson, Pond's Seedling, and Columbia, be thrown into the list for general cultivation, as they answer here equally as well as any of the varieties therein mentioned.

Every one of the list of cherries marked for general cultivation south of Lake Ontario, and the Great Western Railway, do well about Toronto; their names are Black Tartarian, Elkhorn, Black Eagle, Elton, Napoleon Biggaræa, Early Purple, Yellow Spanish, and Governor Wood. All of the Dukes and Morell's are perfectly hardy, and will do well wherever cherries will grow, whereas the Association only gives 2 varieties for general cultivation.

We think it would have been better for the "Fruit Growers' Association," when speaking of gooseberries to have given the list mentioned, and have said that the English varieties do well on properly managed clay soils, rather than to have recommended the "Houghton's Seedling" for general cultivation, which is, comparatively speaking, a worthless variety.

Among currants we should recommend that Black English, Red Dutch, White Dutch, and Red Russian, be struck out of the list, having been entirely superseded by other varieties, and that the following well-known good kinds should be added: Red Grape, short bunched Red, and La Versailles.

Red Antwerp we find is omitted in the list of raspberries, while we consider it worthy of a place with any of those mentioned, we would also say that the Red Marvel, of the four seasons, does as well here as either Franconia or Belle de Fontenay. Red Marvel is not mentioned by the Association at all.

MoAvoys Superior and La Constante strawberries, mentioned for trial by the Association, we have seen growing here, and bearing abundant crops, and we should recommend that they be added to the list for general cultivation. La Constante is especially noteworthy, as being a very late variety.

With regard to grapes, we think Adirondac, Tokalon, Iona, Israella, and Creveling might be added to the list on trial, while Diana and Rebecca should be taken out, both being old and well known varieties.

The Association give no lists of either Siberian Crabs or Peaches. Peaches, though not succeeding in many parts of the Province, are grown in the Niagara District, in a great many places bordering on Lake Erie, south of the Great Western Railway, and also in the neighbourhood of Goderich; while without Siberian Crabs, many cold parts of the Province would be almost without anything in the apple way. We would mention the Transcendant as the finest and best crab grown in this neighbourhood.

For the Toronto Gardeners' Improvement Society,
ALEX'R. PONTEY, President.

March 26th, 1871.

Farmers' Gardens.

Now that the season of making gardens is drawing nigh, we will offer some suggestions on the subject. Our text is that farmers do not generally have good gardens. That class of people which ought to have the best—the legitimate tillers of the earth—often lack the luxuries which a well cultivated garden will supply to the table each day in the year. We believe they generally intend to enjoy these products, but there is no allowance made for the garden work in the ordinary plan of yearly labours, and the result is the fruit and vegetables are neglected. We advise every farmer to expend at least fifty dollars in labour on his garden devoted to fruits and vegetables for family use. The "value received" for this investment will be amply returned in a variety of ways which will be readily suggested to the imagination of the lover of good things "all the year round."

In a garden one should cultivate a variety, so as to have a seasonable supply for the table at all times. Of spring growth, asparagus, lettuce, and radishes are among the earliest and best. If the lettuce is grown

in a hot-bed, and the asparagus well managed, these vegetables may be placed on the table very early in the season. Part of the asparagus bed might be covered with a cold frame, which would bring it forward earlier and so lengthen the season. When the spring vegetables are gone the more delicious ones of summer growth supply their place. Early potatoes, beans, corn, onions, peas, beets, tomatoes, cucumbers, and cabbages diversify the farmer's living. At this season also the small fruits in ample abundance should be daily on his table. Strawberries, raspberries, and blackberries succeed one another in order, and continue the supply until the fall fruits mature. There need be no failure in growing these fruits. Nor should the garden be without a bed of celery for winter use, and the various vegetables which remain in the ground to be used when the winter frosts first leave it, should be amply cultivated.

We believe every farmer would make money by having such a garden though it cost him twice the amount we have indicated. It would forego the use of costlier food, and it would be beneficial to the general health of the family. During the summer—and even the whole year—it would supply the main bulk of the food. We can likewise add that gardening is pleasant employment, and all the members of the family would become interested in it. Let the boys raise their berries and grapes, and aid the ladies in having what they invariably take delight in, namely, a well stocked flower bed.—*Rural New Yorker.*

EVERLASTING FLOWERS.—This class of flowers are becoming every season more popular. For winter bouquets and floral ornaments, and for decorating during the holidays, and other festive occasions in the winter nothing can equal them. They are easily grown and dried.

100 DOLLARS FOR SIX VERBENAS.—Dexter Snow, of Chicopee, Mass., sold last September, the stock, consisting of six single plants seeding Verbenas, to Peter Henderson, of Jersey City. The varieties are of the Italian strain; striped, spotted and mottled, and have been brought to their high state of perfection, by the hybridizing of Mr. Snow, who has devoted many years to the cultivation of the Verbena, and to whom we are already indebted for many of our choice varieties.

VARIEGATED LEAVES AND DOUBLE FLOWERS.—Variegated foliage and double flowers, according to Professor E. Morren, never occur together on the same plant. The Professor explains that variegated leaves (the partial disappearance of chlorophyll) is a proof of weakness, whilst the doubling of flowers is a proof of strength; and as both these conditions cannot possibly occur at the same time, variegated leaves and double flowers in the same plant are an impossibility.—*The Farmer (Scottish.)*

SICILIAN MODE OF EATING STRAWBERRIES.—Throughout Sicily it is the custom to eat strawberries along with sugar and the juice of an orange or two. The strawberries, a small kind, come to the table without their stalks, are crushed with white pounded sugar, and the juice of an orange is squeezed over them. The result is a most fragrant and agreeable compound, much superior in my opinion, to strawberries and cream. Indeed, I think it is all but worth while to make a journey to Sicily to be initiated into this mode of eating strawberries.—*Dennet's Mentions.*

THE BREATH OF FLOWERS.—The odours of flowers do not, as a general rule, exist in them as a store or in a gland, but they are developed as an exhalation. While the flower breathes it yields fragrance, but kill the flower, and fragrance ceases. It has not been ascertained when the discovery was made of condensing, as it were, the breath of the flower during life, what we know now is, that if a living flower be placed near to butter, grease, animal fat, or oil, these bodies absorb the odour given off by the blossom, and in turn themselves become fragrant. If we spread fresh unsalted butter upon the inside of two dessert-plates, and then fill one of the plates with gathered fragrant blossoms of clematis, covering them over with the second greased plate, we shall find that in twenty-four hours the grease will become fragrant. The blossoms, though separated from the parent stem, do not die for some time, but live and exhale odour, which is absorbed by the fat. To remove the odour from the fat, the fat must be scraped off the plates and put into alcohol; the odour then leaves the grease and enters into the spirit, which thus becomes "scent," and the grease again becomes odourless.—*Dr. Plesse.*

Bring Flowers.

More flowers, more beauty in my path,
More light along my way,
A deeper hue the sunshine hath,
A richer glow the day;
And every breeze that sweepeth by,
Speaks with a gayer tone,
And breatheth with it perfumes rare,
Which these sweet flowers have strawn.

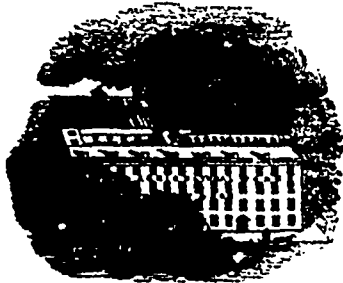
Ay, bring them forth into the sun,
They were not born to be
Hidden away from mortal eyes,
What joy such flowers to see.
Bring crystal water drops to fling,
Like pearls upon each leaf,
So let them rest in yonder vase,
A green and golden sheaf

FATHER! who gar'st these gems to shine,
These buds in bliss to grow,
What must adorn Thy courts above,
If such are found below?
They say that there o'en rainbow hues
Are pale and dim to see,
Then what, O FATHER! dyes Thy flowers?
What must their radiance be?

—Horticulturist.

Advertisements.

**ALBANY AGRICULTURAL WORKS,
ALBANY, N. Y.**



HORACE L. EMERY & SON,
Patentees and Sole Proprietors and Manufacturers of
**Emery's Patent Endless Railway
AND LEVER HORSE POWERS,**

Universal Cotton Gins and Condensers, Threshing Machines with
Cleaners combined, also with Separators, Sawing Machines, for
Wood and Manufacturing purposes. Also, Manufacturers of and
Wholesale Dealers in Agricultural Machines and Implements of
the latest and most approved construction and utility extant,
and adapted to the wants of all countries and people. Successors
of **EMERY BROTHERS, ISAAC T. GRANT,** and
others.

Send for Catalogue and Price Lists. v3-8-1f

A RARE CHANCE!

FOR SALE OR TO RENT,

"DEW-DROP" DISTILLERY,

SITUATED IN THE

Village of Blair, Township of Waterloo,

TOGETHER with Eight Acres of land attached. A never failing
supply of water, with about 25 feet fall, and a Six horse-
power Engine, with Distillery Apparatus complete, including a
Run of Stones, and capable of making Sixty Bushels per day.

THE BUILDING IS STONE,

Situated within 3 miles of Galt, 1 mile from Preston.

It is in the centre of a large grain growing district, where abun-
dance of material can always be procured and could be converted
into a Flax Mill, if desired, without any outlay, the present machi-
nery being of sufficient value to do more than make the alterations.

One half the purchase money can remain for a term of years,
secured upon the property.

Title indisputable, and immediate possession given.
Mr. Thomas Reid will show the premises to intending pur-
chasers.

Application to be made, if by letter post-paid, to
WILLIAM BELL, Esq.,
Ayr, C. W.

**Choice Brahma Peetra, Black Spanish, Black
Hamburg, and Muscovy Duck Eggs for Sale.**

THESE Eggs are from Prize Fowls, some of them Imported
from England this Spring.

Price \$2.00 per Set, packed carefully and sent by Express.
Address **R. A. WOOD,**

Box 1043, Toronto. v3-8-1f

WHO WANTS MONEY?

\$20,000 TO LOAN!

UPON Improved Farm Lands Terms favourable. Interest
reasonable.

TIME, TWO TO TWELVE YEARS

—payable by half-yearly or yearly instalments, with privilege of
paying off a part, or whole amount, at any time, deducting interest
for the unexpired term.

No INTEREST required in advance. FARMERS who have borrowed
money, payable in one sum, see their hopeless position, and are
securing relief in this way as soon as possible.

CASH PATENT taken out when required.
Letters of Inquiry must be prepaid. Apply to
GEORGE F. BURROWS, Dundas, C. W.

THE FARMERS' ADVOCATE.

A PURELY Farmers' Journal, published in London, C. W., by
WM. WELD, of Delaware, a practical farmer, also owner of
the celebrated horse *Anglo Saxon*, suggester of the Farmers' Bank,
and projector of an Agricultural Emporium. It is an eight page
paper, published monthly, at the small sum of 50 cts, and in addi-
tion each subscriber is presented with a copy of a handsome en-
graving, that took the first prize at the last Provincial Exhibition.
It is free from Government support, and will advocate farmers' in-
terests without fear or favor. There can be no better advertising
medium, as it is destined to have a very extensive circulation, be-
ing one of the cheapest papers in Canada.

Address, **WM. WELD, Advocate Office,**
v3-8-1f London, C.W.

"THE ILLUSTRATION HORTICOLE,"

Published by **AMBROISE VERSCHAFFELT**, Nurseryman, GHENT,
BELGIUM.

THIS beautiful publication appears monthly. Every number
contains three fine coloured plates, representing the newest
plants, fruits, &c, &c.

PRICE. FOUR DOLLARS.

N. B.—A specimen number can be had FREE.

The Catalogues of Ambroise Verschaefelt's extensive Nurseries
can be obtained by writing to

AMBROISE VERSCHAFFELT,
v3-8-1f Ghent, (Belgium.)

VETERINARY SURGEONS.

VETERINARY SURGEONS practising in Canada, holding Di-
plomas of any recognized schools, are requested to send their
names and addresses, and also the Colleges in which they studied,
and the date of their Diplomas, with a view to publishing a list of
the members of the Profession in Canada

Address, "TORONTO VETERINARY SCHOOL," Box 571, Toronto.
v3-7-1f

LANDS FOR SALE.

TWENTY THOUSAND ACRES OF LAND, both wild and im-
proved, and at all prices, for sale in various townships through-
out Upper Canada, cheap and on easy terms.

For lists and particulars, apply to the proprietor,
T. D. LEDYARD, Barrister, &c.,
South-west cor. of King and Yonge-sts., Toronto.
Toronto, Oct. 2, 1864. v2-19-1f

NEW SEEDS.

PURE AND FRESH,—sent by mail to any part of Canada.
Send for a Catalogue.

First Prize for Annuals at Provincial Exhibitions of 1864 and
1865, and Union Exhibition, Toronto, 1863.

GOLDSMITH & CO.,
v2-7-2f St. Catharines, C. W.

BONES! BONES! BONES!

CASH Paid for any quantity of Bones, delivered in Boston, or
at our Bone Flour Manufactory, in N. Y. Address,

C. H. GARDNER, Agent
Of the Boston Milling and Manufacturing Co.,
16 Cortland St., N. Y.
v3-7-1f

**THE DIRECTORS OF THE
COUNTY AGRICULTURAL SOCIETY,**

Of the County of Grey, offer a

PREMIUM OF \$40.00,

(To which the Township Society of the Township of Sydenham
will add \$5.00.) for the

BEST AGRICULTURAL STALLION

THAT has not served in the County of Grey before, that may be
shown at the town of Owen Sound, on the 27th day of
April, 1866, at noon, provided such animal shall meet the
approval of the Directors, and serve within the Townships of
Derby, Sydenham, Sullivan, Holland, and St. Vincent, and the
town of Owen Sound, during the coming season.

A Premium of \$20 is also offered for the best of any other
stallions then shown—provided he serve within the County during
the coming season. See large hand-bills.
THOMAS GORDON, Secretary.
Owen Sound, April 1, 1866. v3-7-2f

THE CANADA FARMER;

A FORTNIGHTLY JOURNAL

OF

AGRICULTURE, HORTICULTURE, & RURAL AFFAIRS.

This Journal is about to enter, under the most favourable aus-
pices, on the third year of its existence. It has amply fulfilled the
hopes of its well wishers. It is now universally acknowledged to
rank among the best agricultural papers of America, and to supply
just what was wanted for the improvement and development of
Canadian agriculture.

During the past year, a department for BRITISH GLEANINGS has
been introduced. Special attention has also been given to ESTRO-
MIOLOGY, a subject of great importance, in view of the losses
occasioned of late by the farmer's insect enemies. These features
will be continued, and in addition to them the following new ones
—1. A series of articles on the philosophy of farming, to be
entitled: FAMILIAR TALKS ON THE PRINCIPLES OF AGRICULTURE.
These will explain in a simple and practical manner the why and
the wherefore of agr. cultural operations, and will form, when
completed, a valuable farmer's manual. 2. A natural history
department, consisting of descriptions of Canadian animals, birds,
reptiles, and fishes. Life-like illustrations will accompany these
articles. 3. Under the head of THE HORTICOLE, a series of articles
on farm and garden management, with a special view of interesting
the boys and girls in rural pursuits. 4. In compliance with the
wish of a large number of subscribers, a table of contents will be
furnished in each issue.

A very large sum has been spent on illustrations—larger than in
any other similar publication—and this feature of the paper has
been exceedingly attractive to all classes. Efforts will be made,
during the coming year, to secure as much variety as possible in
this department, and no expense will be spared where the labour
of the artist and engraver can aid in making clear any agricultural
or horticultural subject.

THE CANADA FARMER remains under the same editorial manage-
ment as heretofore, and the utmost pains will be taken to add to
its corps of contributors and correspondents.

SUPER-PHOSPHATE OF LIME,

\$40 PER TON.

SUPER-PHOSPHATE OF LIME, a highly concentrated Manure,
prepared so as to give a greater quantity of the soluble
phosphates, &c., and, as manufactured by us, contains in combi-
nation all the ingredients necessary to the nutrition of plants, and
to the fertilization of soils. It contains Bi-phosphate and
neutral phosphate of Lime in abundance, Sulphate
and Carbonate of Ammonia; Carbonaceous sub-
stances and Nitrogenous organic matter, &c.,
gradually yielding ammonia to the soil. Manufacturing it of the
best materials, and in the most approved manner, we offer it with
the utmost confidence, as being fully equal if not superior to the
best Peruvian Guano.

PETER R. LAMB & Co.

Manufacturers, Toronto, C. W.

Send for a Circular.

v3-5-3f-a. c. t.

BLACKSMITH'S TOOLS.

**Peterson's Patent Tyre Upsetting Machine.
Patent Regulating Blast, Tycere Iron.
Patent Double Geared Tyre Bendg.
And other Blacksmith's Tools.**

FOR SALE BY **ARCHIBALD YOUNG, Junior,**
General Agent, Sarnia, C. W.

AGENTS WANTED.

County rights for sale. Send for an Illustrated and Descrip-
tive Circular. v2-24-

NOW READY;

CANADIAN BEE-KEEPERS' GUIDE.

SECOND EDITION.

J. H. THOMAS & BROS., beg to announce that the First
Edition of the above work having been exhausted, a Second
Edition, revised and corrected, has been got out, and is now on
sale. Price of single copies, 25 cents. If ordered by mail, 3 cents
must be added to pre-pay postage. A liberal discount to the trade.
All orders for the Book, or for J. H. Thomas's First Prize Moveable
Comb Hives, promptly attended to.

Price of Single-Boarded Hive, \$5, Double Boarded Hive, \$7,
including right to make and use.

Letters to be addressed (post-paid,) to

J. H. THOMAS & BROS.,

v3-1-1f Brooklyn, Canada West

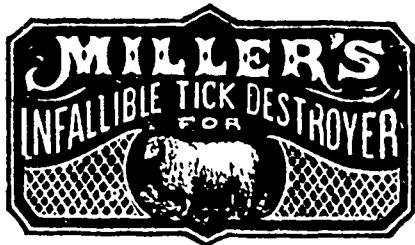
J. H. THOMAS'

FIRST-PRIZE BEE HIVES

MAY be sent safely to any part of Canada. We are daily send-
ing them to all parts of the Upper and Lower Provinces,
and even to Nova Scotia and Cape Breton; and the demand is in-
creasing. Send early. All orders for Hives, Bee Books, &c.,
promptly attended to.

The territory of the Lower Province will be sold cheap, as we
have sufficient in Canada West for our own purposes.

v3-4-1f **J. H. THOMAS & BROS.**



A CERTAIN cure for Tick, and all skin affections in Sheep. No flock master should be without it. Prepared only by HUGH MILLER & CO., Chemists, Toronto.

FRUIT AND ORNAMENTAL TREES. TORONTO NURSERIES.

The Proprietor of the Toronto Nurseries begs to call attention to the large and excellent stock of Fruit and Ornamental trees which he offers for sale this spring. The Fruit Tree Department is composed of large quantities of the following articles:—Standard and Dwarf Apples, Plums, Pears, and Cherries; Gooseberries, Currants, Raspberries, Hardy and Foreign Grapes, Strawberries, &c., &c.

ENGLISH COOSEBERRIES.

10,000 IMPORTED ENGLISH GOOSEBERRIES for sale at the Toronto Nurseries, at \$2.50 per dozen, and \$12.50 per 100. GEO. LESLIE, Leslie P.O., C.W.

IMPROVED FARMS OF various descriptions, in the COUNTY OF PETERBOROUGH, C. W., FOR SALE ON EASY TERMS.

UNIMPROVED FARM LOTS, Adj. to, a. a. with Grist and Saw Mills, Post Office, Store Schools, &c., at ONE DOLLAR PER ACRE. For particulars apply to CHAS. JAS. BLONFIELD, Secretary to Canadian Land & Emigration Co., Toronto Bank Buildings, Toronto.

WILSON'S EARLY BLACKBERRY, The largest, best and most productive; ripe before any other Blackberry, yielding its whole crop in the shortest period between Raspberries and other Blackberries, just the time when Fruit is scarce and brings the highest price.

PHILADELPHIA RASPBERRY, For hardiness and productiveness, is unequalled, bearing the extreme cold of Minnesota with out injury, and yielding in that latitude a splendid crop of fruit, it has produced here over 200 bushels per acre. 20 ACRES IN STRAWBERRIES—best varieties. Send for Catalogues, gratis. WILLIAM PARRY, Cannaminston, Burlington Co., New Jersey.

One Hundred Dollars Premium.

The above amount will be paid by the South Waterloo Agricultural Society, to the first established Cheese Factory within the South Riding of the county of Waterloo, the same to be of the capacity of not less than two hundred cows.

The Annual Fall Show of the above Society will be held in Preston, on Wednesday, the 2nd of October, 1866. WM. A. SHEARSON, Secretary & Treasurer.

DAIRYMEN!

HAVING supplied most of the Factories in Oxford, last year, with Cheese Screws, Hoops, &c., we can supply you this year, with an article which we can warrant as first-class. Orders promptly filled. WHITELAW & NUIRHEAD, OXFORD FOUNDRY, BRACEWELL, April 1, 1866.

DAIRY REQUISITES.

THE undersigned is prepared to supply vats of all sizes on the model of the celebrated "ONEIDA CHEESE VAT" also, Milk Cases, and all other articles used both in Private Dairies and Cheese Factories, of the best material and workmanship, and at very low prices. LEWIS F. BUNCEY, NORWICHVILLE, C. W., April 16, 1866.

CHOICE HARDY GRAPE VINES, AND ENGLISH GOOSEBERRIES.

THE following two-year old Vines, (splendid roots,) viz:—CONCORD, HARTFORD PROLIFIC, DIANA, REBECCA, and DELAWARE, will be sent (post free) to any Post Office in Canada, on receipt of \$1.50, free of postage. Any three of the above varieties purchasers may choose, free, for \$1.00. 2000 GOOSEBERRY BUSHES, all the best ENGLISH IMPORTED VARIETIES at \$1.50 per dozen. JAMES FLEMING, Yonge Street Nursery.

Markets.

Toronto Markets.

"CANADA FARMER" Office, April 13, 1866.

During the past fortnight business has been moderately active in our market, the rise in the price of wheat being the leading feature to record. Merchants are not agreed in opinion as to whether the present inflated prices are warranted by the stocks in the country. Sales during the present week have been principally to supply local consumption. Wheat is in good demand, but the better grades are not freely offered, except at rates that buyers are loth to pay. Holders are taking advantage of the reported short supplies, to raise prices, and considerable speculation is said to characterize the market. The provision market remains without material change.

The following are quotations of the prices of products, &c.: Flour.—No. 1 superfine at \$5.30 to \$5.50, Extra, \$6.75 to \$7, Double Extra, none in the market. Fall Wheat—advanced, as high as \$1.52 was paid for a car load; \$1.39 to \$1.40 for medium samples. Spring Wheat—Little offering. We heard of a sale to-day at \$1.20. Barley.—No sales. Selling nominally at 60c to 62c, prime loads at 64c. Prices are, however, nominal. Peas.—Firm, at from 62c to 66c. Oats.—Dull, and in little demand. Car loads sell at 30c to 31c, wagon loads at 30c to 32c. Rye.—Prices at present nominal at 50c to 60c per bushel of 56 lbs. Seeds.—Clover steady at from \$4.50 to \$5 Timothy firm, at from \$2 to \$1.25 for fair to choice, No. 1 selling at \$3.25. Hungarian Grass 60c to 75c. Tares, \$1 to \$1.10. Pork—unchanged. Dressed hogs, selling at from \$8 to \$8.75. Pork, mess unchanged, at \$22 to \$23 per barrel; prime mess, \$20 to \$21 per barrel. Hams, in salt, \$12.50, smoked do., \$14 per 100 lbs. Lard, unchanged, at 12 1/2c to 13 1/2c. Bacon, unchanged, at 10c to 12c per lb. Beef hams, \$10 to \$11 per 100 lbs. Butter—Large orders from New York have arrived by buyers in this city, which owing to the scarcity of stocks they are compelled to leave unexecuted; selling at 17c to 19c for store-packed butter; choice dairy, 21c to 23c per lb. Cheese, in fair demand at 14c to 16c. Eggs, scarce; lots sold to-day at from 15c to 17c. Dressed beef, \$5.25 to 5.75 per carcass. HAY AND STRAW.—Hay sells at \$8 to \$9.50. Straw, \$3.50.

Montreal Markets, April 10.—Laidlaw, Middleton & Co., report.—Flour—Receipts 1,625 barrels; market quiet but very firm. Superfine \$5.70 to \$5.80; holders of superiors ask 5c. to 10c per barrel over outside figures. Wheat—No transactions. Akes—buoyant, first lots \$3.70 to \$3.75. Pearls—nominal. Pork—No transactions.

Hamilton Markets, April 10.—Grain Market.—Fall Wheat, \$1.20 to \$1.21. Spring Wheat, \$1 to \$1.12 1/2. Barley, 50c to 62 1/2c. Peas, per bus., 60c to 61c. Oats, 33c. Beef, per lb., \$6.75 to \$7.50, hind quarters, \$7.50 to \$8; inferior, \$6 to \$7. Mutton, per lb., 6c to 7 1/2c. Pork, per 100 lbs., \$7 to \$7.75. Eggs, per doz., 15c to 20c. Butter, per lb., 25c to 30c. Potatoes, per bushel, 60c to 65c. Hides, per cwt., \$5, dry hides, 10c per lb. Calveskins, per lb., 5c to 10c. Carrots, 25c per bushel. Sheepskins, 37 1/2c to \$1.50 each. Tallow—W. H. Judd & Brother's prices—rough, per lb., 8c. Hay, per ton, \$7 to \$9. Straw, per ton, \$2.25 to \$3.30.

London Markets, April 10.—Fall Wheat—Inferior at \$1.15, good to extra at \$1.20 to \$1.45. Spring Wheat, \$1.15 to \$1.20. Barley, 40c. Peas, 55c to 60c. Oats, 25c to 27c. Corn, 50c. Buckwheat, 40c to 45c. Flour, \$1.50 to \$1.75 per 60 lbs. Clover Seed, \$4.75 to \$5. Timothy, \$2.25 to \$3 per 60 lbs. Hungarian Grass and Millet, 75c. Tares, \$1.50 to \$1.75. Butter—Prime dairy packed 18c to 19c per lb., fresh, in rolls, by the basket, 20c to 22c per lb. Eggs, 14c per dozen. Dressed Hogs, \$5 to \$5.25. Lard, 12 1/2c. Hay, per ton, \$7 to \$9. Straw, per load, \$2.50 to \$3.50. Pea, \$2 to \$3 per load.

New York Markets, April 11.—Flour—Receipts, 3,333 bbls.; market more active and very firm; sales 12,200 barrels, at \$6.60 to \$7.15 for superfine state; \$7.10 to \$7.50 for extra state; \$7.55 to \$8 for choice do.; \$8.60 to \$7.10 for superfine western; \$7.15 to \$8 for common to medium extra western, and \$8.15 to \$8.40 for common to good shipping brands extra round hump Ohio. Canada flour more active, sales 850 barrels, at \$7.25 to \$7.90 for common; \$7.95 to \$12 for good to choice extra. Wheat—Receipts, none, market very firm and quiet; sales 6,600 bushels white Canada at \$2.60, and 1,000 number State at \$2.43, for handsome new No. 1 M. I. wheat \$1.78 is refused. Rye finer; sales 26,500 prime Western at 60c to 63c, and 800 bushels prime North River at 60c to 65c. Corn—Receipts, 4,160 bushels, market 2c better and more active; sales 97,000 bushels at 70c to 79c for unshelled, and 80c to 82c for sound mixed Western, in store and delivered. Oats, 1c better, at 48c to 45 1/2c for new Western, 50c to 58c for old do.; 57c to 58c for Canada, 55c for Jersey, and 58c to 60c for State. Pork, heavy and lower, sales 6,450 lbs., at \$16.50 to \$25.50 for new mess, closing at \$26.37 for regular, and \$24.75 for old do.

Contents of this Number.

Table listing contents of the issue with page numbers. Includes sections like THE FIELD, THE APIARY, VETERINARY DEPARTMENT, CANADIAN NATURAL HISTORY, STOCK DEPARTMENT, THE DAIRY, POULTRY YARD, ENTOMOLOGY, BRITISH CLEANINGS, CORRESPONDENCE, EDITORIAL, AGRICULTURAL INTELLIGENCE, THE HOUSEHOLD, HORTICULTURE, and POETRY.

THE CANADA FARMER is printed and published on the 1st and 15th of each month, by GEORGE BROWN, Proprietor, at his Office, No. 25 and 28 King Street East, Toronto, U. C. where all communications for the paper must be addressed. THE CANADA FARMER presents a first-class medium for Agricultural advertisements. Terms of advertising, 30 cents per line of space occupied, each insertion—one inch space being equal to 12 lines. No advertisement charged less than \$2, being ten lines of space. 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, Proprietor and Publisher.