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THE CANADA FARMER

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The Field.

New Use for a Turnip Crop.

UNDER the heading of "Cultivation of Turnips and other Roots," we published in our issue of Nov. 1st, the first portion of an article contributed by a valued correspondent. The amount of space required by the Prize List in our last unavoidably delayed the publication of the remainder of the paper, which we now give, adding, as before, that the writer, and not the Editor, is responsible for the opinions and suggestions offered, but at the same time commending the subject to the careful consideration of Canadian farmers:—

A great deal has been said about the overgrowth of wheat in Canada, and there is no doubt with much truth, but if our farmers would restore to the soil what the wheat crops take from it, over-cultivation with wheat would be impossible.

Having already glanced at what is done in farming in England, let us now see what is done in Canada. The nearest approach we make to a proper rotation of crops, is the mere changing from one crop to another. We grow wheat, then clover, for two years, then fallow, then wheat again, then oats, then peas possibly, with a kind of bastard fallow, then wheat again; in short, we grow the cereals until they will grow no longer; then we manure where we have it, and fallow where we have not. We trust to fallow not only to kill the weeds encouraged by our other management, but to restore the ground to such a state of fertility as to enable it to produce another crop. The consequences are small crops, foul fallows, and final poverty, not only of the soil, but of the farmer. Of the benefit of a naked fallow, no one who knows anything of farming has any doubt. The soil, when dry and pulverized, has a very strong affinity for ammonia; so much so, that it will adopt and deodorize any foul or decaying matter. All nitrogenous matters evolve ammonia in their decomposition; this passes off either into the atmosphere, if left exposed, or into the soil if the decaying matter is covered with soil. That which passes off into the air forms a grand magazine of fertility, to be absorbed wherever required It is the ammonia which the soil, when well worked and pulverized, attracts from the air that affords the future nutriment of the wheat crop; and it is that element alone that the naked fallow provides for the coming crop.

Many of our soils have but a weak affinity for ammonia, others have one much stronger. The soil which has the strongest affinity for ammonia furnishes the best wheat land. It is the clay in the soil, and possibly the humus, which possesses the affinity, and it is this fact which renders a porous clay, or one that can be rendered porus by draining, or by the admixture of manure, so fertile: but there are some clays that seem to benefit but little by summer fallowing; and these have but little of the required affinity. To these soils, ammonia, in some shape, must be added, or you will have no wheat or other cereals.

Now, where can we get the largest and cheapest supply of ammonia? The British practice shows that this is procured from the consumption of the root crop *on the ground*, either by sheep or cattle, or both. But we have already shown that in Canada we cannot hope to consume on 100 acres of land twenty-five acres of turnips, *on the soil on which they grow;* we have not time, and we have not stock to do it, and we have neither room nor stock to consume them in the winter. What can we do with them? Why, this (and in this fact, though seemingly passed over, will consist the future fertility of our farms.) WE CAN NOT THEM IN THE GROUND. A rotten turnip yields as much, and as good manure, as one eaten; and in fact better: for the beast which eats the turnip carries off with it the best part of the root, while the turnip rotted on the ground gives back to the land all it took from it, and much more; for it gives to the soil all it has taken from the air; and as all it takes from the air is nitrogen or ammonia, it furnishes at once the best possible food for the cereals which are to be the following crop.

Let this fact be once established, and our course is easy. "But what horrible extravagance!" says one,—"how much more profitable it would be to consume them by sheep," says another. Well, I doubt these, and all other similar assertions. Our farmers do not think it extravagance to plough in two tons of green clover per acre, and they do not think it extravagance to lose a year's crop in a bare fallow, and some eight dollars per acre, the cost of making and working the fallow. Why then should we grudge a crop of turnips, which in return will ensure a good crop of wheat, or a larger one of barley, and at the same time thoroughly enrich the ground? Let us first see what our course would be under this system, and afterwards count the cost. We will begin with a crop of our ordinary spring wheat, the yield of which has been possibly from ten to twelve bushels per acre. This being harvested, we should drag the stubbles, and sow white stubble turnips, which before winter sets in will produce a tolerable crop of leaves at all events, and which must be ploughed under that fall. The next year the land must, at any rate, be a fallow, or hoed crop, on account of the weeds, thistles, &c. Very well; as soon as the early spring sets in, harrow the fall-ploughed stubbles, and sow turnips again. Sown so early, the fly cannot take them, and they will form a smothering crop. If they are sown early enough they will be sure to come. I would prefer the large white turnip. When they are well up into rough leaf, drag lengthwise and across, and you will then have a tolerable plant; or cultivate both ways with some of the tines taken out of the cultivator, then leave the ground till the middle of June. Plough in the turnips again, and drill in Swedes with bone dust, or superphosphate, for a crop. Horse-hoe, and finally hand-hoe, and leave the Swedes till they attain full size; there will be a noble crop. Then cut them with a machine on the field, greens, roots and all, into small pieces. Plough them under, and leave them to rot and decay under the furrow. Cannot any one see that after this treatment the land will be in splendid tilth for spring wheat, or barley, and that (season admitting) you will be sure of a crop? Seed down the following grain crop with clover alone, not timothy and clover—timothy takes more than it gives. Take off as much of the first crop as is necessary for fodder, as hay, and plough the second crop under. Prepare the ground for spring wheat; or if you intend to grow fall wheat, you must plough the first crop of clover under as soon as it is in flower, and cultivate afterwards in the usual manner.

It strikes home to any one, that land treated in this manner would be greatly improved in condition; but objectors will consider it as a very expensive process. All this we will see by and by. The first thing to be done is to get the land into good heart at any expense; the next thing is to keep it so. Land in a poor low state is useless, a bill of expense, and a heart-breaking affair at the best.

In Canada we require most especially that the land should be in the very best condition, and in the richest possible state that will grow wheat without its going down and mildewing, and it does not go down or mildew as easily as wheat in the moist English climate.

Our seasons are so short that the grain has not the full time to mature, and our weather is subject to such sudden and severe alterations, that the grain needs all the support which can be given to it, to withstand the changes of temperature. We are troubled with insect plagues, but it is believed that if we could grow (as they do in England) forty, fifty or sixty bushels of wheat an acre, the ravages of these pests would be far less felt than they now are. The midge in a general way does not destroy more than twenty bushels an acre. If we grow forty bushels, and the midge does strike it, we should have, at all events, the chance of twenty bushels per acre left to cover our expenses; whereas when we grow only twenty, and the midge strikes it, all is destroyed, and time, labour and capital, wasted without any return.

Let us now see what sort of evidence we can adduce in support of this system. The first I shall mention is personal. On our farm in England, we always grew considerable quantities of mangels and turnips. As is usual, the turnips were eaten by sheep in the field, and with the well-known beneficial results. But one year we were disappointed of our sheep. In that part of England no one breeds flocks of sheep; they buy their ewes in lamb, the lambs are born on

the stubbles, then with their mothers "folded" as it is called on the turnips, the ewes being obliged to eat the roots, whilst the lambs are allowed the range of the greens, and fatten surprisingly. When the lambs became fit for market, they were driven to London for sale, and the ewes fattened with the remainder of the turnips and other food, and finally sold off to the butcher, to be replaced late in the fall by a newly purchased flock. Well, for some reason that I cannot recollect, the flock was not purchased, and we relied on some neighbouring sheep to eat down the turnips; but the farmers had as many turnips of their own as they could consume, and ours remained unconsumed. In this strait, by the advice of an experienced labourer, who had seen such a course adopted, the crop was destroyed on the ground, and ploughed under; and the result was the largest crop of grain ever seen in that district.

Again, as another instance, that veteran editor, Joseph Harris, formerly of the *Genesee Farmer*, in a lecture on the cereals, which he delivered at New Haven, Feb., 1860, says—"I was once on the farm of Mr. Matthews, of Swathan, in Norfolk, England, when he called my attention to a barley stubble, and said that the crop of barley from that field averaged seventy-five bushels per acre. It had been heavily manured for turnips, and the crop was very large, but not having stock sufficient to eat them, the greater portion rotted on the ground, and were ploughed in of course furnishing a large amount of manure, rich in ammonia."

As a further instance:—It was our custom, when we harvested and housed our mangels and Swedish turnips, always to cut off and spread on the ground the leaves of both kinds of roots; we never allowed them to be eaten, because experience had shown that when the leaves and greens were ploughed in, a splendid crop of either wheat or barley (whichever was sown) was sure to follow. In England, the turnips stand on the ground during the winter, and throw up high seed stalks in the spring; but the mangels must be housed, as the frost spoils them. The destruction of the turnip root in England on the soil is troublesome, owing to its vitality; but in Canada, if white turnips were sown and left exposed to the winter frost, they, as well as mangels, would be entirely softened and destroyed, and by spring time be ready for immediate amalgamation with the soil.

I will now give a Canadian instance. Some years since, a Scottish farmer on one of the worn-out farms in the Niagara district, had on his farm one twenty-five acre field, that from continuous cropping was so reduced, that no grain whatever would grow on it. He had no spare manure, as the farm would not grow straw enough to make it, but he was determined to thoroughly enrich this piece of land. He therefore prepared the field for mangels, planted them in drills, as well manured in the drill as he could manage, which was not much, but as the land had never before grown mangels they grew finely. He horse-hoed the roots, then, when the plants were large enough, he ran the cultivator across them in place of singling or pulling them out. He got a heavy crop of tolerably large roots, the whole of which were ploughed in, and the ground summer fallowed the following year, to kill the weeds. Fall wheat was then sown, and produced *sixty bushels per acre*. The wheat was seeded down well with clover, and as soon as the clover was in flower the next year, it was ploughed under with a ball and chain. This treatment got the land into thorough heart, and with judicious management since, that field, even till now, continues the best on the farm.

It is a well known fact that where sheep are not kept on mountainous or other extensive pasture, the English farmer neither makes, nor expects to make, any profit on the sheep over and above the manure which they furnish by consuming the roots and oil cake on the farm. If the sheep pay for the outgoings and interest on their purchase, and leave the farmer the manure free, he considers himself richly paid, and so he is. In Canada we do better than that, so far as buying and selling the sheep is concerned, but still the generality of farmers are content to keep but few sheep, and only those that they can winter through on pea straw, and some few roots, without difficulty. Sheep, in any great number, cannot be fattened or indeed kept successfully in Canada through the winter, without being housed, and it is not one farm in five hundred where three hundred sheep can be housed during the winter.

In THE CANADA FARMER, 16th April, 1866, P. Murison writes—"I would like to know if ploughing in a turnip crop is a good plan for manuring ground. I generally take in the turnips themselves, and plough in the leaves. Which is the best?"

THE CANADA FARMER answers,—"If you have cattle to consume the roots, the latter is clearly the most judicious course."

Now I doubt this. I believe that the cattle and sheep take away more good than they leave behind. I was discussing the matter with a clever Englishman who had been head labourer, or grieve, on a large English farm, where they made their own superphosphate; he had never discussed the idea of destroying turnips on the land before, and at first seemed to look on it as a horrible piece of extravagance; but when I told him the amount of solid constituents of the turnip, and how much of that must necessarily go into the sheep, and be carried away with them, perception dawned upon him, and he exclaimed in a sort of rapture, "Yes, you are right; I see it now. If you were to take all the lambs which can be bred up on one hundred acres of turnips, and dissolve them with sulphuric acid, you would have a grand lot of superphosphate, enough to manure two such lots of turnips, and by feeding these turnips on the ground the sheep carry away the whole of it." Well, he was delighted at the discovery, and went away fully determined to grow and plough in all the turnips he could manage to get into the ground.

But few people are aware of the extent to which green crops are ploughed under in some parts of Canada. Thus, on the sandy land about what is known as the Long Point country, county of Norfolk, it is not unusual to plough in one, two, and even three sowings of buckwheat in the course of one season. The first sowing, possibly, will hardly cover the ground; the second is better, and the third is a full crop, the ground producing a good crop of wheat afterwards. But the season in that district is the longest in Canada, or otherwise they could not do as they do. When they can once raise a good crop of clover, they prefer to plough it under as soon as it is in flower, and then sow fall wheat afterwards; without clover their land in the sandy portions would not repay the cost of cultivation.

On the plains in Haldimand and Hamilton, back of Cobourg, they carry out the same system to a great length. The land there was bare of trees except oak scrub; it was a poor sand with a hard clay subsoil. For many years it was considered unfit for cultivation, until some of the Brantford plains people went down there. They began with buckwheat, following with clover and plaster, and soon showed the capabilities of the soil. By a gradual bringing up of the hard clay subsoil, they have greatly improved the sand, and they now adopt the following course:—The wheat stubbles are ploughed under in the fall, then, as soon as the frost is out of the ground, and at the earliest possible moment, they sow a good thick crop of peas; as soon as the peas are well in flower, they plough them under with a proper implement, and sow buckwheat thick; the buckwheat comes to a full crop, and is again ploughed under in the fall; next year spring wheat follows, and they are sure of a first-rate crop. Plenty of clover seed is sown with the spring wheat. The next year, the clover is ploughed under as soon as it is in bloom, and that same fall winter wheat is sown, with the certainty of a first-rate crop. The wheat is clovered down, stands for hay, and the second crop is ploughed under for spring grain. If the clover heads are ripe enough, the spring crop is self-seeded with the clover. They then plough for another crop of oats, barley or otherwise, as the necessity of the farm requires. All the people there who have adopted this plan have become rich, and the land cannot be now purchased at any reasonable rate. These plain lands are very early, and the fall wheat is always ahead of the midge, and the quality of the grain is the very best in Canada; but the straw is short, and were it not for the green crops so ploughed under, manure would be out of the question. Plaster is freely used.

I have thus strung together all the information I could for the present obtain on this important subject. The success of the plan depends upon the length to which it is carried. One thing is quite clear—it cannot be carried too far. If it is found to make the wheat too gross, a crop of oats, barley or rye, will reduce the redundancy of the growth of the wheat, and bring it within reason.

Now I want all the persons who may read this, to find fault with it, pitch into it right and left, hit hard, make fun of it, do anything but pass it over in silence. There may and must be some good in discussion, but silence helps no one, not even to the extent of making them think.

VECTIS.

Toronto, 21st October, 1867

LARGE TURNIP.—The Windsor *Dominion* says: "William Lovelace, 1st con. Mersea, has a small field of large turnips. The one sent here measures thirty-four and a half inches in circumference, eleven and a half inches in diameter, and weighs twenty-two pounds. We venture to say that the smallest turnip he has of this kind (white globe) will not weigh less than fifteen pounds. They grow on light sandy soil."

Discussion on Fertilizers.

IN a recent number of the *Utica Weekly Herald* a very interesting discussion of the Little Falls Farmer's club is reported on fertilizers and kindred subjects, of which an earlier notice would have been given but for the press of exhibition matter and other items. An able address was delivered on the occasion referred to, by Mr. Miller, of Herkimer, on the application as a fertilizer of the refuse matter from the manufacture of straw paper.

He said the question of utilizing the refuse material from paper-mills had occupied the attention of paper manufacturers and others for some time. The manufacture of white paper from straw has now been going on some ten years. From the commencement of the business to the present time the trade has been increasing, and now seventy-five tons of paper per day are made from straw. It takes two tons of straw for a ton of paper. An immense amount of money has been spent to retain the alkali used in paper manufacture, and make it subserve some useful purpose. There is about fifty-five per cent. of waste in the straw. Soda ash is used in large quantities in the preparation of the straw for paper, and it is allowed to run to waste after serving that purpose. In every pound of paper there is a waste of half a pound of soda ash and one pound of straw. The soda is not injured, but is so combined with the various parts of the straw that no way has as yet been discovered by which it could be profitably separated. It could be separated by evaporation, but the expense was about as much as the soda was worth. At Herkimer, they are using 2,000 tons of straw per year, or an average of about six tons per day. There is daily a waste there of three tons of straw and 2,400 pounds of soda ash. It is thrown into the stream and passes down the creek. This waste contains everything belonging to the straw, except the fibre.

Some experiments had been made at Fort Edward to utilize this material for agricultural purposes. Muck was drawn out and the liquid poured upon it, but I am not able to give the result. The liquid, as it passes off to the stream, is too strong to be applied directly to plants—unless it is diluted it kills them.

Another experiment was made under his (Miller's) direction. There was a large pit near the mill, where the knots and dirt blown out of the straw by the fan-mill were piled. Upon this mass the liquid was thrown, and the mixture spread upon sandy land, sown with oats. It was spread over the land like manure, and wherever it was put it killed the oats. In the fall the piece was seeded to grass, and there was a large growth. It was too strong for the oats.

In reference to the value of soda and potash in agriculture, Mr. Miller referred to Johnson's Agricultural Chemistry and quoted his remarks in regard to the value of carbonate of soda and carbonate of potash. According to Johnson, carbonate of soda was worth $55 per ton for agricultural purposes. It could be applied profitably to grass lands that were mossy, or that contained a superabundance of vegetable matter, also upon sour lands. It could be applied beneficially upon fields of grain or wherever ashes can be profitably used. Wood ashes contain potash; this and soda ash, said Mr. M., have the same essential nature in the arts. In preparing straw for paper we can use potash, but it is too expensive. Johnson says that many experiments show that both are valuable to the agriculturist, but the quantity to be used depends upon the soil and the character of manuring to which it had previously been subjected:

Every farmer knows that in grain grown on low lands the straw is weak. In this liquid we have not only the silica, but the soda that makes it soluble. The alkalis are the only substances which will render silica soluble. Even if the proportion of the silica in the liquid is small, we have the alkali which makes silica soluble, thus putting it in condition to be available for plants. There are 67 lbs. of silica in 1,800 gallons of the liquid. Every plant needs soda and silica, and it must be presented in a form that is available. Johnson says that soda ash may take the place of potash, and that carbonate of soda has been found of benefit to the buckwheat crop. The great value of this waste liquid is that it decomposes manures and vegetable substances. By the use of the alkali, they give up those elements necessary for the growth of plants. In other words, it puts land in a ferment, or condition to force forward the rapid growth of plants.

Mr. Miller spoke of the value of silica in the process of vegetation, and said the only way to get it in a form by which it can be used by plants, is through the agency of an alkali of either potash or soda. The whole system of making paper out of straw, was the discovery that it could be dissolved by an alkali. If lands are maured with half-rotted manure, plants do not grow rapidly, but if an alkali be added, the effect on the growth of plants will be very marked. Potash

and soda are the strongest of all alkalis. Lime and magnesia come next. The alkalis are valuable not only in giving directly what the plants require, but in preparing other matter for their use by rendering it soluble. He would advise an application of the liquid on the land before the seed is sown, or in a diluted form upon the growing plants, so that it may come in contact with the roots. He thought the liquid could be used to good purpose upon lands for the purpose of destroying weeds.

As 7,200 gallons of this liquid were run down the stream from his mill at Herkimer as waste material, he would be glad to have farmers experiment with it. They could have all they wanted at no cost. He said some experiments had been made to utilize this material in soap-making, and the stream, while running off the liquid, presented the appearance of a mass of soap suds The water at these times was excellent for washing clothes It readily cleaned them of dirt.

The growing of rye was strongly recommended both on account of the value of the straw, and the utility of the crop on a dairy farm.

Mr. S. S. Whitman, of Little Falls, said he had learned by experience that it was necessary to exercise care in the application of fertilizers. He had applied manure from beneath his stables to melons and cucumbers, and it killed the vines, had tried gas lime upon meadows and it killed the grass. The truth was it was too much was applied; it was too strong, and should have been diluted.

Another speaker, Mr Olney, of Southbridge, Massachusetts, urged the importance of bone and bone dust as a fertilizer. He said that at the East, bone manures are coming largely into use. Formerly, there had been great trouble from grain rusting, but he had never heard of rust attacking a piece of grain raised on bone. As a top-dressing, he would advise the use of fine bone, but where it was to be worked in the soil, coarse bone would be more economical. For gardeners, nothing was found to forward vegetables with such rapidity as a good article of phosphate. The great trouble in this class of fertilizers has been the difficulty of getting a reliable article. Farmers at the East say that they can buy phosphates and use them as cheaply for the corn crop as the cost of dropping barnyard manure in the hill. In addition, the phosphate hastens the ripening of the crop at least ten days to two weeks. Bone manure was particularly recommended for wet lands, and an instance was given of a farmer who had a low, wet piece of land, that was not producing anything of value. He boned it at the rate of 400 lbs. to the acre, and it brought in a luxuriant growth of white clover and the finer grasses. This was the universal testimony of farmers who had applied it to this character of lands. Upon dry lands the bone was longer in decomposing than upon moist soils Mr. Olney made some further remarks on the importance of preparing composts under cover, and stated that the liquid referred to by Mr. Miller as waste of paper mills, is considered of value in composting. He spoke of an instance, where a farmer had used it in its undiluted state to kill out weeds and worthless vegetable matter. It put the ground in splendid condition, destroying every weed.

The use of bone meal as an adjunct to the feed of stock, especially milch cows was strongly urged by the same speaker, who observed that young and growing animals were very fond of it. Calves would gladly lap it from the hand There was no danger in feeding it. Cows would eat what they required, and no more. Those that did not need it would not touch it. He thought dairymen would do well to feed this article to cows, since they were called upon to supply a considerable quantity in their milk and in the production of their young. There was a difference between milch cows and oxen in their appetite for bones. Had never seen or heard of an ox picking up and trying to chew a refuse bone, whilst with milch cows it was quite common.

The foregoing discussions are of value on account of the information given, and the practical experience detailed, and we cordially [illegible] the example of the Little Falls Farmers' Club to Canadian agriculturists.

Degeneracy of Wheat.

E. S. Todd, in the *New York Times*, combating the idea that there is, as asserted by some writers, a natural tendency in some varieties of wheat to run out or degenerate, says:—

"On the borders of the River Nile, in Africa, one of the finest regions in the world for the production of excellent wheat, the same varieties are grown from year to year, without the least deterioration, that were cultivated three thousand years ago. And the same thing may be done in this country by exercising the same care in the selection of the seed that is observed by the farmers in that part of the world.

"It is a well-established fact that wheat will hybridize when different varieties are allowed to grow in close proximity. Of course, the product would be a mixture of seed, in which the purity of the variety is gone. Consequently, with a mixture of seed, a farmer would find himself in the same circumstances, with reference to the improvement of his wheat, that he is when he undertakes to improve his domestic animals by breeding from mongrels or from grade stock. It is well understood that such animals —grades and mongrels—when employed as breeders, never transmit the excellent points of desirable form and symmetry to their offspring with reliable certainty, while pure-bred animals never fail in this respect.

"The same facts hold good in the vegetable kingdom, with seed wheat in particular When different varieties are sown in close proximity, and the product, which will be an impure grain, is again employed for seed, a pure variety of choice wheat may be run out most effectually in a few years, so that intelligent farmers, who were only superficial observers, would be ready to affirm, without any hesitancy, that wheat does degenerate. The cause of degeneracy, and the remedy, may all be expressed in a few words. We have already hinted at the cause, namely: sowing different varieties near each other, so that the grain will hybridize; threshing several kinds together, and continuing to employ such grain for seed from year to year. Herein lies the whole secret of the degeneracy of varieties. If a pure variety be kept by itself with suitable care, and cultivated on good ground, and the grain never threshed with other wheat, the purity of a variety of wheat, with all its excellent characteristics, may be maintained intact as long as wheat may be cultivated. There is no uncertainty about this suggestion. The idea is in perfect keeping with the established laws of vegetable physiology. Cultivating any variety of grain in a slip-shod, slack and perfunctory manner, will cause the best variety of wheat the world ever knew to degenerate and run completely out in a few years. On the contrary, if the seed be selected every season with the same care that the originator of the Weeks wheat observed for a decade of years, generations unborn would cultivate the same varieties that our fields now produce, without the least deterioration in either yield or quality of grain."

Reclamation of Land in Holland.—A report by Mr. Thurlow, secretary to the British Legation at the Hague, gives a description of the *polders* or drained lakes, of which Haarlem Meer is the most notable example. It appears that after being pumped dry the area is cut up into parallelograms, which are frequently not much larger than an acre each, and are separated by primary canals. These drain the land in wet seasons and irrigate it in time of drought, as well as forming a highway for the small boats which take the place of the English tumbril or waggon. A certain number of parallelograms are formed into a group, and pump their superfluous drainage into transverse canals, which communicate with the main outlets to the sea. In one case there are no less than four canal systems with different levels, through all of which every drop of water must pass in order to reach the ring dyke which girdles the *polder*. This dyke is constructed in duplicate, with an intervening space of fifteen or twenty meters, and water-works are erected on its banks. These dry lakes do not afterwards leak to any great extent, and the rain-fall is seldom excessive, being pumped out by ordinary windmills before the 1st of May. The health of the "colonists," as the population may be called, is satisfactory, and the reclamation answers financially. Haarlem Meer took thirteen years, being completed in 1852, and cost nearly a million sterling, but the outlay has been repaid by the sale of 42,000 acres. The recovery of the Zuyder Zee is seriously looked forward to, and this would throw all former undertakings into the shade. Amsterdam would then have an outlet to the German Ocean by the North Holland canal, now in process of construction, and which is of such dimensions as to allow two men of war to pass each other at any point. During the last two hundred years £300,000,000 have been expended for hydrographical purposes in the narrow tract of country, hardly as big as Wales and Yorkshire put together, lying between the Dollardt and the Scheldt, and Mr. Thurlow compares the Netherlands to a copyhold property with Neptune as lord of the manor, whose fines amount to a million sterling per annum for repairs and superintendence.

Peat.—The Goderich *Star* says there are immense beds of peat in the townships of Hullet, Turnbury, Wawanosh, McKillop, Hay and Stanley, varying from five feet in depth upwards. In one part of McKillop it is fully fifty feet in depth. The extent of land occupied by these beds is fully 5,000 acres.

Stock Department.

Fall and Winter Care of Young Stock.

To the Editor of The Canada Farmer:

Sir,—Having on previous occasions occupied the space of your columns at considerable length on the subject of rearing young stock during the summer months, I now propose to take up the subject again and follow it somewhat further.

Cold winds and the dry and yellow leaves of autumn forcibly remind the farmer of the necessity of early forethought and timely provision for the care of his stock through the coming winter. Upon the economical and successful manner in which this is accomplished, quite as much as upon any other thing, depends his success in stock farming. I observe a great many people, after having paid considerable attention to their calves during the summer months, sadly neglect them in the fall, under the mistaken idea that they are now become old enough to take care of themselves; and that if they have the run of a tolerably good pasture, nothing more is required until winter is fairly set in. But this is a great mistake, for at no time do they require, or will pay better for, a little extra attention than during the fall months. True, they may apparently get enough to eat; but it will be cold frozen stuff, containing very little substance; and if they are left entirely to depend upon such food, their growth will be materially checked. As soon as the cold nights come on they should have the benefit of the shed, and be fed in the morning with a little good hay. The supply of meal should also still be continued if possible.

To bring young animals to early maturity, whether calves, lambs, or pigs, they must be kept growing from the time of their birth till they are deemed fit for the butcher. For it is an important fact, and one that should on no account be forgotten by the farmer, that when a young animal ceases to grow from lack of a proper supply of food it ceases to be profitable, and immediately becomes a burden and expense. It is of great importance to bring all animals to maturity as soon as possible; and to do this we must feed liberally. On this principle short-horns have acquired the habit of attaining the size and weight of common four and five year old steers when they are only two and three years old; and herein lies the profit of the business. For, if well kept until they are two or three years old, they bring more money than ill-fed animals will at four or five. Business men, merchants for instance, tell us they aim to get quick returns even if it cuts down the profits to a certain extent; but, in bringing animals to early maturity the farmer obtains quick returns and large profits. In order to obtain this, however, it is absolutely necessary that calves should be well fed during the first year of their existence; after that they will get along with considerably less attention. Through the winter they should be separated from the older stock, and fed on hay of the best quality, with a daily supply of either roots or meal. It is also of the greatest importance that shelter be provided for all kinds of stock during the winter. The advantages of protecting farm stock from the rain, sleet, and chilling blasts of winter, are not so well understood and appreciated by a great number of our farmers as they should be. Young stock especially are greatly injured by cold winds and storms. And the custom of suffering cattle to run at large during winter without some place of shelter is, to say the least of it, a great want of economy. No sensible person will for a moment dispute the fact that cattle well protected from the cold and storms of winter in this changeable climate of ours can be wintered on much less food than those exposed to the full blast of the wintry winds. It has often been a matter of wonder to me how any man claiming to possess the feelings of common humanity, much less a professed christian,

can sit contentedly and comfortably around the cheerful fire, or sleep in a warm and comfortable bed at night, while the poor dumb animals that God has committed to his care, in order that they may add to his comfort in this world, are exposed to the full power of the cold winds and storms. Surely such cruelty should be made punishable by fine and imprisonment. And yet in too many instances do we see people, surrounded with all the comforts and many of the luxuries of life, apparently quite unconcerned about the comfort of their stock. They will tell you they do not believe in stock farming; they live by raising grain. But the raising of stock is becoming a matter of great importance. Farmers are beginning to find that the raising of stock is more sure and certain than to depend altogether on the raising of grain; so much so, that there is danger in some places of the farms becoming overstocked.

Domestic animals claim and should obtain a large share of the attention of every farmer, for those who give such care reap a rich reward.

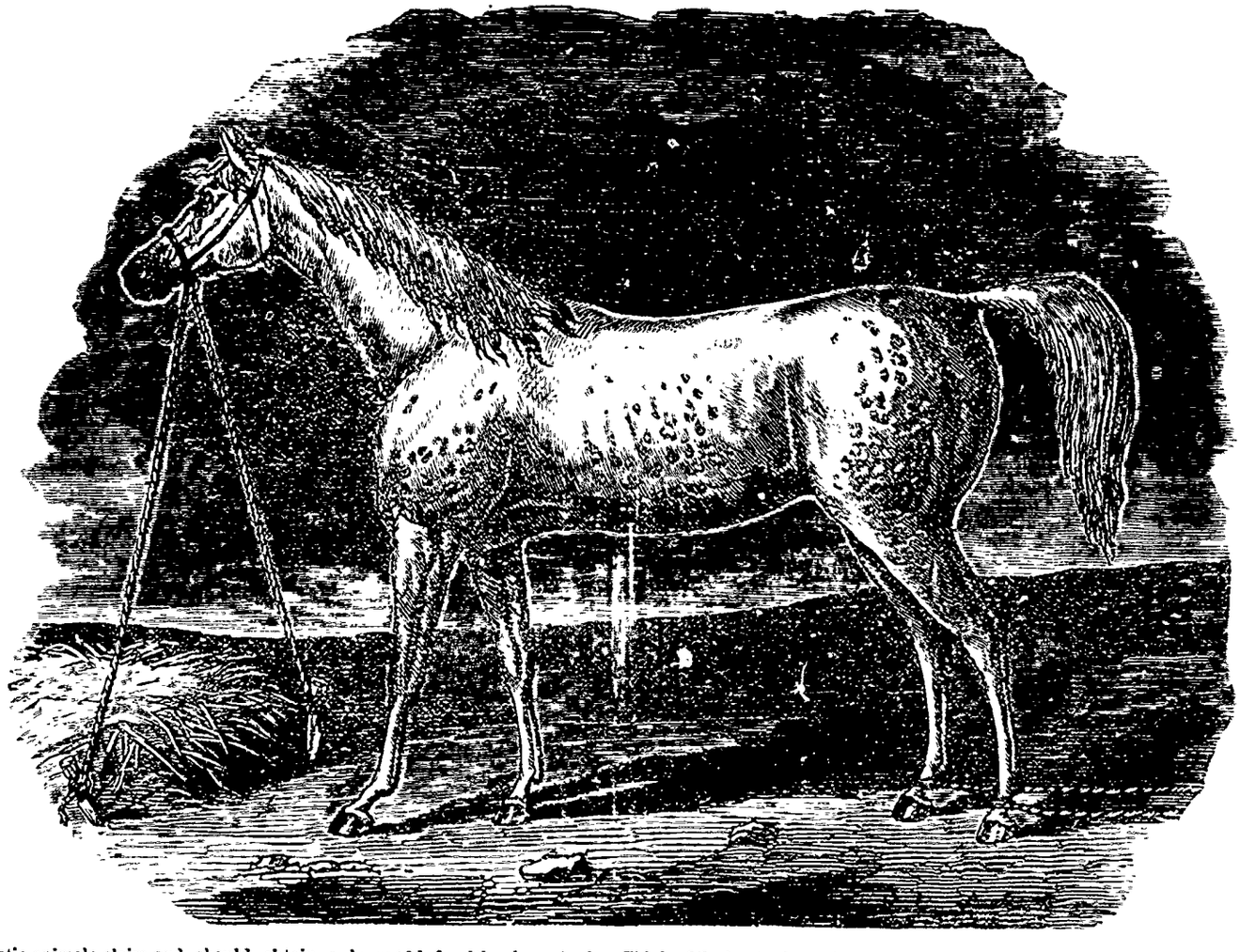
JAMES LOVELL.

BROOKE, October 21st, 1867.

The Arab Horse.

IN a former number of THE CANADA FARMER, our readers will remember, we gave a brief account and illustration of the English thorough-bred horse. This beautiful animal owes much of its excellence to the qualities inherited from its Arab progenitors. The accompanying illustration gives a characteristic representation of the pure-bred Arabian, showing his general form, and special points of excellence, as well as incidentally the manner in which he is usually tethered near the tent of his owner. The engraving is copied from the *Field*, in which also we find the following notice of this noble breed :—

"Most people who have given the Arab horses a thought know that there are several varieties even of them. The Nedjdean horse is to be considered as the purest type, and the nearest approaches to him in appearance and certain qualities are the most valuable. A recent and well-informed explorer has stated that the horses of Nedjed are not to be bought. If so, and if they be otherwise inaccessible, it may be consolatory to some to know that a good imitation is procurable by a good judge who will pay for his fancy. Whether or not a fresh infusion of Arab blood would benefit our racers is a point not likely to be settled as long as really well-bred Arabs are not imported here; but I cannot but think that our saddle-horses, and troop-horses especially, would be improved by it. There are men, and lots of them—some decent judges, too, of English horses—who can be persuaded that any under-sized long-tailed animal, particularly if he be a grey, and in possession of all his faculties, is an Arab. Think of the brutes brought over by officers after the Crimean war, which were dignified with the name of Arabs, and whose numerous faults were brought forward in evidence against the real son of the desert. A Turkish pony is a good beast; his feet and legs are capital, his appetite good (often better than his temper), and he is an enduring sort of slave; but the best of them cannot hold a candle even to an inferior Arab horse. The well-bred Arab is an example *per se*. For his apparent size there is more of him physically, and more spirit, gameness, and strength, than in any other horse. If well-bred, he is much more likely to be under than over fourteen and a half hands; but when on him you don't feel as if on a pony. His head is a picture by itself—so fine at the muzzle as to make the cheeks look almost coarse, the nostrils wide, eyes prominent, mild, but bold, with little ears that, seen alone, could be taken as bail for the family of the owner. The neck is strong and muscular, without being heavy or "beefy," and the head nicely put on. Shoulders well laid back, looking rather thick, and none the worse for that when nice and free at the points. Girth deep, and back ribs of enormous depth; so big are all the ribs as to make the saddle-girth seem carried forward, whence the common idea that Arabs are bad shouldered horses. (Some are, of course; so sometimes are winners at Newmarket.) The croup is high to a degree seen only in horses of this high caste, and the tail is set on very high, and carried right off the back. The fore-arms of the Arab are remarkably muscular. Very short from the knee downwards, he has great flat, clean legs, that no ill-usage can cause to puff. His feet are high at the heel, a little "donkeyfied," but hard as flints, and with as much wear in them. His thighs are to match his arms. His hind legs are well under him, and his hocks often turn in a little. He is hard as nails, will eat anything or nothing, and you may ride him for a month at a time. As a charger he is best. Intelligent and obliging as a poodle, he is still bold and resolute. When he once sees what vagaries are required of him, he will perform them. He is startled at neither lance-flags, swords, firing, nor music, nor any of the bugbears of English remounts, but he hates a camel (small blame to him) and detests an elephant. He will fast as long as you like, and you may tire him if you can, being careful not to fatigue yourself in the attempt. He is not perfect, owing to bad breaking; his walk is often a shuffle, nor is his trot even. He sometimes "runs," and mostly stumbles. Good riding and English bridles improve all this, though. His fast pace is a nine miles an hour canter, at which he can stay till the week after next. Among other horses he is, though entire, quiet; quiet also to saddle and groom, unless ill-treated. As a race-horse he often knows too much; but he has many qualities that, disseminated among our saddle-horses, would make the possession of a stable less of a care than it often is."



Canadian Natural History.

Squirrels.

Every one is familiar with the quick and lively squirrel; and though the little animal is a universal favorite, yet so strange is the perversity of human nature, that boys of all ages, and men too, cannot resist the temptation of hunting and persecuting those pretty creatures whenever they catch sight of them. Such, however, is their activity, that unless beset by overwhelming numbers they generally succeed in eluding their persecutors. Indeed, without a gun it is almost impossible to obtain possession of an adult squirrel; and even when the hunter has the advantage of fire-arms, the sharp-sighted and nimble little climbers generally contrive to keep the trunk or boughs of a tree between them and their pursuers, so that it is no easy matter to secure the chance of a shot. Their movements in running along the limbs and branches are extremely rapid, but still more remarkable is their activity in leaping from bough to bough or from one tree to another even across considerable intervals. In these gymnastic performances they seldom miss their aim, and if they chance to do so, they almost invariably catch some projecting twig in their fall, and thus save themselves from coming to the ground, and pursue their course not at all disconcerted by the mishap. But even should they fall from a considerable height, either through missing their hold in leaping, or being violently dislodged, they contrive in their descent so to spread out their limbs and expanded tail as to offer the greatest resistance to the air, and thus come to the ground as lightly as possible and escape unhurt. Trees are the natural home of almost all the family, and their structure is admirably fitted for their woodland haunts and mode of life.

They belong to an extensive natural order, Rodentia, which has already been described in former notices of natural history in this journal. The tribe or family of the squirrel is very extensive, comprising a number of species, and being very generally distributed over the globe. They are nowhere more numerous or common than in North America, though like all wild animals they fast diminish and almost disappear from the neighborhood of men. The most common species in Canada are the three represented in the accompanying engraving, the Red Squirrel, the Black Squirrel, and the Ground Squirrel or Chipmuck. Every one will recognize them in the illustration, without any special figures or references.

The generic name of the family, *Sciurus*, is of Greek derivation, and signifies shadow-tail, in allusion to the length and expanse of this member, and its habit of arching it over its back. Of the Canadian varieties the Red Squirrel (*Sciurus Hudsonius*) is the most common. It very closely resembles the English species in general appearance and coloring, but is somewhat smaller The common characteristics of all the squirrels, by which they are distinguished from other members of the same natural order, are well marked in this pretty and sprightly little animal. These distinctive peculiarities are—slender, elongated body, small rounded head, large, brilliant eyes, erect ears, the upper lip slightly divided, the hinder longer than the fore-legs, the feet furnished with long, slender distinct toes, four on each fore-foot and five on the hinder, the fore-foot being also provided with a tubercle covered with an obtuse nail in place of a thumb, eight teats, two pectoral and the rest ventral, tail long and bushy, more or less distichous, that is, having the fur divergent in opposite directions from the central line. The teeth are constructed like those of all the order, the four incisors, or cutting teeth, being specially adapted for gnawing hard substances, such as nut-shells and the hard coats of seeds. The ears of the Red Squirrel, though covered at the back with long and projecting hairs, are seldom tufted like those of the English squirrel. The color of the fur is subject to considerable variety, but most commonly it is of a deep, reddish brown above, with scattered darker hairs, and on the under part of the body white. Traces of a dark line are generally observable along the flanks. The tail on the upper surface is of the same color as the body, with blackish hairs on the border; on the under side, rufous in the middle, then black and tipped with brown. The total length of the body is about eight inches, of the tail, including the fur, six inches and a half.

This graceful little animal is very generally distributed over the North American continent, and is found from the Artic circle, or 68° north latitude, to the mountainous ranges of North Carolina and Tennessee. It possesses in a marked degree the lively disposition and activity of its tribe. Its gambols, when at liberty in the woods, are most amusing, and its gymnastic performances truly surprising. It approaches nearer to man's abode than any other species, and indeed is the only variety that is at all frequently found near human dwellings. A pair of these creatures had their quarters, a year ago, close by the house of the writer, and seemed to be very partial to the snow apples in the orchard, many of which bore traces of their little teeth, though their principal subsistence consisted, during spring and summer, of the young buds of trees, and in the autumn and winter of the horse-chestnuts and acorns of which there happened to be an abundant supply close to the house. During the warm months squirrels are frequently abroad in the cool of the day, in quest of food, or pursuing their active gambols among the branches, or uttering those sharp chattering notes, which have suggested one of the familiar names of this species, Chick-a-dee. Though classed among the hybernating animals, they are not completely dormant during the winter, yet they undoubtedly pass much of their time in sleep; but occasionally on warm days one or two may be seen to venture forth from their snug retreat. With provident instinct the little creature lays by an ample store of provision for the winter, hiding its food in various places, either in the hollows of trees or in sheltered nooks about the roots and elsewhere, and apparently possesses a very retentive memory as to the locality of its granaries or hiding places. The next species in the illustration is the largest of Canadian squirrels, and not uncommon in the less settled districts. This is the Black Squirrel (*S. niger*), which is easily distinguished by the uniformly jet black hue of its fur, even the under parts of its body being of the same tinge. It

is larger, and in proportion more elongated than the preceding species. The length of its head and body is about thirteen inches, of its tail, including the fur, thirteen inches, making the total length of the animal two feet two or three inches. Though larger than other varieties of the tribe, it seems to be one of the most timid, and usually disappears before the advent of the grey squirrel, or even of its little red cousin already described. When undisturbed it is lively and frolicsome, and is remarkable for a curious habit of suddenly ceasing its play and running to the nearest stream to refresh itself with a draught of water. It is also said to wash its face and paws somewhat after the manner of the racoon. The skin of the black squirrel is valuable, forming a beautiful glossy and smooth fur. All the larger species are used, especially by the Indians, as food, and by many among the Anglo-Saxon settlers of the country they are esteemed a delicacy.

The remaining figure in the illustration represents the most common variety of the squirrel family in this part of the world. The Striped Squirrel (*S. Striatus*), or Ground Squirrel, is smaller than either of the other varieties, and differs from them in having its habitation not in trees, but in burrows under ground. It is known by various names besides those already mentioned, such as Hackee, Chipping Squirrel, or Chipmuck. Its body is shorter and in proportion stouter than the preceding species; its ears are small and rounded, covered with slightly projecting hairs, but never tufted; its tail is slender, nearly cylindrical, and only slightly distichous towards the extremity. It does not possess true pouches, but its cheeks are dilatable, and are used to convey nuts and other store of food to its burrows. The colour of this little animal is subject to considerable variety; but usually the forehead is tawny, with darker markings above the cheeks and eyes; the upper part of the neck, forepart of the back, and upper surface of the tail are grey mixed with black; the flanks greyish, passing into reddish behind; the throat, breast, abdomen and under surface of the legs are white, mixed with light ash. The under side of the tail is fulvous, bordered with black and grey. A narrow chestnut brown dorsal stripe commences behind the ears, becomes dilated and darker on the back, and ends a short distance from the tail: a shorter white stripe runs parallel with this along each side, bordered above and below with black. The total length of the head and body is about six inches and a half; that of the tail, four and a half inches. This pretty little creature is not surpassed by any of its congeners in alertness of movement; it makes for its burrow on the slightest alarm, and disappears with surprising celerity. It excavates its subteranean retreat to a considerable distance below the surface, forms usually several branches or lateral tunnels, and provides for entrance and retreat by more than one opening. In these deep and winding burrows, where it is tolerably secure from most of its enemies, it stores an abundant supply of winter food in the shape of grain and nuts. It is accused of doing considerable damage to young corn by destroying the kernels as soon as the blade appears a little above ground. On this account it is relentlessly destroyed in the maize-growing districts, by being poisoned, dug, or drowned out—some more merciful and considerate farmers, however, protecting their sprouting corn by scattering a supply of kernels on the surface for the especial benefit of the marauders. It retires into its winter quarters about the end of November, and seldom re-appears above ground till the beginning of spring. The young are produced in May, and there is generally a second brood in August. Their number is about four or five. Besides these common species there are others, not so abundant, yet not unfrequent in certain localities. One species, the American Grey Squirrel (*S. leucotis*) is extremely numerous in the adjacent States, though only occasionally found with us. Its total length is about sixteen inches, and it is distinguished by the grey hue of its fur. Where they exist at all it is usually in considerable numbers; and when food in any locality is scarce, or from some other cause, they are in the habit of migrating in large bodies, and will cross large rivers in their journeys. They swim indifferently, however, and many perish in the unaccustomed element.

Another very pretty and curious species is met with in several parts of Canada, namely, the Little Flying Squirrel (*Pteromys volucella.*) The generic name is derived from two Greek words signifying winged mouse. This little animal is furnished with a membrane extending along its flanks from the fore to the hind legs, and this appendage being spread out in leaping, assists it materially in its passage through the air. When on the ground they are less active than the other species. Not long since, one of these creatures came into the possession of the writer, having been dislodged along with three or four others, in felling a tree, and caught alive. It was, however, so much injured in its fall or capture, that it did not long survive the event. The usual length of this little creature is about eight or ten inches, the tail, with the fur, being about of equal length with the head and body. The ordinary color of the fur is mouse grey on the head, and rufous on the body above, inclining to grey. The under side of the flying membrane is dark brown. They are said to be very gentle in disposition and easily domesticated. The Red Squirrel is also sometimes kept as a pet, and becomes very familiar. The foregoing are, we believe, the principal varieties found in Canada. They vary considerably in color, according to the locality and season, and hence, we doubt not, the species have sometimes been confounded, and individuals described under different names whilst in reality they were only varieties of the same species.

☞ A wolf was shot in Garafraxa recently which had infested the neighborhood for six months.

An eagle, measuring seven feet eight inches from tip to tip of wings, was shot in Elora, recently, by Mr. Richard Kenning. The bird was taken on the wing, and is still on the land of the living.

English Sparrows.—An attempt is being made by Colonel Rhodes, of Quebec, to acclimatise this useful little bird, so common to every part of England. A considerable number were brought out in the *Hibernian;* a large per centage, however, died on the voyage.

The Dairy.

Uncoloured Cheese.

While the requirements of the market, as was intimated in a recent issue, seem to demand a somewhat higher colouring in Canadian cheese, the question is coming up in England whether the addition of colouring matter does not impair the quality and interfere with the ripening of the cheese. In reference to this subject, the following extract from a communication of Sir James Stuart Menteath, of Mansfield, in the *Ayrshire Express*, may be interesting to our readers:—

"There are several advantages from not colouring cheese. Among these may be stated—

1. An uncoloured cheese will ripen sooner, and be fit for use. Some years ago, the late George Wilbraham, M.P., of Cheshire, an enlightened and public spirited country gentleman, suspecting that the coloring of cheese with anatto and other vegetable substances had a deleterious effect on it, offered a large sum of money to any one who would chemically investigate the subject, and write an essay on it. Mr George Whitby composed an able one on the subject. It was published by Ridgway, bookseller, Piccadilly, London, in 1841. Mr. Whitby, at page 29, states 'that it is his opinion that most red and scarlet vegetable subjects are astringents, and that all matters possessing this property, if mixed with the milk, will tend more or less to interrupt the formation of curd, and that it will interrupt one or more of the processes or changes which all cheese must pass through before it ripens, particularly as its action on the curd will counteract, condense, and harden, by that natural attraction between gluten, gelatine, and tannin, the principle of the astringency.' If such be the case, and of which it seems certain, what a great loss it must be to the dairy farmer colouring his cheese with annatto or any other vegetable colouring substance! The reed, or rennet, when added to the coloured milk, will not now throw down all the curd; and where much cheese is made, what a great loss of weight must be experienced! Mr. Titley, of Bath, one of the most extensive dealers in cheese in the West of England, and well acquainted with all the details of Cheddar cheese-making, informed me long ago how injurious it was to colour cheese. It prevents the cheese ripening for a long time for the market. The sooner the blue-mould appears in the cheese, the sooner it ripens, and is fit to come to table. An uncoloured Cheddar quickly ripens, and the blue mould appears in it.

2. No intelligent dairy farmer, either of Cheshire or Somersetshire, has on his table coloured cheese. They always prefer one uncoloured, as richer and higher in flavour. Had the Cheddar cheeses that obtained the prizes at Kilmarnock exhibition been uncoloured, they would have been much richer in taste and higher in flavour.

3. It is curious to remark, no country except Great Britain colours cheese. The only uncoloured cheese is the Stilton, which is one of the best flavoured and richest cheeses. We find no coloured cheeses in Holland, none in Switzerland, where Gruyere is made; none in Lombardy, the country of the Parmesan; nor in France, which produces the delicious Rochfort cheese. The American cheese, which is now imported in such vast quantities into this country, is uncoloured, and is yearly improving in quality. It greatly behoves our dairy farmers to do all they can to improve their Cheddar, and prevent it being lowered in value in the market by the superiority of the American. And as it is ascertained that colouring cheese affects its quality and richness, surely this ought to be a chief reason to abandon it, and bring into the market the best-made Cheddar uncoloured, to cope with that which comes from America."

The Ayrshire Agricultural Association, with a view to correct this demand for coloured cheese, has offered prizes at the Kilmarnock Cheese Exhibition for uncoloured Cheddar cheese. Sir James has contributed a sum of money towards this object, and hopes that much good will result from the endeavour to introduce uncoloured Cheddar cheese, and that the public will gradually be trained to prefer it to that which is coloured.

It will be new to our readers that the Americans do not colour their cheese. This is a mistake. They do not colour so highly as the English makers, but anotta is one of the requisites at all private dairies and cheese factories in the United States and Canada. It was one item of information culled by Mr. X. A. Willard, during his dairy tour in Britain, that to be popular in the English market, American cheese must have a higher colour than it usually had, and no doubt this piece of information has led to higher colouring on the part of American cheese makers generally.

The *Utica Herald* observes in reference to this subject:—

"We have no doubt that vegetable coloring matter of various descriptions may have an injurious effect upon the curd. Granting that may all be true, the practical dairyman has hardly suspected it. He knows that the early ripening of cheese depends, for the most part, upon its manufacture and curing. Thus, by care in manufacture, light salting, and comparatively high heat in curing, a cheese highly colored with anotta may be ripened for the table in thirty days, or even twenty days from the press. One great objection which the English urge against the American cheese, is that it ripens too quick and goes to decay too soon. If color would arrest the process of ripening and decay, that might be claimed sometimes, perhaps, in its favor."

"American Chedder."

The *Rural New Yorker* says.—

"F. W. Collins, of this city, exhibited, at the late State Fair, a sample of cheese made on his farm in Otsego County, which he christened 'American Chedder.' The Committee say of it:—'This cheese is in small sizes, varying from nine to twelve pounds. The skin of the cheese is very thin, while it is so close and impervious to the air as to hold the inside of the cheese soft and in good condition. This cheese we look upon as a great and valuable addition to the kinds made in our country.' This opinion was backed up by a very handsome special premium."

How far this so-called "American Chedder" may resemble the English "Cheddar" in process of manufacture, flavour, &c., we know not, but unless we are greatly mistaken it is not usual to make "Cheddar" cheese "in small sizes." It is our impression that they usually weigh sixty or seventy pounds apiece.

Veterinary Department.

Scrotal Hernia.

This affection is often met with in colts from the age of three weeks upwards, and also in stallions, and occasionally in geldings. This kind of hernia, as the name implies, consists in part of the intestine passing through the abdominal ring and becoming lodged within the scrotum, or bag which covers the testicles. In stallions and in geldings it is produced by violent exercise, as racing, leaping, heavy draughts, &c. In young colts it often appears to be congenital. Scrotal hernia, when of ordinary size, is easily noticed as a large tumour occupying the scrotum. On examination it will be found to be soft and fluctuating; and if the hand is passed upwards towards the groin, the tumour is found to be continuous with the abdominal ring, and in some cases it may be partly returned with the hand; but on moving the animal it will immediately slip down. This hernia is usually largest in warm weather, and in aged stallions, and in geldings: at certain seasons it will almost entirely disappear. Other diseases might be mistaken for it, and in order to be correct in recognising its presence, a good plan is to make an assistant cough the horse, and take hold of the enlargement during the effort of coughing; the swelling, if the case be one of hernia, will be found to suddenly expand, and just as quickly recede again.

In young colts it is very common, and, like umbilical hernia, as the animal grows and becomes strong the intestine gradually recedes into its natural cavity. When it becomes strangulated the symptoms are very distressing. The horse lies down and rolls over on his back, and attempts to balance himself in that position; he is in great agony, casting wistful looks to his flanks, and the body is covered with a profuse perspiration; the scrotum is swollen and painful to the touch, and the acute symptoms increase in severity until death puts an end to his sufferings.

Scrotal hernia in young colts can be successfully treated by means of bandages. To effect this object apply a truss, and secure it by bandaging: it will be necessary to use the bandages for some time. The colt should also be well fed whilst he is under treatment. Castration will also remove it; but the operation must be performed by what is called the covert operation. We would recommend castrators, before proceeding to operate, to examine every colt carefully, to ascertain if hernia does not exist. For if it does, castration, as it is generally performed, would in all probability be attended with very untoward results. We have frequently known cases where due caution had not been exercised; when the colt got to his feet the intestine came out, and all attempts to return it proved fruitless.

When the abdominal walls become injured so as to divide the muscular fibres completely, and allow a portion of intestine to protrude, the affection is called ventral, or abdominal hernia, and is of frequent occurrence amongst horses. It differs from either scrotal or umbilical rupture, as the protrusion is through an artificial opening. This description of hernia varies greatly in size. It may be not much larger than a nut, or it may be the size of a man's hand. When small it is very apt to be overlooked. Ventral hernia is often produced by a kick from another horse, or being kicked by a groom, or gored by the horn of an ox. It is also the result of horses leaping and coming down with violence upon stiff fences, &c. Ventral hernia may exist for years, and like umbilical hernia prove of little inconvenience to the horse, further than its unsightly appearance, which certainly depreciates his marketable value considerably. The danger to be apprehended is injury to the part. Ventral hernia may be treated similarly to umbilical.

There is another description of hernia, called diaphragmatic hernia. Fortunately this is of rare occurrence, as sooner or later it proves fatal to the animal. This consists in the passage of a portion of the intestine, usually the small gut, through the diaphragm, a membrane which separates the thoracic from the abdominal cavity. Cases are on record where this description of hernia has been supposed to exist for a considerable time before strangulation occured. The causes of it are the violent exertion of leaping, running, or pulling heavy loads, and it may also be produced from the manner in which a horse throws himself about when labouring under an attack of colic. We had an opportunity of making a post-mortem examination, where upwards of thirty feet of the small intestine had passed into the thoracic cavity. Little or nothing by way of even palliative treatment can be done in these cases.

The Apiary.

Drone-laying Queens and Drone-laying Workers.

It sometimes happens that strong stocks suddenly become depopulated, and the inexperienced bee-keeper is at a loss to determine the cause. The appearance of the bees does not indicate the loss of their queen, and still they are daily dwindling away. It will generally be found that such stocks have drone-laying queens or drone-laying workers. It may be well to remark here that a drone-laying queen is a queen that lays eggs which produce drone bees only; being unimpregnated eggs, they never produce worker bees. This peculiarity in the queen arises from two, or indeed three, distinct causes. First, the queen may never have become impregnated from some inability to fly or leave the hive, such as an imperfect wing; or if reared late in the fall she may have been prevented from leaving the hive by unfavorable weather. In such cases she fails to mate with a drone, and though after a time she may commence to lay, yet her eggs produce only drone bees. Secondly, the fertility of a queen may suddenly cease from old age, in which case she will no longer lay worker eggs, but continue to lay drone eggs. Queens become drone-laying from this cause more frequently than from any other. It happens after this manner. When a queen copulates with a drone, a little sac, called the sperm reservoir, is filled with impregnating fluid. At the age of three and a half or four years, this little sac becomes exhausted, and her fertility ceases; and though she continues to lay eggs, yet they are no longer impregnated, and hence produce drones only. The third cause is somewhat similar. The queen ceases to be fertile from the sac becoming exhausted of the impregnating fluid, but not on account of old age, but rather from imperfect copulation. In the act of coition the sperm reservoir may be but partially filled, and a few weeks, even days, may exhaust it, when suddenly a young queen, which at first was fertile, is found to be a drone-layer. Such instances, however, are very rare.

Drone-laying workers, are so from only one cause—inability to receive impregnation. They are not so common as drone-laying queens, and are only found in queenless stocks, and by no means in all such. A drone-laying worker is a worker bee whose reproductive organs have been partially developed. All worker bees are female bees undeveloped—possessing the generative organs in a shrivelled or imperfect state; but when one of the workers has been reared in a cell near the queen-cell, it frequently happens that it receives a small portion of the "royal jelly," or peculiar food given to the queen; the result is, the organs of reproduction are partially developed, and under certain circumstances it is capable of laying eggs, but never of being impregnated, hence, all the eggs laid by such a bee produce drones only. In some instances a worker cell near the queen cell is somewhat enlarged, in which case, the worker bee produced therein has somewhat the appearance of the queen; the abdomen being longer and more pointed than in other workers When a stock has lost its queen and failed to produce another, if there is such a worker amongst them it will assume the position of a queen and commence to lay, and is known as a drone-laying worker. As before remarked, instances of drone-laying workers are not so common as of drone-laying queens. Stocks having either, however, soon become depopulated, the workers dying daily, while none are produced. Though only drone eggs are laid, yet drones are not multiplied as fast as might be supposed, as only few eggs are deposited by such queens and workers, and many of them never reach maturity. With movable comb hives there is no difficulty in determining whether a stock has such a queen or drone-laying worker. In such cases the eggs are not deposited in regular order, but scattered here and there through the centre of the combs. The smooth, even appearance of worker brood no longer exists, but wherever the eggs are deposited the cells are extended, giving the combs a very uneven and ugly appearance; moreover, the eggs, though drone eggs, are always deposited in the worker cells, a drone-laying worker depositing fewer in number than a drone-laying queen, and if possible more irregularly, though in other respects the appearance of the combs is the same.

Fun among the Bees.

A correspondent of the *Country Gentleman* says:—

"One of my neighbor's boys, in passing through my apiary, would take a stick and scrape off the bees clustered on the hive, and then run. He wanted to have some fun, he said, when asked why he did it. It made the bees very cross, and I was in hopes that they would teach him a lesson, and make him respect them. It is a long road that never turns, and one day they got their satisfaction in a somewhat novel and pleasing way. In passing through my yard one day, with his Newfoundland dog at his side, they stopped to look at a large swarm clustered on a hive. They were quite close up, when some fifty bees let loose and pitched in, which made the youngster hide quickly in some tall grass hard by. His dog, having more courage, was bound to fight it out, and bit, snapped and growled, right and left, until about a thousand bees came to the assistance of their friends, which made it so warm for the dog that he sought his kind master in haste. Strange to say, his kind master was angry with him, but the dog staid by him like a true friend, with hundreds of bees for company. The young chap, very soon tiring of his tormentors, went into the house and got under a table. Not stopping to close the door, his ever faithful and loving Newfoundland followed with a good swarm of bees with him, and they all went under the table, which made it so warm for our friend that he hastened out of the house and made for home, followed by his loving friend and a small swarm of bees. It taught him a lesson that he did not forget, and should be a warning to other boys not to have fun with bees."

☞ The queen-bee has no regular guard, either when she traverses the combs, or when she is stationary. In either case, as we have frequently observed, the working bees that happen to be near her, for the most part turn their heads toward her after the manner of courtiers in the presence of royalty, and wherever she moves, clear the way to allow her to pass, or rather get hastily out of her way, forming a circle around, but never accompanying her. Occasionally during her progress, they fawn upon and caress her, touching her softly with their antennæ. Bevan.

Bees and Humble Bees.—Huber relates a singular anecdote of some hive-bees paying a visit to a nest of humble-bees placed under a box not far from their hive, in order to steal or beg their honey, which places in a strong light the good temper of the latter. This happened in a time of scarcity. The hive-bees, after pillaging, had taken almost entire possession of the nest. Some humble-bees, which remained in spite of this disaster, went out to collect provisions, and bringing home the surplus after they had supplied their own immediate wants, the hive-bees followed them, and did not quit them until they had obtained the fruit of their labors. They licked them, presented to them their probosces, surrounded them, and thus at last persuaded them to part with the contents of their honey-bags. The humble-bees, after this, flew away to collect a fresh supply. The hive-bees did them no harm, and never once showed their stings, so that it seems to have been persuasion rather than force that produced this singular instance of self-denial. This remarkable manœuvre was practised for more than three weeks; when the wasps being attracted by the same cause, the humble bees entirely forsook the nest.—Kirby & Spence

Correspondence

Welland County Show.—Canadian Nurseries.

To the Editor of THE CANADA FARMER:

SIR—I attended, on the 15th and 16th October, the County Show of Welland, held close to the county town, near the canal. The Society has purchased and fenced ten acres of very suitable ground, and erected a large and commodious building for the exhibition of Ladies' work, manufactures, agricultural, horticultural and dairy products. A charge of ten cents was made to non-members, and the weather being fine and the attendance large on both days, the revenue from this source must have been very considerable.

The show of horses was large, and the animals were in sounder condition than one usually sees on such occasions. For the saddle and carriage several excellent specimens were exhibited, but the farm horses, though many of them well bred, were a little too light, perhaps, for the heavier soils of this district. Several good specimens of pure bred Durhams were shown, and the Durham grades were very numerous and of superior quality. I find in many places, more particularly in the West, the ordinary grade cattle rapidly improving, simply by using pure-bred bulls, and giving more attention to the proper selection of cows. The show of sheep was quite extensive, and comprised many pens of superior animals. Leicesters prevailed, and Cotswold blood was in several cases obvious. There were a few good Downs and Merinoes, but these breeds do not appear to be making any progress in this, or, perhaps, any other section of country. Both here and at the previous shows which I attended in this district, pigs and poultry were but indifferently represented, not so much as to quality as number. Butter and cheese were creditable; the grain and roots extensive, and of excellent quality. In fruit this show would certainly not compare with what I saw a few days before in the old town of Niagara, nevertheless it was a very creditable and encouraging display. The fact is, a more earnest and enlightened attention is now being given to the raising of fruits in all the more important sections of the Province of Ontario and if I am not very much mistaken, a few years will show that both our soil and climate are much better adapted to this purpose than the most sanguine could have imagined a quarter of a century ago. Among the implements I noticed a most efficient sub-soil plough, manufactured by Morley, of Thorold. It is on the principle of Reid's (English), improved by Howard, and is the best subsoiler that mechanical science has yet presented to the agriculturist. What with draining, accompanied by subsoiling, the tenacious soils of this and other districts might in two or three years be made to double their present average produce.

I am indebted to Mr. Price, accompanied by Dr. Frazer and Mr. Mitchell, for a beautiful drive over the heights of Pelham and the "short hills." The soil is light and dry, and the young wheat was looking magnificently, while on the heavy clays below it was coming up weakly and unevenly. From the summit Lakes Ontario and Erie may be distinctly seen in clear weather; the scenery is rich and beautiful, and the country abounds in the choicest sites for villa residences, an advantage Canada will, no doubt, appreciate when she becomes richer and more populous. I ought not to omit to say that Dr. Frazer cultivates most successfully, in his garden, no less than twenty-five varieties of open-air grapes; the flavor of some of which and the wine produced therefrom, I can say from experience is of a very agreeable character. I also ascertained that the Doctor's wine and clusters are very popular in the neighborhood, and are doubtless more gratifying to the palate than his more strictly professional prescriptions.

I am told that more winter wheat has been sown this fall than for many years. The Mediterranean and midge-proof are the principal sorts, but some have ventured on the Soules and other white varieties. In passing through Haldimand I observed a number of fields in wheat looking well on the lighter soils; but where the land was heavier and but an indifferent tilth obtained, appearances were discouraging. Here as elsewhere, the tenacious clays cannot be brought under any system of profitable cultivation without underdraining, which at the best must be a slow process. Draining tiles, however, were to be seen here and there, indicating that farmers are turning their attention in earnest to this indispensable means of permanent improvement.

On my return through Brantford and Paris, I had the pleasure of spending a day or two with several farmers in the vicinity, including the Hon. D. Christie, the Messrs. Moyle, Clement, and others, to whom I gratefully acknowledge my indebtedness for kindly attention and much useful information. Mr. Christie's imported bull calf had only arrived about a fortnight, and though somewhat low in flesh, consequent on the voyage, indicated a very high style of breeding, and a sound, healthy constitution. This fine young animal was purchased of Mr. Carr, a celebrated shorthorn breeder in Yorkshire, for two hundred guineas! He was calved in May last, and is, perhaps, the best, if not the only specimen of the *pure Booth blood* on this continent. Judging from an excellent engraving of his illustrious grandsire, Mr. Booth's "WINDSOR," he promises, if all goes right, to sustain the high character for symmetry and breeding which has for many years so distinghished this family of shorthorns. Your readers will find a detailed pedigree of the "Knight of St. George" in THE CANADA FARMER of October 15th. Every well-wisher to the agricultural improvement of Canada, must earnestly desire that the expectations of his enterprising owner may ultimately be fully realized. I was glad to find Mr. Christie's choice and increasing herd in so sound and thriving a condition. Notwithstanding the severity of the drought, his pastures seemed not so badly affected as those on heavier soils, and his stock, which have to depend almost exclusively on grass, were in excellent order for breeding purposes.

I paid Mr. Charles Arnold, of Paris, a very hurried visit, and was just in time to taste what little fruit remained on his hybrid grape vines in the open air so late in the season. Mr. Arnold has devoted earnest attention for years to the procuring of a new variety, or rather varieties of grapes, specially adapted to the soil and climate of Canada, and it would appear that his labors are about realizing satisfactory results. He has some half-a-dozen sorts, mostly black, that promise to make their mark. They are numbered, but not yet named. No. 2 is a finely flavored grape, large bunches and berries; and I was particularly pleased with No. 5, a white grape of delicious flavor and a good bearer, an illustration of which appeared in THE CANADA FARMER of Nov. 1. The whole of these grapes are hardy, and ripen in good season, both wood and fruit, and as yet continue remarkably free from disease. I was not so fortunate in finding fruit on Mr. Arnold's hybrid raspberries, though I just got a taste of two varieties; the berry was large and the flavor agreeable. The wood of all the sorts was of vigorous growth, ripens thoroughly, and bears exposure on an open situation through winter, without artificial protection, qualities of great importance in our climate. Mr. Arnold is also making experiments in hybridizing wheat, a large patch of which was growing in drills in a part of the nursery. The results of all these experiments, it is to be hoped, will be made known to the public in due course, and that their indefatigable originator will find his labors rewarded in the end.

Speaking of horticulture, I may just observe that I had during this journey a hurried opportunity of taking a glance at the extensive nursery of Mr. Beadle, of St. Catharines, who has for years occupied a foremost position in the improvement of Canadian fruit culture. His large assortments comprise the choicest apples, pears, grapes, peaches and plums, adapted to our climate, and the trees had a remarkably healthy appearance. Immediately on my return I took a stroll through the very extensive nurseries of Mr. Leslie, of Toronto. Here the greatest activity prevailed in packing up trees for all parts of the country. This well-known establishment has attained to its present large proportions through a long series of years, under the successful management of its much respected proprietor, who is now assisted by his son, a young man of ability and business habits. It is encouraging to look at the condition and extent of those nurseries, as affording a reliable measure for ascertaining the progress of the country in matters of taste and luxury; of which shrubs, flowers and fruits are true exponents. The cultivation of a taste for these things will, by degrees, greatly improve the general appearance of our country, and powerfully tend to make its homes attractive, and their inmates contented and happy.

Yours, &c.,
GEO. BUCKLAND.

Toronto, Nov. 1867.

Patent Method of Preserving Meats.

A "SUBSCRIBER" sends the following communication:—

Seeing in the columns of some of the late numbers of your paper notices of the method of preserving meat by Messrs. Medlock & Bailey's Patent, using bisulphate of lime as a basis, I am induced to communicate the following information to you upon a patent lately brought out in England, which, as far as experiments have shown, is the simplest and most efficient of any invention of the kind. That I refer to is known as Redwood's patent, the invention of Professor Redwood, of the Royal Pharmaceutical Society of Great Britain. It consists in coating the joints of meat required to be preserved with a covering of paraffine wax, the wax being melted, and of a certain temperature named in the patent. The meat is repeatedly dipped and cooled, until a sufficient covering is formed. By this means the outward air is entirely excluded, and the joint will keep for any time, in any climate. All that is necessary, when the joint is required for use, is to soak in boiling water; the wax melts and floats to the surface, and the joint may then be removed and cooked according to taste. The wax being perfectly tasteless, communicates no unpleasant flavor to the meat.

The writer has tasted chops preserved in this manner four, five, and six months old—which could not be distinguished from freshly killed meat.

CROP STATISTICS.—A correspondent sends the following suggestion:—In your paper of the 15th Nov. I saw a piece treating of the manner in which the statistics of the crops of Canada were collected, which, as there mentioned, seems to be very deficient in the information des. . The Bureau of Agriculture occasionally send to the Secretaries of Agricultural Societies, to give all the information they can on the subject, which, doing the best they can, will only be an estimate, for to gain correct accounts of the crops grown it would be necessary for them to travel over the greater part of each Township. I think a more reliable method would be for each township council to cause either the collector or assessor to ask information from each farmer, for they are expected to visit each farmer in the municipality, and thus by very little trouble to them the information so much required might be correctly gained, for the information collected is only an estimate, and often very far astray when given by those who merely guess at it with nothing else to guide them.

R. C.

COUNTY AND TOWNSHIP AGRICULTURAL SOCIETIES.—In reference to this much vexed question, a correspondent from the township of Aldboro sends us the following:—"I noticed in the *Globe* of 15th November that a Convention has been held in Toronto, for the purpose of framing a new agricultural law. The resolutions of this Convention, if adopted by the Legislature, are such as will almost ruin the Township Agricultural Societies, which in the opinion of the agriculturists of this and surrounding Townships, are much more beneficial than the County Societies to the farming community at large. In fact, the general impression is that it would be far better to do away with the County Societies altogether—they being considered of little practical benefit to most exhibitors, while the Township Societies are open to

all. The late Convention was composed of delegates most of whom were sent by the County Societies, who, it is well known, are enemies to the Township Societies, and who have, I am sorry to see, worked for their own selfish motives, regardless of justice. We claim that we too had a right to be consulted in that Convention. I sincerely hope that our Legislators will consider well before allowing these obnoxious resolutions to become law."

TURNIP DRILL WANTED.—A correspondent from Windsor, Nova Scotia, signing himself "A Farmer," writes:—"As I cultivate root crops considerably, and our season is very short, I find I require better means of pushing on my work in the way of seed sowing, special manuring, &c. Could you or any of your correspondents inform me if machines for sowing seeds by horse-power, and sowing super-phosphates, &c., are manufactured in Canada? I am perfectly familiar with the English bone dust and turnip sowers; but they are too cumbersome and expensive, and calculated to hold too much manure, to adapt them to this country; besides, I think the revolving brush with different sized gauges is better than the revolving cylinder. I was glad to see the question of manuring land by eating off turnips brought forward, and hope it will be fully discussed. I hope to be able to communicate something on the subject this winter. I, like yourself, do not coincide altogether in the views of your correspondent, but he certainly attacks one of the greatest difficulties in conducting farming operations with profit in this country."

ANS.—There are several sorts of drills manufactured in Canada for the purpose of sowing turnip and root seeds, either alone or with artificial manures. Some of these are on the barrow principle, propelled by hand, and others are drawn by horses. Those constructed with the revolving brush, we have found by experience to work excellently, and we can assure our Nova Scotia correspondent that the Canadian implements for the purpose he desires are light, convenient, and efficient. By a reference to the account of the implements at the Kingston Exhibition, in our issue of Oct. 1st, he will find the names and addresses of more than one maker. The prize list may also assist him.

TOWNSHIP SOCIETY FUNDS.—"A Township Director" sends us the following communication in reference to the recent Agricultural Convention:—"I think a marked improvement is contemplated in the election of Directors to the Provincial Association, but I am much surprised to see with what apathy the interests of Township Societies were regarded by the majority of the Convention. In the first place, as is to cripple us, it is suggested that only one-half of the Government money be allowed to townships, instead of three-fifths as heretofore. But a more damaging feature remains to be pointed out. Under the present Agricultural Bill, Township Society Treasurers are required to deposit all money received, as subscriptions, by the first of May in the hands of the treasurer of the county society, in whose hands it must then lie until such time as he may receive the Government grant, (which is often too late in the fall to meet the premiums at our exhibitions) before he will pay back to the township society one cent of their own money, no matter how urgent their necessity, thus inflicting a most needless inconvenience on the Directors who are endeavoring to promote the cause in townships, perhaps with as much zeal as those who protect the County Society's interest. Will it be believed that a motion providing that the Treasurers of Township Societies be allowed to deposit a certified list of paid-up subscriptions should be sufficient, *failed to find a seconder?* The only conclusion I can arrive at is, that the convention was composed chiefly of delegates from County Societies, who only in very few instances take any active part in the welfare of Township Societies, which, indeed, are too often looked upon as rivals."

CUSTOM CHARGES.—"A subscriber," writing from Forbes Post Office, Prince Edward Island, asks:—"Would you favor me by stating in your valuable paper the amount of duty paid by parties passing through the States to Canada, driving a horse and buggy, not intended for sale?"

ANS.—We are informed that the duty, or exemption from duty, in the case stated, would depend on circumstances. If the party were a resident of the United States, and coming to Canada with a view of settling here, he would have to pay fifteen per cent. on the value of the horse and buggy. If he were a resident of Prince Edward Island, coming to Canada by way of the United States, and bringing with him the horse and buggy from the first-named place, his proper course would be to obtain a certificate from some authorized customs officer in Prince Edward Island that the articles in question actually left that place; and such a certificate, presented to the proper authorities here, would exempt him from the payment of any duty on his arrival. Again, if he came over from the United States, with the intention of only remaining a short time and taking his property back with him, he would also, on certain conditions, be exempt from duty. He would then have the option of two modes of proceeding. He might enter into a bond conjointly with some responsible party here, for three times the amount of the duty—the bond being limited to a certain period—and when he takes back his property to the States, he must there obtain a duly authorized certificate that the horse and buggy have actually returned, and on receipt of this certificate by the customs authorities on this side, the bond would be cancelled. Or he might, as soon as he arrives in Canada, deposit the amount of the duty, stating the circumstances, and his intention of only remaining a short time; and after his return with his property to the States, the amount so deposited would be repaid on application, accompanied with a certificate to the same effect as that required in the preceding case.

The Canada Farmer.

TORONTO, CANADA, DEC. 2, 1867.

New Agricultural Bill.

WE devote considerable space in our present issue to a report of the doings of an important Convention held in this city on the 12th and 13th of last month, with a view of settling the main provisions of a new Agricultural Bill for the Province of Ontario. The accomplishment of Confederation renders fresh legislation necessary, the former Statute having become a dead letter. Under these circumstances three courses were open. The old Act might be re-passed, an entirely new one framed, or the old Act adopted in substance, with such modifications and additions as the assembled wisdom considered desirable. As might have been expected, the last-named course was taken.

The first departure from the old Act was in reference to the two and a half per cent. retained by Government ostensibly for the promotion of agricultural information and instruction. It was the general opinion that this provision did not work well, and it was agreed that it would be better to omit it in the new Bill. We are not sure that a wiser course would not have been the definite appropriation of this percentage to the collection of agricultural statistics and crop reports, a thing greatly needed, and only to be accomplished by means of such machinery as Government can put in motion. The gathering of this much needed information would not be very costly, and the percentage for which useful employment is wanting, would go far towards defraying the expense that would be thus incurred.

The next point of divergence from the old Act was in regard to the composition and election of the Board of Agriculture. It seemed to be the feeling of the meeting that it was desirable to infuse fresh blood into the Board, and to secure as far as possible a representation of all parts of the Province in its membership. With a view to the attainment of these objects, it was agreed that the Board henceforth consist of twelve persons, instead of eight as heretofore, and that they should be elected in the following manner. The entire Province to be mapped out into twelve Electoral Districts, each comprising certain counties to be enumerated in a schedule. The Societies in the several districts at the annual meeting each to elect one person to the Board by majorities, and the Secretary of each Society, within eight days after the annual meeting, to notify the Minister of Agriculture who has been chosen, and in case of a tie between two names, the Minister of Agriculture to have a casting vote. This is the plan that was embodied in a Bill proposed by Mr. Cowan, late M.P.P. for South Waterloo, some time ago, and appears to be satisfactory to the leading individuals who have agitated for change in the mode of constituting the Board of Agriculture. We trust that if adopted, as no doubt it will be, its practical working will be such as to please all parties, and that it will effectually cure a chronic soreness.

It was wisely agreed that the Act should provide for the establishment and maintenance of a Veterinary School.

A proposal made by Mr. D. W. Beadle, of St. Catharines, that the President of the Ontario Fruit Growers' Association be *ex-officio* a member of the Council of the Agricultural Association, did not find favour with the meeting. This is, we think, to be regretted, inasmuch as consultation with the Fruit Growers' Association in regard to the Provincial Exhibition and other matters, is very important, and a link of connection should exist between the two bodies, to facilitate such consultation. As it is, we believe the Fruit Growers' Association prepare the fruit department of the Prize List for the Provincial Show; nor can we see what reasonable objection can be urged against the officer in question having a place in the Council. We also think for like reasons, that the President of the Ontario Poultry Association ought to be a member of the Council.

Some alteration was made in the provisions respecting Township Societies. The feeling of the meeting was decidedly averse to the existence of Township Societies at all, but it was not deemed best to adopt a sweeping measure for their extinction. It was resolved to apportion one-half the County Government grant to such Township Societies as raise $75 by membership fees, also that no show be held in any Township in which a County show is held, but that the funds of such Township Societies be handed over to the County Society. This arrangement has a very awkward look, since it requires a fifty per cent. larger membership in a Township than in a County Society, in order to obtain a share of the public grant. This discrepancy, we have been told by some members of the Convention, was purely an oversight. Doubtless it will be corrected in the passing of the Bill. If the Township membership must be seventy-five, surely the County membership ought to be, at the very least, 100 or 150. Our readers are well aware that we incline to the view that it is better for our farming population to foster County Societies than to scatter their energies upon a large number of weak and inefficient Township Societies. This opinion has, however, chiefly to do with the annual shows; but of course it is quite possible for Township Societies to exist and do good irrespective of shows. If they would bend their energies in the direction of mutual improvement meetings, purchasing breeding animals, &c., and all unite in getting up a grand County Show annually, we can see how they might be very useful; but when, as is too often the case,

their one object is a yearly exhibition, we cannot but regard it as an unwise frittering away of strength and resources that united make a respectable array but divided, only show the nakedness of the land On this subject, however, as on all others, we are open to conviction, and invite free discussion in these columns.

Some changes were proposed in the apportionment of the public money to districts and towns, but the only departure from the old Act that was agreed on was granting the city of Toronto $600 dollars on condition that $100 be raised by subscription.

Mr. Cooley made a suggestion about organizing a police force for the protection of exhibitors and their articles, at fairs, which was adopted.

A committee was appointed to frame a Bill in accordance with the several resolutions of the convention, and during the interim prior to the assembling of the Ontario Legislature there will be opportunity for suggestions from any quarter in regard to provisions which it may be desirable to embody in the Act when it shall come before the House for final action The functions of the committee are apparently limited to putting the resolves of the Convention into shape, but we imagine that they would not refuse to consider any proposed addition or improvement, and on their entertaining it favorably and stamping it with their recommendation, there can be little doubt it would become law. We hope, therefore, that all who can contribute toward the comprehensiveness and efficiency of the new Bill will not fail to do so. With a general and cordial co-operation of all parties, we may anticipate that the new era on which we have entered will be one of marked and gratifying improvement.

The Season.

If it be well, as it doubtless is, to chronicle anything remarkable in the seasons as they pass over us, it would be an unpardonable omission not to record the characteristics of the late fall and early winter of the present year. We have had a time of unusually pleasant weather, but marked by a singular and severe drought, the like of which that remarkable individual the "oldest inhabitant" has no memory of. October was a most agreeable month, seemingly composed of a mixture of the weather that usually characterisitzes a few mid-October days, and that which we know by the name of "Indian summer" A brief visit from Jack Frost, just to let us know he was lurking somewhere not far distant, ushered in November, but about the middle of the month all trace of his icy presence disappeared, and lo! the veritable Indian summer, "pure and simple," broke in upon us with its smoky twilights, delicious haze, and soft mildness. Meantime, and indeed ever since the wane of summer, there has been drought. The roads have been innocent of mud, scarcity of water has caused much inconvenience, many farmers having had to drive their cattle long distances for a drink, and even to team water for domestic purposes, while dwellers in towns and cities have had to buy water by the barrel, their wells having failed to yield their wonted supply. Millers have been set fast by want of water. The land in many places has been too dry for ploughing, while in spots usually inaccessible late in the fall, teams have been able to work without difficulty Fires in the woods have been extensive,—easy to ignite and hard to put out. Everybody has had ample opportunity to prepare for winter, and such as are caught without having taken due precautions against the advent of settled hard weather will have only themselves to blame. During the past week the drought has been brought to an end by a gentle but copious rain, and that has been succeeded by clear, wholesome, comfortable weather Beyond the leaflessness of the trees, there is not much at the date of our going to press to indicate that December is just upon us. We shall soon, however, have winter in earnest, and remember the recent fine weather only as a pleasant dream.

Toronto Veterinary School—Presentation.

We are happy to learn that the Toronto Veterinary School has commenced its winter session under promising auspices A considerable number of students are availing themselves of the excellent opportunities afforded by this institution for obtaining a thoroughly practical and scientific acquaintance with the veterinary art. It is gratifying also to perceive that the services of the most active promoters of the school are duly appreciated. A well deserved compliment was paid to Professor Andrew Smith, on Friday, November 22, by the students of the college, who presented him with a very handsome service of plate, accompanied by an address, honourable alike to donors and receiver The address was as follows:—

"To Professor A. Smith, F.E.V.M.A., of the Toronto Veterinary School: We, the undersigned students of the Toronto Veterinary School, whilst asking your acceptance of this present, as a small token of our esteem and good will, desire to give expression in words to the feelings which prompt us. Knowing well the importance of the profession in itself, and of a thorough knowledge of it in those who practice it, actuated, moreover, by a desire that all who belong to it should be a credit to it, you have never failed in imparting to us, lucidly, and we may say generously, all that your deep study and long experience have stored up. The great interest you have always shown in our studies, your anxiety that we should make good progress, and your many efforts to assist us in our difficulties, the kindness and good temper which you have invariably manifested whilst presiding in the school, have all contributed to raise in us sentiments of gratitude, good will and respect. With these feelings toward you we now enter upon another session of the school, and we sincerely hope that no conduct of ours in the future will cause you to doubt our sincerity at the present."

Mr. Smith, in thanking the gentlemen of the school for the flattering testimonial of their regard, stated that the progress of the college since its opening was in the highest degree gratifying. By its efforts a number of practitioners, well versed in the diseases of the horse, have been spread over the Province, and were gradually displacing those many ignorant persons whose presence in the community was dangerous to the welfare of the noble animal whose interests they professed to foster.

Professor Buckland, who presided on the occasion, expressed a hope that he might soon be able to announce officially the grant of additional aid from the Board of Agriculture for the advancement of veterinary science.

Exchange of Devon Cattle.

The following communication has been received by the Editor of *The Globe*, and handed over to us for publication in the Canada Farmer, that it may meet the eyes of stock breeders. It contains a suggestion of great importance, which we would commend to the attention of the owners of Devon and other pure-bred cattle. Such an exchange as the writer proposes would no doubt be mutually beneficial, and would provide one means of counteracting the deteriorating effects of in-and-in breeding. The letter is from W. Taylor, Esq., Harptree Court, Somerset, England, and is as follows:—

"Since reading the report of the 'Provincial Exhibition' published in *The Globe*, dated 27th September, 1867, it has occurred to me that Devon breeders in Canada would meet with very remunerative prices for their bulls, if they were to send some of them to the old country for sale. Or they might, with advantage, change some of their male animals for the bulls bred in England. For myself, I may say, should the *Canadian* Devons possess the same quality as do the *English* Devons, I should be willing to make an exchange. The bull I have used for from four to five years, obtained the Gold Medal at the International Royal Agricultural Society's Show at Battersea in 1862 as the *best bull* of his breed at the show; and my cows possess as long and as good pedigrees as any in the world."

Prize List—Correction.—We have been requested to correct an error that appeared in the Provincial prize list published in our last issue:—The First Prize for clover seed was awarded to A. McKenzie, Whitby, not to Wm. Alcorn, Hamilton Township, as stated in the list.

The Wheat Market.—Our latest English exchanges note a decline in the price of wheat, but speak of it as only temporary, and resulting from special causes. They confidently predict good markets for all sorts of grain during the present winter, and this opinion seems justified by the accounts that reach us in reference to the relations of demand and supply all over the wheat-consuming and wheat-producing world.

Board of Agriculture—Retiring Members.—Our readers will learn by an official notice in our advertising colums, that four members of the Board of Agriculture retire at the expiration of their term of service in January next. The names of the retiring members are.—Hon. George Alexander, R. S. Denison, Esq., F. W. Stone, Esq., and J. C. Rykert, Esq The notice further reminds the various county agricultural societies that it devolves on them, at their annual meeting in the third week of January, to nominate four suitable persons to fill the vacant places. The retiring members are eligible for re-election.

Singular Misconception,—We have been astonished several times of late by being asked if the Canada Farmer were going to be discontinued, and have been informed that such a rumour was prevalent in several quarters, and that it originated from a statement to that effect made in one of our own issues. By a reference to dates and other circumstances, we conclude that the paragraph which has been thus mis-interpreted was one which appeared in our issue of August 1, and had reference to another periodical Under the heading of "*The Practical Entomologist*" we stated in that issue, that "this journal" (referring, as the context clearly showed, to "*The Practical Entomologist*") would be discontinued at the end of the volume for the present year; but it passes our comprehension how any one who read a single sentence of that notice, to say nothing of reading the article through, could possibly have applied it to the Canada Farmer. Careless readers who could so misunderstand the plainest statement will, perhaps, scarcely be undeceived by the prospectus of the Canada Farmer for 1868, which we publish in the present issue, and to which, nevertheless, we would direct their attention.

Agricultural Intelligence.

Agricultural Convention.

Meeting of Delegates.

In accordance with a resolution passed at the meeting of the Provincial Agricultural Association, at Kingston, in September last, the delegates from various Agricultural Associations, Mechanics' Institutes, and Horticultural Societies, met in the lecture room of the Mechanics' Institute, on Tuesday, November 12th, to consult together respecting application to Parliament for a new Agricultural Bill.

The Secretary of the Provincial Association called over the names of the delegates, when the following were found to be present:—

Agricultural Societies.

Addington, Robert Madden, Brant West, George Beatman; Bruce, W. Withers; Elgin East, J. King; Elgin West, J. A. Phillpott; Essex, Alex. Bartlett; Glengary, Daniel Campbell; Grenville South, Andrew Wilson; Haldimand, Jacob Young; Huron, Robert Gibborn; Lambton, E. Watson; Lincoln, John Lawrie; Middlesex East, George E. McGee; Norfolk, D. W. Freeman; Northumberland East, Donald Douglas; Northumberland West, Walter Riddell; Ontario

South, John Shier; Oxford North, R. W. Sawtell; Peel, Emerson Taylor; Perth, Stuart Campbell, Simcoe North, Walter Rallus; Toronto, W. Strachan; Waterloo South, James Cowan; Welland, John Mitchell; Wellington North, John Beattie; Wellington South, George Murton; Wentworth North, John Weir, jr., Wentworth South, W. A. Cooley; York North, E. Jackson; Durham West, John Davy; York West, B. Bull; Leeds South, William Brough; Lennox, William Caton; York East, John Crawford; Lanark South, Archibald McNee, Simcoe South, G. D. Morton; Brant East, I. Lapierre, Niagara, D. Thorburn.

HORTICULTURAL SOCIETIES.

Guelph, Col Saunders, Hamilton, Charles Weston, St Catharines, D W. Beadle

MECHANICS' INSTITUTES.

Berlin, . . McDougall, Guelph, David McCrea; Galt, James Cowan: Hamilton, Thomas McIlowarth; Toronto, John J. Witherow; Whitby, J. H. Perry; Woodstock, William Edwards; Waterdown, M. J. F. Kellup; Dundas, Robert McKechnie.

On motion of Colonel R L. DENISON, seconded by Mr. STONE, Mr. Wheeler, President of the Agricultural Association, was called to the chair.

The Secretaries of the Association, Messrs. Hugh C. Thomson and W Edwards were appointed Secretaries to the meeting

The CHAIRMAN, in opening the proceedings, stated that they were met in accordance with a resolution passed at the last annual meeting of the Provincial Association at Kingston their object being to decide whether it would be advisable for the Association to proceed under the old Act of the Legislature, or apply for a new one. In consequence of Confederation they were, in a sense, compelled to apply for a new Act the old Bill had become a dead letter. But many held that its provisions would be suitable enough by re enactment. Others inclined to the belief that many alterations in the Bill were not only desirable but imperative The subject being of such importance, he was glad to see there so large a delegation; and it would be for them to determine what was best to be done.

Mr. D. CAMPBELL, seconded by Mr. ROBERT MADDING, moved that the Secrerary be requested to read the present Bill, clause by clause, to enable members to give an expression of their views on each point as it came up in order.

Considerable discussion followed, some delegates considering that time should not be occupied with reading the old Bill, with which all were familiar, but that Mr. Cowan's proposed new Bill should at once be read and discussed; others thought a committee should be appointed to prepare a report to be submitted to the meeting. Col. Denison said the Board desired to hear the opinions of the delegates before expressing any opinion, but were ready to give their views on the measure, clause by clause, if that course were considered desirable. It was at length resolved to proceed according to Mr. Campbell's motion, and read the present Bill, discussing it clause by clause.

Mr. EDWARDS then commenced to read the old Bill, beginning at clause 9—the previous clauses being such as did not come before the meeting. This clause provided that out of the sums appropriated for Agricultural Societies in Upper and Lower Canada, from Provincial funds, two-and-a-half per cent. should be applied under the authority of the Governor in Council, towards the promotion of agricultural instruction and information.

In reply to a delegate, Mr. EDWARDS explained that at present ten per cent. of their allowance was detained by the Board of Agriculture for the purposes of the Provincial Exhibition, and two-and-a-half per cent. was detained by the Government to be appropriated to the promotion of agriculture.

Several delegates expressed the view that the retention of the two-and-a-half per cent. by the Government had not been found to work well, and was held to be a grievance in almost every county. It was money mis-applied; and it was agreed that that section of the Act ought to be expunged.

The next clause (10) defined who should be the members of the Board of Agriculture, and Col. Denison explained that the only alteration they desired in it was limiting the number of Vice-Presidents from each society who should be members of the Board, to one instead of two.

The next clause provided that four members of the Provincial Board should annually retire, and that the names of such retiring members should be published in the agricultural journals of the Province.

In reply to Mr. Jackson, Col. DENISON said that the only alteration proposed to this clause was, that the names of the retiring members should be published in the official *Gazette* as well as the agricultural journals.

The next clause, the twelfth, excited much discussion. It provides that the County Agricultural Societies in Upper and Lower Canada should, at their annual meetings in January, nominate four persons to be members of the Board, and transmit the names of these persons to the Bureau of Agriculture.

Several delegates expressed themselves strongly in favour of a change in the mode of electing members to the Provincial Board such a change as would infuse new blood into it—and not place gentlemen there for the term of their natural lives.

Mr. D. CAMPBELL, seconded by Mr. J. C. RYKERT, moved that members of the Board of Agriculture be elected at the annual meeting of the Association by delegates from the different societies.

Mr. PERRY thought that the number of times the Board had been re-elected during the past ten or twelve years showed that there was need for a change in their mode of procedure. They wanted, decidedly, new life in that Board. They wanted every section of the Province represented in it and he thought that the division of the Province into districts, in some such way as that suggested in the new Bill, would be a good plan.

Mr. JACKSON, of Newmarket, said that the society he represented was opposed to the present mode of electing members to the Board of Agriculture, but he was not prepared to accept the amendment last alluded to. The difficulty they laboured under was that each society acted in an independent, isolated way. He thought that a general meeting of several societies in some central locality, for the discussion of matters connected with the Provincial Exhibition and other points, as well as for the election of delegates, would be a great improvement.

Dr. BEATTY, of Cobourg, who had been connected with the Board for the past nine years, defended the members from ever using any influence to effect their election. Not even the shadow of such a movement on the part of the Board could be traced. It had been suggested that the mode of election should continue as at present, but that the names of retiring members should be published in the Agricultural journals and official *Gazette;* and that each county Society nominating a member for the vacancy at the Board, should forward his name to the Commissioner of Agriculture, to be by him published forthwith. In this way an entire lot of new members might be secured for the Board every two years. The publication would place the names of all the candidates before the eyes of every agricultural man in the Province, to be voted on.

Mr. MURTON would move that the plan of electing members to the Board be the same as in the new Bill.

The CHAIRMAN remarked that that would make twelve members instead of eight.

Mr. MURTON said it would. He desired to move his resolution as an amendment.

Mr. BUTTERY seconded the motion.

At the request of a delegate, Mr. EDWARDS read the clause in Mr. Cowan's Bill, regarding the representation (SEC. nine), which provided that Upper Canada should be divided into twelve agricultural districts, to be designated by numbers, and each comprising the counties designated in the schedule; that Agricultural Societies in the several districts, at the annual meeting, shall each elect one person to the Board by majorities; and that the Secretary of each society shall, within eight days, forward to the Minister of Agriculture the name of the person chosen; and that in case of an equality of votes for one or more delegates, the Minister should have a casting vote.

After some further discussion, the amendment to the first amendment was put to the meeting and lost. The motion, as amended, providing that the members of the Board shall be elected on the plan proposed in Mr. Cowan's Bill, was carried by a vote of thirty-three to twenty-two.

The SECRETARY then read several clauses of the Bill, which were adopted without discussion..

VETERINARY SCHOOL.—On coming to the section relating to the duties of the Board, it was suggested by Col. Denison that the Act should provide for the establishment and maintenance of a veterinary school. The suggestion was adopted, with the understanding that it should be introduced into the Bill.

The section in relation to the Board of Arts and Manufactures was then taken up, and on motion of Mr. McRae the matter was referred to a committee, composed of the delegates (seven in number) from Mechanics' Institutes, with the President of the Board of Arts and Manufactures as chairman.

The Convention then adjourned till seven P.M.

On re-assembling, the sections of the Act regarding the organization, &c., of Agricultural Associations, &c., were successively read and approved of.

In reference to the formation of the Council of the Association to control the annual exhibition arrangements, some discussion ensued, respecting the relative representation of the Agricultural Societies and the Board of Arts and Manufactures, but no action was taken on the matter.

Mr. BEADLE then moved, and the motion was seconded, that the President of the Fruit Growers' Association of Ontario be a member of the Council.—Lost.

Mr. SHIER moved, seconded by Mr. RYKERT, that in the clause providing for the making of contracts, &c., by the Council of the Association, the words "Board of Agriculture" should be struck out, so that it may read "shall be made and had with the Council of the Association."—Carried.

Mr. COWAN made some observations in regard to the non-appointment of auditors, and moved that, at the annual meeting of the Directors of the Association, two should be elected for the purpose of auditing the accounts of the Agricultural Association; and that it should be the duty of these auditors to transmit a copy of their proceedings to the Association, prior to the annual meeting of the County Associations.—Carried.

It was then moved by Mr. BEADLE, and seconded by Mr. RYKERT, that the Horticultural Societies be given a vote in the Board of Agriculture the same as in the Agricultural Societies.—Lost.

The SECRETARY proceeded to read the sections respecting the formation of Horticultural Societies; also providing for the formation of Agricultural Societies in each of the eighty-one Electoral Divisions of Ontario.

Mr. RYKERT thought that more stringent measures should be taken to oblige County Councils to make grants for County Societies. He advised a tax upon the ratepayers, and making each of those so taxed members of the Association.

Section 47 next came up. It had reference to the first meetings for forming Electoral Division Societies.

Mr. FOOTE, seconded by Mr. DAVY, moved that all the clauses relating to Electoral Division Societies be repealed, and that the words "District Societies" be substituted.

This motion, though ruled by the Chairman out of order, as the principle of Electoral Divisions had been discussed and agreed to, was put to the meeting, and lost.

The next clause provided for the annual meetings and election of officers. The annual meetings were to take place in the 3rd week in January, and the President, Vice-President, Secretary and Treasurer, and not more than seven Directors, elected.

Col. DENISON suggested that the time in above clause be fixed at between the 14th and 21st January.

The Auditor was also included among the officers to be elected.

It was also suggested that there should be two Auditors and not more than nine Directors.—Carried.

On next clause, it was moved by Mr. SHIER, seconded by Mr. KING: "In the event of the Secretary and Treasurer dying or resigning office during the term for which he has been elected, it shall be the duty of the Directors, and they are hereby empowered to nominate and appoint a fit and proper person to fill the office for the unexpired term of the person so dying or resigning as aforesaid."—Carried.

The 49th section was then considered, but ultimately struck out altogether.

The 50th section passed.

Sec. 51, providing for the annual report of the proceedings, and what it should contain, next came before the meeting.

Mr. JACKSON thought too much labour was herein imposed on the Secretary, to no purpose.

Mr. FOOTE said that the details were necessary, and instanced a case in which four men got up a society, took all the Government grant, got it divided between them, and unless in some such way as proposed in the Bill, there was no finding out such practices readily.

It was moved in amendment that all the words from "the names of all persons" to "was granted," in the clause, be struck out. Carried.

Sec. 52 was left in abeyance till three succeeding clauses were considered.

Sec. 53, carried.

On section 54, providing for the organization of Township Societies.

It was moved by Mr. GRAHAM, seconded by Mr MURTON, that that clause be struck out.

The mover explained that his reason for doing so was, that these societies were in a measure useless. He knew of a case in which one man organized three Township Societies, and came down and drew three-fifths of the funds of the parent society Again, he knew men in his county, South Hastings, who were worth thousands of dollars, and who had for years and years past taken prizes for the same pairs of stockings. (Laughter) Stockings which brought $2 each prize, and had perhaps, been bought at the Provincial Exhibition. He had further known one of the Township Societies, in his county, hold the Township show on the day immediately following the County show, and that the men attending the Township show were not such as took the greatest interest in agriculture, by

any means. The money in the Township Societies went into the pockets of very few persons. Again, in one of the Township Societies in his county, he knew of $100 in prizes going into the pockets of one individual, the united value of whose contribution to the show would not reach £5. Of course, this was not speaking much for the intelligence of a section of the community. (Laughter.)

Col. DENISON objected to holding a County and Township show within a few days of each other.

Mr. RYKERT admired the candour of the delegate for South Hastings, but could not admire his county. (Laughter.) He thought Township Societies ought to be done away with. The County of Lincoln was, he believed, unanimous in that respect; but he felt that there were other counties which would be injured by the abolition of these Township Societies. In order to let them die a natural death, he would move, that hereafter the Township Societies be only allowed to draw one-third of the money appropriated by Government to County Societies, provided they have not less than seventy-five members at $1 each.

Mr. COWAN, of Waterloo, thought that any attempt to abolish Township Societies by Statute would be very unwise. Nor did he believe in starving societies to death on Mr. Rykert's principle. He would, therefore, move, that Township Societies which subscribe not less than $75 annually, get one-half the Government grant; and that no Township show be held in the township in which the county exhibition is held, but that the funds of such Township Societies be given up for the benefit of the County Society.

This amendment was seconded by Mr. COOLEY.

It was put and carried, and the Convention adjourned, to meet again at nine o'clock on the following morning.

SECOND DAY'S PROCEEDINGS.

The delegates met again on Wednesday morning. Proceedings commenced about half-past nine, A.M., the President of the Provincial Agricultural Association, Mr. J. P. Wheeler, of Markham, occupying the chair

Clause 55 came next in order before the meeting; but at this stage it was moved, that the motion passed at the last meeting in reference to Township Societies be reconsidered. After considerable discussion, the motion was put, and lost.

On motion of Mr. SHIER, section 55 was amended by the addition of the words "two Auditors," and the further addition of a sub-section providing for the appointment of a Secretary and Treasurer, in the event of the death or resignation of either of these officials.

Mr. COWAN next moved, that in cases where part of a township was in one Electoral Division, and part in another, there might be a Township Association formed in each part, and that each of said societies should report to the County Society of the Electoral Division in which it was situated. He explained that, by this provision, there would be two separate societies created, each entitled to a full share of the Government money as Township Societies.

Mr. GIBBONS said that instead of concentrating their strength it was diffusing and weakening it. It was encouraging the creation of more branches than one in each township.

Mr. COWAN said that no township was likely to be divided for electoral purposes unless it were too populous, and probably one half of such a township would contain double the population of other whole townships.

Mr. COWAN's motion was then put, and carried by a majority of one.

Clause 56 came up next. This clause provided for the making out of an annual report by the Township Societies, and for sending a copy of the same to the County Society. It was passed without amendment.

Clause 57, providing for the exhibitions of the County Societies, and for the union of two or more of them, for any purpose likely to promote the welfare in agriculture of one or more townships or counties, was passed.

Clause 58, specifying the Provincial allowance to County Societies and its conditions, next came before the meeting.

Mr. CAMPBELL moved that sub-section 4, of clause 58, be expunged. He considered it a great grievance that at present five of the counties of Ontario monopolized each $1,050 out of the public funds, while other counties, with as large a population, though not perhaps as large an extent of territory, only got $702.

Mr. EDWARDS explained that, by the sub-section preceding that to be expunged, the amount granted to Electoral Division Societies was fixed at $800. The 4th sub-section, which it was proposed to expunge, provided that each of the counties of Lennox, Addington, Huron and Bruce, separately, should be entitled to receive a sum not exceeding $800, on the conditions specified in the Act, and that the counties of Prince Edward, Welland, Haldimand, Grey, Halton, Kent, Carleton, Essex, Lambton, Lincoln, Norfolk, Peel and Perth, should each be entitled to receive, as heretofore, a sum not exceeding $1,000 a year.

Mr. CAMPBELL's motion was carried.

The remainder of this section, after considerable discussion on the propriety of distributing the grant according to population, was carried.

Clause 59, specifying the amount to which certain Electoral Divisions were to be entitled, came up.

The clause provided that the following Electoral Divisions, viz., the cities of Toronto, Kingston, Hamilton, London and Ottawa, and the towns of Brockville, Niagara and Cornwall—shall each be entitled to receive a sum not exceeding $400, for the encouragement of Horticulture, Agriculture, Manufactures and Works of Art, within their respective limits.

The Secretary, Mr. THOMSON, explained in relation to this clause, that a departure had been allowed by the Government in the case of small towns having townships attached—such as Brockville and Niagara. In respect to qualifications, these had been put on the same footing as County Societies, and allowed to draw $3 for every $1 they contributed.

Mr. STRACHAN moved that the clause be expunged altogether. Toronto city gave more liberally for the purposes of agriculture than the counties outside of it, and he felt Toronto was entitled to more than the $400 named.

Mr. COWAN asked did the Society organized in Toronto give its funds to the Provincial Exhibition?

The CHAIRMAN replied in the affirmative.

Mr. RYKERT added that it gave a large amount besides.

A motion of Mr. SHIER'S, that for the purposes of this Act the city of Toronto be considered as one of the Electoral Divisions, was then put and carried.

Mr STRACHAN'S motion, seconded by Mr. GRAHAME, for the expunging of the sub-section, then came up, and after some discussion, was put and lost.

Mr. STRACHAN then moved, that the words "three-fourths of the amount paid to County Societies," be substituted for the sum "$400."

Mr. EDWARDS explained that, under the last resolution, the eight Electoral Divisions of cities and towns would each be entitled to receive a sum not exceeding three-fourths of the amount paid to County Societies—that is, if the counties received $800, the Electoral Division Societies got $600. If the next sub-section were left in the Act, the city would have to raise $600 before getting $600.

Mr. RYKERT being willing to give Toronto more than the other eight Electoral Divisions under discussion, moved that Toronto be allowed the sum of $600, provided they raise by subscription $400.

Mr. GIBBONS seconded the motion, which was put, and carried.

The wording of the succeeding sub-section next came under consideration, and it was agreed it should be changed so as not to conflict with the resolution just passed.

Section 60 then came up, and caused considerable discussion. Several resolutions and amendments were proposed, but the section was at length passed, with the following interlineation, suggested by Mr. Hugh C. Thomson: that the words "and paid," should be inserted in the clause, making it read that the branch society should be entitled to a share of the grant to the County Society in proportion to the amount subscribed and paid. He also suggested an addition to this section, providing that a certified list of the Township Society's members, and the amount paid by each, should be forwarded to the Treasurer of the County Society.

The remaining clauses of the Bill were passed.

Mr. COOLEY, Superintendent of the last Provincial Exhibition, submitted the draft of a section providing for the organizing of a police force for fairs, to protect the articles and exhibitors—the police to have the same power, during the Exhibition time, as constables ordinarily exercise in serving criminal process or making arrests.

On motion of Mr. DENISON, seconded by Mr. SAWTELL, the following committee was appointed to draft a Bill, based on the old law and the amendments added by the meeting, and to hand the same to the Secretary of the Board of Agriculture, for presentation to Parliament. The committee named was —Messrs. Rykert, Wheeler, Stone, Thomson, Cowan, Prof. Buckland, Messrs. Shier, Cooley, and the mover.

On motion of Mr. KING, the chair was vacated, and Mr. STONE called thereto.

Thanks were then voted to the previous Chairman and Secretaries, and the Convention adjourned.

Sale of American Short-Horns in England.

A LOT of Short-Horn cattle sent to England for sale by James O. Sheldon, Esq., of White Spring farm, Geneva, N. Y., in charge of Mr. J. R. Page, were submitted to public competition, at Windsor, on the same day that a number of animals were sold from Queen Victoria's herd of Short-Horns. A large attendance of buyers came together, and in reference to the day's proceedings, the *Field* of October 19th observes:—

"The Windsor Short-Horns were not, however, the sole or perhaps the most attractive feature which brought so many from far and near on Wednesday last. The sale of the American animals, announced to follow the distribution of the Windsor stock, was a very potent attraction. For some reason or other, Mr. Stratford was not allowed to carry out his programme, and the American animals were sold at the Castle Inn. We heard no explanation of this inconvenient alteration, which looks like official routine. If permitted to be housed and exhibited at the Shaw Farm, one is at a loss to conceive what impropriety there could have been in their disposal there."

There appears to have been nothing remarkable about the Short-Horns offered from Her Majesty's herd, and hence they only brought moderate prices. Eleven bulls averaged £25 15s. 6d., and forty-two females averaged £41 1s. each.

Mr. Sheldon's animals were sold as follows:—

3RD DUKE OF GENEVA, (23,753.)		
D. McIntosh, Havering Park.....	£577	10s.
7TH DUCHESS OF GENEVA.		
Fred. Leney, Orpines, Kent.....	735	0
4TH MAID OF OXFORD.		
Fred. Leney, Orpines, Kent.....	315	0
5TH MAID OF OXFORD.		
I. Downing, Turners Hill.....	210	0
COUNTESS OF OXFORD.		
Col. Kingscote, Kingscote Park....	261	10
6TH MAID OF OXFORD.		
Col. Towneley, Towneley Park...	420	0
7TH MAID OF OXFORD.		
Fred. Leney, Orpines, Kent.....	273	0
8TH LADY OF OXFORD.		
Col. Towneley, Towneley Park....	472	10

SUMMARY OF THE SALE.

One bull.....	£577	10	0
Seven heifers.....	2,688	0	0
Average of eight head..	£408	3	9
	£3,265	10	0

The catalogue also included Twelfth Duke of Thorndale, but he was in a state of health unfit for sale, and was bid in at £194 5s. The *Field* remarks on the prices realized:—

"The total of the nine animals, including the sick bull £3,495 15s., must be regarded as another instance of the value attaching to certain peculiar strains of blood, and adds to the reputation for judgment of the original breeders, and reflects great credit on the American gentlemen who have so well maintained the character. The sale was unreserved, with the exception that Mr. Page, the representative of Mr. Sheldon, claimed the right of one bid for the Duchess heifer, a right which the spirit of the company rendered it unnecessary to exercise."

The following extract from a brief notice in the *Country Gentleman* conveys the impression that higher figures than those actually obtained were hoped for by Mr. Sheldon's friends.

"This aggregate, which at current rates of exchange is equal to something like $25,000, although less than we had been inclined to hope for, must still be regarded as by no means a poor one. It will be some time, we fancy, before any other herd can afford to spare eight animals that will bring over £400 apiece, and still retain the means of maintaining itself besides—even in England."

FRUIT GROWERS' ASSOCIATION OF NOVA SCOTIA.—This Association held its fall exhibition on the 24th of October last. There were no less than 639 entries, and altogether there was an excellent display of fruit, showing the capabilities of the Province for producing many excellent specimens of fruit. Prizes were awarded for the best collection of apples, and separate premiums were also given for sixty distinct varieties of apples. There were, besides, prizes for plums, quinces, grapes, both open air and under glass, and peaches. The list also included the ordinary varieties of garden vegetables, besides nursery stock The exhibition was altogether extremely creditable.

Poultry Yard.

How to Keep Eggs.

The following is the conclusion of an article from our sailor correspondent:—But going in stays on the port tack, I want to tell you of my latest *egg* observations made during this last four months' voyage. The week before going to sea, I gathered in sixty dozen eggs for cabin sea-stores, taking especial pains to prove every egg of the lot a good one; besides I got them from my farmer friends, and know they were all fresh laid. Then I fixed them for keeping, by taking five or six dozen at a time in a basket, and dipping them, for about five seconds, into the cook's "copper" of boiling water. After scalding, I passed the eggs through a bath made by dissolving about five pounds of the cheapest brown sugar in a gallon of water, and laid them out on the galley floor to dry. There I had my sixty dozen eggs sugar-coated.

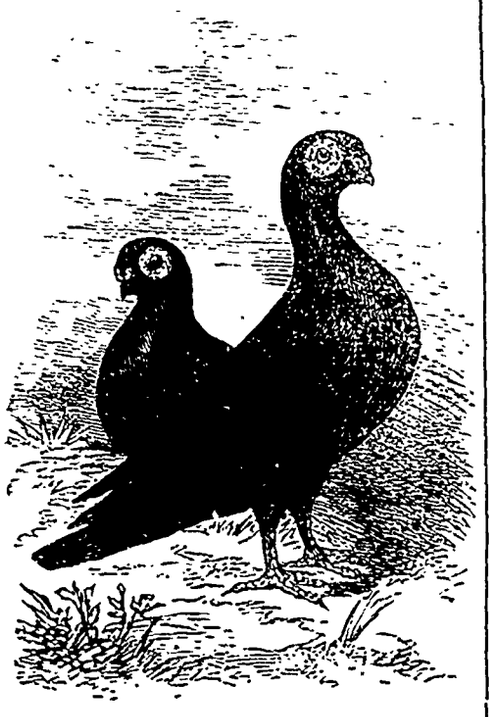
I packed them in charcoal dust instead of salt—I tried salt ten years, and I don't believe it preserves eggs a mite. It would, perhaps, if we were to chowder them all up in salt. But just stowing the stuff around the shells—"tell that to marines; sailors won't believe it."

The steward had strict orders to bring aft and report every bad egg he should find. During the voyage he brought three—not absolutely spoiled; but a little old like. All the others, or what was left of them, were as fresh when we came in the Capes, the other day, as they were when I packed them away on New Year's day.

I made a discovery—new to me, however. Perhaps it may be to others—possibly worth something. Ever since we began to have fancy fowls and *buff* eggs, I had noticed that the first to fail were the new colour, and finally that where an egg is spoiled, the yolk has settled through the albumen, and adhered to the shell. So, on this voyage, I have been experimenting. The result is, I have found the density of the albumen in the white shelled egg always considerably greater than in the buff ones, while the specific gravity of the yolk was several per cent. less. So the conclusion was, and is, that the yolk of a yellow egg settles soonest thro' the albumen, comes in contact with the shell, and consequently the air, and the buff egg soonest spoils.—*Country Gent.*

The Barb, or Barbary Pigeon.

We give above an illustration of the Barbary Pigeon, taken from a fine specimen of this breed which gained the first prize at the recent Poultry Exhibition in Toronto. The pair for which the premium was awarded were exhibited by Mr. J. Johnson, of London, whose name, next to that of Col. Hassard, figures most conspicuously in the pigeon section of the Prize List. In reference to this elegant pigeon, Mr. P. Jones, an enthusiastic admirer and successful breeder of the variety, writes as follows.—"The principal properties or characteristics of the Barb are in the head, though shape and carriage are also very important items, and must on no account be



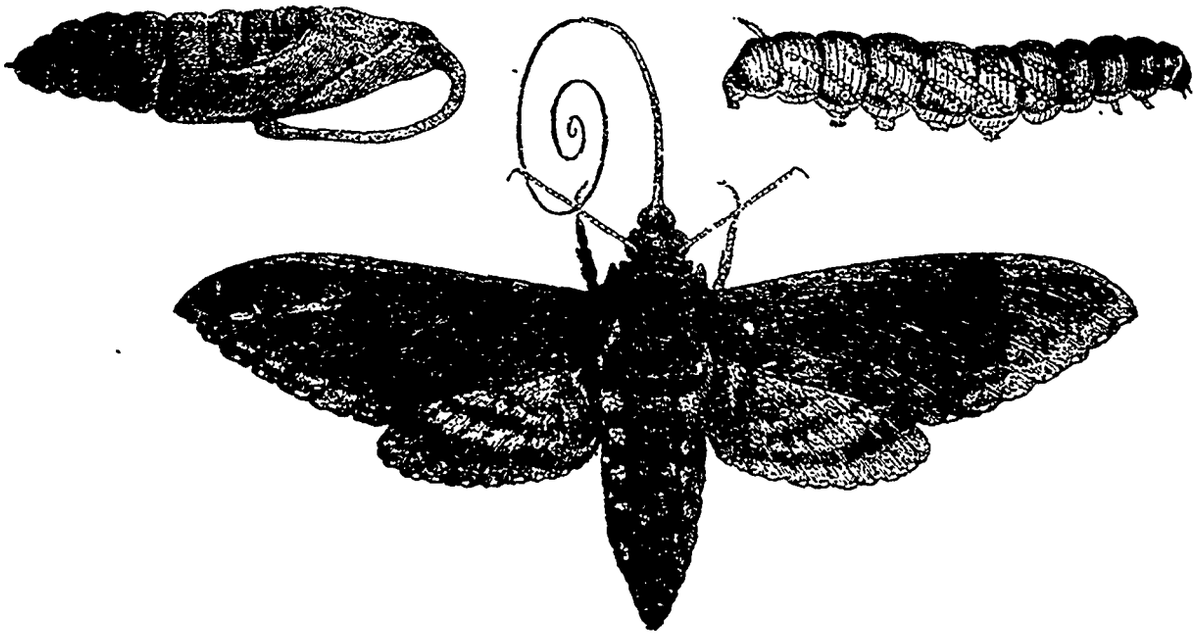
lost sight of; the flight-feathers are rather longer than in most other varieties, and serve to carry off the somewhat bulky appearance of the body of the bird. With regard to color, Barbs are usually self-colored, and the prevailing hues are black, white, yellow, red, and dun. Splashed and mottled birds are sometimes produced and may be useful for crossing, but as yet they have done nothing in the show-pen. In value I should estimate the colors in the following order:—first, black; second, yellow; third, white; fourth, red; and fifth, dun.

"The beak in the Barb is short and thick, not shaped like that of the parrot, but with the upper and lower mandibles meeting, as in the bull-finch—the thicker the lower mandible the better. The beak should be furnished above and below with a neatly-shaped, fine wattle, of a white or very pale color. The iris of the eye in the Barb should be white or pearl-colored in all the dark feathered varieties, though many otherwise good birds have white or gravel eyes. The eye-wattle is of a brilliant red or coral color, and should be large and well defined, standing out boldly from the cheeks and evenly distributed round the eye; a deficiency of wattle at the back is the prevailing fault. The texture should be fine and velvety. There should be no vacant space between the eye and beak wattles. The skull is broad, square, and flat on the top; the profile, from top of skull, between the eyes, to tip of beak, should be an unbroken line or curve, without break or indentation at the insertion of the beak or its junction with the skull. Barbs are hardy birds, and good breeders when at liberty, though apt to neglect their young at an early age when in confinement. They do not care to fly much when at large, rarely leaving the roofs of houses or making more than very short flights."

Entomology.

The Potato Sphinx.

We have received from Mr. Lazarus Parkinson, of Eramosa, county of Wellington, a very strange looking specimen, which might well excite the wonder and curiosity of those who had never before seen anything of the kind; he found it in the ground when digging up his potatoes. It is two inches and a half long, and half an inch thick, of a chestnut brown color, and round in shape, tapering towards both ends; from one end, which is the head of the specimen, there proceeds a long curved proboscis, like the handle of a jug; the other end is divided into broad rings, and terminates in a point. Now, what is this thing? It must be alive, because the tail end moves; but it cannot walk or crawl, and is quite helpless. Let us examine it closely, and perhaps we shall be able to find out. Those rings that move when you touch them are very like the rings of a caterpillar, and, see, at the other end there are traces of eyes, antennæ, and even short wings, but all enclosed in a hard brown shell. These things show us that it is an insect in its helpless pupa state; the long jug-handle is the case which contains its tongue for sucking out the honey from flowers. If we keep it in a little damp earth till next year, there will come out a large handsome greyish moth, with five bright yellow spots on each side of its body; its wings expand five inches; and its body is the same length as the chrysalis. Its name is the Potato Sphinx (*S. quinquemaculata*, Haw.)



The caterpillar is usually of a dull green color, with yellowish-white oblique stripes on each side of its body, and a sharp thorn-like tail. Sometimes its color is bright sea-green with flesh-colored stripes; and sometimes dark-brown, or even black, with yellow stripes. It feeds greedily upon potato and tomato plants, and often strips them entirely of their leaves. The illustrations, drawn life size, from Harris's "Injurious Insects," represent this Sphinx in its three stages of caterpillar, chrysalis, and moth.

The St. Catharines Nurseries.

We have long purposed visiting the above nurseries, but have only very recently been able to carry out our purpose. The closing days of November are not just the time of year one would select in order to see anything rural to advantage, but the present season has been so open and pleasant that out-door garden work can scarcely be said to be over yet, and accordingly we found seeding, transplanting, pruning, manuring, and covering, almost in full operation in the grounds above mentioned at the date of our inspection of them. The dryness of the land underfoot, and the pleasantness of the sky overhead, would have suggested a much earlier period of autumn, but for the chilliness of the air and the leaflessness of the trees. A wintry drought reigned over the country at the time in question.

The St. Catharines nurseries are situated close by the town whose name they bear, and possess consequently many advantages of location, soil, and exposure, being in the midst of the fruit garden of Canada. These nurseries were established many years ago by the late Dr. C. Beadle, and are now carried on by his son, Mr. D. W. Beadle. They consist of a home nursery of thirty acres, and a tract of one hundred acres a mile distant. A general stock of nursery and greenhouse products is kept on hand, but fruit trees and hardy grape vines are made specialties. Of fruit trees, both standard and dwarf are propagated, a decided preference being given to standards. Dwarfs are not high in favor with Mr. Beadle. He deems them rather horticultural playthings, than of practical utility for cropping and business purposes. He has also found them more precarious than standards. One winter he lost 70,000 dwarf pears, the frost killing the quince stocks outright, while the pear part survived. At present the stock of fruit trees at these nurseries is low, except in the staple items of apple trees, and we believe this is the case with our nurserymen generally, a large and increasing demand for fruit trees being one of the signs of the times, and a very gratifying one, among the farmers of Canada. Besides fruit trees, ornamental and shade trees are largely grown at these nurseries, also flowering shrubs, evergreens, roses, and bedding-out plants. The demand for these is also very perceptibly on the increase, indicating improvement and advance in the taste, culture, and refinement of our population.

Mr. Beadle has extensive and convenient glass structures for propagating purposes, one 60x30, another, a double roofed house, 90x40. The latter is of recent construction, and is only partially stocked as yet. The new building is covered with thick glass, without sliding sashes, other provision being made for ventilation, so as to leave the glass a fixture. These houses are warmed on the hot water tank principle, which seems preferable to any other, because of the evenness and humidity of the atmosphere thus created. A large frost-proof building has also just been erected for the purpose of storing away dahlia roots, cuttings, &c., during the winter. We saw a large and healthy-looking collection of hybrid perpetual roses, geraniums of all sorts, among them the variegated leaved "Mrs. Pollock," and "Sunset," the foliage of which is very beautiful, verbenas, dahlia roots, &c. Besides the stock on hand, an extensive assortment of novelties is on the way from the Old World, among them about a hundred new roses, also pinks, picotees, fifty new kinds of herbaceous plants, and forty new irises. Mr. Beadle has very complete conveniences for propagating all descriptions of plants, and is going largely into the propagation of hardy grape vines the present winter. A great store of newly pruned wood is in the frost-proof house, awaiting leisure for cutting up and setting out. The propagating department is under the superintendence of Mr. Thomas Buchanan, who was for many years gardener to the late Mr. W. P. McLaren, of Hamilton, and is a very skilful, intelligent, and experienced horticulturist. Mr. Beadle has given much attention for some years past to the testing and multiplication of out-door grapes, and while hot-house grapes are not neglected, special pains have been taken to obtain and propagate the best hardy varieties. We were glad to find that the "Delaware" has won golden opinions for itself at these nurseries. Mr. Beadle considers it the best out-door grape he has yet fruited. The specimens in his grounds, both of old vines and young plants, have a stronger and more vigorous look than in any nursery where we have seen this variety of grape. We are inclined to think that in the hurry of propagators to make money while the demand was brisk, the "Delaware" suffered somewhat in constitution, many plants being sent out of forced and spindling growth. If this be so, it is likely the reputation of this grape will improve as it recovers vitality and vigor. The "Adirondac" is also highly spoken of by Mr. Beadle. We do not know of any one else in Canada who has fruited this variety. At these nurseries it has proved very early, rather earlier than the Hartford Prolific, and of desirable flavor. "Iona" has also attained a high character here. A new grape that originated at Port Dalhousie, named the "Laura Beverley" is described by Mr. Beadle as perfectly hardy, a great bearer, ripening early, of good flavor, and hanging tenaciously to the bunch. Rogers' hybrids, especially Nos. 3, 4, 9, 15, 19, and 33, have done well here. Mr. Beadle is, however, most sanguine and enthusiastic in reference to the hybrids raised by Mr. Chas. Arnold, of Paris. He thinks them a most valuable acquisition, and decidedly in advance of many others that are vauntingly pressed upon public attention. Mr. Beadle will shortly issue a little hand-book of vine culture, wherein information as to varieties, brief hints as to planting, pruning, and general treatment, will be given for the guidance of all and sundry who wish to grow grapes. It will, no doubt, be of great service, and we shall be glad to notice, and possibly cull extracts from it, on its appearance.

The sale business of these nurseries is partly carried on by correspondence, but chiefly through wholesale dealers, who take orders on their own responsibility, and purchase the stock they retail. Orders are sent from all parts of the country, and but for the operation of the United States tariff laws, considerable business could be done across the lines, these nurseries being situated so near the frontier. At present international tariff arrangements operate to the disadvantage of the Canadian nurseryman. The American nurseryman can send his trees here without let or hindrance, and as a matter of fact, if there be an overstock of anything in the nursery line, or if there are odds and ends to work off, they find their way into Canada. American dealers do not like to spoil their own market by selling too low, but they have no scruple about spoiling ours. Thus Concord grapes were not long since being offered at $7 greenbacks per hundred, to the detriment of Canadian nurserymen. We state this merely as an item of information, not as an argument for protection. Our true policy as a people is in the direction of light tariffs and free trade. This policy will, of course, affect individual interests, and particular commodities unfavorably, but it is, we doubt not, that which will be productive of the greatest good to the greatest number. It will, better than any other line of action on our part, prepare the way for a renewal of Reciprocity—a "consummation devoutly to be wished."

The propietor of these nurseries is a thoroughly intelligent and skilful horticulturist, not wedded to old theories, nor over anxious to espouse new ones. He does, what it would be well for all in his branch of business to do, namely, keeps abreast of the times as to useful information, discoveries, and improvements. We were glad to see a natural, healthy, thrifty habit of growth, characterizing all the trees, old and young, in these grounds; and from the care and skill bestowed upon every department, we have little doubt that a business, already plainly a large and remunerative one, will grow apace, and bring golden rewards to its owner, while it largely contributes to render our land replete with fruitfulness and beauty.

Keeping Grapes Fresh.

We have tried many plans to preserve pears, apples, grapes, &c., and have in them all partially or wholly failed. A friend in the interior of this State received a present of grapes some time ago, (March,) which he speaks of in the following manner:—

"Three days since a friend brought me about a pound of Catawba and Isabella grapes. They were about as good as if just taken from the vine in the proper season—full and plump, but most of the berries had fallen off from the stems in the carriage of about ten miles over a rough road.

"Now, the way these grapes were preserved may not be new to you, though it certainly seemed a novel one to me; but the fact of their keeping until the end of March in fine condition is worthy of publicity.

"In the fall, when they are perfectly ripe, they are taken from the vines] when they are free from anything like moisture, handled carefully and packed in small kegs—nail kegs were the kind used in this instance. Put a layer of green leaves, right off the vines, in the bottom, on this a layer of grapes, then leaves again, and grapes, alternately, until the keg is full, then finish off with leaves. Put in the head, and your cask is ready for what? Why, to be buried in the ground. Dig a trench so as to admit the cask deep enough that they will have about one foot or fifteen inches of soil over them when covered. The ground should be packed moderately tight, and a board laid along on the top before the ground is thrown in. They throw some litter on the surface of the ground over those which they wish to take up during the winter, to prevent the ground from freezing so hard as to keep them from getting at them. One important thing must be observed, that they be placed where there can be no standing water about the cask, or they would suffer.

"On farther inquiry, I learn that the farmers in that neighborhood have practised this mode for years, and don't seem to think it anything new."

We would express the opinion that if the grapes are buried, the keg or whatever they may be packed in should be water-tight. If moisture penetrates the grapes will not keep.—*Ger. Telegraph.*

Protecting Trees from Rabbits.

From an experience of twenty years I will tell your readers how to prevent rabbits from injuring apple trees. My plan, which is the only thing that has proved successful, is:—In the fall of the year, just before winter sets in, we wrap the trees with rye straw in the following manner:—Take a bunch of rye straw, say as thick as three fingers, and commence at the root of the tree, and wrap from right to left, by giving it a twist every time you bring it around, until it is nearly all wound up in this manner. Then take a second bunch, and by a peculiar twist it is adjusted to the first bunch, and thus keep on until you have wrapped high enough to be out of the reach of these enemies to trees. It may be thought to be a tedious job, but patience and a little practice will soon prove different. In this manner I can wrap over one hundred trees per day with ease. I prefer this plan for several reasons—first, it is an effectual preventive against rabbits; second, it protects the trees against sudden changes of weather, so common and injurious in the western prairies; and third, we leave the straw on in the spring until the orchard is ploughed, and then it protects the trees from being injured by the ploughman.

P. S.—The straw should be made wet a little, to make it more pliable.—*Cor. Country Gentleman.*

☞ There was exhibited at the recent American Pomological meeting a specimen of the Crawford Late Peach, which measured twelve and a half inches in circumference, grown in Missouri.

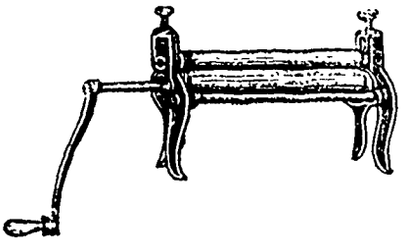
Scraping and Washing Trees.

We consider the early winter to be the time for scraping and washing the trunks of trees. It is well known to all observing fruit-growers that the loose bark of trees is the winter quarters of myriads of insects, where they securely remain until the ensuing spring, when the warm, genial weather invites them to quit their cosy homes and begin their destructive operations for the season. We have found a narrow saw, rather fine-toothed, to be an excellent tool in rasping off the superfluous bark. It accomplishes it more uniformly than a hoe, trowel or other scraper; a trowel or a short-handled hoe, however, is very good, when the other may not be possessed. After the bark is removed, the trunks should be washed thoroughly with a preparation of whale-oil soap and water, say in the proportion of a pound of the soap to four gallons of water. It can be applied to large trees with a hickory broom or a stiff white-wash brush, and to small trees, especially dwarfs, with the hand scrub-brush. Sickly trees, which can, at this season, be easily detected by being covered with a species of fungi, or, perhaps, more properly, a peculiar insectivorous deposit—should be scrubbed so as to completely remove this. The mixture will, of itself, benefit the tree, while the removal from the stem of all extraneous and injurious substances will give to it new health and vigor the ensuing season—in some instances, to a surprising extent. When whale-oil soap is not obtainable, lye may be used, but it should not be very strong, or it might be injurious to the roots of the tree, if applied plentifully and the tree be small.—*Germantown Telegraph.*

Preservation of Dahlia Roots.—On this head a correspondent furnishes the following:—"In your last issue there are some hints on the above subject. They may be good, but my own experience is that the desired object may be gained with less trouble. I have about twenty varieties of the dahlia; most of these I have kept for the last ten years. My plan is this. I have a large box in the cellar filled with dry sand; in this I pack the roots every fall. I lift them just before the ground freezes hard, with no extra care further than not to break the roots apart. As to moistening the roots in winter, I never would think of it. They lie till spring imbedded in the dry sand. I start them in the vinery or hot-bed early in the spring, and divide them when sprouted, then plant in pots. Your correspondent seems to think light indispensable; mine never see it till spring, and yet I think I have been tolerably successful in their culture."

Preserving Cabbages.—The following mode of putting up cabbages for winter and spring use, we copy from that most valuable work, *Gardening for Profit*, a work which every farmer should have:—"Cabbages are preserved very simply; they are left out as late as they can be pulled up by the roots—in this section about the end of November—they are then pulled up, the heads packed close together, in beds six feet wide, with six feet alleys between, care being taken to have the ground levelled where the cabbages are placed, so that they pack nicely. They are left in this way for two or three weeks, or as long as the ground can be dug between the alleys, the earth from which is thrown in the beds of cabbage, so that, when finished, they have a covering of four or six inches of soil. This is not enough to cover the root, however, which is left partly exposed, but this is in no way injurious. Some prefer to cover them up at once by ploughing a furrow, shovelling it out wide enough to receive the heads of the cabbages, and then turn the soil in on the heads, and so continuing until beds of six or eight feet are thus formed. This plan is rather more expeditious than the former, but it has the disadvantage of compelling them to be covered up at once by soil, while the other plan delays it for two or three weeks later, and it is of the utmost importance in preserving vegetables that the operation (particularly the final covering) be delayed as late in the season as frost will permit. Generally more are lost by beginning too soon than delaying too late. Onions, we find, are best preserved in a barn or stable loft, in layers from eight to ten inches deep, covered up with about a foot of hay or straw, on the approach of severe frosts. The great points to be obtained are a low temperature and a dry atmosphere; they will bear twenty degrees of frost without injury, provided they are not moved while frozen, but they will not stand a reduction of temperature much lower than this without injury."

The Household.



An Effective Wringer.

Thorough washing machines are still of doubtful utility, and it may admit of question whether a really good one is yet before the public, there are several efficient wringers in the market, and as wringing is the most laborious part of the toil to which woman is doomed on washing days, a good wringer will materially lessen the slavery of that domestic process by which soiled linen is made white again. We have received from Mr. Henry Mulholland, hardware merchant, of Montreal and Guelph, a sample of the machine above represented, and which, on trial, does its work exceedingly well, quite as well as a more costly wringer with whose operations it has been compared in our kitchen. Its price is $5 50, and we believe it is kept for sale by our leading hardware merchants in all parts of the Dominion of Canada.

The Colby Wringer fits equally on a round or square tub, or washing-machine, and is perfectly self-holding, without the use of screws, cams, or any other arrangement for fastening. It will wring anything, from a collar to a bed-quilt, in the most perfect manner, while it costs less, works easier and is much lighter to handle, than any other wringer in the market; and being so much more simple, it is less liable to get out of order. The manufacturers of Colby's Wringer claim that it is superior to all other wringers. First, in being so light to handle. Second, in having so few parts to get out of order. Third, all parts are made of the most durable material. Fourth, it can be put on or off a tub or washing-machine in an instant, without turning a screw, or loosening a cam. Fifth, it occupies less room, and is not in the way when on a tub or machine. Sixth, it requires less strength to work it. Seventh, it is so much lighter and packs in so much less space, it can be sent to any part of the world at much less cost of freight. Eighth, when not in use, the rolls and springs are entirely relieved from pressure, which is a very important thing, as constant pressure upon one place gets the rolls out of shape and injures the springs.

Collett's Patent for Preserving Meat.—In our issue of October 15, we published a communication from Mr. Martin Collett respecting a new method of preserving meat; we noticed also the favourable testimony which this method had received from eminent chemical authority in England. Through the courtesy of Mr. Collett, who placed at our disposal a turkey which had been subjected to this process, and which had been killed more than five weeks before, we have had an opportunity of testing the efficacy of the plan. We have pleasure in testifying that the bird was perfectly sweet, tender, and palatable, and we could not detect the slightest unusual flavour, or anything to indicate that the turkey had not been slaughtered only a day or two previous. We have every reason to believe that the new method is a cheap and efficacious means of preserving meat without impairing its fresh flavour.

How to Make an Enemy.—In order to get an enemy, lend a man a small sum of money for a day. Call upon him in a week for it. Wait two months. In three months insist upon his paying you. He will get angry, denounce you, and ever after speak of you in abusive terms.

Advertisements.

Markets.

Toronto Markets.

"CANADA FARMER" Office, Nov. 28th, 1867.

THE produce markets have been very dull since our last report, and very few sales have been made.

Flour—Until to day, holders were asking $6 50 for No. 1 super, with buyers offering only $6 25. No sales took place. To day sales were made at $6 50—several lots changing hands at that figure.

Wheat.—The market since our last report has been quiet. There has been very little animation among dealers, but prices have been firm and well maintained. Spring wheat, in car lots, was offering at from $1 41 to $1 42, and a few sales were made at these figures. Fall wheat in car lots was offering at $1 60, and a sale was made at that price. Receipts on the street market have been very light. Street prices nominally $1 35 to $1 40 for spring, and $1 50 to $1 55 for fall.

Oats—The market has advanced during the week. Transactions are principally of a retail nature. Car loads sold during the week at 50c, and retail lots at from 53c to 55c.

Barley—The market has ruled quiet and steady. Sales of car lots C. W. barley were made during the week at 78c f.o.b., and of N.R. R. barley at 80c f.o.b., which may be taken as the present prices. On the street market the receipts have been very light, hardly sufficient to establish quotations. Street prices nominally 76c to 80c.

Peas.—The market has been very dull and has nominally declined. No sales have been reported, the lots offering being held above the views of the buyers. On the street market 70c was paid for a few lots.

Oatmeal—Very scarce, and enquired for at from $5 75 to $6.

Dressed Hogs—Receipts by teams and by rail were large. For average hogs from $5 to $5 25 was paid. Extra heavy mess hogs brought $5 50 and even $6. Inferior sold as low as $4 50.

Butter—The market has improved. Several large lots, store packed, sold at from 13c to 14c, and a few lots of dairy at from 15c to 17c. Stocks in the hands of dealers are principally ordinary and medium grades, the former being very dull of sale.

Pork—The quietness in the Quebec Lumber market is having a depressing effect upon the Ottawa Lumbering interests, and the usual orders for Mess Pork from that region are not coming in as fast as expected. Holders are are asking $18 50 for Mess; a few sales being reported at $18. There is, however, very little doing.

Cut Meats—A fair business has been done during the week; quotations remain the same as last week. Bacon, rough, 6½c to 7c, Cumberland cut, 7½c to 8c; smoked 10c. Hams—in salt, 7½c to 10c; sugar cured and canvassed, 9c to 10c.

Cheese—Very little doing. For new, holders are asking from 8½c to 9½c.

Lard—Market very quiet. In the absence of transactions prices are nominally 9c to 9½c in kegs.

Eggs—Scarce and enquired for. Selling packed at from 15c to 16c.

Hay—Selling at from $12 to $16.

Straw—Selling at from $10 to $11 50.

Salt—American, on the wharf, selling at $1 75 per barrel.

Wool—Very dull; large lots almost unsaleable; for small parcels from 20c to 24c is paid on the street.

Contents of this Number.