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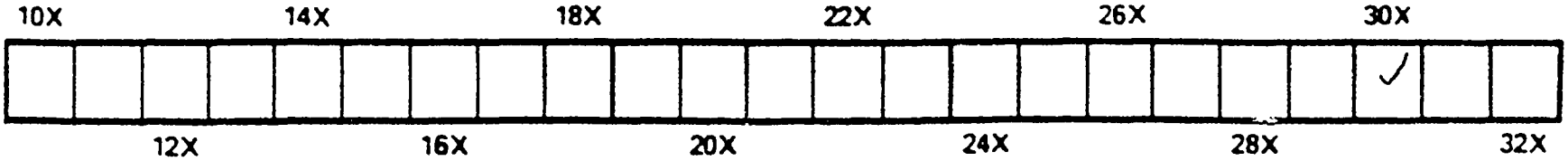

THE CANADA FARMER

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## The Field.

### On the Cultivation of Hops.

THE Hop (*Humulus lupulus*) is a perennial diœcious plant of the natural order *Cannabinaceæ*, and is found growing in a wild as well as in a cultivated state, in many parts both of Europe and North America. In England, hops are very extensively raised, principally in a few of the Southern counties, and both the plant and its mode of culture have been brought, of late years, to a high degree of improvement. As the raising of hops is already attracting considerable attention among farmers in several sections of Canada, and has been accompanied by a promising degree of success, we propose giving, in two or three papers, a pretty full outline of the most approved modern principles of their cultivation, and preparation for market.

(I.) CLIMATE.—Hops delight in a warm and dry atmosphere, which is not subjected during the season of growth to great and sudden changes of temperature. Like wheat and the vine, they require bright and warm sunshine to bring them to perfection; but they will do with a less summer temperature than the latter requires to ripen its fruit in the open air. In high and exposed situations in Canada, especially at considerable distances from the St. Lawrence and the lakes, the early autumnal frosts would prevent the full growth and ripening of the flowers; but all along the frontier, from Montreal to Windsor, experience satisfactorily shows that this valuable crop may, by good management, be brought to a great degree of perfection. Natural shelter against high and prevailing winds, such as elevated ground and trees, is an important condition to secure in selecting a site for a hop-plantation; as high winds are often exceedingly destructive to the crop, particularly during the latter stages of growth.

(II.) SOIL.—Hops may be successfully grown on several classes of soils, but it requires both judgment and experience in the way of manuring and cultivation, so to treat the various soils as to make them yield a remunerative return. Gerard, an old herbalist of the latter part of the 16th century, observes:—"The hop joyeth in a fat and fruitful ground, and prospereth the better by manuring." Tusser, a quaint old rustic writer of a somewhat earlier date, thus speaks of the hop in his renowned *Five Hundred points of good Husbandry:*

> "Choon soil for the hop of rottenest mould,
> Well doonged and wrought as a garden plot should,
> Not far from the water (but not overflowne),
> This lesson well noted, is meet to be knowne.
>
> "The sun in the South, or else Southlie and West,
> Is joy to the hop as welcomed ghest;
> But wind in the North, or else Northerly East,
> To hop is as ill as fray in a feast.

The soil most congenial to the growth of the hop is calcareous loam, resting on a dry and open subsoil. Wet clays are wholly unsuitable; yet by thorough draining, deep tillage, and liberal manuring, there are thousands of acres of very stiff soils in Kent and Sussex, (England), that are made to provide very heavy crops of the coarser kinds of hops; but it is the greensand formation, immediately underlying the chalk, abounding in many places in phosphate of lime, that produces hops of the richest qualities, and commanding, consequently, the highest prices. In England, and also on the continent of Europe, the character of the soil and the geological formation on which it rests can generally be pretty well determined by observing the kinds or varieties of the hops under cultivation. The *Goldings* are mostly found on the friable calcareous soils of Kent, and the roots have been found to descend from ten to fifteen feet and upwards, in search of food and moisture, into the fissures of the subjacent limestone rock. At Farnham, in Surrey, and also in the vicinity of Canterbury, on soils somewhat similar, the *White Bines* are the prevailing variety:—these with the former are most esteemed for the brewing of the pale bitter ales which England exports in such immense quantities to the principal and most distant parts of the world. On the clay loams of Kent and Sussex the *Grape* and *Jones* varieties are principally cultivated; but within the last few years the *Colegates*, and one or two new kinds that ripen earlier, have been introduced with satisfactory results. All these sorts of hops are hardy and very productive, but inferior in quality to the Goldings and White Bines, and are generally used in the manufacture of the ordinary sorts of beer. The soils of Worcester and Hereford, formed from the debris of the calcareous marls belonging to the new red sandstone and Silurian system, produce a hop possessing a peculiarly mild and pleasant bitter, supposed to have been derived from the Flemish red bine. The hops grown on the heavy land of Redford, in Nottinghamshire, designated "*North clays*" are coarser than those of the weald of Kent and Sussex, imparting a peculiar flavour to beer, almost nauseous to those unaccustomed to its use.

From this brief description of the more common varieties of hops, it will be seen that differences in soils produce corresponding differences in the quality, quantity, and value of this crop; and therefore it becomes necessary to ascertain the character of the soil, and also to some extent the climate of a given locality, before it is decided what particular variety of hop should be introduced. In Canada, however, we have no such diversities of soil within small areas, such as characterize the physical features of the hop districts of England; yet in looking at this subject in a practical point of view, we must learn to form a correct estimate of the value of those differences in the organic and mineral composition of Canadian soils, which do actually obtain. A loam of moderate tenacity, through which are interspersed small calcareous stones, resting on a dry and permeable subsoil, will produce hops of the finer varieties; but a low-lying, heavier and damper soil, rich in organic matter, will generally yield heavier crops, but of inferior quality.

(III.) PREPARATION OF THE SOIL.—It is a matter of primary importance, before commencing to plant, that the ground should be brought into the best possible state favourable to that operation. If the land be wet, the first thing will be to drain it; and the more thoroughly this work is done the better. It will be in vain to attempt to raise hops on soils in which water stagnates; they may grow well at first, but in a short time the roots will become enfeebled, the plant will exhibit a yellow, sickly appearance, and cease to be productive. It will be found advantageous to plough the land as deep as may be practicable in the fall, so as to expose the largest surface to the action of air, frost and snow. If the subsoil be close and retentive, it also should be broken up eight or nine inches, either by an ordinary plough deprived of its mould, or by what is better, a proper subsoil plough, which no farmer of the present day, having a tenacious soil, should be without. Subsoiling, however, should always be *preceded* by underdraining, whenever that operation is necessary. Hops delight in land that has been long down in pasture; in such case, the old sod should be completely buried by the plough early in the fall, to facilitate decomposition. In that case, no manure is really required; but when arable land is appropriated, good dressing of rough farm-yard manure should be incorporated with the fall ploughing. As soon as the ground gets sufficiently dry in spring, the cultivator and harrow may be applied, so as to leave a smooth and clean surface.

(IV.) PROPAGATION.—This is effected either by seeds or cuttings; the former method is very rarely used, except for purely experimental purposes. Cuttings are obtained from the hills of old plants that have been earthed up during the preceding season of growth. That portion of the lower end of the bine growing from the crown of the stock being surrounded by earth thrown into the hill about midsummer, assumes a form somewhat in appearance to roots, having two or three joints, at which eyes or buds are developed. In pruning the hops early in spring, what has remained of the old bine since the previous autumnal gathering, is cut off close to the crown of the stock, or nearly so; thus affording a cutting with joints and buds, which, when put into the ground, will produce a new plant, having, in all respects the same properties and characteristics as its parental stem. This is the almost universal method practised in England in raising new hop grounds. But on this side of the Atlantic, it is a common practice to raise hops from what are termed "runners,"

or suckers, which are sometimes found in considerable amount spreading out from the hills, a little under the surface of the ground. These runners are highly endowed with the vital principle, are more certain of growing, perhaps, than cuttings, and like them remain true to the parent stock. Both cuttings and runners, therefore, may be indifferently employed for raising a new plantation. It is of importance, however, that they should be taken from young and vigorous plants, *of a pure and distinct variety;* otherwise, the young plantation to be raised will present a mixture of different sorts, varying as to forms of growth and time of ripening; conditions always inconvenient, and more or less detrimental.

It must be remembered that the hop is a dioecious plant, that is, there productive organs of the male and female are the products of distinct plants, the flowers of which are of different forms and habitudes. The male hop produces no flowers that possess any commercial value; what are commonly known as "hops," are exclusively the flowers of the female plant. One is as necessary to the other in producing perfect seed as are the sexes in animals. The male hop has its flower, or pollen, previously perfected, so as to impregnate the stigma or "bur" of the female as soon as it is ready; which inoculation gives that energy and vitality to the seed, without which it would not produce in a perfect manner its kind. It is this pollen which gives weight to the hop, and also the fine aromatic bitter, which, while it imparts so agreeable a flavour and healthy tonic qualities to beer, exerts an indispensable influence in regulating its formation and preserving its quality. The petal, or leaf of the hop, contains but little of the astringent principle required, compared with what is found in the seed. The same atmosphere which ripens and wafts the pollen from the male, prepares the female for its reception. Two or three male hills will be found sufficient for an acre; they should be equally distributed, with poles a little higher than the rest, that the pollen may be the more readily diffused.

The raising of hops from seed is both tedious and uncertain: three or four years must elapse before they can be brought into bearing, and there can be no certainty, beforehand, whether the same seed will produce the same variety: the probability being that several different kinds, most, if not all of them, inferior to the parent, will be the result. For experimental purposes only can the raising of hops from seed be recommended, and innumerable failures will in all probability be endured, ere a single new variety, worth cultivating, is produced.

## Familiar Talks on Agricultural Principles.

THE POTATO.

Among the esculent roots raised on the farm, this is by far the most important and valuable, and until within a few years past, no crop grown by the farmer or gardener was more easily raised, or brought a more sure return. Of late, however, much mystery and uncertainty have come to be connected with the culture of this plant, in consequence of the wide-spread prevalence of a disease known as the rot or blight. Before the appearance of this affection, there seemed no call for any particular skill in cultivating the potato. It would grow in any hole in the ground, or indeed on the top of the ground with a little straw or litter over it, and yield good crops. Now, the science of the agricultural chemist, and the toil of the experienced practical farmer and gardener are alike at fault, and the potato has become one of the most fickle of the plants on which the cultivator's art is expended. In discussing its culture, other principles besides those connected with the composition of the plant, and the adaptation of particular soils to it, must be taken into consideration. But, following the order of things adopted in previous "Talks" with regard to other cultivated plants, we may first advert to these general principles, and then touch upon those which are peculiar, and attention to which seems to be necessitated by the diseased conditions under which the potato has been struggling for some time past.

The composition of the ash of the potato is thus given by Johnston:

Ashes in 10,000 lbs. of the rootsand stems.

| | Roots. | Tops. |
|---|---|---|
| Potash | 40·23 | 81 9 |
| Soda | 23·34 | 0·9 |
| Lime | 3·31 | 129·7 |
| Magnesia | 3 24 | 17 0 |
| Alumina | 0 50 | 0·4 |
| Oxide of Iron | 0·32 | 0·2 |
| Silica | 0·84 | 49·4 |
| Sulphuric Acid | 5·40 | 4·2 |
| Phosphoric Acid | 4 01 | 19 7 |
| Chlorine | 1·60 | 5·0 |
| | 82·83 | 308·4 |

This table plainly indicates the character of the soil in which, under ordinary circumstances, the potato will flourish the best. It is one in which lime and potash are found in considerable quantity. Every farmer is well aware that the best crops of this plant are usually obtained from new land. This is because the virgin soil is rich in stores of alkaline and other mineral substances furnished by the ashes of the recently-cleared forest. Would we put old or exhausted land into the best state for this crop, we must supply such substances as lime, wood ashes, plaster, salt and bone dust. Thus we provide a store of material such as is enumerated in the foregoing table, and assimilate the soil to the condition in which it is found when first reclaimed from its natural state for purposes of agriculture. Strongly heating manures, such as that from the barnyard while still unfermented, are very unsuitable as applications to this crop. Thoroughly rotted composts are best for it, whether in the absence of the substances just enumerated, or in conjunction with them. The better the fertilizing matter is incorporated with the soil, the more likely are satisfactory results to be obtained. A loose, mellow, rich, warm loam, with a porous subsoil, is most fitted for this crop.

Little more need be said as to the general principles bearing on the cultivation of the potato, and we pass now to take a brief glance at the disease whose development has, within a few years, done so much to render abortive the attempt to grow this crop. On all questions relating to disease, it is proverbial that doctors differ, and the potato rot is no exception to this remark. All sorts of theories have been started to account for this affection, and as a consequence conflicting remedies have been suggested. Among all the theories with which we have met, none so thoroughly commends itself to our judgment as that which is ably set forth in Principal Dawson's little work on "Scientific Agriculture," to which we have repeatedly had occasion to allude in the course of these "Talks." Arguing on the wide and almost universal prevalence of the disease, and the many indications that the vital energies of the plant have to some extent failed, it is thought by the author just named, and by many scientific and practical agriculturists, that the peculiar mode by which the potato is propagated has much to do with the disease in question. It has been grown for many generations by natural or artificial division of the plant itself, and not as most plants are grown, by the constant sowing of fresh seed. Just as the longest-lived forest tree must at length die, so must the group or stool of the potato, which, originally founded by a single seed from a ball, is only one plant, increased in extent by a spontaneous division of its roots into detached tubers. It might have been expected that by degrees its energy would diminish, until at length it died out. If this be the correct view of the matter, it is not surprising that the potato now fails, but rather that it has held its own so long. If it be objected that the symptoms being those of disease, rather than of weakness and old age, they tend to disprove this theory, it may be replied that, after all, it has been a process of decay with which we have had to contend of late years in the culture of this plant, and that the manifestations have been very similar to those which occur in the case of other vegetable products, when they attain an extreme age. If it be further objected that new seedling varieties have not escaped the rot, it must be borne in mind that they have been less affected by it than other kinds, and also that the parent plant whence the balls have been obtained may not have been wholly free from hereditary taint. The remedy, to be effectual, must be persevered in until several generations of the plant have been produced, and all hereditary taint has been worked out. Principal Dawson, contends that thoroughly to eradicate the disease, the Government of a State, or some public body or institution devoted to agricultural improvement, ought to take the matter up, and having at length produced a healthy family of tubers distribute them to such parties only as will agree to discontinue the culture of the present exhausted and diseased varieties. A public potato nursery of this kind might be maintained at comparatively small cost, and if it succeeded in restoring to us the potato in a condition of renewed youth, health, and vigour, the boon would be one of incalculable value.

In the meantime, whether the above theory be correct or not, there are certain palliatives, if not preventives of the disease, that every grower of the potato can resort to, and which experience has proved to be more or less effectual. These are early planting; frequent change of seed, especially from poor and cold localities to richer and warmer ones; the selection of such varieties as have shown the least tendency to be diseased; planting in dry and well-drained soils; the use of well-rotted manure, and fertilizers of a kind suited to the nature and wants of the plant, such as lime, wood ashes, salt, plaster, bone dust, super-phosphate, guano; and finally, planting, whenever practicable, in new land.

Although no thorough renovation of the plant has been effected so far as we have been aware by growing fresh tubers from balls produced by successive generations of potatoes, yet there are new seedling varieties which are much less liable to disease than the older kinds. Among these none are more worthy of attention than a number of new sorts originated by the late Rev. Chauncy Goodrich, of Utica, N.Y., who during the later years of his life experimented largely and patiently with the potato. How far the plant may be said to have become renewed under his hands we do not know, but several new varieties of great value obtained by him are now being extensively grown throughout the United States. Some of them have made their way into Canada, but they are not yet so well known as they deserve to be. Prejudice has been excited against them in some quarters, in consequence of the substitution of inferior old sorts for the new ones by unprincipled venders. This has especially been the case with the Garnet Chili, one of Mr. Goodrich's first and best seedlings. The Kentucky Red, which somewhat resembles it, has been palmed off for it to a great extent; and being a large, coarse, watery potato, is of course thought but little of by parties who have been unfortunate enough to get it in place of the Garnet Chili. We have not at hand a complete list of the seedligs tested and found to be worthy of adoption by Mr. Goodrich, but from memory may mention, in addition to the Garnet Chili, the Early Goodrich, Gleason, Monitor, Harrison and Cuzco. Some of these varieties are, we believe, kept for sale by our leading seedsmen; but full information respecting all the varieties produced by Mr. Goodrich can be obtained by addressing D. S. Heffron, Utica, N. Y., who, since the death of the originator of the potatoes referred to, has had principal control of their culture and sale.

## Manure-Saving.

*To the Editor of* The Canada Farmer:

Sir,—I noticed in your January number a communication from Bruce, requesting some information as to the best means of keeping manure. As I had a great deal of trouble and perplexity on this very subject, and lost considerable time and money before I could get my manure heap arranged to my satisfaction, permit me to offer the following remarks. When first I commenced farming, I was extremely desirous to stop this terrible leak out of the pocket caused by the wasting of manure, but then how to do it was a serious matter, for I did not sufficiently understand the subject to know what mostly to guard against. Covered manure heaps were the rage, so up goes a shed, and then sawdust, plaster, &c., placed behind my stock would retain the urine. But somehow my manure did not please me when taken out in the spring; part was awfully fire-fanged, part showed no signs of fermentation, and part in a

medium state. While thus perplexed, a capital little work fell into my hands, entitled Anderson's Agricultural Chemistry. In treating of the management of manure heaps, he says that during fermentation, mineral acid is produced in such abundance, that it combines with the ammonia, and thus fixes it, but the real loss is owing to the ammonias being allowed to escape; he also speaks of the advantage of covered manure heaps, but adds, (which I found by experience) that it is necessary to pump on them occasionally. Finding that it was not necessary that it should be kept actually dry, the thought occurred to me that by having a pit with an impervious bottom, artificially made if not naturally so, and arranging it so that only what rain actually falls over it can enter, all loss would be avoided. During the average time that manure is kept there is generally supposed to fall from 1' 6" to 2' of rain; allowing a certain amount to be soaked up in the manure, more to be evaporated, as this quantity only comes at the rate of three or four inches per month, it would be easy to ascertain what sized pit, sunk rather below the larger one, will prevent all leakage.

To explain my ideas more clearly, I will describe my arrangement for stowing manure. I commenced by pulling up all the wooden flooring of three stables constructed in the old style, for allowing the urine to pass through the floor, filling it up with earth and a foot or more of clay puddling, into which the planks are firmly beaten; a group being formed behind all the cattle and great care being taken to make them water-tight; in the yard and within 10 feet of the doors of the building is a large pit, about three feet deep, capable of holding one hundred and thirty loads to every yard in height, with a clay bottom, and sides sloping at about three to one, the ground being arranged outside the pit to throw back all rain water; the bottom of the pit is sloped towards a small pit or tank, sunk about 1.6 below the large pit, a small pump being placed in the former. My plan is to commence in October or November, and cover the bottom of the pit with loam or black mould for a depth of one or two feet; the dung and urine is then wheeled out and deposited in layers on this, which takes all soakage. I should explain that my original plan was to let the urine flow into the pit, but in practice I found it better to strew chaff, sawdust, or anything along the group, to soak it up, even to scoop it up with a square shovel; and it is held in suspension by the dung long enough to be wheeled the short distance to the pit. In this climate it is rarely necessary to use the pump till early in Spring, and then as often as the tank is nearfull; it takes but a short time when everything is well arranged. We generally turn our manure once for the sake of mixing the mould. I attach great importance to the bottom of my pit being sloped, and tank being below it, as it keeps the manure constantly in that moist state which so much assists in keeping up a proper fermentation. For this plan of a manure heap it is necessary that all the details should be carried out, for I can easily imagine where cattle are badly fed, and most of the urine lost, some artificial protection may be required to keep out frost, and allow fermentation to proceed all winter; but farmers who feed partially with a view to a good quality of manure will, I am confident, be satisfied with this plan if fairly carried out in all its details. This system is now advocated by the best authors on Agriculture, and correspondents in agricultural journals are constantly complaining of the ill effects of barn cellars on the health of stock. Should any farmer still be afraid of the loss he may sustain by the escape of ammonia, he can mix sulphuric acid or gypsum in the tank, but when some bog earth is used the loss will be very small. Since I adopted this plan I saw a notice in one of the newspapers of a gentleman who seems to have made similar arrangements for saving manure. Of course I offer no claim to originality in this plan; many journals have been constantly advocating something very similar. Stevens, in his Book of the Farm, edited by Professor Norton, says that in his opinion the best plan is to open the midden and furnish spouts to the building, but as I myself, after reading these and many other works, was considerably perplexed, and as some brother farmer may be in a similar predicament, I beg to offer these remarks, hoping, if they should be accepted, they may be a small return for the valuable information I have often received through your journal.

A FARMER.

## Restoring Worn-out Lands in Lower Canada.

*To the Editor of* THE CANADA FARMER:

SIR,—Having for a number of years past felt great interest in agricultural operations, I have been induced lately to purchase a farm on the Island of Montreal. It is what is called a good one, of about 160 arpents, consisting of various soils, from free black mould to tenacious clay. I have had now nearly three years' experience. I am well aware that to make a good farmer requires an amount of knowledge and application which people who have given the subject no attention little dream of. The profession of a farmer ought to rank higher in public estimation than it does; for surely the prosperity of Canada is bound up with it. I look with great interest for every issue of THE CANADA FARMER, which I consider of more importance to the country than many a broad sheet: and on several occasions have altered my plans in accordance with information conveyed in some of your special articles. Eastern Canada contains a large breadth of strong, good land, well adapted for wheat and barley, but, as you are doubtless well aware, it has been cropped down to sterility To reclaim it will require a great amount of skilled labour, the cost of which has hitherto been comparatively moderate, but is every year getting to be more expensive. Above all things, it is labour which is required. Shallow ploughing has been continued so long that the ground has been robbed in a great measure of its nutrition. Deeper ploughing and more thorough stirring of the soil to a greater depth would make new farms out of old ones.

On my farm, I have a field of tenacious clay loam. When I took possession, it was so completely infested with scutch grass that not a square inch of it was free from the pestilent root. I was determined to eradicate it. In the process of fallowing, I carted off a portion of the roots and burned them, with the clay adhering, and scattered back the ashes on the land. I so worked it with plough, grubber (a heavy Scotch one) and harrow, that not a root remained. I had a crop of barley (two rowed) off it this last year, of 43 bush. per arpent. A portion of it was much laid, which prevented it from filling, and which also caused some loss in taking it off the ground; otherwise I am satisfied it would have been 50 bushels. Now, I know that it had not received a shovelfull of manure for 8 years, and it may be any number more. What can be done with one field may be done with a thousand. I am certain that, by pursuing a system of more thorough culture, the annual crop of Canada might be doubled in a very few years.

The all-important subject of tile draining, of which I have done a very little, I should like to see greater facilities for prosecuting. As to manure, I take it for granted that every farmer makes and procures as much as he possibly can.

I see you long for the steam plough; and well you may. What a revolution it would make, especially in our clay loams. What fine work a steam digger would make. We have the inventor of the steam digger, Mr Romaine, of Peterboro', amongst us. Can no adaptation of it be had? It is well worth the attention of our agricultural mechanics, who, I am sure, would have all the assistance the ingenious inventor could give them. There is no doubt that the small farms of Eastern Canada could not afford the expense; but is it not possible to do it by association, or perhaps better by private enterprise? One steam plough might be sufficient for a thousand acres.

If my remarks are of sufficient interest for insertion in THE CANADA FARMER, I may at some future time trouble you with some account of experiments I have made with salt, which I see occasional allusions to in your columns.

J. R. E.

County Hochelaga, Feb. 28, 1867.

## Beet-Root Sugar.

*To the Editor of* THE CANADA FARMER:

SIR,—In your paper of the 15th inst., which I have just received, I find a letter written by Mr. Carl Becherer, of Montreal, in answer to one from me in your paper of the 15th February. This gentleman is astonished at the expression of opinion that this most valuable branch of industry could not be introduced into this country, on account of the severe winters, which would make the storage of the beets impossible.

I think if Mr. Becherer will read my letter again, he will see that I only stated that I had come to the conclusion that we could not manufacture the beet-root sugar in Canada to advantage in consequence of the short season between the maturity of the roots and our severe winters. Now, my comparison was between Canada and sunny France, and not with Russia and Sweden, where I never enjoyed the pleasure of travelling.

I stated in my letter that I would not willingly throw anything in the way of improvement in Canada, and shall now regret if what I have written shall deter Mr. Becherer, or any other gentleman, from establishing beet-root sugar manufactures in the country. I regret to say that the only establishment I ever knew in Canada, and one that I took considerable interest in, proved a failure and a loss to more than one person. When I wrote to THE CANADA FARMER, it was more to caution my brother farmers against sowing quantities of the seed to be brought out from France by the President of the Board of Trade, now journeying there, until there was a fair prospect of a factory being established and a fair price for the roots agreed upon, than it was to caution the manufacturers of sugar. It is all very well to agitate the growing of new crops in this country, such as flax, hemp, chicory, sugar-beet, &c., &c.; but I know from experience that the manufacturer and agriculturist must go hand in hand, and that neither will pay alone. If anyone intends making sugar from the beet, let him first determine where he would like his establishment, and then agree with the surrounding farmers to grow each a certain number of acres of the beets, and let the price be fixed, and a clear understanding established; then both parties will be satisfied. I feel confident that with a fair price the farmers can afford to grow the roots; for I have tried, and believe them to be as easily grown as mangolds; and Mr. Becherer knows the manufacturer can make it pay, and save the country 30 per cent. on our sugar. Therefore, let me beg that both interested parties will think no more of my letter, and never for a moment suppose that I wished to "dissuade parties from an undertaking that would lessen the price of sugar 30 per cent., and give occupation to thousands of labourers, and add a lucrative crop to the farming community."

Your correspondent kindly offers to give information concerning the manufacture of sugar from beet-root. Let me also take the liberty of requesting that he will furnish such in a letter to your valuable paper, and oblige at least one of your readers.

DENIZEN.

March 18th, 1867.

## Flax Culture.

*To the Editor of* THE CANADA FARMER

SIR,—Spring is fast approaching, when every farmer in the country will be calculating on what crop he will put in the ground that will be likely to be most remunerative; and while the price of wheat is so very high, it is to be hoped they will not be led away with the idea of trying wheat again on land already exhausted of all the properties for growing this valuable plant, and when they have not been able to produce over an average of from six to eight bushels to the acre for years back. I now allude more particularly to the front townships bordering on the lakes. High as the price wheat has attained, it has not yet reached that of flax seed, the ruling price of last year's crop being two dollars per bushel, and of four pounds less to the *bushel* than wheat. I am authorised to state, for the benefit of your readers, that Mr Currie, a respectable farmer, living on lot No. 19 in the 6th con. East, County of Oxford, harvested from *six acres last year* 128 bushels of flax seed, a fraction under 21 *bushels* to the acre, after sowing only 50 lbs. of seed to the acre. Every one conversant with a flax crop is aware the fibre is always of equal value to the seed, and sometimes realizes more; however, for seeds alone this is a fine return, and ought to encourage farmers to give this valuable branch of agriculture more of their attention. It is also well they should know the Government has reduced the price on the balance of the Riga seed imported last year to $2 50 per bushel, and that it has been cleaned and prepared for sowing by Mr. Fleming, Seedsman, Yonge Street, who will furnish it to parties intending to sow it this Spring. All parties who made the trial of this valuable seed last year, admit its superiority over the native seed, producing as it did fibre three to four inches longer, and several parties had three tons to the acre, while two was the average from any other kind of seed. The proceeds of last year's crop from this seed ought to be carefully preserved for sowing this season, as much benefit will result from this course. From the general prosperity of the country and the bright prospect before the farmers, they can well afford to try an acre or two of flax, and judge for themselves. Many new scutching mills are going into operation in many sections of the country, and why not have at least one or two in every county in the new Dominion of Canada?

JOHN A. DONALDSON.

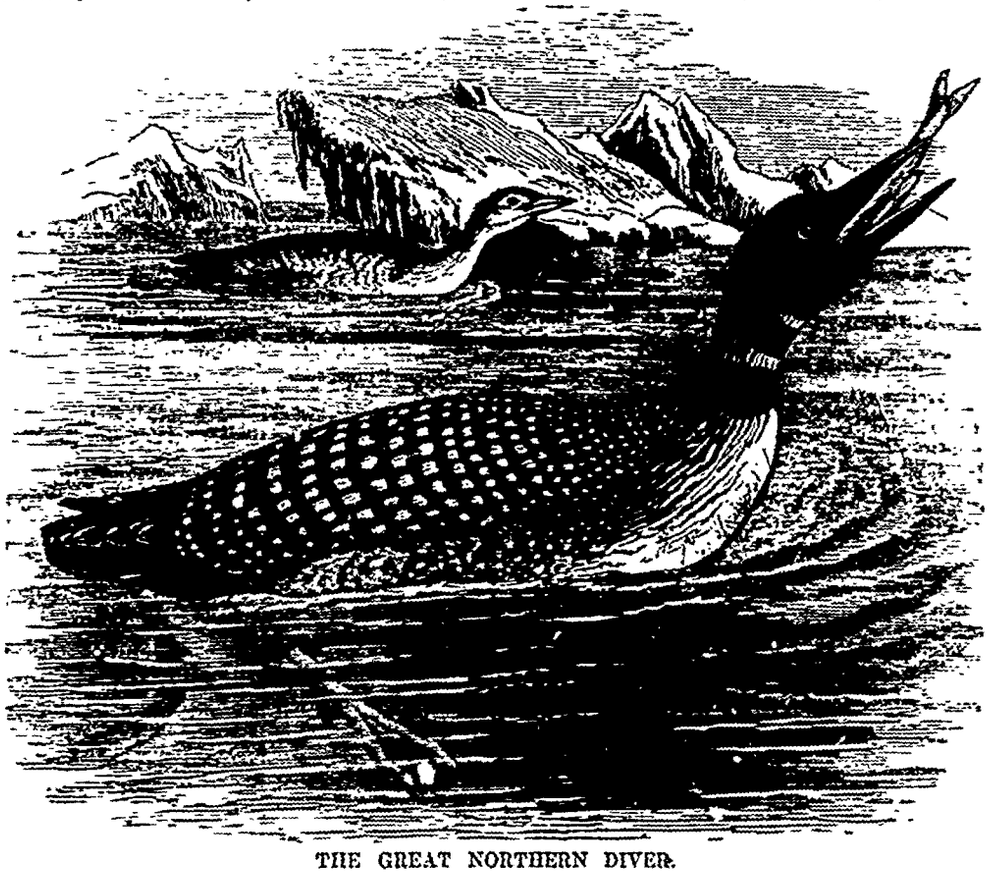
TORONTO, March 25th, 1867.

## Canadian Natural History.

### The Great Northern Diver.

(*Colymbus glacialis.*)

The accompanying illustration represents the bird last mentioned in our account, which will be found elsewhere, of the collection sent by Canada to the Paris Exhibition,—the Great Northern Diver, which, on account of its size and beautiful markings, at once attracts attention in the group to which it belongs. The head of the adult bird is black glossed with green and purple, and the cheeks and back of the neck are black without the green gloss. The back is black variegated with short white streaks, lengthening towards the breast, and the neck and upper part of the breast are white spotted with black, and cinctured with two collars of deep black. The breast and abdomen are white. The total length of the bird is not quite three feet. The immature bird is greyish black above, each feather being edged with a lighter hue and the under parts of the body are dull white. In some places this bird is called the Loon.



THE GREAT NORTHERN DIVER.

In its native haunts this splendid diver may be seen pursuing its arrowy course through and over the water, occasionally dashing through the air, but very seldom taking to the shore, where it is quite at a disadvantage.

Perhaps there is no bird that excels the Northern Diver in its subaqueous powers, although the penguins and cormorants are eminently notable in that respect. Its broad web bed feet are set so far back that it cannot walk properly, but tumbles and scrambles along much after the fashion of a seal, pushing itself with its feet, and scraping its breast along the ground. In the water, however, it is quite at its ease, and, like the seal, no sooner reaches the familiar element, than it dives away at full speed, twisting and turning under the surface as if in the exuberance of happy spirits. So swiftly can it glide through the water that it can chase and capture the agile fish in their own element, thus exhibiting another curious link in the interchanging capacities of various beings; the bats, for example, surpassing many birds in airy flight; the cursorial birds running faster than most quadrupeds, the seals and others equalling the fish in their own watery domain, and some of the fish, again, being able to pass for a considerable distance through the air. But among birds, it is generally admitted, the aquatic powers of the Great Northern Diver are unrivalled. Something of mystery, too, has always attached to this race-horse of the sea. For centuries it was thought impossible to track it to its nest, and the wildest stories were current respecting its origin and habits. Naturalists are now, however, more familiar with its haunts, and it is ascertained that it retires to high latitudes to breed, where it lays from two to three eggs on the margin of some lake or stream—the nest, a very large one, frequently floating among reeds upon the water.

Though this bird never uses its wings to escape from pursuit, he is by no means incapable of flight; but in flying he sometimes gets into scrapes from which he cannot easily extricate himself. A writer in the (English) *Journal of Agriculture* gives the following amusing instance:—A friend in Shetland, requiring to be awake at an early hour, had just replied to the knock of a domestic, when a sudden yell from the caller effectually banished his slumbers. "The devil is here in the dark," roared the girl, "and his claws are in my leg." A bewildered diver had found his way into the house, and had thus intimated his presence to the unlucky maid-servant. Another specimen of the diver was caught in a hollow in a moor, from which it was unable to rise. It was placed in an enclosure where two sea eagles were confined, but the royal birds objected to the intrusion. The male eagle dashed at the new-comer without a moment's delay, but the diver received the onset with its bayonet like bill, exactly as a foot soldier would meet the charge of a dragoon. Baffled and bleeding, the eagle, after repeated failures, retired from the contest. Meanwhile his mate had watched the progress of the combat with gathering wrath, erected feathers, and glaring eye, and when she saw the final defeat of her lord, sprang from her perch, avoided the diver's beak, and with one grasp of her talons round his neck laid him dead at her feet.

In winter, the Northern Diver is not gregarious, but in autumn they are often collected in little troops, when they utter a continuous chant, which sounds most musically along the waters. "We shall not forget," says the writer already alluded to, "the surprise we felt when that plaintive bell-like sound first struck our ear. We were becalmed in a yacht, when all at once we seemed to hear the distant tinkling chimes of a pack of beagles. At length the telescope discovered the source of the sound in a group of these birds far off towards the shore. Anxious to obtain a specimen as well as a closer view, we dropped down upon them in a small boat, and by various manœuvres succeeded in approaching them pretty closely. The glass showed their eyes suspiciously watching us as they slowly edged away, though not absolutely taking alarm. At length we thought we were within range of a large duck gun, and sent a cartridge among them. Instantly the flock disappeared; but two were wounded, one of which remained floating, and apparently dead. We had almost grasped it when, with a sudden effort, it revived and dived like its fellows. It rose before the gun was reloaded, and two stout rowers, pulling with a will, gave chase; but at every rise above the surface the bird, sorely wounded as it was, increased its distance, and finally left us far behind." Other writers relate similar narratives of the extreme difficulty of capturing or shooting this bird, on account of the marvellous rapidity of its course through the water.

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Artificial Birds' Nests.—The societies formed for the protection of insectivorous birds in Switzerland are now setting up artificial nests. One of the members of a society of this description who inhabits Pervey, having observed that many species of that kind select for nests the holes they find in the branches of rotten trees and that they consequently do not find it easy to settle in orchards, where all the trees are in good condition, began, twenty five years ago, to set up rotten trunks in his grounds, and since then he has had no need to trouble himself in the least about clearing away caterpillars, that care being entirely left to the birds who perform their duty admirably. His neighbours, on the contrary who have not had this foresight, have had their orchards laid waste by insects. The Yvardum Society have gone the length of placing artificial nests in the public walks and communal forests, on the borders of the lawns, &c. All those nests are now inhabited by hedge sparrows, red starts, creepers, and tom tits, all which may be found in Switzerland as high up as the perpetual snow line. The same practice has found its way into Germany.—*Ex.*

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### Crows vs. Insects.

Mr. J. A. Allen, in his "Winter Notes of an Ornithologist," published in the first number of the *American Naturalist*—a new popular magazine that we heartily welcome—gives a good word for the crow. "The poor crow," he states, "despised or persecuted by nearly all, is a bird of unusual interest to every lover of nature, and is a true friend to the farmer, though he finds in the latter a most inveterate enemy. The few crows that remain with us during the cold winter, seem able to support but a miserable existence, but no sooner does returning spring and the bare earth afford them a supply of grubs and other noxious insect larvæ, than they fare liberally, and their labours thus contribute vastly to the welfare of the farmer. Capable of withstanding the deforesting of the country, which has exterminated so many of our larger birds, he needs but little encouragement to become one of our most familiar and useful birds."

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☞ A Missouri farmer being asked if raising hemp was a good business, answered, "I can't sartin say, but it is surely better than being raised by it."

# Stock Department.

## Road and Carriage Horses.

*To the Editor of* THE CANADA FARMER:

SIR,—Having been an exhibitor at the late Provincial Fair, and having watched the decisions of the judges with interest in the road and carriage class of horses, I should like, through the columns of your paper, to draw the attention of the people, as well as of the judges, to a few facts in relation to that class of horses. As is very well known, we in Canada look to the English standard, as approaching the nearest to perfection in regard to domesticated stock of all kinds. In the class of road and carriage horses, a majority of the judges did not seem to understand the English idea of a carriage horse.

The English horse is of good size, not less than sixteen hands high; heavy, but clean bone; colour, bay or brown, free from white; black legs, mane and tail (a white foot or feet is considered a foul mark), with sufficient life to impart an animated, lively look and carriage.

The following horses were all bay;—Phenomenon, Grand Exhibition, Arthur, British Splendor, Coachman, and Perfection, who though virtually an English horse, being got by imported King Alfred, out of an English mare was imported from the State of New York.

No stallion of the colour of Black Hawk' Morgan has, to my knowledge, been imported from England into Canada as a road or carriage horse; his colour there, with want of substance, would rule him out; yet he received first honours at the late exhibition. The pair of carriage horses that took the first prize were of the same undefinable colour, and would have been termed in England "hard coloured." No doubt they were the fastest horses on the ground, when driven in the light buggy to which they were attached, which did not probably weigh over two hundred pounds; but place them in a family carriage with a few persons in it, and attempt to bring it to the grounds on the fair week, and they would cut a sorry figure. It may be objected by some that carriage horses are not to be driven on bad roads. Granted; but if required they should be able to perform the service. The pair that received the second prize were, in my opinion, far superior for all practical purposes. The Americans themselves are tired of their Black Hawk horses for the carriage; they say that they are too small, and they are now commencing to breed the English style of roadster. The Black Hawk for the buggy is unsurpassed, but the carriage is a different affair altogether.

There is another source of annoyance to breeders and owners of stallions; that is, allowing parties to exhibit their horses in harness. No reasonable man can object to another showing his horse's paces in harness, but after that let the horse be taken out and examined by the judges, free from any artificial appliance other than the bridle. It is well known that an artificial form can be imparted to a horse in harness, which he would not retain one minute if taken out of it, besides, defects can be hidden when a horse is kept in harness. No dealer in horses would think of buying a horse without seeing him stript. A horse, to do justice, must be seen as near as possible in a state of nature; if then he carries a good form, he will doubtless retain it when in the service of man, and be a source of profit as well as pleasure to his owner.

Some tart remarks have been made in regard to parties using stalls for parlors and bedrooms, during the exhibition. A little reflection would dispel those ideas. Most of the horses on exhibition were of considerable value, and few men would like to leave their horses by themselves, in a strange place, with other stallions in their immediate vicinity, as a serious loss might occur in a few minutes, when there might not be any person near to render assistance.

GEORGE MURRAY.

York Township.

A VALUABLE BROOD MARE.—An acquaintance of mine owns a mare that will be 24 years old this spring, and is now in foal with her eighteenth colt, having missed but one year since she was five years old. She has raised every one, and nearly all have brought her owner a high price. Such instances as this, I presume, are not common. R. W. S.

## Horse Stables.

*To the Editor of* THE CANADA FARMER:

SIR,—The importance of properly constructed stables to the health of the horse can scarcely be overestimated, or too frequently urged on the attention of those who own and use this noble animal. It is a fault with many stables that they are built for men rather than horses, and I have to point out two common errors into which not a few builders are liable to fall in constructing stables, especially those upon farms. The first is, having the doors and upper floors so low as they generally are. On account of these low doorways, horses will instinctively learn to fear them, and they frequently shy, rear, or pull back on the bridle or halter when led into the stable. They are also an exciting cause of that obstinate disease termed "Poll Evil," many cases of which I have been called in to treat, which were doubtless chiefly brought on by severe contusions received in passing through doorways. The horse, when passing through them, is either surprised by something it sees inside or outside the building, or perhaps is suddenly alarmed by the voice or gesture of the person leading him in, when up goes the head, and crash comes the poll against the beam of the door-way. A violent bruise is the consequence, often bringing with it inflammation of the part; and probably, if not arrested in time, a deep-seated abscess or *tumour* will be the result. Low hay floors may also produce the like injuries. The easiest position a horse can stand in is when the hind extremities are slightly the highest portion of the body, or when the flooring of the stall slants in exactly the opposite direction from what it generally does in most stables in the country. Horses when at pasture will be invariably observed to stand with their hind-feet elevated when resting themselves; and it is not a little surprising that builders and others have not improved upon this fact, and adapted floors to the wants of the horse. The moisture from the animal, if the floor slanted a little toward the fore extremities, should assist in keeping the forward feet cool and healthy; whereas we oftentimes find them inclined to be feverish and dried up, requiring a great deal of attention in order to keep them healthy. There is another objection to having floors laid to slant backwards, which is this: the horse will often try to ease the strain upon the flexor tendons of the hind legs by habitually hanging back upon the halter; and the severe pressure of the same on the top of the horse's head, as a matter of course stopping a free circulation of blood in the part, often develops into a tumour or abscess. Finally, I would mention that several cases have come under my observation, where horses have been compelled to stand for a long time on shipboard, with their hind feet much lower than their forward ones. Affections of the kidneys or sprain of the tendons have been thus brought about. I would not however, recommend that horses should stand at any time with their forward feet too much on the descent, as in that case the remedy will be as bad as the disease, rendering the forward legs liable to a heavy strain on them, and probably producing acute Laminites or Founder.

T. K. QUICKFALL, M. R. C. V. S.

Veterinary Infirmary, Belleville, C. W.,
January 17th, 1867.

## How to Manage Young Lambs.

HAVING had the sole charge of young lambs for several years, and been generally very successful, I will give my experience. A young lamb that the mother will not own, and has not strength to suck, I bring into the house, wrap it up in an old blanket, and place it near the fire; then get some ewe milk, warm it slightly, and feed the lamb, a little at a time, (three teaspoonfuls, say) every twenty minutes, till it begins to revive. I then moisten my finger in the milk, and insert it in the lamb's mouth, repeating this operation until it learns to suck readily. It will then take its milk readily from the ordinary glass sucking bottle, with a nipple used by babies. Care should be taken to feed sparingly; I killed many lambs by over-feeding. When I first commenced raising them by hand.

If you wish to return the lamb to its mother, do not keep it from her too long; return when warmed and its stomach filled, and confine the two in a small pen about four or five feet square—suckle it often, holding the ewe for that purpose. It is a good plan to bring a dog near the pen; the ewe will eye the dog angrily, commence stamping her fore foot, otherwise standing perfectly still, and the lamb, if inclined to suck, will then have a good opportunity. The presence of the dog seems to arouse all the motherly instincts, and she will turn round her head and caress the young one with true maternal regard. By persevering, I never have any difficulty in making a ewe own her offspring.

It frequently happens a ewe will drop twins—one strong and the other weakly; the one most needing her affectionate care will be discarded. It is a good plan in this case, after warming and suckling the weak lamb, (if chilled,) to shut the ewe with it alone, keeping the other away from her. (The dog operation here comes into play admirably.) Do not keep the favourite from her too long, however—not over a couple of hours, say—or she will forget it. In conclusion, I will say, whoever attempts to raise lambs, particularly early in the season, must have a warm building, fronting the South and West if possible, so arranged that the ewes can be shut up in very cold weather—a number of small pens is necessary. I sometimes have a half dozen different lots, all requiring a little different management, and then, most of all, close attention is requisite. Get the young lambs through two days, and the worst is over. When they are old enough to pick at hay a little, place some Indian meal in troughs at the side or end of the building, so arranged by nailing boards in front that only the lambs can get at it. It is astonishing the quantity they will eat in this way, and the extra growth it produces. I should have remarked before, if you intend to raise the lamb by the bottle, give it ewe milk for two days, and after that cow's milk diluted, half water, and warmed to blood heat.

If the above experience of one who has been eminently successful as a *lamb raiser* is faithfully and patiently carried out, my word for it the next census will show a material increase in the number of sheep throughout the length and breadth of these United States.—*Horace Maticer, Blooming Grove, N. Y., in Country Gentleman.*

HEAVY SHORT-HORN OX.—A correspondent furnishes, for the *Co. Gent.*, the following figures as to the Short-Horn ox "Josh Billings," fed and recently slaughtered by Mr David Goodell, Brattleboro, Vermont:

| | | |
|---|---|---|
| Live Weight | | 3,010 lbs. |
| Tallow | 325 lbs. | |
| Hide | 138 | |
| Fore-quarter | 479 | |
| do. do. | 506 | |
| Hind-quarter | 489 | |
| do. do. | 470 | |
| | | 2,407 lbs. |
| Shrinkage, about one-fifth | | 603 lbs |

RESTORING THE BREED OF CANADIAN HORSES.—We learn, with much pleasure, that a vigorous effort is being made to renew the breed of Canadian horses from Normandy and Brittany, whence they came at first. This renewal is necessary, on account of the constant drafting away of the best of our horses to the United States In a few weeks the following horses will arrive; viz.,—A Percheron stallion each for the Society of Beauharnois, L'Assomption, and Vercheres; a Breton stallion each for the Society of Chateauguay and Mr. Herbert of that place; and one Anglo Norman horse for the Huntingdon Society. These six stallions will be followed by many others. We prefer the Percheron breed, and could not recommend the Anglo-Norman.—*Minerve.*

REMARKABLE STONE IN A HORSE'S STOMACH.—On Sunday morning last, a large bay horse of Clydesdale breed, belonging to Messrs. Moyes & Gowans, brewers here (says the *Kilmarnock Standard*), died after a period of intense suffering. The animal (which was purchased in November last), at various times showed signs of illness, but was entirely unfit for duty only during the last ten days of its existence. As none of the medicine given to it proved of the slightest avail, the Messrs. Moyes & Gowans caused Mr. Aitken, veterinary surgeon, to make a *post mortem* examination of the carcase on Monday, when a stone, or calculus concretion, of extraordinary size, was found in the animal's intestines. The stone, which is globular in shape, weighs no less than eleven pounds, and is about two feet two inches in circumference Such formations are by no means rare, but the most experienced of those who have examined the one in question have no recollection of ever seeing anything of the kind at all approaching to it in size. The largest met with are spoken of by medical authorities as being "several pounds" only in weight, so that the one in the possession of the Messrs. Moyes & Gowans may prove to be quite unexampled in size.

# The Dairy.

## Butter-making; the old Trouble.

Several correspondents send us enquiries respecting the cause of their failure in making butter come. So much has been written in every agricultural paper about this difficulty, and the proper method of making butter, that to offer any remarks on this subject seems only a superfluous repetition of what every dairymaid has read or heard a hundred times before. We do not profess, then, to suggest anything new, nor do we know of any specific or infallible rule, that shall in every case secure a speedy conversion of cream into butter. Some persons say they never fail, others, who follow the directions given by those same unfailing guides, have to confess to occasional miserable failures, and fruitless churnings extended indefatigably over weary hours. All we can do here is to remind our enquirers of several of the important points which it seems desirable to attend to. The principal difficulty occurs during the winter season, which is now happily drawing towards its close; but as there is a month or more yet before grass will be growing in sufficient quantity to afford pasture for cattle, a few hints may not be entirely out of season. First, with regard to feeding the cows, we believe it is very important, as one means of preventing the difficulty under consideration, as well as to preserve the general health of the animals, that salt should be regularly supplied, or that the cows should have access to salt, to lick at their pleasure A secondary advantage resulting from attention to this point is, that the cattle are thereby impelled to drink a larger quantity of water, which has a favourable influence on milk making We think it desirable, moreover, to add, if only a small quantity, grain of some sort, in addition to the roots and hay which form the principal part of winter diet for our dairy stock. When feeding corn to cattle, we never experienced the difficulty in churning butter that seems, so frequent a concomitant of root feeding.

Then, as regards the proper treatment of the milk A great many experienced dairy authorities recommend scalding the milk, and indeed regard this as the only sure mode of preventing the frequently recurring vexation of churning in vain Let those who cannot succeed otherwise scald their milk; but we must say that we have not found even this plan infallible, and besides producing a quality of butter certainly not first class, it spoils the taste of the milk We would recommend attention to the following particulars, and if, notwithstanding, the butter fails to come, then by all means scald the milk.

Let everything about the dairy be *scrupulously* clean. Let milk be kept in a moderately warm room; a temperature between 50° and 60° is the best; certainly it should never be allowed to freeze. Skim before the milk turns sour. Stir the cream well in the cream pot every time a fresh addition is made. Do not shut either milk or cream in any close place; fresh, sweet air is essential. The temperature of cream for churning should be about 60°. If it is much below or above this, or if the room in which the operation is performed is either very warm or cold, delay and disappointment may be the consequence. We believe that with strict and unvarying attention to these points, as well as to the proper feeding, salting and watering of the cattle, the instances of failure will be very few, if any. Some persons recommend giving the cows an occasional small dose of saltpetre. We have had no experience of the practice, but think there can be no harm in making the experiment.

## Remarkable Cow.

A correspondent in the *Country Gentleman* gives an account of an astonishing yield of milk by an Ayrshire cow, bred and owned by Mr. S. Scammon, of Stratham, N. H. The writer of the communication from which we quote took considerable personal trouble to ascertain the facts of the case, and vouches for the correctness of the statements. The cow was of a pale yellow colour, and girths 6 feet 3 in." The year that she was six years old Mr. Scammon kept an "exact account" of the butter made from her, which amounted to six hundred and ten pounds (610 lbs.) Her milk weighed fourteen thousand five hundred and forty pounds—being almost forty pounds per day, through the year, and nearly twelve pounds *per week of butter* through the year. Mr. Scammon gives his cow good hay during the winter, and generally two quarts of corn meal per day when she gives milk. In summer, he gives her four quarts of meal per day, till July, then decreases to two quarts, and after haying turns her out to grass and gives no meal. He also gives her green corn stalks in the season of them. He thinks the meal is principally useful in increasing the quality rather than the quantity of the milk.

His two daughters, he says, milk this cow, "one on each side of her, with a large pail apiece." Would sell her "for $1,000," and nothing less.

He says "some four years ago he went up into Vermont and bought four full-blood Durham cows, but this *Ayrshire*, then a heifer, would make more butter than all of them!" Has tried "several different breeds, but prefers Ayrshires before any." Four years ago he slaughtered an Ayrshire ox, which weighed, dressed, nineteen hundred and ten pounds.

This cow "would give milk the year round, but is usually dry one month before calving." She "runs all to milk," so that if no meal was given her she would "get very thin."

# Veterinary Department.

## Chronic Diseases of the Air Passages of the Horse.

### Nasal Gleet.

Nasal gleet is the name applied to a chronic discharge from one or from both nostrils. This is not an uncommon disease amongst horses in Canada, and it is also a disease in which gross mistakes are often committed by practitioners who are not thoroughly versed in the anatomy of the parts affected in this complaint. Many a good and valuable horse has been destroyed because supposed to be suffering from glanders, when the affection was simply a case of nasal gleet. There are other affections of the sinuses of the head, and particularly of the frontal sinus, giving rise to a chronic discharge of matter from the nose, but at present we intend to confine our remarks chiefly to that kind which supervenes upon an attack of catarrh. Instead of the nasal discharge ceasing, as it usually does in the course of eight or ten days, it increases and somewhat alters in colour; the lining membrane of the frontal sinus becomes thickened and enlarged, and assumes an unhealthy condition The lining membrane of the nose is also altered in colour, and instead of its natural clearness it soon acquires a pale leaden hue, but does *not* exhibit the *ulcerative* patches characteristic of glanders. The discharge alters both in quantity and quality. At one time it may be thin, whilst again it is thick and creamy-looking: in some cases the discharge is continuous, whilst in others it is retained for a considerable time within the sinuses, and comes away in large quantities, especially after exercise. There is often a watery discharge from the eye, and the frontal bones are tender when tapped with the finger; and if there is much matter within them, a dull heavy sound is also produced. If the disease is of long standing the bones bulge out, at first very slightly, but gradually increasing. In those cases the bones are greatly diseased and a large amount of pus is collected within the sinus, which very soon interferes with respiration and produces laborious breathing. In ordinary cases, where the bones are but little affected, it is a long time before it materially affects a horse in his working capacity. In some cases the sub-maxillary glands are enlarged and hardened; but they have not the same fixity to the jawbone as in glanders, and the general appearance of the horse is quite different from the emaciated condition which generally accompanies that disease. This, although a very serious affection, is a complaint which in most cases can be satisfactorily treated, though in severe cases it is generally necessary to have recourse to an operation before a complete cure can be established. As we intend shortly to notice other causes of chronic discharges, from the nose, &c., we shall defer noticing the more important treatment at present, and merely add, that in all cases the animal must be well cared for and have a regular and generous diet.

"Hollow Horn."—L. Kitchen, Waterford, enquires:—"Can you give a cure for a disease called 'hollow horn?' All the remedies I can hear of such as docking the tail, boring the horns, putting camphor in the ears, or on the head, and cramming a a quantity of coperas down the throat, seem to me perfectly heathenish. Can you tell me which is the best work on diseases of cattle, the price, and where to be procured?"

Ans.—We do not know any disease in cattle correctly called "hollow horn;" and we entirely agree with you, that docking the tail, boring the horns, &c., are heathenish in the extreme. The complaint in the case you refer to may be "nasal gleet," or chronic catarrh. Many barbarous operations and customs are resorted to for the supposed cure of hollow horn. Processes of the frontal bones, known as the flints, and to which the horns are attached, are hollow, hence the mistake by many would-be cow doctors. They mistake the natural formation for disease.

N.B.—As to the best works on cattle diseases, we would recommend "Youatt's Treatise on Cattle," and Gamgee on "Dairy Stock." The price of the former is $2 40, of the latter $2 25 They can be procured through almost any bookseller.

Diarrhœa in Sheep.—A "Subscriber," writing from Cathcart, says. Will you inform me through The Farmer what is the best remedy for sheep that have the scours? I have lost a number of fine lambs from that complaint this winter, and many of my neighbours' flocks have suffered from the same disease. I should also feel obliged if you would state at what temperature cream ought to be when it is churned.

Ans.—Diarrhœa, or scouring, is often the result of improper feeding, or it may be caused by bad ventilation, frequent changes in the temperature, &c., and to treat it aright the cause or causes upon which it depends should if possible be found out. In many cases, it is nature's own method of cure; for there may be some irritant within the intestinal canal, and the passage of an undue quantity of liquid fæces is a means of getting rid of it. Therefore, in the first place, in regard to the treatment of lambs affected with the scours, we would recommend a change of food, and also a change of housing, if the place in which they are at present kept is either low lying or insufficiently ventilated; and in the medicinal treatment in the early stage we advise a mild laxative, as two ounces of epsom salts, dissolved in six ounces of water, to which may be added one drachm of powdered ginger, or if there is much pain and straining, a little castor oil and laudanum should be given. If the scouring continues, and the weakness increases, one drachm each of catechu, ginger, and gentian, may be given in a pint of warm water, several times a day

To the second question, an answer will be found in the Dairy department of the present number.

Heart Disease in the Ox.—Ernest R. Jacob, of Ardock, asks our advice respecting an ox in his possession, which he tells us is affected in the following manner: "He fell sick about six weeks since. I notice that when drawing logs he will often go a few rods and then stop, and I can hear his heart beat, even when I am walking behind the log, a distance of one rod at least. When the heart beats so loud, the vein in the neck, close to the shoulder, is seen to beat violently too. Besides, when about to be yoked he evidently does not like it, and tries to avoid me. In every other respect he seems well, and in good order; he eats heartily, chews his cud, acts lively, and shows no other signs of sickness. We are here in the back woods, away from all surgical advice, and should feel greatly obliged fo. any suggestions you could give."

Ans.—We suspect that your ox is suffering from some disease of the heart, and the case is likely to be a troublesome one, and the treatment of it very unsatisfactory. We would recommend you to put the ox in a loose box or stall and not work him any. Feed him well on a nutritious diet, as boiled oats, barley, linseed, &c., and only allow a few pounds of good hay daily, and give every night one drachm of the iodide of potassium dissolved in a pint of water, until twelve doses are given. Cut the hair off the left side over the region of the heart, just behind the shoulder, and apply about three ounces of mustard, made up as for table use, and rub it thoroughly into the part from which the hair has been removed. This application should be applied every second day, for at least eight or ten days, and at the same time excite the animal as little as possible.

# Poultry Yard.

## Breeding Poultry.

READ BY COL. HASSARD BEFORE THE CANADA WEST POULTRY ASSOCIATION.

In regard to the mode of rearing chickens, much may be learned from books on poultry; but there is one subject on which they are silent, viz. impregnation. I have heard and seen that many fanciers and breeders in this country especially, allow all breeds to run together at certain seasons. They say it is convenient to do so if the cocks agree, and if eggs are then taken they are useless. Granted; but after this promiscuous intercourse can you be certain that no future harm will arise from it? In the larger animals, such as cows, horse, and others, there is no doubt that the first impression lasts for some three or four births. A nobleman in England put a thorough-bred mare to a Zebra: the offspring was striped. The next year he put the mare to a thorough-bred horse, and again the stripes appeared; and I am informed that for three or four foals all were more or less striped on the shoulders. Some years since, when in the Mediterranean, I had a pointer bitch, of which the greatest care was taken to keep the breed pure; she had a splendid litter of puppies, eight in number; I reared six; they were all pointers but one, which, though of the same color, turned out a long-haired ugly brute, almost useless. This was accounted for by the fact that the first litter had been by a vagrant in the street, similar in shape, but of different color to the odd pup. I therefore recommend to all poultry breeders to keep their birds pure; above all, not to let the pullets that they intend to rear stock from have any intercourse with males not of the same breed. Perhaps some of the professional and scientific men in the society can explain these things, which I do no not profess to be able to do. I merely state the facts, and act accordingly. I never let any pullets of mine run promiscuously with other breeds: and I think what holds good in one case, will in another.

With regard to breeding, I think that the system of counteraction must be acted upon. I merely say I think, and do not lay down the law on the subject; but I am convinced that in breeding pouters, carriers, Cochins and other breeds, to do well you must always act on this principle, which I will explain. It is valuable information to many, and breeders generally would have better stock by paying attention to the rule. It is this—supposing (take carriers for instance) you have two first-class birds which you want to match, but on examining the points, you find both deficient in one point—say eye; you cannot match them, or you will perpetuate bad eyes—the very thing you want to avoid. No, you must select a bird with a very good eye, to counteract the deficiency in the other, although it may have some other inferior point. Again, in Pouters, if you have one of great length, you could afford to match it to one smaller, if good in other points. Again, in Cochins, if you want good color, all other things being perfect, a dark cock should be put with light hens, and *vice versa*—you will then get light and dark chickens, but never mealy or of doubtful color. In a show pen it is quite the reverse; the birds must match in color to a nicety. I have merely given these examples because they have come within my own experience; but in all other breeds the same thing applies. So that it appears there is a great deal to be studied and thought of, and attended to, even in breeding poultry. Here I should state something about breeding in and in, or from near relationship, which if continued will eventually ruin the stock. Mr. Ballance, of Taunton, Somersetshire, Great Britain, has, however, proved that by a judicious selection of strong birds from different broods, kept in different runs, the system may be successfully carried out. But there is no doubt that, if continued for many years carelessly, the stock degenerates. In a manufactured breed, like Sebright Bantams, it cannot be carried on at all, or degeneracy in markings, &c., will be at once apparent.

The next question is what are the best ages to breed from. I have been compelled to breed from young stock generally: but I believe two-year old cocks and young hens, or the reverse, would be equally good. So much depends upon what one has, that no rule can be always followed; and if the stock is healthy and not too old, and the aforesaid principle of counteraction attended to, the result should be good. For all sorts get birds as near perfect as can be, and never breed from stock with glaring defects on one side or the other. I think that these rules should be followed until the breeder has a good stock on hand. He may then try experiments by crossing. But there is one thing he never should do; that is, sell any of this experimental stock as the genuine article, or at any rate without letting the purchaser know what he is taking. I once in England sold a gentleman a black-breasted red game Bantam cock; he was satisfied in all respects but one; he said he thought he could trace on the wing a light portion that made him imagine he had Duckwing blood in him. I wrote immediately, and told him that one bird in the brood had turned out Duckwing; he asked me to take him back, which I did; but I was not obliged to do so, as there had been no deception on either side. At the time I was not aware that it mattered, nor did it much; for the bird was a splendid specimen. A word or two about prices of birds of the same stock may not be out of place. Prices must vary according to quality although birds are of the same stock. If you sell a pair or trio almost faultless, which the buyer may exhibit against you, you must get a remunerative price. You can let him have same race, blood, purity, &c., for a less sum; but then there may be a difference in age, in points, or other respects, which lessens the price. I once purchased, from one of the first and best breeders of Cochins in England, a cock Cochin China; the sum paid was, I think, £1 10 stg., which, for a bird coming from this yard, I considered very little, especially as my new purchase was own brother to the bird that had won the first prize at the Crystal Palace Exhibition. On his arrival, I did not like the comb. I wrote and said so, and I was told that a few weeks before he had a fight through the wires, and it got damaged. This I could see was the case; there was no fault in the bird for stock; but he was useless to exhibit. Had he not been, I suppose £5 would not have bought him. Some of his descendants are now here. I merely refer to this to explain the reason why prices should vary for birds of the same stock, although they may be equally good to breed from. In closing these remarks, I would request all interested in our society to endeavour to inculcate as far as possible into the minds of dealers and others that in poultry, as in other things, honesty is the best policy, and that no confidence can be established amongst us, especially when at distances apart, unless the birds advertised or sent are what they are represented to be.

# The Apiary.

## The Queen Bee.

The Queen is easily distinguished from the drone or the worker by her long tapering body and short wings, or rather wings which appear short from the great length of her body. She is the mother bee, or only perfect female bee in a colony. Her proboscis is more slender than that of the worker, and her legs are longer, and have not the hairy brushes at the joints. As she never collects *pollen* or *propolis*, her hind legs have not the cavities found in those of the worker. The abdomen of the queen contains the ovarium, consisting of two branches, each of which contains a large assemblage of vessels filled with eggs, and terminating in what is called the oviduct, from which they are extruded by the insect, and deposited in the cells. The queen, like the worker, possesses a sting, but that of the queen is somewhat curved or bent, while that of the worker is straight. She seldom uses it, however, except in a battle with a rival queen, and may be taken in the hands with perfect safety.

The back of the queen is darker than that of the worker, while the belly is more of an orange color; her movements when undisturbed are majestic and stately; but when she wishes to conceal herself from man her movements are quick and shy. Her business is to propagate her species, which under favourable circumstances she is not slow to do. The number of eggs which a prolific queen is capable of depositing in a day has been estimated at from 2,000 to 4000, which may appear almost incredible, yet if a queen is closely watched through the glass of an observing hive made for the purpose, she may be often seen during the breeding season to deposit four or five eggs per minute. If, then, we allow her to lay five eggs per minute for ten hours out of the twenty-four, we have $10 + 60 = 600 + 5 = 3000$ eggs. A queen will not, however, average this for the season; the celebrated naturalist Schurach, computes the number of eggs produced during the working season at 100,000. The body of the queen, as before remarked, is long and tapering; this is in order that she may deposit the eggs at the bottom of the cells, which are nearly half an inch deep. In the operation of laying, she first puts her head into a cell, as if to ascertain whether it is in a fit state to receive the eggs, she then withdraws her head, passes half her length over the cell, curves her body downwards, inserts her abdomen into the cell, turns herself half around, and withdraws her body, having in the meantime deposited an egg, which is attached to the bottom of the cell by a glutinous matter with which it is covered. She thus passes on from cell to cell, furnishing each with an egg. During this process of laying, the workers attend her continually, supplying her with food and water.

## Size and Shape of Bee-Hives.

*To the Editor of* The Canada Farmer:

Sir,—I would add a word to what has already been said upon this subject. If all the practical details of bee-keeping were as well settled as the size of the breeding apartment of hives, it would be better developed as a science. It should contain between 2,000 and 2,220 inches, frame measurement. She would be a queen of rare fertility that would occupy the empty breeding cells in a hive the latter size, after taking into account the larger size of the drone cells, and allowing considerable space for honey and bee-bread to stimulate breeding.

I think Mr. Thomas disposes of the shape question rather summarily. The fact that Langstroth and Crainby both use and recommend what are termed shallow hives, would indicate that the matter is by no means decided. If the wintering of bees were the only thing to be considered in determining the shape of hives, certainly a tall hive would be used; hence Langstroth says:—"Tall hives have some obvious advantages." But it does not follow from this that he recommends a tall hive any more than the conical Polish hive spoken of in the next paragraph. In a circular lately issued by him, he says:—"We prefer for many reasons the shallow form of hive, which we adopted after experimenting largely with deeper frames, and frames to be removed from the sides, as well as the top." The form adopted is described in these words: "A hive, long from front to rear, and moderately low and narrow, seems on the whole to unite the most advantages." With which agrees Quimby. (p. 72.) Still I think, in our climate, the less the frames are under twelve inches in depth the better—at least with those who winter their bees on the summer stands. The principal reason why the breeding box should be shallow, rather than deep, is to give room for surplus honey receptacles. These should be five or six inches in depth, and in ordinary swarming hives contain, on an average, all the room required by a good stock, in a fair season. Quinby gives over 1,200 inches; Langstroth about the same; Thomas about 600, and Z, 1,050. Mr. Jewett and other bee-keepers, who wish to make the production of honey a specialty, should give the requisite space here. I manufacture the proper Bee-Hive (or it may be done by the bee-keeper) by a slight addition to the cost, and without any change or destruction of existing parts, so as to give a space of 2,000 inches for surplus honey. We want a hive adapted to swarming or non-swarming purposes. The non-swarmers of the past would meet neither of these wants. But in a hive in which one can remove frames of honey, cut out queen-cells, have the space for surplus honey as warm as the breeding box, and of sufficient size to employ all the bees, swarming is placed almost entirely within the bee-keeper's control. By increasing his stocks one-half, that is by taking one swarm from two old ones, he may secure a gradual increase of stocks, and have the energies of his bees directed mainly to the production of honey.

A. N. HENRY.

Oshawa, 8th March, 1867.

## A Move in the Right Direction.

"T. G." writes from Brantford, under date of March 7, 1867, as follows:—"The West Brant Agricultural Society have taken a step forward, and made an advance which can but result in the greatest good to the farmer, the mechanic, and manufacturer, as well as the citizens of Brantford. The Society have determined to hold a spring show on the 11th day of April, 1867, within their spacious and beautiful grounds, in the town of Brantford. This Exhibition will also furnish an opportunity for the sale and exchange of animals and farm products generally. Liberal premiums are to be offered for the various breeds of stallions, and for spring grains, seeds, roots, &c. The farmers are expected to bring anything they may have, whether or not it comes under the premium list, stock of all kinds, horses, bulls, cows, heifers, steers, calves, oxen, sheep, pigs, poultry, grains, seeds, roots, dairy products, &c. The manufacturers of implements are expected to bring in samples of their handiwork, labor-saving machines, ploughs, cultivators, drills, harrows, reapers, mowers (single and combined), raking attachments, &c., more particularly all that class that comes in use during the spring and summer months. The farmer and the artizan will at once admit the great benefit they will derive by attending a "spring show" as well as the "fall show"; not that the latter should be lost sight of, or even neglected in a single item, but they must see that the spring is the more convenient time for purchasing much of the seed required, and that nearly all the implements have been used and laid by for the coming season by the time the fall show takes place. No doubt, the farmer intends, whenever he sees any thoroughly good machines, animals, or an extra class of grain, seed, roots, &c., to purchase such as he wants in the spring; but how many changes may affect him before that time, and prevent his carrying out his intentions; but at the spring show the farmer sees and feels his need at once—they must be supplied; he proceeds to buy, barter or exchange such grain, seeds, roots, implements or animals as please his fancy. Assuredly the spring is the time for this business. The members of the Society are sanguine of the success of their project. The committee of management evinced a commendable zeal, and the Town Council of Brantford and citizens generally have shown a liberal spirit in the matter. The farmers and artizans in the neighbourhood also manifest an interest in the undertaking which promises well for the coming exhibition." We give the society our cordial sympathy, and heartily wish them success.

## Poultry Queries.

A correspondent at Dundas sends us the following:—"I would like to inquire concerning something in which I have quite lately begun to be interested, and in awakening which interest you yourself have been principally concerned. I allude to poultry. Hitherto when I have thought about raising good, thoroughbred poultry, I have been discouraged by the difficulty of procuring pure stock, or, at least, by my own ignorance of where to obtain it; but your capital management of the "*Poultry Yard*" in The Canada Farmer has done away with the difficulty entirely. Still, there are some things I want to know. I have about concluded to go to California in a few weeks; and while I could not be burdened with taking out live fowls, I still could take a few eggs of the best varieties, if I could procure them. Col. Hassard's advertisement in the Canada Farmer informs me where I may procure eggs of the Cochin China breed. Do you know where I can procure pure Dorking and Poland eggs? A friend in this neighbourhood has what he calls the yellow Dorking. It answers in many respects to the characteristics of the Dorking as described in the Canada Farmer, but is neither grey, silver grey, speckled nor white. Is the colour an essential to the purity of the breed? Would you inform me how eggs intended for hatching should be packed when required to be sent a long distance? I have heard of varnishing eggs to preserve them—are they eligible for breeding purposes after that or not? What is the best published authority on poultry? And where obtained?"

Ans.—The Canada West Poultry Association, who may be addressed through their Secretary, will no doubt be able to inform our correspondent where he may procure good eggs of any of the varieties he names.

With regard to the colour of Dorkings, we believe that though there is some variety in the colours, yet a good bird should belong to one of the classes enumerated and correspond to the colouring peculiar to it. The so-called "Yellow Dorking" cannot be a genuine Dorking at all, but is probably a cross between the true Dorking and Buff Cochin.

As to the method of packing eggs for travelling—Mrs. Ferguson Blair, one of the highest authorities in such matters, recommends that they should be packed in hampers. The jarring consequent on nailing down the lids of boxes is apt to break or injure the eggs. Her plan is to put each egg upright (previously wrapped in strong paper), in a little nest as it were of hay, tightly compressed; they are placed as closely as possible in the hamper; on the top is a layer of hay, and paper over all; with a packing needle and twine, the lid is then fastened down.

Mrs. Ferguson Blair has sent eggs thus packed to the Bahamas, and they have hatched in the proportion of eight out of thirteen. The plan of varnishing the egg would certainly, by excluding the air, kill the embryo, and prevent the eggs hatching.

Among reliable books on the subject, we may mention "Doyle's Domestic Poultry," published by Routledge & Co.; Mrs. Ferguson Blair's "Henwife;" and for a cheap but excellent guide, we may mention "Poultry for the Many," which may be procured in Toronto.

## Soap Suds as Manure.

A correspondent from Belleville sends us an extract under the above heading, from the *Edinburgh Weekly Review*, at the same time expressing his dissent from the opinion entertained by the lecturer referred to, and wishing to know our views on the subject. The paragraph is as follows:—

"During the course of a lecture at Bradford, the other evening, Dr. Dresser, an eminent lecturer on the physiology of plants, said that a common idea prevailed that soap suds were a good manure for fruit trees. This was a great mistake, but happily for the lives of the trees the knowledge of the true position of the roots was not generally understood. It was quite a common occurrence, remarked the lecturer, for people who had a garden to preserve the soap suds, and taking them into the orchard to pour the suds on the soil near the trunks of the trees. By this proceeding, the suds, which were a deadly poison, did not reach the roots, which were not near the trunk, but spread themselves under ground on a line somewhat with the wide-spreading arms of the trees. Dr. Dresser said this practice was quite common in the south of England, but he thought that in this intelligent part of the country people who have gardens would know better than to deluge their trees with such a noxious element to vegetation as soap suds. The learned doctor is wrong in supposing that this custom does not prevail here, for even amongst many well informed people the idea is so strong that soap suds are good for fruit trees, that the suds are regularly emptied into the ground near the trees. The knowledge that suds are not good for manure will no doubt prove useful to many people who take a pride in their gardens."

We must confess that we are quite inclined to share in our correspondent's dissent from the above emphatic denunciation of a very common and, as we are disposed to consider, at least an innocent practice. No explanation or reason is given, and as the extract reads, it simply makes an assertion without evidence or justification. We cannot tell upon what grounds Dr. Dresser considers soap suds so deadly a poison to plants. As we understand the matter, common soap is a neutral compound of stearic acid, or the acid of fat, and soda or potash. When water is added, a portion of the alkali is set free, and this liberated alkali uniting with oily or fatty matter in the process of washing, is the secret of its cleansing property. Soap suds, therefore, consist chiefly of a very diluted solution of stearate of potash or soda, with very little, if any, caustic alkali. It is possible that it is to the presumed presence of a considerable proportion of caustic ingredients that the Doctor may attribute the supposed injurious effects of the application. In that case, we think he must greatly over estimate the quantity of free alkali present. As to the position of those portions of the root that are active in absorption, viz., the newly formed and extreme rootlets, he is no doubt perfectly right, and it is well to bear this in mind when we wish to make any fertilizing applications, or even to water the roots of shrubs or trees.

## Extracting Honey from the Comb.

*To the Editor of* The Canada Farmer:

A plan has been devised in Germany for emptying honey from the comb, without injuring the comb or removing the bee-bread or any other impurities. An improvement on the German machine has been devised and patented by L. L. Langstroth & S. Wagner, and will be offered for sale the coming season. Are you aware if any one has introduced it into this Province? BRIAR.

Co. Carleton, March, 1867.

Ans.—It has not yet been introduced here.

Seed Potatoes Wanted.— A. T. Gregory, of Mt. Forest, writes:—"Please mention in your next issue if you know where I could obtain the Gleason and Early Goodrich, and at what price?"

Ans.—See advertisement in The Canada Farmer of March 1, and the article on the Potato in this issue.

Profits of Pig Breeding.—Mr. Geo. Robson, Sec. Co. Ag. Society of South Ontario, sends us the following item: "Mr. Yeoman Gibson, of this place, bought from Mr. Robert Ormiston, 7 Con. No. 17, of this Township, a sow pig 19 months old, weighing 640 lbs. On the last week of May, 1866, she had a litter of pigs thirteen in number, and raised ten of them, and one of them weighed, when slaughtered, 330 lbs. at seven and a half months old."

Diseased Potatoes and the "Skinless Oat."—A "Subscriber," writing on the prevalence last season of rot in the potato crop, says that the best method of arresting the spread of the disease is to sprinkle freshly slacked lime over them. He also suggests that it would be a great advantage to farmers and others who raise this valuable root if hand potato mills or graters could be procured, to grind up into flour (starch) all that were beginning to spoil or that were too small to be marketable. Large quantities, he is told, are thus converted into starch at Lowell in Massachusetts. The same correspondent enquires if any of our readers have a species of oat called the "skinless oat," specimens of which he once possessed, but lost them before seed time. In this kind, he says, the slightest shake or stroke will separate the kernels from the husk, and throw out the grain smooth and clean like groats.

Whole or Broken Bone for Vine-Beds.—"Vine," writing from Toronto, asks:—"Which is best for vine-beds, whole bone, just as gathered up, or those to be procured at the blacking factory, having all the grease extracted and being broken up, the former being one third the cost of the other?"

Ans.—Bone in large masses is so slow to decompose, that it is of comparatively little immediate use as manure in this condition. For vine-beds, however, which should be dug to a depth of not less than two feet, and require some permanent manure, rather than a quick and stimulating fertiliser, it is not necessary that the bones should be reduced to very small pieces, and such as have not gone through any factory process will answer very well if they are simply broken up with a sledge hammer, or something of the sort.

Good Yield From Two Acres Manured.—"J.D.," who sent us recently a communication on the advantages of top-dressing, now sends us the following account of his experience in ploughing under manure, for corn and potatoes on a single acre of each. He says:—On the two acres I put 75 loads of well rotted manure, ploughed it under, and dragged it fine. I marked out the land in cross lines, three feet apart each way, and planted one half with corn, which yielded by measure 125 bushels of good sound corn. The other acre I planted with potatoes, and the seed being scarce, I used only 9½ bushels of very small potatoes, for the large ones had all rotted, so that there were no others to be got. Nevertheless I obtained 228 bushels from the 9½ bushels planted, and this without the use of the hand hoe from the time of planting until the time of digging. In this crop there were no small potatoes of any account, while I had some that weighed 2¼ lbs. apiece, others 2¾ lbs, apiece, and one that weighed 3 lbs. All the hoeing was done with the horse hoe and cultivator.

THE AMERICAN BEE JOURNAL AND GAZETTE.—Concerning this periodical, we have the following communication from Mr. J. H. Thomas, of Brooklin:—"I have received a letter from Mr. Wagner, the publisher. He will carry out the understanding with the publisher of the *Gazette* to furnish the journal to all Canadian subscribers until the close of the present volume, which will end with the June number. The journal should be in the hands of every Canadian bee-keeper, as its pages are filled with practical matter—the experience of apiarians from almost every State, as well as from some of the most noted bee-keepers of Europe. I am now agent for Canada, and while Greenbacks are at their present value, I will furnish Canadian subscribers the journal at $1 50. Persons ordering now will receive the back numbers. The next volume will commence with the July number."

NOTE BY ED. C. F.—We are in regular receipt of the *Bee Journal*, and can fully endorse the foregoing recommendation of it. It is well edited, contains a large amount of useful practical information, and as Mr. Thomas observes, should be in the hands of every Canadian bee-keeper.

HOP GROWING.—We have received the following from Prescott:—"Many readers of THE CANADA FARMER in this vicinity are desirous that you would publish a good comprehensive article on hop culture. In Vol. II. page 50, is the only article in the FARMER throwing any light on the subject; and some further information especially applicable to the circumstances and climate of Canada is greatly needed.

I will suggest the following questions, to be answered in an article in your paper, satisfied that it would prove to be valuable throughout Canada, as the culture of the hop is acknowledged to be very profitable. 1. The kind of soil best adapted to the growth of the bine. 2. Mode of preparation of the soil. 3. Best time to plant. 4. What kinds of the bine are best for Central Canada. 5. Where are they procurable, and what is the best method of propagation and mode of culture? 6. Harvesting. 7. Curing of crop.

An answer to the above in an article or a series of articles will be duly appreciated by a

"HOST OF SUBSCRIBERS.

ANS.—By reference to the Field department of the present number our correspondent will see that we have complied with his request. The subject will be resumed in future issues.

FISH CULTURE.—We have received from Mr. Wilmot, of Newcastle, a communication which we subjoin. We are happy to have the favorable testimony of one so well qualified to form an opinion, in regard to the fidelity of our pictorial illustrations, and the practical value of the instructions that accompanied them. Mr. Wilmot says:—"The article on fish culture in the CANADA FARMER is a very good one, very explicit, and will bring the matter fully before the agriculturists of the country. The more I see and read about Pisciculture, the more convinced am I of the immense wealth and benefit that might accrue to the country, were some good and economic plan carried out by the Government for reproducing valuable fish that are now almost gone. I am pleased to inform you that my young fish are doing exceedingly well, being active and healthy. I do not think I have lost a dozen of them since hatching out. This is very gratifying, as I learn from Buckland, and other works, that shortly after hatching out a very fatal disease attacks them, and carries them off by thousands. This I have escaped, and attribute my success to the purity of the water and the care I have given them. Your artist has made splendid illustrations of the young fry, much better than any I have seen in any work yet published."

CULTURE OF BEANS.—"W. R.," of Cobourg, writes: "In THE CANADA FARMER for March 1st, in your article on beans, you say, 'The variety commonly called horse beans are but little grown in Canada or the United States, from an impression that they will not do so well as in England and other European countries. This we believe to be a mistaken idea. Those who have given them a fair trial report most favourably in reference to them, and we know of no good reason why they should not flourish and bear good crops here as well as in the Old World.' Now we have tried to grow horse beans every year for the last eleven years, on soil that would have been thought a good bean soil in Britain, and we are decidedly of opinion that they cannot be made a profitable crop in Canada; we think our seasons too *short* and *dry* to grow horse beans profitably. In England the sowing of beans begins as soon after the month of January as the soil admits of the necessary operations, and may be practised up to the middle of March. The earlier the crop is put in the better, in general, is the chance of its being productive. The greater liability of the eastern counties to drought, renders the crop more liable to the attacks of insects such as the 'black dolphin' or *bean aphis*, which usually makes its appearance as soon as the plant suffers for want of moisture. For this reason the bean crop is rather an uncertain one in the climate of the eastern counties, and other crops are gradually encroaching on the breadth which it used to occupy.

Our Agricultural Association think that the cultivation of horse beans should not be encouraged, as they have struck them from their premium list for the last two years."

NOTE BY ED. C. F.—"Who shall decide when doctors disagree?" In the neighbourhood of Malton, C. W., horse beans do very well; one cultivator in that locality thinks they are superior to those grown in England. Our correspondent "W. R." who is one of the best practical farmers in the country, tells us in a private note that he had one year at the rate of 24 bushels to the acre, by no means a bad crop considering what he says about the liability of his part of Canada to drought. No crop succeeds equally well in all situations, and there may be other places where beans may be grown profitably, though not in the vicinage of Cobourg.

FRUIT TREE QUERIES.—"Hemlock" writes from Leith, county of Grey, as follows.—"Would you be so kind as to inform me, through the columns of the FARMER, where I might procure the best apple trees, &c., the name of the owner or agent of the nursery, and the prices of fruit trees? Which do you think send the best trees, Hamilton or Rochester nursery-men? Would you be so kind as to name a few best varieties, that you think best suited to this part of the country? What would you say of Red Astrachan, Gravenstein, Rawley, St. Lawrence, Baldwin, Northern Spy, and Rhode Island Greening? Which is the best—Spring or Fall planting? Would it do to set trees out on *lea* sod, ploughed in Spring, it never having been cropped?"

ANS.—Part of the above queries were answered in our issue of March 1st, which our correspondent probably had not seen when he sent the above. In reference to the remaining questions, we may briefly reply:—Drop from your list Gravenstein, Hawley, Baldwin, and Rhode Island Greening, as it is doubtful if they will succeed so far North. Substitute Famense, Golden Russet, Pomme Grise, Ribston Pippin, and Talman Sweet. These, with the others named by you, will make a good list of hardy varieties. We prefer Spring planting. It will be somewhat laborious to plant fruit trees properly on the ground named; still, it can be done.


# The Canada Farmer.

TORONTO, UPPER CANADA, APRIL 1, 1867.


## Proposed Abolition of Turnpikes in England.

ONE of the prominent subjects at present occupying the attention of the public mind in England, is an alteration of the laws relating to roads; and it is proposed to abolish altogether the system of turnpike tolls, and provide for the maintenance of all public roads partly from the national exchequer and partly by local taxation. It appears that two committees of the House of Commons, one in 1836, and the other in 1864, have enquired into this subject, and reported that in their opinion it would be greatly for the advantage of the community if turnpikes were abolished throughout the country. The matter has been recently discussed by the Central Chamber of Agriculture, by the Central Farmers' Club, and other influential societies, and resolutions have been adopted by them all, very strongly urging the proposed change, on the score of justice, economy, and efficiency. It is very generally felt that the present system of maintaining public roads by tolls is both vexatious and expensive, and all sorts of evasions are commonly practised to escape the tax. It is not our purpose to discuss the question here; but we think our new country should in this matter, as in others, give due heed to the experience and the cautious wisdom of older countries; and if we see the people of England about to abandon a system which has now been tried for so many years, it certainly behoves us to look to our own regulations, and enquire whether these are really the best that under the circumstances we can adopt. In one part of this Province with which we happen to be acquainted, the Municipal Councils have co-operated in an arrangement by which gravel roads, free of toll, have been pretty largely constructed, and the plan has, we believe, proved very greatly to the advantage of the localities concerned, by facilitating access to market, and attracting business to suitable centres.

## Canadian Birds at the Paris Exhibition.

AMONG the contributions of Canada to the Paris Exhibition, is a collection of native birds sent by the Board of Arts and Manufactures. The birds are very creditably stuffed by Mr. Passmore, of Toronto, and are arranged according to the system of Professor Hincks, of University College. Specimens of most of the birds found in this country are exhibited; and, as may be supposed, the collection is one of great interest, giving a very clear idea of this portion of our Canadian Fauna.

The order INSESSORES, or Perchers, which is placed first in the system, is well represented, but we have space only to mention a pair of ruby-throated humming birds (*mellisuga colubris*), the only species of this brilliant family that braves our northern climate, and a white specimen of the so-called robin (*Turdus migratorius*).

Among RAPTORES—Birds of Prey—the Bald Eagle (*Haliaetus leucocephalus*) is conspicuous for his majestic size. There is no specimen of the Golden Eagle, though this has been found in Canada.

The third order, SCANSORES—Climbers—is only represented by the Woodpeckers and two species of Cuckoo. Of the former the Pileated Woodpecker (*Dryocopus pileatus*) is a fine looking bird with a scarlet crest.

Our list of Game Birds—RASORES—is comparatively small, including the Wild Turkey (*meleagris gallopavo*), a rare inhabitant of this country, three species of Grouse, the Pine Grouse (*Tetrao Canadensis*), the Prairie Chicken, or Pinnated Grouse (*T. Cupido*), rare with us, and the Ruffed Grouse (*Bonasa umbellus*), and the common Quail (*Ortyx Virginianus*).

The large Blue Heron (*Ardea Herodias*), the White Heron (*A. Egretta*), and the elegant Western Avocet (*Recurvirostra occidentalis*), are among our most remarkable Waders—GRALLATORES—which comprise the fifth order in the system.

The common and the crested Cormorant (*Graculus Carbo* and *G. dilophus*), two specimens of Pelican (*Pelecanus trachyrhyncus* and *P. fuscus*), one of which was shot in the Don, represent the *Pelecanidæ*, the first family in the last order, NATATORES, or Swimmers. There are eight species of Gulls and several species of Tern. The *Anatidæ*, or Duck family, are numerous in Canada, and form a beautiful group in this collection. Specimens are shown amongst many others of the Canvas-backed Duck (*Nyroca valisneria*), the Eider Duck (*Somateria mollissima*), the Canada Goose (*Bernicla Canadensis*), and three species of Swans, the American Swan (*Cygnus Americanus*), the Trumpeter Swan (*C. Buccinator*), and Passmore's Swan (*C. Passmori*). The latter, which differs from the Trumpeter chiefly in certain anatomical points, may possibly be a young individual of that species. The *Colymbidæ*, or Divers, conclude the list, of which the most remarkable is the Great Northern Diver, or Loon (*Colymbus glacialis*).

Altogether the collection is exceedingly creditable to the exhibitors and to the Taxidermist, and furnishes an excellent illustration of this part of the Natural History of Canada. In connection with this contribution to the Paris Exhibition, the Board of Arts and Manufactures for Upper Canada have published in the January number of their journal for the present year a complete list, so far as at present known of all the native birds of Canada. This will be found of great service to all interested in the pleasing study of ornithology.

## Beet-Root Sugar Making in Illinois.

Some time ago, in an article on the practicability and profitableness of manufacturing sugar from the beet in this country, we mentioned as one ground of doubt on the subject, the fact that a large manufacturing concern had attempted the thing in Illinois a few years since, without, so far as we knew, any encouraging results. We inferred, from the readiness with which our American neighbours take up anything that promises to pay well, that not much encouragement had been obtained by the parties concerned in the Illinois experiment, and argued that, had it been otherwise, the golden returns of the new manufacture would have been trumpeted forth all over the land, and sugar factories would speedily have been set in operation in other States beside the one above named. A paragraph has recently come under our eye which seems to show that this enterprise is by no means abandoned in Illinois, but that a company is operating in that direction, and with encouraging indications. The Agricultural Editor of the *N. Y. Tribune*, N. C. Meeker, of Illinois, reports on the subject as follows:

"We think we have important news regarding beet sugar. Last year a number of enterprising capitalists of Springfield, Illinois, organized a company for the purpose of making beet sugar. The place selected was at Chatsworth, Livingston County, Illinois, and the works were under the direction of the Messrs. Gennert, the original projectors.

"They planted 400 acres, mostly fresh prairie, and raised a crop of 4,000 tons of fine beets, at a cost of $1 a ton in the pits. The varieties were the White Silesian and the Imperial, and upon a test of various parts of the crop, the average yield of fair refining sugar is 7½ per cent. This is confirmed by analysis made at Belcher's Sugar Refinery, St. Louis. When refined, the yield is 5½ per ct. of sugar, equal to New York refined B. Quite a number of barrels have been made, and the works are in operation this winter. When all the beets are worked up, the yield must reach nearly 400,000 lbs. of refined sugar. The starting of new works and expensive machinery are always difficult, and this company has had its share, and there has been delay. But this delay has been of use in settling the question whether beets can be kept in large quantities during the fall and winter months. They find that the loss during four months is only one per cent. The conclusion of this vast experiment, worthy of the Prairie State, is, that beets can be grown on the raw but rich soil of the West, as well as on the highly fertilized soils of Belgium and France; that the yield of sugar is almost precisely the same, and that the beets can be kept till they can be used

"The importance of these facts scarcely can be overestimated. That prairie region is equal in extent to England, France, Spain and Portugal combined, and on almost every acre the beet can be cultivated. Underlying are inexhaustible beds of coal, and a people fully competent to enter upon this new enterprise are ready. Sugar is next in importance to wheat. A beet sugar crop on these prairies will be of greater value than the corn crop. Granting these to be facts, the time cannot be distant when sugar will be sent from the West to New York, and exported to foreign countries."

We sincerely hope that the above is all "true as gospel," and while disposed to smile at the idea of Illinois sugar as an export out-doing Illinois corn, we think that State will do wonders if it can supply its own home demand for the article in question, and shall be glad if time proves that the same can be done in Canada.

## Postage on Book Manuscript and Proof Sheets.

In our issue of Jan. 1, of the present year, we stated as an encouragement to correspondents to send items of information, details of practical experience, and agricultural clippings from the local press for insertion in our columns, that such mail matter, properly marked and unsealed at the ends, was only subject to a postal charge of one cent per ounce. Acting on this idea, a correspondent at Niagara presented a budget at the post office in that town, when transmission at the above rate was refused, and letter postage charged. On our correspondent informing us of this we adverted to the subject a second time, viz., in our issue of March 1st, and expressed the opinion that there must be some mistake about the matter; that either the conditions as to marking and leaving unsealed were not complied with, or the Niagara Postmaster had exceeded his authority. The expression of opinion has called forth the following communications:—

*To the Editor of* The Canada Farmer:

Sir,—In your issue of 1st inst. you state "If a communication or article be marked 'Manuscript for the Printer' and left unsealed and open at the ends, no Postmaster has a right to refuse to mail it," at one cent the ounce.

This is an error. *Book manuscript and printers' proof sheets* are allowed to pass at one cent an ounce, but articles addressed to a paper or periodical, for insertion therein, do not come under this definition.

The object of the regulation is to enable a person living, say in Toronto, to publish a book in Montreal, and to send copy and proof to and fro.

Your obedient servant,

J. DEWE.
P. O. Inspector.

Post Office Inspector's Office,
Toronto, March 7, 1867.

*To the Editor of* The Canada Farmer:

Sir,—In the Canada Farmer of the 1st inst. there is a paragraph reflecting upon my having refused to pass manuscript, intended for the press, at one cent per ounce, and you say "either the requisite conditions (for mailing such manuscript) were not complied with or the P.M., Niagara, has broken the regulations."

I referred the paragraph in question to the Secretary of the Department, and have received his reply informing me that *I acted quite right*.

There is in fact no such regulation as that laid down by you for the transmission of manuscripts intended for the press, at any rate less than letter postage.

Will you please do me the justice to insert this explanation in your next issue,

And oblige, Yours respectfully
ROBERT WARREN, P. M., Niagara.

Niagara, March 19th, 1867

The official instructions which are interpreted as above, are contained in the following notification to Post Masters, which has recently been published, and refers to a Departmental Order issued rather more than three years ago:

"In Department Order No. 65, dated Nov. 24th, 1865, permission was given for book manuscript and printer's proofs, whether corrected or not, to pass at the printed matter rate of one cent per ounce; and it now appears to be necessary to explain to postmasters that by book manuscript was meant the written sheets of any book, and the intention was to encourage literary productions by affording facilities for authors to send and receive such matter to and from their publishers by post. Printer's proofs are the printed impressions taken by a printer, for correction and examination, of any matter passing through his press. Under former regulations the written marks correcting such proofs rendered them liable to letter postage when sent by mail, and the intention of the Department Order referred to was to relax the rule in favour of such proofs, and allow them, when corrected, to retain their character as printed matter, and pass at printed matter rates of charges."

We are sorry to have unintentionally misled our correspondents, and as it would appear groundlessly imputed blame to the Niagara Postmaster, but prior to our receipt of the foregoing official explanations, we were under the impression that all written matter meant for publication, came within the scope of the Departmental Order above quoted, and we cannot help saying that, in our opinion, the "regulations" are quite susceptible of the liberal construction we put upon them, while they do not actually demand the narrow and rigid interpretation assigned them in the foregoing communications. If, as the Postmaster General states, the object of the Departmental Order was "to encourage literary productions by affording facilities for authors to send and receive such matter to and from their publishers by post," it is surely no transgression of the spirit of the Order to allow communications meant to be put in print, and in no sense of a private character, to come under its action. We trust that the Postmaster General will supplement the instructions already in force, by giving permission to Postmasters to consider correspondents and contributors to the press "authors," and as such entitled to the privilege of cheap postage. A liberal measure of this kind would certainly have a tendency to "encourage literary productions," and would accord with the enlightened spirit of the age and country in which we live.

## Milk-Weed and Canadian Nettles.

We have received from Mr. Alexander Kirkwood a copy of a short treatise "on the milk-weed or silk-weed, and the Canadian nettle." We recently noticed in this journal a specimen of the fibre of the milk-weed, which had been left at our office, and stated that it was the intention of Mr. Kirkwood to make the experiment of having the fibre of this plant manufactured into cloth. The pamphlet which we have now received gives interesting and full information on the subject of which it treats, the object of its publication being "to offer to the agriculturist, and through him to the manufacturer, some new materials for clothing; and to trace their natural history, production, and preparation, namely:—Asclepias cornuti, *milk-weed*, or *silk-weed*, Asclepias incarnata, *swamp silk-weed*, and Urtica canadensis, or *Canadian nettle*; textile plants indigenous to Canada, but hitherto neglected, and almost unknown, and to view them as new industrial resources."

Mr. Kirkwood is sanguine in his estimate of this new fibre as a textile material. He observes that "Automatic mechanism is now so extensively employed in the arts of spinning and weaving, that any peculiarities which the fibre may possess can be met by peculiar machinery. It so far resembles other fibres of vegetable origin, as to require torsion and extension to convert the slender filaments into thread; and it possesses the three requisites of elasticity, softness, and tenacity, for the production of raiment for comfort and decoration."

He gives also the testimony of Professor Hincks, who says in a letter to the author,—"I have submitted the prepared fibre which you sent me to a very careful microscopic examination, going up gradually to the highest power that I employ. The bark fibres are very long and fine, and separate very completely. Their appearance resembles flax, and they certainly equal, and I think exceed that substance in quality, as judged of by the eye. I measured the diameters of several fibres under a magnifying power of 450 diameters, and found it to be about $\frac{1}{3000}$ of an inch. It appeared to me that the substance of the fibre is strong, because the internal channel is very narrow, yet it evidently possesses the quality of flexibility in a very high degree. I should expect it to form a very valuable textile material, probably equal to the very best vegetable fibre hitherto used."

Besides the fibres of the stalk, the silky down of the seeds is believed to be capable of manufacture into fabrics of beautiful appearance and texture. This down, either alone or in conjunction with other materials, has already been successfully manufactured into a variety of fabrics. Paper has also been made both from the down and from the fibre.

We very cordially wish Mr. Kirkwood success in his undertaking, and commend his pamphlet to all persons interested in the development of the industrial resources of our country.

## The Canadian Fruit Culturist.

We have read with pleasure a little work prepared by Mr. James Dougall, of Windsor, and entitled "The Canadian Fruit Culturist." This will be found useful compendium of practical directions for fruit growing, adapted to the Canadian climate. The fruits included in this useful treatise are the apple, pear, plum, cherry, grape, peach, nectarine, apricot, quince, gooseberry, currant, blackberry and strawberry. A well arranged list is furnished of the varieties of each kind most suitable for the climate of Canada, and brief but judicious and practical directions are given under each head for the planting and cultivation of the various fruits. We recommend the work to all young farmers, especially to those who are new to the country, and to all who purpose setting out orchards vineyards or gardens.

It is in pamphlet form, is published by John Dougall and Son, Montreal, and sold at twenty-five cents per copy.

## Veterinary School—Examination for Diplomas.

The examination of candidates for diplomas in the Toronto Veterinary School took place on the 14th of March, at the Agricultural Hall, before a Board of examiners, consisting of Dr. Lizars, Mr. Varley, of the 13th Hussars, Mr Merrick and Mr. Walter, of the Royal Artillery, and Mr. Hagyard, of Brampton. The students underwent as full and varied an examination as the time would allow, the same regulations in this respect being adopted as in the examination for the diploma of the Royal College of Surgeons, England; each candidate appearing successively before all the examiners, and being questioned on all the subjects embraced in the course of study that has been pursued in this valuable institution. Mr. Merrick and Mr. Varley were the examiners in materia medica, the other gentlemen taking the subjects of anatomy, physiology, pathology, surgery, and the treatment of diseases generally. The examination was altogether very satisfactory, and reflects great credit on the diligence of the students and the thorough course of instruction given in this institution. Amongst the strangers present, besides the regular instructors attached to the school—Professor Buckland, Mr. Smith, and others,—were Mr. Robinson, V. S., of Tullamore; and Mr. Elliot, V. S., of Elora; formerly students in this college. At the close of the examination the following gentlemen received diplomas:—

Mr. John Coates, Milton, Co. of Halton.
Mr. E. J. Harrison, Milton, Co. of Halton.
Mr. Lavin Cather, Toronto, Co. of York.
Mr. Archibald McNee, Perth, Co. of Lanark.

At the conclusion of the examination, Mr. Varley, V. S., 13th Hussars, presented the diplomas, and congratulated the several candidates on the strict examination they had just passed.

We are glad to learn that this valuable institution is making very satisfactory progress, and that the opportunity it affords for gaining a thorough knowledge of veterinary science is being appreciated and embraced by young men from all parts of the Province, as will be seen by the following additional list of students who have attended the school during the past session, and are preparing for exaination next term.—Messrs. Sanderson, Richmond Hill; Gemmell, Grahamsville; Cowan, Waterloo; Thomas, Arran, County of Bruce; Wilson, London; Wells, King; McDonald, Ingersoll; Woodall, Gore; and Upsol, Chinguacoucy. The classes are also attended by several other gentlemen as agricultural students. There is no doubt that as the advantages of the institution become better known it will be attended by a still larger number, and the country, and especially the agricultural portion of the community, will reap the benefit, in the distribution throughout the land of a sufficient number of well educated veterinary surgeons, and in a more general diffusion of sound views of animal physiology, as well as the proper treatment of disease.

Encouraging to Correspondents of the Canada Farmer.—It will be interesting to all our readers, and operate doubtless as a stimulus to those who favor us us with communications, to know that the letter of "J. F. C." on the "Surface Application of Manure," which appeared in our issue of January 1, 1867, has been deemed of sufficient value to be transferred from the columns of the Canada Farmer to those of the *Mark Lane Express*, the leading agricultural paper in Great Britain, and we may add in the world. In this way, a practical farmer who has opinions and experiences of value to narate, may be useful on a much wider field than he at all anticipates, when he first puts pen to paper, it may be with hesitancy, with a view to publishing what he knows for the benefit of others.

## Blenheim Agricultural Society.

The Secretary of this Society has sent us a list, which we subjoin, of the officers for the current year. President, Major Cowan; Vice President, Daniel Wakefield; Secretary and Treasurer, G. F. Williamson; Directors, John Irving, Francis Burgess, W. Alexander, W. Keys, Alexander Palluilo, John Mayson, John Moffat, F. Croft, and W. Baldwin. We are also informed that the number of members in 1866 was 562, the number of entries for the exhibition in the same year was, 1815. Our correspondent is desirous that we should remind the farmers throughout the country, that by sending in their names, and paying their subscriptions to the agricultural societies in their neighbourhood before the first of May, they will secure for their respective societies a fair share of the Government grant, which is apportioned according to the number of members in each. We would further urge upon the agricultural community generally the claims of these useful associations, the benefits of which are becoming more apparent every year. We trust that every farmer will see it his duty to become a member of one of these societies, and by taking part in the competitions, and by his personal presence at the exhibitions, and influence with others, do all in his power to foster the spirit of agricultural improvement that is happily making steady progress amongst us, and which must not slack if we would keep pace with the enterprise of the age.

Sheep-Shearing Regulation of the Board of Agriculture.—The attention of sheep exhibitors is called to a resolution of the Board of Agriculture, adopted on the 27th ult., and which will be found in our advertising columns.

Sale of Short-Horn Bull Calf.—Mr. John Snell, of Edmonton, has sold to Mr. Joseph Gardner, of Toronto Township, the Short-Horn bull calf "Duke of Bedford," five months old, for $200. This calf is the first produce of Mr. Snell's young bull "Duke of Bourbon," imported from Kentucky.

Double Walled People's Bee Hive.—Mr. A. N. Henry, of Oshawa, advertises in our present issue a hive for which he claims exemption from moisture and the effects of atmospheric changes. We shall endeavour to give some account of the mode by which Mr. H claims to have accomplished these results in our next.

Exhibition of Poultry.—We would remind our readers of the Exhibition of Poultry which will be held in the Agricultural Hall, Toronto, on Wednesday and Thursday, the 10th and 11th of April. We believe the number of entries altogether exceeds two hundred, and we confidently expect that the collection of birds will be both more numerous and will include finer specimens of Poultry than have ever before been gathered together in the Province. The exhibition will no doubt be well worth a visit by all who live sufficiently near Toronto to come into the city on either of the above days. The price of admission is fixed at twenty cents on the first day, and ten cents on the second.

Paris Patent Grain Drill.—Among our advertisements, the attention of farmers is invited to a grain drill, manufactured by Messrs. Maxwell and Whitelaw, of Paris. The fact that this drill has gained six first prizes and diplomas, and among them the first prize at the Provincial Exhibition in Toronto in 1866, and at Hamilton in 1865, is sufficient guarantee for the merits of this implement, which we believe has been found in practice to deserve the distinction it has won at these exhibitions. We are satisfied that a good drill which does not bury the seed too deep, and which in other respects does its work well, is an important aid to the farmer, enabling him to economise seed and secure a better yield.

## The Household.

### Universal Dryer.

The *Ohio Farmer* contains a brief notice of a new invention, which promises to be of considerable value, and of which we hope, if further experience in the United States confirms its merits, to hear something more in Canada. This is an apparatus for speedily drying clothes, fruit, hops, and a variety of other articles, to which it is equally applicable. The "dryer" is made of different sizes, to suit the locality and purposes for which it is required. It occupies comparatively a small space, and the quality of work done is said to be of the very best order. Clothes put on the lines fresh from the wringer, will dry ready for ironing in less than half an hour, and come out as white as clothes can possibly be made. A full lot of fruit can be turned out perfectly cured every twenty-four hours. For cities and towns, where the air is filled with soot and dust, or where drying room is scarce, this invention is invaluable to the housekeeper; and even in the country it would be a great convenience for clothes, while for drying fruits, &c., it would be of the greatest value.

The price of these dryers at present varies from $75 to $100. (*Am. cur.*) according to the size. The inventor is D. K. Boswell, who we understand is making arrangements for introducing the invention into the different States of the "Union." The *Ohio Farmer* promises to give a further description of the invention, illustrated by an engraving.

Another of our exchanges mentions a domestic apparatus exhibited at the New York State Agricultural Show at Albany. If this should prove satisfactory, and come into general use, we feel sure there would be general rejoicing in all our kitchens. The new invention is a *machine for washing dishes!* When we hear more about it, we will give our readers the benefit of our information. Meanwhile we will not tantalize the fair sex with too sanguine hopes of release from what we are told forms one of the most weary items of domestic drudgery.

☞ The latest style of collar for men has turn down corners, on which appear dogs and horses' heads. Asses' ears are worn a little *higher up*.

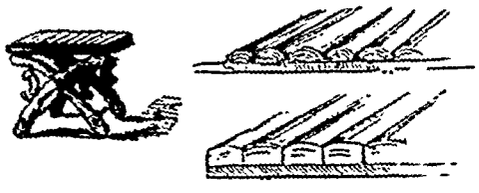
How to Fill the Ice House Cheaply.—Although past the season for doing this work, we give the gist of a correspondent's communication on this subject, that our readers may thereby profit in the future.—"A great improvement upon drawing ice from two to four miles, I found, is my method of making it in the ice-house. I bring water in a pipe into the house, and make it fall in spray before a window on the north side during the coldest weather. I have succeeded in making a solid cake of ice ten by ten feet and four to six feet thick.—*Rural New Yorker.*

The Empty Cradle.—Many a mother's heart will respond to this sketch. We met John on the stairs. He was carrying an old cradle to be stowed away among what he termed "plunder" in the lumber room. One rocker was gone, and the wicker-work of the sides broken; but we could not refrain from casting a sad look into its empty depths. "Gone," we said, dreamily, "all gone!" What golden heads were once pillowed here, heads on which curls grew in moist slumber, and the cheeks and lips flushed to the hue of rose leaves. When sleep broke, the silken-fringed lids opened heavily from the slumbrous eyes; smiles flitted like sunbeams over the face; the white fist was thrust into the mouth, and when mamma lifted the muslin and peeped in to see if baby was awake, what cooing and crowing was heard! The little feet began to kick out of pure delight, and kicked on until both of the tiny red shoes were landed at the foot of the cradle. Where are those heads now? Some that were embrowned by vigorous manhood are sleeping on battlefields; some are bleached with time and cares; and the feet have grown sore and weary on the rough paths of life. Perhaps some little one once tenderly rocked here is sleeping in the coffin. Over it grows heart's ease and vigorous box, and white candytuft, and starry jessamine. The blue-bird flutters its bright wings through the willow boughs, and the cool summer wind whispers to the green leaves and grass-blades on the graves. What of? Perhaps of its mortality. Sleep on, little dreamless one. "Of such is the kingdom of heaven."—*Mark Lane Express.*

# Rural Architecture.

## Rustic Work.

To raise the largest crops, to breed the finest stock and in short to make the most money out of his land, should not be the sole aim of the farmer. Leaving out of the question the highest interests, there are



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minor considerations which he cannot ignore and neglect without losing much of the advantage and pleasure which his position both claims and puts within his reach. Among those objects of scarcely secondary importance, to which he ought to give due regard, is the attractiveness of his home. This is not the unimportant matter that it might on first thought appear. For his own sake, and to promote the healthy tone of his own mind and heart, it is well to surround

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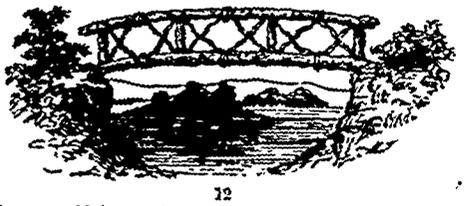
his dwelling with all the charm that he can give it; but if he have young people about him, it is especially desirable that he should make their home as pleasing and attractive as possible. The more interest these young spirits can learn to feel in the homestead, the less tempted will they be to forsake country for city life, and to seek for pleasure and excitement else-



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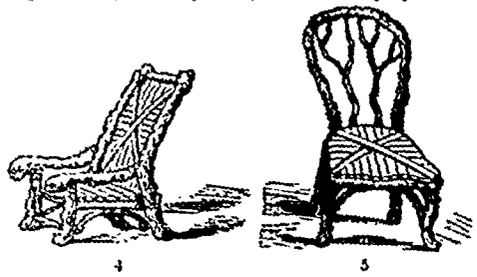
where, amid less safe and innocent scenes. The love of home is the nurse of virtue, and that parent is neither faithful nor wise who does not most earnestly seek by every means in his power to foster this principle in the hearts of his children. Even if the embellishment of home and its surroundings must needs cost money, the prudent expenditure of some portion of the earnings, for this purpose would be money well laid out, though the returns could not be estimated by commercial arithmetic. But the cost of home adornment is often quite an imaginary or exaggerated objection. The exercise of ingenuity and taste, with the necessary allotment of some little time and labour, will often do more to adorn a place than could be accomplished by a lavish expenditure of money; and there is one way in which a great deal can be most effectively done to secure this end by almost every farmer, and which is peculiarly adapted, and indeed is only fitted, for rural dwellings. It is a mode of embellishment especially suited for the retired and sequestered situation of farm houses; which should have a character of their own, and should not remind one either of town houses or villa residences, but should have a quiet, peaceful, welcoming air about them,—should be emphatically *homes*. The style of rural architecture, in favour of which we would say a word, may neither be classical nor gothic, but it is peculiarly *homely*, and not without its own special attractions. We allude to rustic work; and though we are well aware that under this name there are hundreds of fantastical, clumsy, and altogether worthless structures, yet we can also call to mind many charming abodes that owe their picturesque beauty entirely to a judicious employment of



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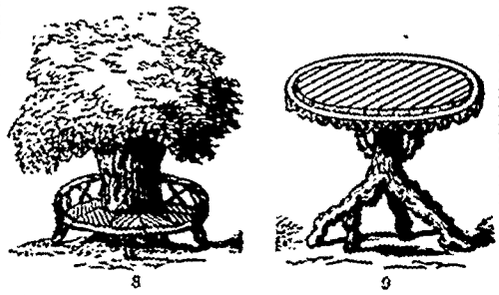
this graceful and natural though primitive style of ornament. One of the most lovely rural homes we ever saw was the residence of a good minister, a man of excellent taste and great ingenuity, who had with his own hands, and with the most trifling outlay of money—for, like most of his fraternity, he was poor—converted what had been a most plain and unattractive dwelling into a picture of beauty that was the admiration of every beholder. His success was due to a tasteful combination of rustic work and landscape gardening, and all within the compass of a comparatively small plot of ground. A free use was made of climbing plants and other natural adornments, but the great charm was owing to the perfect harmony of



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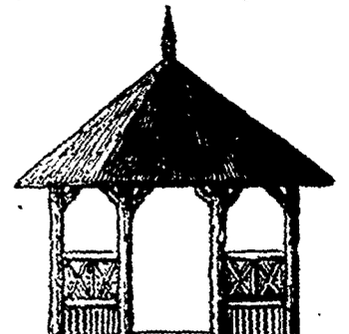

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everything about the place. Verandah, porches, arbors, garden seats, fences, gates, &c., were all in perfect keeping with each other, and all constructed of the materials and workmanship known by the name of rustic work. This has been defined as a style of architecture in which nature is followed rather than any rules of art. It is not an easy matter to give directions for this kind of work; for after all, much must be left to individual taste, judgment and ingenuity. Indeed, we half suspect that no small part of

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the charm lies in this tax upon our own thought and skill. A few hints, however, may be useful to guide those who are willing to try their hand in this pleasing method of increasing the attractions of home. We give, besides, a number of illustrations of the kind of work, which may serve as patterns for imitation, or as suggestions to aid the ingenuity and inventive powers of the rustic architects. The illustrations are most of them taken from that excellent little work, the *Illustrated Annual Register of Rural Affairs*, and a few also have been selected from the *Horticulturist*, a most valuable periodical.

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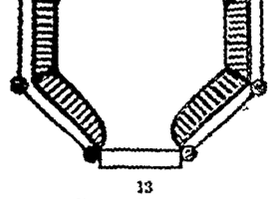
The materials used in rustic work are the undressed trunks, limbs and branches of trees; and wherever it can be done the bark should be left on. Indeed, in most examples of this work the rough texture and the colour of the bark are most important elements



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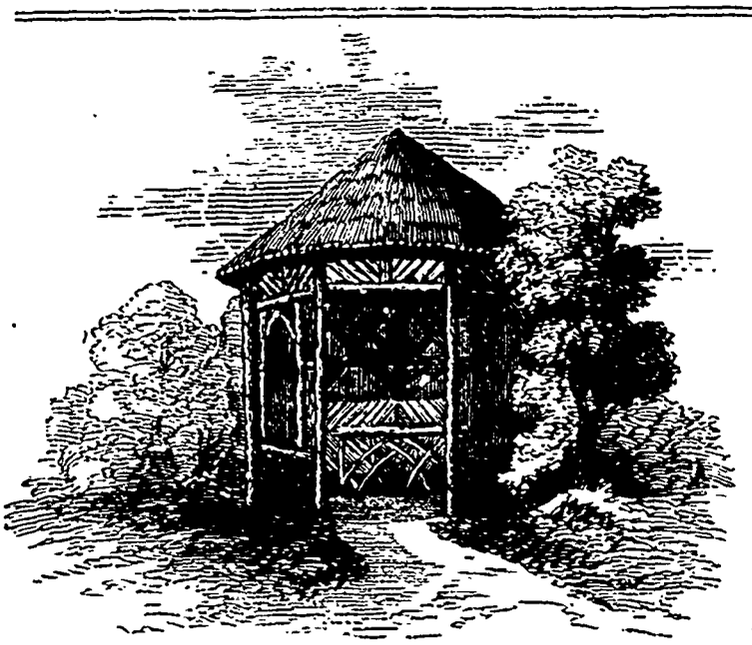
in the picturesque effect. Some kinds of wood, however, answer very well for the purpose without the bark, such as oak and the wild vine. The most generally available wood in this country is the red cedar, which is both artistically effective and durable. For some of the joints, especially in structures that require to be particularly firm, such as bridges, gates, &c., tenons should be used. Much of the work, however, requires only wooden pins and nails to fix it together. One writer in the *Horticulturist* recommends what are called wire nails, which can be driven without splitting the wood, and clenched effectually. The wood used for the purpose should be cut towards the close of the summer. Cut in August or September, it is said to last much longer than when cut during the winter or early spring. A coating of coal oil might be advantageously used for some of the work, to prevent the ravages of insects.

The illustrations which we give require, we think, very little explanation, the drawing in most cases showing the construction at a glance, far better than any lengthened description.

The simplest objects in rustic work are garden stools and seats. Fig. 1 is an example of the former, constructed of nearly straight pieces of wood, partly



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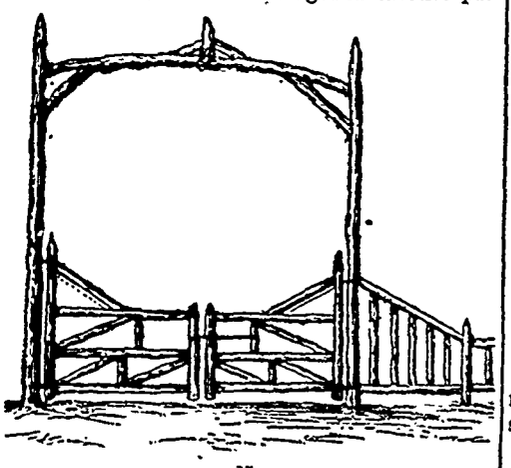
pinned and partly nailed together. The flat surfaces for seats, tables, the lining of walls, &c., are often constructed of what is called rustic wood mosaic. For this purpose small straightish branches are split in half and nailed side by side on to a flat board. This is represented in fig. 2. Where it is desired to obtain a smoother surface, the edges are shaved off so as to adjust the flat surfaces together, as seen in fig. 3. This kind of work can be arranged in effective pat-



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terns for seats, table-tops, or the sides of summer-houses. The employment of different coloured bark, or staining the branches, gives a pleasing variety to the design. Figs. 4 and 5 are rustic chairs. For the outer frame of the back in the last a thick twisted stem of the wild vine is the most suitable. Figs. 6 and 7 are convenient forms of garden seats, in the first of which nearly straight pieces of wood are used, and in the second, more crooked pieces are neatly spliced together. In fig. 8 the back of the seat is fastened to the trunk of a tree, which affords at once support and shade. The table, fig. 9, is made of a suitable trunk of a tree, inverted, with two or three of the principal branches for the feet. On this are nailed two circular boards battened crossways together, and covered with wood mosaic. Figs. 10 and 11 are rustic flower stands, which are very easily made, admit of great variety in design and when filled with growing flowers in pots, form very pleasing objects in a garden. The top may be made either of rustic work or strong wicker-work. Fig. 12 represents a picturesque foot-bridge, which of course should be firmly made, and well bolted together. The withes which cover the joints are employed for effect, and not for fastening. A neat rustic summer-house is shown in figs. 13, which give the plan and elevation. It is about eight feet in diameter. The posts may be set in the ground, the tops sawed off even, and the rustic frame attached. Three other illustrations are given, figs. 14, 15, and 16, of less formal summer-houses; still more rustic in character. The cornice in

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fig. 16 is ornamented with fir cones, grouped together so as to form a regular pattern.

The accompanying illustrations of gates were furnished to the *Horticulturist* by the author of "My Farm at Edgewood," and are fac similes of those that have been in use for years at Edgewood. Of the gate-way represented in fig. 17, the writer alluded to says:—"For nine years the gates have swung back and forth a dozen times a day, without a single hammer's stroke in way of repair. They bid fair to last until the sap portion of the wood (cedar) is fairly rotted away. The three horizontal arms are inserted with tenons; the braces are fitted only with the gouge, and made fast with wire nails."

The next gate, fig. 18, is equally simple, and in way of ornamentation has only its little roofiet. The design represents this as of equal width with the gate; but a somewhat better effect may be secured by an extension of the roof some six or eight inches on either side, in which case, of course, the posts must be cut off even with the ridge, and finials of cedar sticks adjusted at each end. The bit of roof adds to the picturesque effect, gives a hospitable air and promise of

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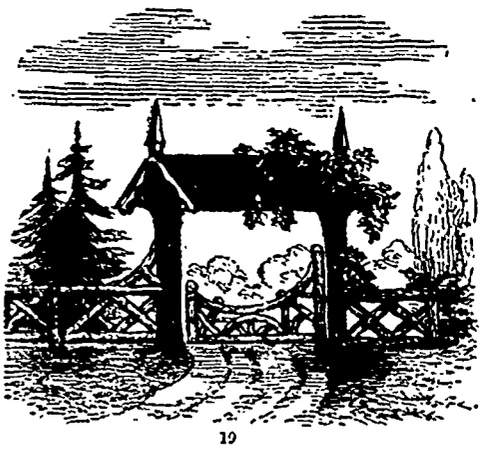
welcome, and moreover, serves to keep the gate dry and preserve it much longer than if it had been exposed to the weather. A similar gate, with its rural surroundings, is shown in fig. 19, and gives a fair idea of the pleasing effect produced when such designs are in harmony with their situation and accompaniments. Fig. 20 represents a porch intended to be covered with climbing plants, but here denuded of those ornaments to show the simplicity of the construction.



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We conclude our series of illustrations, and our notice of rustic work, by a representation of an ordinary log hut, fig. 21, of the simplest construction, made picturesque and attractive by the exercise of a little skill and taste of the kind we have been describing.

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## Experiments in Grape Culture.

*To the Editor of* THE CANADA FARMER:

SIR,—It is generally known that if a man plants an apple or pear orchard, and, when come to bearing, finds the fruit worthless or undesirable, it is quite a simple thing to renovate it by grafting with the best kinds known to pomologists. This is equally true of a vineyard. I have for years made attempts, both by budding and grafting, to improve some old stocks, but with uniform failure. It was not till I saw how, in California, they transferred whole vineyards from the old Mission grape to Muscats and Hamburghs, that I understood the method myself. Being in Canada again last spring, I determined to try my hand on some eight year old Isabellas that I wanted to improve. I began by cutting off every other one in a row until I had cut off 15, which bled profusely, as it was performed in the middle of April. I cut the heads off about two inches under the surface of the ground, cleft the stock exactly as I would an apple limb, and inserted two scions having only one eye each. I could afford no more; and if the eyes are sound you will need no more, since there will be in all probability two good canes for each stock if both scions take, and one will be sufficient to establish the vine if they do not. Having fitted the scions neatly, and with as long a tongue as the nature of the cleft would permit, for some of them split very badly, I covered the whole wound with a liquid grafting wax that sticks very close, returned the earth, covering the scion till it almost disappeared, and then left them to their fate. Five of the 15 grew finely, making shoots as long as the old vines on the same trellis; and while this per-centage may appear discouragingly small, I may say that it was not a fair test, for out of seven Cuyahogas only one took, the buds having been winter-killed. I then took up 12 vines, Clintons, Isabellas, and Catawbas, of the same age as the former, and planted them in a row; two or three weeks after, I cut them off and grafted them all with Delaware; 11 out of the 12 grew finely, two making quite sizable bunches of fruit. That I considered quite a pleasing success, and was so gratified that I would not have taken $100 for my row of Delawares. But the culminating point of my success was the following:—I had just received from Ellwanger & Barry, among others, an *Iona*, at the price of two dollars, about the size of a good large timothy stalk. After planting it I observed that it had one eye just above the surface and another about three inches above that; I stood for awhile looking at it, and reflecting on the felicity of paying $2.00 apiece for such specimens, as well as on the statement of some disappointed purchaser, that, after you had paid the price, you needed the affidavit of some reliable nurseryman to be satisfied that they were graperines at all; and filled with such ideas, I seized my knife and remorselessly severed the top joint, thereby diminishing the chances of its growing very considerably. I immediately inserted it into a stock similar to those before mentioned, but growing in the nursery bed where it had been planted as a cutting. On examining my precious scion, I discovered that the eye had been rubbed out; but knowing that vine buds are generally double, though I had not eyes enough myself to see the secondary eye of the scion, I had faith to believe it was there; so I fitted it in, and to my great satisfaction it grew surprisingly, in spite of the profuse bleeding of the stock. The secondary eye, that could not be seen, shot forth no less than *seven canes* of good size, 6 of which I appropriated for the purpose of grafting, and left the other to fruit next summer, which I confidently expect it to do, since it is a good half-inch thick. When the scarcity and value of Iona wood and plants are considered, the success I experienced may be believed to have been very gratifying, and I am very willing for other lovers of horticulture to experience the like gratification, and hence endeavour to make it known. I should observe that I attribute my success with the Delawares to the fact that, the vines having just been transplanted, the capillary attraction of the roots was checked, so that on being cut off they did not bleed in the least; for there is no doubt that the abundant flow of sap from the root is the cause of many scions failing. It is the practice of some to merely cover the grafts up with earth and to apply no composition, but I think the plan very reprehensible, for the cleft stock cannot but absorb a great amount of water, and thus carry canker and rot into the root, though the tenacity of life of the vine may cause it to survive the slovenly treatment.

AMPELOS.

Vine Hill, near Dundas, March 8, 1867.

## Dwarf Trees.

*To the Editor of* THE CANADA FARMER:

SIR,—Those who wish to plant fruit trees for profit only, should not plant dwarf trees at all; and for this reason, that many fruit growers, without, as we think, good cause, are refusing the dwarf trees altogether. The planting of dwarf trees in the garden around the house, or in the lawn, is very desirable. There is, perhaps, nothing more attractive and more beautiful around a house than a plot of ground dotted over with evergreens, dwarf trees, shrubs, &c.; but when dwarfs are planted for this purpose they are often a failure for want of proper treatment. It should be distinctly understood that dwarf trees require the best of cultivation.

When they are planted in the lawn the planting should be well done. If the soil is a heavy clay, a bushel or two of vegetable mould from the woods, or elsewhere, around the roots of each tree will be found of great benefit: no grass or weeds should be allowed to grow nearer than three feet of the trunk; they should have a good top dressing of well-rotted manure every year; it is best applied in the fall. Fresh or strong manure should always be avoided.

In the heat of summer a mulch of green grass, weeds, or cut straw will help to keep down the weeds and grass, and will greatly benefit the trees. It should be put about two or three inches thick. The heads should be started higher than is usual, for when started too low it is more difficult to cultivate them, and the heavy snows that we sometimes have are apt to split off the under limbs. They should, for this reason, have a trunk from ten to twelve inches high. The heads may be left somewhat thicker than standard trees, and should be pruned so as to make the heads evenly balanced and round shaped. Some varieties of dwarf pears are best grown in a pyramidal shape. All rampant shoots should be kept pinched back in the summer. Those planting the pear should, if possible, get those kinds that succeed well in the neighbourhood where they are planting; for varieties that flourish well in one part of the country often prove a failure when planted in another location. Large showy kinds of fruit are the most desirable for dwarfs.

S. H. M.

St. Mary's, C.W., Feb. 20, 1867.

## A Vote on Grapes.

IN addition to the Report, recently given in this paper, of the proceedings of the Fruit Growers' Society at Rochester, we copy the following synopsis from the *Rural New-Yorker*, of the vote taken on the best twelve varieties of grapes:

The vote for the best twelve varieties of grapes was then taken—twelve names being voted on one ballot. Thirty-eight votes were cast, with the following results: Whole number, 38; Diana, 38; Delaware, 37; Concord, 33; Iona, 31; Creveling, 30; Adirondac, 26; Israella, 26; Rogers' No. 4, 22; Isabella, 23; Rebecca, 26; Hartford Prolific, 27; Catawba, 13; Rogers' No. 19, 15; Union Village, 7; Clinton, 7; Allen's Hybrid, 6; Ives' Seedling, 2; To Kalon, Rogers 44, Rogers 39, Perkins, Maxatawney, Norton's Seedling, Corielle and Cuyahoga, one each.

It was understood that those placed first on the ballot were regarded as the best, giving the following results:

The following grapes were at the head of the list, in the order named: Delaware, 25; Iona, 7; Creveling, 1; Adirondac, 1; Isabella, 2; Catawba, 1.

The following stood second on the list, in the order named: Delaware, 7; Diana, 10; Creveling, 3; Iona, 7; Isabella, 6; Adirondac, 1; Concord, 1; Israella, 1; Hartford Prolific, 2.

AN EVERGREEN.—A man who does not learn by experience.

☞ A writer in the *New England Farmer* says that when tomatoes are growing near an apple tree the borers will not trouble the tree. He plants tomatoes by the trees to prevent them

ARABIAN COURTSHIP.—An Arabian having brought a blush to a maiden's cheek by the earnestness of his gaze, said to her, "My looks have planted roses in your cheeks; why forbid me to gather them? The law permits him who sows to reap a harvest."

CUTTING SCIONS.—As the time approaches when it may be convenient to cut scions, we would endorse the practice of an experienced grafter, who informs us that the best way to keep them till wanted, is to stick the ends into a potato. This will prevent their drying up. Care should be taken to label them, and they should be kept in a dry place in the cellar.

☞ The modern fashion of naming florist's flowers must be held responsible for the very dubious paragraph extracted from a gardening paper:—"Mrs. Legge will be looked after, she may not be so certain as some, but she was nevertheless very fine in the early part of the season. Lady Popham is useful, one of the old-fashioned build, not quite round in the outline, but makes up well."

HOW TO PLANT WATERMELONS.—W. S. Carpenter told how to plant watermelons at a recent meeting of the Institute Club. Dig a hole two and a half feet deep and three feet across. Fill to within six inches of the surface with green stable manure, and then add good soil so as to make a hill six inches high and plant from ten to twelve feet apart. Good melons and a fine yield may be looked for by pursuing this plan of planting.

JAPANESE MAIZE.—Is not only a valuable acquisition for table use, but is also described as being highly ornamental, growing to a height of from five to six feet, and has its foliage alternately opposite; the foliage is from two to three inches wide, and is about four feet in length. The variegation begins to show when the plant is four inches high, and in a short time it is beautifully and evenly striped with alternate stripes of green and white, and in its earlier stages of growth is striped with rose colour. Nothing, it is said, in the way of a foliage plant can exceed in gracefulness and beauty a group of those plants; culture similar to corn.—*Morris' Practical Farmer.*

## Poetry.

### Poor.

What! poor, you say? Why, save you, friend,
I've more than hath the world can show,
Such wealth as mine you cannot boast,
Such bliss as mine you cannot know.
I've more than keenest head can sum,
Could ever dream of night or day—
I've treasures hid from sordid hearts,
No cunning thief can take away.

My riches never bring distrust
Between me and my fellow-men;
No evil passion stirs my breast,
To yield me hate for hate again;
But pleasure, peace, and joy they bring,
They soothe my cares, they make me glad,
They give delights I cannot name,
And buy me comfort when I'm sad.

Come here, and open wide your eyes;
You see earth's glory at my feet,
You see the sky above my head,
The sunshine on my garden seat;
You see the love that lights my home,
The children round my cottage door—
The birds, the bees, the grass and flowers,
And you have dared to call me poor!

Come here, and open wide your ears,
And hark the music morning makes,
When from the hills and from the woods
Her high and holy anthem breaks.
Come here, and catch the grand old songs
That nature sings me evermore—
The whisperings of a thousand things,
And tell me, tell me am I poor?

Not rich is he, though wider far
His acres stretch than eye can roll,
Who has no sunshine in his mind,
No wealth of beauty in his soul.
Not poor is he though never known
His name in hall or city mart,
Who smiles content beneath his load,
With God and Nature in his heart.

—*Mark Lane Express.*

# Advertisements.

# Markets.

## Toronto Markets.

"CANADA FARMER" Office, March 28, 1867

OUR market for the past week has ruled quiet and steady, with a moderate business done at full prices. At the close the market is steady, but hardly so active as early in the week; but sellers will not submit to any concessions.

*Flour.*—The large purchases of last week have left our market comparatively bare. Superfine sold at $7 45 to $7 50 on the spot, and $7 35 to $7 45 at out stations, and 1,000 barrels at $7 50 here. Closes quiet; fair brands can be bought at $7 40. The higher grades are neglected. Fancy is nominal at $8, extra $8 50 to $9, and superior $9 50 to $9 75.

*Wheat*—*Spring wheat was sold at $1 55 for inferior to $1 65 for ordinary.* For car lots good samples $1 70, and sales of 15,000 bushels choice spring at $1 70 to $1 75 per bush, golden drop sold at $1 80, holders now asking $1 85. Fall wheat has been in better request, and prices have advanced fully 5c to 10c per bushel over last quotations, sales of good fair samples at $1 92 to $1 95, round lots now firmly held at $2.

*Peas* have ruled firm at an advance of 2c. Receipts moderate; 68c to 69c; latterly 70c has been paid on the street. A sale of 10,000 bushels at 74c in ships' bags on cars is reported; 72c is offered for cargoes f. o. b.

*Barley* continues in active demand for good parcels, and 58c to 60c is freely paid for lots by teams and cars. Some large purchases of malt have been made, understood to be for western account, to which the advance in barley may be attributed.

*Oats* are very scarce and much wanted. 36c, 37c, and even 38c, has been paid for good parcels. A sale of a car-load at 37c mentioned. Round lots offering at 40c f. o. b.

*Seeds* are rather lower, in consequence of increased supplies. A large quantity of clover has been sold at from $7 25 to $7 50, and can now be had at the former figure. Timothy in large supply and *slow of sale at $1 75 to $2 25, according to quality*, some holders asking $2 50.

*Provisions*—Butter—prices ranging from 9c to 11c, according to quality. Market closes firm, with little offering. Cheese in very light stock. Firm with not much doing, at 13½c to 14c per lb for good. Pork—Market has been firm. Mess held in few hands at from $19 to $19 50, prime mess $15, no prime in market. Hams, smoked, 11c, in salt, 8½c; bacon, Cumberland cut, in salt, 7½c; Canadian cut, 7c; rolled bacon, smoked, 11c, with very little in market. Shoulders, in salt, 6½c to 7c. Lard—Country, 7½c to 8c, city, 8½c to 9c. Eggs—11c to 12c, round lots worth 13c. Dried Apples—Selling at from 10½c to 11c.

*Hay and Straw.*—Hay from $12 to $14, straw from $6 to $7.

**Hamilton Markets.**—The grain market to day was *rather poorly supplied. Quotations remain as on our last. Wheat* red, $1 60 to $1 61, spring, $1 50 to $1 55. *Barley*—50c to 53c. *Oats*—32c to 33c. *Peas*—65c to 68c. *Buckwheat*—32c to 35c. *Corn*—65c to 70c. *Clover Seed*—$7 50. *Timothy*—$2 to $2 50. *Flax Seed*—$1 50 per bush. *Eggs*—9c to 12½c per doz. *Butter*—Transactions light, large stock on the hands of buyers hard to dispose of, tub, 9c to 11c per lb; rolls, 10c to 12c per lb; fancy rolls from farmers' waggons, 18c per lb. *Flour*—from white wheat, $8 50 to $9, do red winter, $7 60 to $8, do spring, $7 to $7 50, middling uplands, $6 50 to $6. *Oatmeal*—$4 75 to $5 25. *Corn meal*—$3 75 to $4. *Bran*—50c to 62½c. *Shorts*—60c to 70c. *Lard* selling at 11c to 12c per lb. *Chop feed*, $1 25 per 100 lbs.

**London Markets.** March 26—*Fall Wheat*, $1 50 to $1 80; *Spring Wheat*, $1 60 to $1 72. *Barley*, 40c to 45c. *Peas*, 62c to 66c. *Oats*, 35c to 37½c. *Corn* 60c to 70c. *Rye*, 65c to 70c. *Seeds*—Clover, $7 per 60 lbs., Timothy, $3 per 60 lbs. *Butter*—Prime dairy-packed, 13c, No 2, 9c to 10c per lb, fresh, in rolls, by the basket, 15c to 16c per lb. *Eggs*, 12½c per dozen. *Potatoes*, 50c per bushel.

**Galt Markets.**—*Flour*—F. W., $4 50 per 100 lbs, Sp. W., do. $3 75. *Wheat*—Fall, $1 75 to $1 85 per bush.; amber, $1 55 to $1 65; spring, $1 45 to 1 50. *Barley*, 40c to 45c per bush. *Oats*, 32c to 34c per bush. *Butter*, 12c to 14½c. *Eggs*, 10c to 12c per doz.

**Guelph Markets.**—*Fall Wheat* per bushel, $1 65 to $1 85; spring wheat do $1 35 to $1 65. *Oats* do 34 to 36c. *Peas* do 55c to 60c. *Barley* do 45c to 50c. *Hides*, per 100 lbs, $5 to $6 50. *Pork*, per 100 lbs, $5 50 to $6 50. *Wool* per lb 34c. *Eggs*, per doz. 10c to 11c. *Butter* per lb. 11c to 12c.

## Contents of this Number.




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