

Technical and Bibliographic Notes / Notes techniques et bibliographiques

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

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

- | | |
|--|--|
| <input type="checkbox"/> Coloured covers/
Couverture de couleur | <input type="checkbox"/> Coloured pages/
Pages de couleur |
| <input type="checkbox"/> Covers damaged/
Couverture endommagée | <input type="checkbox"/> Pages damaged/
Pages endommagées |
| <input type="checkbox"/> Covers restored and/or laminated/
Couverture restaurée et/ou pelliculée | <input type="checkbox"/> Pages restored and/or laminated/
Pages restaurées et/ou pelliculées |
| <input type="checkbox"/> Cover title missing/
Le titre de couverture manque | <input checked="" type="checkbox"/> Pages discoloured, stained or foxed/
Pages décolorées, tachetées ou piquées |
| <input type="checkbox"/> Coloured maps/
Cartes géographiques en couleur | <input type="checkbox"/> Pages detached/
Pages détachées |
| <input type="checkbox"/> Coloured ink (i.e. other than blue or black)/
Encre de couleur (i.e. autre que bleue ou noire) | <input checked="" type="checkbox"/> Showthrough/
Transparence |
| <input type="checkbox"/> Coloured plates and/or illustrations/
Planches et/ou illustrations en couleur | <input checked="" type="checkbox"/> Quality of print varies/
Qualité inégale de l'impression |
| <input checked="" type="checkbox"/> Bound with other material/
Relié avec d'autres documents | <input checked="" type="checkbox"/> Continuous pagination/
Pagination continue |
| <input checked="" type="checkbox"/> Tight binding may cause shadows or distortion
along interior margin/
La reliure serrée peut causer de l'ombre ou de la
distorsion le long de la marge intérieure | <input type="checkbox"/> Includes index(es)/
Comprend un (des) index |
| <input type="checkbox"/> Blank leaves added during restoration may appear
within the text. Whenever possible, these have
been omitted from filming/
Il se peut que certaines pages blanches ajoutées
lors d'une restauration apparaissent dans le texte,
mais, lorsque cela était possible, ces pages n'ont
pas été filmées. | Title on header taken from:/
Le titre de l'en-tête provient: |
| | <input type="checkbox"/> Title page of issue/
Page de titre de la livraison |
| | <input type="checkbox"/> Caption of issue/
Titre de départ de la livraison |
| <input type="checkbox"/> Additional comments:/
Commentaires supplémentaires: | <input type="checkbox"/> Masthead/
Générique (périodiques) de la livraison |

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

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

THE CANADA FARMER

VOL. III. No. 10.

TORONTO, CANADA, OCTOBER 16, 1871.

NEW SERIES.

The Field.

Securing Roots.

Fodder is now, and in all probability will during the coming winter be scarce; the greater care should then be exercised to secure safely all root crops.

POTATOES are taken up in two ways, either by means of the plough or with the potato fork or "grapes." For neatness and thoroughness of work no implement that we have seen can surpass the potato fork; but where the land is light, a crop may be lifted well and quickly by means of the plough.

We consider that all potatoes should be dug as soon as thoroughly ripe, that is, as soon as the tops can be detached by pulling from the bulbs. They should be left upon the surface of the ground, if the weather be open, until the earth upon them is perfectly dry. Upon lighter lands two hours will often suffice for this purpose. They should then be piled or pitted in small heaps containing from 20 to 40 bushels, and left to sweat until there be danger of injury by frost. This sweating process has to be undergone somewhere, and it is far better that it should take place in small heaps outside than when stored in large quantities in a cellar.

If potatoes are to be left out through our long Canadian winter in pits, great care should be exercised in the formation and covering of the heaps. We are no advocates for large pits. We consider 50 bushels to be the best size, and our reasons for so thinking are: That our risk of loss by excess of heat or frost is thus reduced to a minimum; that such is a handy sized pit to open and pick over during the snatches of fine weather that we may have in winter or early spring; and that 50 bushels just about make a convenient waggon load.

Lay the heap upon a very light bottom of straw, just sufficient to keep the root from contact with the earth. Pile up neatly; cover with a foot of loose straw and six inches of

earth firmly compacted with the spade. Build in a ventilator, and leave it until the very severe weather sets in. Long ere that time the potatoes will have been thoroughly sweated. Then take away the ventilator and make all snug.

CARROTS.—The best manner to take these up is to pass the land side of a narrow sharp cutting plough close along the rows, after which the root grasped by the haulm is easily pulled out. Throw into rough heaps, and top at convenience.

Carrots will keep during winter in cellars at the same temperature as turnips, ranging from 32° to 36°. The temperature should not be allowed to rise above the latter, nor to sink below freezing point; but the nearer we can keep to 32° the safer will the crop be from spoiling.

In passing we would recommend every farmer to hang one or more thermometers in his root cellar. They can be bought at 50 cents apiece, and the cost is well repaid by the knowledge that our cellars are neither too hot nor letting in the frost. In entering a cellar from the outer air upon a cold winter's day, it is impossible to tell what is the temperature inside by the feel. An atmosphere in which the temperature is at 26° will feel warm after leaving the open air, where the thermometer stands in the neighbourhood of zero.

TURNIPS.—Pull these in time. Many of our farmers are too greedy, too anxious to leave their turnips in the ground at the risk of loss by frost and snow, and thus gain a few pounds or may be bushels upon the acre. A crop of 500 bushels per acre, well and dryly secured, is more valuable than one of 600 put into cellar or pit covered with wet soil.

We believe in the old-fashioned method of pulling by hand and topping and tailing. Trimming turnips should be carefully performed. Cutting the top too far from the turnips leaves the root far more liable to sprout at that part, whereas cutting into the body of the turnip is very injurious, as rot-

ting is very apt to set in where the bulb has been cut into. It is quite a knack to strike a happy medium between these two faults in topping, and the farmer should see that this operation is properly performed.

There are other more expeditious ways of raising "heaps." One by ploughing them out. This we consider a dirty job, and utterly unfit for the consideration of farmers. Others go over a field with a sharp hoe, and cut off the tops as they stand in the field; then take a pair of ordinary iron-toothed harrows, and draw them across the rows, once over and back again. The first stroke loosens the turnip, the second takes it completely out, and the teeth do not injure the roots.

This is doubtless a far more untidy method than that of pulling by hand; but where a scarcity of hands and great hurry call for expedition, we know it to be perfectly practicable, as we confess to having pulled turnips in this manner. The objections to the plan are, however, numerous. We make a great mess of our tops; we are apt to cover up many medium-sized turnips in the leaves so as to lose them when gathering, and we do not cut the tails. The latter matters little upon sandy land, as if a shoot with a bottom made of slats be used in unloading, most of the tails break off, and all the dirt is shaken out ere the turnip reaches the cellar window. This process is only practicable upon the lighter soils.

In pitting turnips, we should make our pits long and narrow. Six inches of straw and six of earth is the covering used by many of our greatest turnip growers. There are various methods of ventilating, and we would close this article by mentioning that adopted by Mr. Weir, of Flamboro' West, who, himself a great and most successful turnip raiser, laid the following plan before the Ancaster Farmers' Club last winter. He says:—"I cover the whole heap with six inches of loose straw, then, commencing at the one end, I cover six feet in length with six inches of earth. I then leave four feet covered by a

narrow single board, and earthed up on each side to the board. I then completely cover with earth the next six feet, then lay another board four feet, and so on alternately to the end of the heap. I prefer this system of ventilation to the straw chimney. I find in the spring a few turnips just under the board, where the steam escapes frozen, but consider that the loss of these is fully balanced by the entire absence of rottenness in the remainder."

Be careful in feeding turnips this winter; they will be very valuable ere spring set in.

Harvesting Turnips.

The writer has grown turnips for many years, both in England and in Canada, and after trying all the plans recommended for harvesting, has come to the conclusion that there is none so good or available as to take a sharp hoe, ground as sharp as a chisel, and with it to slice off the green close to the root, or nearly so, and when these have been removed, or consumed by cattle on the ground, to load, with sufficient weight, an inverted harrow, and by dragging it over the field to pull out the turnips from the earth. Some may be left, but if the turnips are well grown, almost all will be so entirely extracted that the labour of getting up the remainder will be greatly lessened. Moreover, if the harrow be of the right construction, when you pass a certain distance, by raising it a little the turnips will be deposited in rows, more or less close together, according to the crop, the shape and efficiency of the harrow, and the skill of the workman. I have often thought that a revolving rake, or series of bars, constructed somewhat like a revolving hay rake, would be found a most useful implement. Nothing will assist filling the turnips into the waggon equal to a three-pronged, long handled, pitching fork, by which often three turnips can be picked up at once and deposited over the edge of the waggon box, and that, too, without your hands being half frozen in snowy or sleety weather. A little talent for ingenuity is just as valuable on a farm as in a millwright's or mechanic's shop; in fact, I never saw the time that it was not useful. There are, however, some dunderheads who never think for themselves, and condemn others who think for them; and for these people pulling up turnips with one hand, chopping off the greens with a knife with the other, allowing the turnips to lie just where they fell or grew, scattered all over the field, again to be picked up into a basket, and by help of a second man lifted into the waggon, which stands about twenty yards into the turnip-patch—I say any old-fashioned, duck-headed plodder, who persists in this course, well deserves what he gets, namely, slow work, half frozen hands, and dear turnips when done.

C.

Curing Corn Fodder.

The great difficulty with all novices is to prevent the stalks from heating and spoiling when stacked or heaped together. For this reason they should never be placed in large masses. We have known large stacks to become ruined in three days after the stocks had dried for several weeks in shock in the field, and when the owner supposed them to be perfectly cured. Thickly grown fodder is soft and fine, and lies compactly together; the amount of juice remaining in the stock is sufficient to originate powerful fermentation. It may be prevented by making large and erect shocks in the field, to remain there till drawn for winter use; or by building small stacks, and placing three or four erect rails in the centre, around which the stack is built, thus leaving an opening or chimney through which the vapour escapes; or by scattering them to dry, over the tops of the bays of hay in the barn and sheds, to a thickness of some three feet.

The fodder may be cut in three ways. If the ground is smooth—by means of a reaping machine, the stalks after drying a few days on the ground to be raked together with a horse-rake, and then drawn off and either spread over hay mows and in shed lofts, or put in small stacks with ventilators or chimneys in the centre, as just described. Or the stalks may be cut with a common scythe, a little practice and skill enabling the operator to throw the tops all one way, so that they may be gathered and bound in bundles; or they may be cut with a common corn-cutter by hand.

Every person who raises corn fodder or feeds it to cattle, should remember that when perfectly cured, so as to retain its sweet flavour and green colour, it is one of the best kinds of food that cattle can live on; while if allowed to become wet, mouldy, discoloured and dark brown or black, it is little better than poison. It is by feeding such unwholesome, badly dried fodder, that some careless farmers have come to the conclusion that corn fodder is poor food for animals. Hence the importance of perfect curing.—*Country Gentleman.*

Subsoiling at Small Cost.

In the *Gardener's Chronicle*, of August 12, 1871, there is a most practical and useful article entitled "Thin-skinned land," well worth any one's studying. The observations therein coincide most entirely with experience, and I am well convinced that the subsoiling there spoken of is a most useful mode of ploughing. The cost is the great objection, as to subsoil a field amounts in reality to something more than ploughing it. Now, to obtain as much as possible the same benefit, and at the same time not to expend too much time on the land, we need only follow the plan often used in a certain part of England, called "ridge and furrowing," and

when striking out the first furrow, allow the plough to return in the same one just drawn, and by setting the plough somewhat deeper, and by laying it well down on the land side, a high ridge will be formed and a furrow also that will stir the subsoil at least four inches below ordinary plough gauge, leaving the subsoil exposed to the frost and air all winter. At the same time the great advantages gained are that the team can readily plough three acres a day, and the land so ploughed in the fall will lie dry and "wholesome" all the winter, and when spring comes will be dry enough to get into at least one week earlier than any land ploughed in the ordinary manner. Any one who will take the trouble to draw a section of "ridge and furrowing" ploughing, will see that after two or three years of such treatment of the land a most efficient subsoiling will be the result. It is true the whole of the land is not subsoiled the first year, but the next will be sure to do nearly all, especially if the ridges of the second and third year cross those of the first; and in the spring, when the ridges are split, the team will easily go over three acres a day. This, it will be readily seen, must be quite an ordinary day's work, and be much lighter ploughing than when first done in the fall previous. If potatoes or turnips are going to be planted, and manure used, it can be spread on the furrows, and being well buried when the ridges are split, will all be just under the growing plant. Perhaps such manuring is better, if done in the fall, for the root crops following in the spring; but every farmer has not time to prepare his land for root crops in the autumn previous to sowing. The value of this description of fall ploughing is further seen by measuring the large surface of subsoil that is thus exposed to the action of the air and frost. It will be seen that nearly one-third of the whole field is thus subsoiled each year, and the substratum underneath the subsoil that is moved into the ridges is of about the same quantity thoroughly thereby exposed to the action of the elements. C.

THE POTATO BLIGHT IN IRELAND.—During the last few weeks the blight has spread to such an extent in Ireland, according to some accounts, that it is feared the potato crop will be almost ruined. In some fields in Tipperary full nine-tenths have rotted already, and the remainder is despaired of. There has not been such a heavy visitation since the great famine twenty-five years ago; and, were it not for the favourable condition of cereal crops, the consequence might be as disastrous as then to the peasantry. In the neighbourhood of the potato land the air is most disagreeable from the oppressive odour caused by the blight. The farmers are bringing large quantities to market, fearing that the disease may get worse. On the other hand, Mr. Alderman Purdon, ex-Lord Mayor of Dublin and proprietor of the *Irish Farmer's Gazette*, says that the reports as to the extent of the potato blight in Ireland are very much exaggerated.

The Failure of Grass Seeds.

In our experience of Canadian farming we can hardly remember any previous season in which the drought has been so disastrous to the young clover plant as the present. In Ontario, this season, the rule has been that the grass seeds have failed to catch. We do not say but that this failure has been in too many cases helped by improper cultivation. We believe that upon land rich and clean grass seeds are as little liable to miss as the grain crop itself. But this year the drought has been very disastrous, and we have heard of farmers who have only succeeded with about 10 per cent. of their grass seeds. We propose to review a few plans by which we may, where grass has failed, catch up to the rotation.

Fall wheat and barley are the usual crops to which we in Canada seed down. If the clover has failed to show sufficiently upon fall wheat stubble, we may be sure that there is no chance for hay next year. Upon spring grain, with favourable showery weather this fall, the clover might yet take sufficient hold upon the field ere winter set in.

There are two courses open the for renewal of the clover :

1st. As soon as the first September rains fall, harrow the stubbles thoroughly, tearing up the surface to the depth of two or three inches; sow grass seed liberally, and cover well with the iron harrow, following with a bush harrow. If it be possible to procure old short manure, spread evenly upon the surface. This is somewhat of a risky performance, and its success will be greatly dependent upon the nature of our coming winter. Where, however, there are large bare patches in a field which has otherwise taken well, we would not hesitate in adopting this plan.

2nd. Where a whole field has missed, and where our land being clean, we do not think it advisable to crop again, and are anxious to bring the field into hay, we would advise to plough the field lightly, completely reversing the furrow slice, harrow smoothly, spread upon the surface well rotted old barn-yard manure, incorporating the latter in the soil with the harrow; sow liberally, and brush harrow and roll the whele.

If, however, the land be in sufficiently good order to promise a paying grain crop, seedling down to rye, fall wheat, or spring grain, is the most certain method of obtaining a good catch.

It must, however, be borne in mind that we are about to take one more exhaustive crop from our soil than we had calculated, and we should make amends to the land by liberal application of such manure, barn-yard or artificial, as we have at our disposal.

Let us as farmers remember that the hay crop has been short this year. Owing to the fact that there is now much old hay in the country, the probabilities are that hay will not

command as high a price in the market during the winter of 1871-72 as the majority of our farmers seem to expect; but that, as the area of new meadow will undoubtedly be small next summer, we may expect an extra market for hay in the winter of 1872-73.

Silver Beet.

In reply to "Sarawak's" enquiries as to the "Silver or Sea Kalo Beet," we repeat the statement already made, that this is evidently one of the hardiest plants that are applicable for the ploughing under as green crops. The course adopted last season with the silver beets grown by the writer was, as soon as the frost becomes severe, the roots, leaves, and all were covered with earth to the depth of some inches, and they so remained all winter. At the very earliest spring they were examined, and found to have sprouted from the heart, while the old last year's leaves had decayed. The new leaves had evidently been growing for some little time, for they were quite blanched, and two or three inches long. As soon as the heavy frosts were gone the whole of the plants were uncovered, and the blanched and growing leaves exposed to the weather. They never failed at all, nor were affected by frost, although we had some very severe ones. As soon as it was possible for anything to grow, and before anything else *did* grow, this hardy plant put forth its leaves, and finally its seed stalks, and was never influenced by the weather in any way; and although during the drought in the summer the ground was as dry as powder, yet still the seed stalks continued to grow, and are covered with seed. The stalks average nearly four feet six inches in height, or rather length, for they do not all stand upright; they have never flagged or checked in their growth, and the amount per acre of the seed stalks would be something enormous, far more than that of the leaves last season.

There can be no reason, therefore, why the seed should not be sown at the earliest possible time that it can be got into the ground. Like all beet seed, the true seeds are covered with a rough, hard, horny case, that requires considerable time in the earth to soften it sufficiently for the seed germs to burst it and come forth.

As to the proposed feeding; or cutting of the greens, the writer considers it would be the very poorest economy to do so; the plant attains its full growth in three months from the time it comes into double leaf, and it should then be ploughed down in the most ruthless manner, and the ground thus given the full benefit of leaves, roots and all. By doing so early enough, it is believed a thorough manuring for fall wheat would be secured, although it might be better to wait for a spring crop. But in land that will admit of fall wheat being sown as late as October, there is no doubt the silver beet would form an admirable dressing when so treated.

We have had no experience in a second crop of leaves, the first being cut off; although we should say that so hardy a plant, and such a vigorous grower, would throw up a large amount of a second growth of leaves; but if this practice is pursued, the heart or crown must on no account be cut, or destruction of the root, without a second crop of leaves, must follow. The cutting of the leaves in the manner proposed can only be excused from necessity.

History of a Canadian Farm.

WATER PIPES TO SUPPLY THE BARN-YARD AND DAIRY.

Early in my farm experience there came some very dry weather, and the well at the house was not sufficient for our demand. I had a visit from an intelligent emigrant Yankee, who had been engaged in laying water pipes in the United States. He wanted to board with me for some time, and we finally agreed to offset his board by his bringing into my yard the water from a large and beautiful spring that took its rise somewhat over a quarter of a mile from our house. At that time I knew nothing of boring logs for conveying water from a distance. Now, however, I am well posted in the work, and should think almost as little of bringing in a spring as of digging a well. My wife had always had a splendid spring of water in her dairy at home in Scotland, and often said that one-third of the profit of cows and their produce depended on having it. I have lived to be convinced of this fact—that without cold spring water the dairy is not cold or sweet, and unless it is both cold and sweet no good butter can be continuously made. You may make it good anywhere almost when the seasons are propitious, pasture in the best state, and weather cool; but your cows give milk in all sorts of weather, and your dairies must be so good as to neutralize all changes of external temperature. At home, in Scotland, on rented farms, we find the difficulties great enough; but then the farms are not our own, and the landlord will not make any improvements of this kind as we find them requisite. In Canada the case is quite different. When on our own farms, all we do is done for our own benefit, and we go at it with a good heart. So it was with our dairy. We must have the cold water or make indifferent butter sometimes. Here was an opportunity of getting the work done on reasonable terms of payment.

All the tools wanted our American emigrant could make, except the auger, which he had. I went to a neighbouring tamarac marsh, and cut a quantity of small straight logs, all 14 feet long, and hauled them home and posted them up in a convenient place to work at them. Our emigrant provided himself with a first-rate American 2½ inch screw auger, and the blacksmith in the neighbour-

hood made a socket of two inches in diameter at one end, and three-quarters of an inch at the other. The large end was made to receive the wooden boring rod, and the smaller was formed to receive the iron auger shank. Our Yankee preferred a wooden rod (nearly of the same size of the hole to be bored) to a smaller iron one, as its size fitting the hole made by the auger, kept the auger itself in a more directly straight line when in use. At the upper end the cross-bar or handle to turn this wooden boring bar with was somewhat enlarged, to afford extra strength and precaution against splitting. Four tressels, two for the log and two for the auger to work in, were next made, and a moveable upright piece went perpendicularly through the two tressels, with a half moon cut at the top of each to support the auger rods. A wedge at the side enabled the operator to raise or depress these upright pieces, so as the auger rod, when resting in the semi-circular hole cut to receive it, would cause the auger to "look" exactly into the centre of the pith in the log. A string or line at the top, and another at the side, attached to the farther end of the log, enabled the operator to see (when holding the string parallel to the log) that the auger and rod pointed straight to the other end, so that the auger would be sure to make its exit in the rear in the pith, as it entered on the front. This was all that was done, and after securing the log with a chain to the tressel, the engineer began to bore away. The auger was good, and the screw part long, and every day saw sixty or eighty feet bored. It was astonishing how fast it was done; but it all depended on the peculiarity of the auger as adapted to its work, and the order in which it was kept. This auger would easily bore a foot a minute, and would have done five times the quantity of work if the log could have been set up on an end, and the chips allowed to run out, instead of having to draw it back so continuously to empty it. In some cases, and with some description of logs, we were obliged to turn ends with them, and thus bore half way from each end, and meet in the centre; but generally if the pith was well defined and the log clear of knots, we had but little difficulty of that kind to contend with.

After the logs were all finished boring, came the jointing and banding. Our American friend procured a quantity of 3-inch hoop iron, somewhat thicker (but not much) than that ordinarily used, and cut it into lengths of about 14 inches. The blacksmith welded these into rings, and at the same time bevelled about half an inch of each side of the ring thus formed, until it had a somewhat sharp edge, leaving the centre of the band or ring all round much thicker. When jointing the logs, one of these rings was taken and driven against the end of the log, with the hole or bore of the log exactly in the centre of the ring. A chisel was then driven in about one inch deep all around the mark thus made in both ends of the log, and

one ring was driven half way into one end of each log, and allowed to remain there. When the logs were placed in the drain dug to receive them, they were raised or depressed until each ring fitted or "looked" into the marks made by the chisel for its reception, then a few blows with a heavy mallet drove up the log last laid down until the joint between them was closed up almost tight, the sharpened edge of each ring having been driven into the end of the log. This formed a perfectly tight joint, and at the same time effectually banded each end of each log, and prevented splitting by the pressure of the column of water.

We next came to the levelling and digging the trench. I was anxious to place my logs below all frost influence, but my Yankee friend decided that the expense would be doubled and the benefits doubtful, as he said the water was spring water and always running—never under any possible contingency stopped—so that one foot under the surface for the top of the log, was, he thought, sufficient. To this I agreed, and we soon had the trench dug. We worried about somewhat to miss stumps, but by staking out the ground first it is astonishing how few direct line trees were altogether in the way. At the fountain-head I put in a box about three feet square and three feet deep, and the log was entered about half way up; but a contrivance was made whereby the water was always at the top of the box, and the log 18 inches under the surface of the water. This afforded a supply for cattle, easily got at, and at the same time a reservoir to protect the mouth of the log from frost. At large pine trough received the outlet water, which was compelled to rise about two feet before overflowing into the cattle trough. The log was continued underground to the site selected for the dairy, and the end plugged up, to be opened when wanted.

The whole was well done, and at a reasonable expense. If I remember right, and from calculations I have many times gone into when questioned by parties wishing to perform a similar work, the cost out of pocket was about 6½ cents a foot. It could not be done for that now, I suppose, as the timber cost me nothing and labour was cheap; but we did it at odd times when work was not pressing, especially boring the logs. Wet, stormy days were always appropriated to this work. C.

Beet Root Sugar.

"Vectis" having written to the editor of *The Sugar Cane* an account of all the difficulties he has met with in his pursuit of this subject, and requested information, particularly such as should ensure the proper crystallization of the sugar, has received the following reply. *The Sugar Cane* is a modern English publication, purely devoted to the subject of cane and beet root sugar, both crude and refined. Its circulation is chiefly amongst

professionals in the trade, and it is therefore the best authority that can be given.

The following is the reply in question:—

LONDON, 17th June, 1871.

(To the Editor of the *Sugar Cane*.)

SIR,—I would recommend your correspondent "Vectis" to try the following (pre-mising that he will work on a small scale), and I think he will find no difficulty in crystallizing the beet juice, provided it is not too weak. He should grow beets weighing not more than from 2 to 2½ lbs. each.

1st. Heat the expressed juice to about 168° Fahrenheit, and then add cream of lime of the density and proportion mentioned in "Crookes," page 79. (These particulars have been given in the *CANADA FARMER*—ED.) Stir it in, and continue heating until very near the boiling point; then remove it from the fire for a few minutes, and again replace it, and increase the heat until the first signs of boiling appear; now remove it from the fire, and filter through a cloth until it runs bright.

2nd. Insufflate (or blow into—ED.) all the filtered juice with carbonic acid, until it is no longer alkaline to red litmus paper; allow the carbonate of lime to subside, and pour off the juice into another vessel; boil for a few minutes to throw down in the form of "mono carbonate," the bicarbonate of lime held in solution, and again filter through a cloth until it runs quite bright.

3rd. Run the filtered juice through animal charcoal, using the latter in a granulated form, about twelve per cent. of the weight of juice employed.

4th. Concentrate the filtered juice to 30° Baume, about 1.245 specific gravity; then, if not transparent, filter through a cloth until it runs bright, and, while hot, pass it through another portion of animal charcoal, using about half as much again as on the first occasion. (See note.)

5th. Concentrate the filtered and now colourless syrup to a density of 42° Baume, S. G., 1381. This density should not be passed, and almost before it is cold it will be found to crystallize.

Your obedient servant,

E. B.

NOTE.—If the animal charcoal is new, i. e., freshly burned, it should be previously washed with boiling water, to remove the sulphides, and dried.

The foregoing is an exact copy of the communication, and I hesitate to alter it, even to make it more easily understood. The editor of *The Sugar Cane* has also most kindly given a translation from "Walkhoff," who is believed to be the best and most particular writer on the subject of beet root sugar, and Walkhoff's opinion bears out that of "E. B.," so that the plan recommended for the small scale may be unhesitatingly adopted.

The only difficulty with farmers and people who have not received a scientific education, is the strength given by "Baume," and the "specific gravities." To meet this trouble I recommend the following plan:

The ordinary Canadian pint (wine measure), such as is stamped by the inspectors of weights and measures, when exactly filled with ordinary cold spring water, weighs a trifle under one pound and half an ounce. The same pint measure, filled with syrup, will weigh as much more, as the difference which exists in the density or thickness of

the two fluids. As the books on this subject always reckon this difference by so many degrees "Baume," or call the heavy liquid as being so much "specific gravity;" and as ordinary persons have not the proper instruments to ascertain what these densities are, and indeed many do not know what specific gravity is, we have constructed the following rule for the use of our readers, and we hope that they will pay particular attention to it.

First get a pint measure constructed like an inverted funnel, with the spout cut off to about an inch in length, and a bottom soldered into the broad end. Take care that this vessel holds *exactly* a pint when filled to the brim. The use of bringing in the top to the size of half an inch is to ensure its holding *no more* than a pint of thick syrup. A broader top would allow the syrup to pile up (so to speak), and the measure would weigh too much.

Get a lead weight made which shall *exactly* balance this pint measure when empty. You will thus be enabled to weigh a pint of the liquid, irrespective of the weight of the measure. It is much better to get this weight made, and keep it with the measure, than be always balancing the measure every time you use it, and be less liable to mistakes.

Now, when you want to ascertain the density, or thickness, of syrup or other liquid, and to see that it corresponds with the specific gravity mentioned in the books or the instructions for the manufacture of beet root sugar—

RULE.—Multiply the specific gravity by $7\frac{1}{2}$, and the answer will be, almost exactly, the weight in grains of a pint of the fluid required to be weighed.

Thus we are told in the foregoing communication signed E. B. (under No. 4), "Concentrate the filtered juice to 30° Baume, about 1,245 specific gravity," &c. Now, a farmer or unlearned person wants to know how much a pint of syrup should weigh with ordinary scales and weights, when brought to this specific gravity; therefore, to put the above rule in practice,

Multiply the specific gravity 1,245 by $7\frac{1}{2}$.

	7½
8,715	
311½	
	9,026 grains.

Therefore, the syrup must be evaporated until a pint of it, when as cold as ordinary spring water, or 60° Fahrenheit by the thermometer, will weigh 9,026 grams.

One pound avoirdupois.....7,000 grains.
One ounce do 437½ "

So that the pint measure of syrup must weigh, when evaporated down to the right strength to crystallize into sugar, one pound four and a quarter ounces and twenty-six grains.

This rule holds good throughout the whole scale of specific gravity; so that any person who has scales and weights can get the gravity of his syrups, (if the scales are good enough, and easily turned,) quite as well as the most scientific manufacturer with his expensive instruments.

The syrup or other fluids tried in this way must always be of the temperature of 60° Fahrenheit by the ordinary thermometer.

VECTIS.

Stock Department.

Extraordinary Competition for Thoroughbred Stock.

—

We have often had occasion to call attention to marvellous sales of thoroughbred horses. In 1866, as Mr. Blenkiron and Messrs. Tattersall are little likely to have forgotten, the purchasers of racing stock went mad simultaneously all over the world. The yearlings disposed of during that culminating year of the Turf's "Hastings' era," on the occasion of the Middle Park Sale, and at the Hampton Court Paddocks, brought the largest average ever realized by Mr. Blenkiron or by the managers of the Royal Stud. Scarcely had Englishmen recovered from the astonishment provoked by the Duke of Hamilton's venture of 2,500 guineas for the Lady Elcho colt, when tidings reached us that at Maribyrnong, near Melbourne, an Australian breeder had sold 43 thoroughbred animals of all ages—and among them nine foals—for the enormous average of some £500 or £600. It has passed into a proverb, that in all the Anglo-Saxon nations, wherever their home may be, high-bred horses are better housed than low-born human beings, and command prices which, in the days of the Crusaders, would have sufficed for a King's ransom. But the commercial supremacy of that peerless animal, the British thoroughbred, is already seriously menaced. Within the last two decades another four-footed rival has arisen which threatens to dethrone the sons and daughters of Stockwell, Beadsman, or Parmesan from their pride of place. It is now some sixty years since one of England's choicest animal products—the pure bred "short-horn"—first sprang into existence. In 1810 the first great price ever given for a high-born bull was paid to Mr. Collins, for a magnificent animal which brought him what was then deemed the unheard of sum of £1,000. About the same time, a famous herd was started in Yorkshire, which has since filled America and Australia, no less than Europe, with its fame, and has produced sons and daughters to which for many years the premiums at the Royal Shows have constantly been awarded; while the bulls are annually let out for the enormous rent of from £200 to £300. Wherever in England, Scotland, Ireland, France, Germany, Russia, the United States, and Australia, short horns are bred, the name of Mr. T. C. Booth, of Warlaby, near Northallerton, is a household word. Nor does the other great herd of England, that which the late Mr. Bates raised at Kirklevington, upon the confines of Yorkshire and Durham, pale its ineffectual fires when compared with the Warlaby prodigies. Between them, Mr. Bates and Mr. Booth divide the palm of short-horn supremacy. Other herds there are

which occasionally call for notice, such as the Townley, Knightley, or Spencer breeds. But, whenever and wherever human names are proudly mentioned in connection with short-horns, the race for superiority is between the two famous Yorkshire breeders; while any other stock-raiser who attracts attention—be it the late Sir Charles Knightley or the late Lord Spencer; or Sir William Maxwell Stirling of Ksir—is spoken of as coming next to Mr. Booth or Mr. Bates, and as *proximus his, longo sed proximus intervallo*.

Rather more than forty years since Ireland caught the contagion of breeding "pedigree cattle." In 1829 the late Mr. Robert Holmes, by introducing into our sister island some excellent specimens of thoroughbred horses and pure-bred cattle, laid the foundation of a trade which will probably make the Emerald Isle richer than Ormus or Ind before many years have passed. The thoroughbred blood imported by Mr. Holmes has given us many famous Irish racehorses, which have graduated with distinction at Epsom, Newmarket, and Doncaster. But latterly the British Turf has seen no Harkaways, no Barons, no Faugh-a-Ballaghs, and on Mincepies; nor has the laudable effort of Lord Mayo to establish a large stud farm at Palmerston been hitherto successful. The importation, however, of short-horns into Ireland, of which Mr. Holmes was the originator, has already borne noble fruit, and last week it gave us two specimen sales in County Meath and County Donegal that have scarcely been surpassed by any record which the books of our two great shorthorn auctioneers—Mr. Strafford and Mr. Thornton—can exhibit. It has long been the fashion across St. George's Channel to speak of Mr. Thomas Barnes, of Westland Kells, in Meath, as "the Booth of Ireland." The late Mr. Barnes—for he died last spring—was a devout worshipper of shorthorns, at the knee of Mr. Holmes, by whose advice he bought two animals of the renowned Mantalini tribe. Mr. Barnes's next step was to hire a celebrated bull named Hamlet from Mr. John Booth, and in rapid succession many of the best-bred cattle to which Warlaby gave birth followed Hamlet across the Irish Sea. When, in 1853, the herd of Mr. Holmes was dispersed upon the death of its owner, Mr. Barnes was admitted to be the owner of the finest cattle in Ireland. His blood was much sought by English breeders, and in 1861 Lady Pigot astonished the world by giving £500 for a Mantalini heifer named Victoria. Within the last ten years the celebrity of the herds owned by Mr. Barnes in Meath, and by his friend Mr. Grove in Donegal, has been justly and universally recognized. Nor is it of much moment that a few Irish maniacs should try to blow up the *George the Fourth Obelisk* at Kingstown, when, simultaneously, we can point to two Irish sales of shorthorns in which 88 head of cattle have been sold at an

average of over £100 apiece, and in one of which a roan yearling heifer of pure Booth blood has fetched the remunerative figure of £750. At the moment when, in 1866, Mr. Lowe was thundering, in his anti-reform speeches, against the perils of democracy and the insecurity of property in Australia and the United States, one of the Melbourne journals quietly quoted the prices fetched at Maribyrnong by Mr. Fisher's thoroughbred mares and yearlings, and asked whether property was insecure or in jeopardy where such figures could be realized. When next Mr. Martin or Mr. Butt shall tell us that the value of Irish property is declining, it will be sufficient for Mr. Gladstone merely to point to these great sales of cattle in Meath and Donegal, and to inquire whether Fenianism or Nationalism can be making much headway in a country which can exhibit such figures as Mr. Thornton secured under the hammer, on the 23rd and 25th of August, for Mr. Barnes and Mr. Grove.

Nothing can be more desirable than the widest publicity for two Irish cattle sales, of which the prices have never been surpassed except in England, and which have rarely been surpassed even in England itself. Just as our thoroughbred horse-dealers exultingly point to Mr. Blenkiron's or her Majesty's average in 1866, so do men learned in the herd-book quote the historical sales of short-horns at which Mr. Bates' Duchesses, Mr. Booth's Great Commanders, Colonel Townley's Royal Butterflies, have realised fabulous figures. To show how rapid has been the rise in the value of short-horns, it will suffice to state that Mr. Bates died in 1850, and that his stock, sixty-eight in number, fetched an average of £67 per head. The principal purchaser at the Kirklevington sale was the late Lord Ducie, who himself died in 1853, when his herd of sixty-two head brought an average of £151 apiece. This high figure was principally due to the competition of our Transatlantic kinsmen, who have since astonished us by the magnificent sums at which they acquire "Duchess blood." But the two champion sales of high-born cattle in England took place in 1867 and during the present year. In 1867 the stock of Mr. Betts, at Preston Hall, in Kent, brought an average of £180 for sixty-three head; and, upon the death of Mr. Eastwood, his fifteen head of cattle fetched, in Lancashire, more than £181 apiece. It has, however, been reserved for an English nobleman and a Canadian millionaire to electrify us by the magnitude of the sums which they have not scrupled to give for the blood of Booth or of Bates. In 1870 Mr. Cochrane, of Montreal, gave to Captain Gunter, of Weatherby, no less than 2,500 guineas for a couple of Duchess heifers. The two precious animals were conveyed across the Atlantic waste of waters to Canada, where they gave birth to two heifer calves, which are destined in October next to find their way back again to the home of their

parents. During the past winter Lord Dunmore, who within the last three years has become the most spirited of our English stock raisers, sent an emissary to Canada and purchased the two Duchess calves for 2,500 guineas, or, in other words, at the same figure which in 1870 Mr. Cochrane had given for their dams. The good wishes of all who admire pluck will accompany these two horned beauties when they traverse the stormy Atlantic in October next. But we have said enough to show that Mr. Blenkiron, Sir Lydston Newman, and other breeders of horses, must look to their averages, unless they wish to be left behind in the race of prices by Booth bulls and Duchess heifers. Australia, the United States and Canada, no less than Great Britain and Ireland, are all entered for the competition race of short-horn acquisitiveness. Nor is it the least hopeful of auguries for our troubled and erratic sister island, that the animal product which of all countries Ireland is best qualified to raise is daily becoming a greater object of attraction in every corner of the civilized globe.—*London Telegraph.*

Canadian Sheep Breeding.

Twenty-five years ago the long and middle woolled—which may be classed under one name as the mutton breeds of sheep—were comparatively unknown in Canada. Nearly all the flocks of sheep then existing in the country were Merinoes and their grades, originally introduced from the Atlantic States. Our woollen manufacturers were then confined principally to coarse homemade cloths and flannels, then suitable to the requirements of a new country.

The South-Down, if I recollect rightly, was the first of the class of mutton breeds introduced, but as a pure breed, did not prove successful. This was partly owing to their want of hardiness; but mainly, we think, to the fact that nearly all the stock imported came from the same flock or strain of blood, and but little or no fresh blood being introduced from time to time, they were too closely bred, and lacked in stamina and constitution. The crossing of South-Down rams upon Merino ewes, however, proved advantageous, and many farmers laid the foundation of improvement in their flocks by buying and using such South-Down rams as were offered for sale by those who bred them. When the Leicesters came, a little later, they were at once taken into favour, and the improvement begun carried still further through them.

The first Leicesters imported were of the Bakewell type, small, compact, of fine form, with little offal, quick feeders, coming early to maturity; giving fine, well-flavoured meat, upon carcasses averaging 100 to 120 pounds each when dressed, at 12 to 18 months old. The success of the Leicesters, both as a pure breed and as an improver of the then ex-

isting flocks of short woolled sheep, proved so entire and signal that many of the better class of farmers sent to England for stock from time to time, and these importations being kept up, and coming from breeders at different points, whose stock, though pure, were not closely related, as was the case with the South-Downs, and the evils of too close breeding, being then understood, were avoided.

The Leicester blood thus became generally disseminated through the flocks of the better class of farmers, those who kept to the pure blood, keeping up the stamina of their flocks either by fresh importations or the exchanging of rams with those who had a different strain of the same breed from their own. The fleeces, however, of these Leicesters of the Bakewell type were objectionable in being too open, and rather inclined to be coarse and too brittle for a combing wool. The fault was not apparent in the sheep bred from a cross of Leicester rams upon the then existing flocks. So strongly did the Leicester blood tell upon these that the sheep of the third cross were nearly equal to the Leicesters as mutton sheep, with the advantage of carrying better fleeces.

As the fashion in England grew for larger sheep with better fleeces than Bakewell cared for, our breeders who imported from thence had larger and heavier rams sent out each succeeding year, till at the present day the short-legged, compact, fine boned, but coarse woolled Bakewell Leicester is rarely to be met with.

While the breed has gained in size, fleece and hardiness, it has lost somewhat in earliness of maturity, quickness of feeding, and, to a small extent, perhaps, in quality of meat.

At the present day it is rare to meet with a flock of Merinoes in Ontario; but among the poorer class of farmers a sort of conglomerated breed has sprung up, the result of crossing the cheap bought, rejected cull rams of the Leicester breeders, upon the remains of the old Merino flocks sold cheap or given away by the better class of farmers to make room for the mutton breeds. These sheep, kept by the present owners as near to the starving point in winter as will just keep life in them, are as yet far too common, and being generally turned out in summer to wander about the country roads in search of grass, are apt to give a stranger travelling over them, a bad opinion of our sheep husbandry.

These sheep have all the bad points of the Merino, with but little compensating qualities derived from the Leicester cross; and being, after the first cross, generally bred in and in, and the best sold to the butchers, make about as worthless a class of sheep as one can see anywhere, giving inferior fleeces of 2½ to 5 pounds, on carcasses of 60 to 100 pounds, the weight depending upon the

amount of Leicester blood in them. They are found all over the Province, but are most numerous in the Niagara peninsula and the older settlements bordering Lake Erie and Ontario.

In Lower Canada, now in Quebec Province, the French *habitans*, kept in ignorance and poverty under the peculiar feudal laws, resist all attempts at improvement as innovations upon their customs, and keep to a small, but hardy race of sheep, of the Merino class, probably originally derived from Brittany and Provence.

In a portion of Quebec bordering on Vermont and northern New York, known as the Eastern Townships, and settled by an English speaking population, the mutton breeds have been introduced, and are fast superseding the Merinoes. More recently the fashion has set towards the Cotswold, and though as yet there are but very few flocks of that breed kept in their purity, their great size and heavy fleeces of fine combing wool is an inducement to many farmers who are not particular about purity of blood, to use Cotswold rams in their established flocks, in order to obtain a increase of size in the carcase without injury to the quality of their wool.

The most recent importation of Leicesters have come from Scotland or the North of England, and are of the type known as "Border Leicesters," a large framed, broad-backed, stout-limbed race, carrying heavy fleeces of combing wool on carcasses of great weight, that when they reach the butcher's roads appear likely to prove more showy than eatable.

The Lincolns, Shropshire, Hampshire and Oxford Downs, have been imported to a limited extent, as have also the Cheviots; but none of these appear to find favour with our farmers, and but very few flocks of any of these breeds, in their purity, are now to be found in the country.

With the advent of the mutton breeds of sheep not only has sheep breeding in our mixed system of husbandry become exceedingly profitable, and our markets well supplied with first-class butcher's meat at reasonable prices, but the demand for our wools has increased to an extent never anticipated, and the price goes relatively higher as the yield of fleece per head grows larger. Woollen factories have risen and become flourishing without the help of a high protective tariff. The duties on importations of woollen goods are no higher than is consistent with revenue requirements, yet the tweeds, flannels, blankets and hosiery goods now made in Canada, owing to their superior quality, not only find a home market, but are also exported at rates that prove remunerating to both the manufacturer and grower of the wool, without too greatly enhancing the price to the wearer, into whose hands they must ultimately come. This success is due mainly to the combination of superior style with durability of wear.—*Cor. Country Gentleman.*

Fatting Animals for Winter.

Nature sets the example. Look at the woodchucks, how fat they are. See how nice and sleek squirrels and other wild ani-

mals look. Every bird and creature of any kind which nature has not entrusted to the keeping of man is fat. The winter has to be lived through, and more or less the fat is what preserves them. The first are said to be in a dormant state, the fat imperceptibly keeping away hunger and cold. The next mentioned are taught by nature to lay in a stock of provisions, and some are instinctively caused to move into warmer climates, but in all cases nature does not permit any under her protection to dwindle away in the autumn; they come into the full severity of winter well prepared. Yet man, with this example before his eyes, will scarcely allow the poor creatures in his care to have any of the winter's store till the chills of autumn have reduced the frame and brought down the fat which summer would have accumulated with good management. The worst of managers will charge every mishap to anything or anybody but themselves, and when they have starved a number of unfortunate young animals to an unhealthy condition, they will begin to physic and use drugs in other ways—to do what, should you think, uninitiated reader? *Assist nature!* Of all expressions, this is the most absurd. *Assist nature!* When they have been going contrary to all nature's rules!—*Es.*

Taking Off Hides.

To the Editor.

SIR,—Being a worker in the leather manufacture, I have constantly under my notice the awkward manner in which the farming community take off the hides of animals of their own slaughter. The hind leg, for instance, being slit up along the under, or perhaps inner side, so as to leave the hock of the hide in the form of a skull cap. As upon being brought into work, every part must be made to lie flat, this portion has to be opened by cutting unsightly strips, which materially impair its usefulness.

The following directions may assist the novice in performing the operation:

We will suppose the animal dead and placed on its back; the operator, by thrusting his knife point foremost and edge up, makes a slit the entire length of the carcase, from the chin over the centre of the breast in the line of the navel to the vent. Let him now stand by its side, with his face looking the way the head lies, and taking the fore foot in his left hand, run the point of his knife in the line of the cleft of the foot and cap of the knee, up the front of the leg, and into the central slit of the bosom. For the hind leg, having reversed his position, let the slit be made in the line of the heel, over the centre of the cap of the hock, down the back of the ham into the central slit. In this way the hide, when spread out, will have a square form, without long projections, and consequent deep indentations of its outline.

TANNER.

From Grass to Winter Feed.

The prudent sheep husbandman, as the biting frosts of autumn weaken his pastures, will see to it that his flock are plentifully, though gradually, supplied with corn or roots, or whatever is to constitute their winter food. No matter how strong the pasture may appear, we would advise that this additional feeding be not delayed beyond the first of November—for snow or cold rain storms are likely to overtake us any day, rendering strong and warming food necessary—and if the flock are not at least partially accustomed to it, some animals will over eat, while others may not get a sufficiency. Any one at all familiar with the handling of sheep need not be told of the bad effects that will result. We have known flocks so injured by a November storm that they could not be restored to their proper thrift during the entire winter following. A good judge of wool will readily detect the fleeces of such stock—as every sudden change in the condition of the sheep produces a "joint" in the fibre, rendering it totally unfit for use in manufacturing such styles of goods as require strength and elasticity in the material composing them.

Three year old wethers, and such ewes as are too old, or from some other cause are unfit for breeding, should be kept in a flock to themselves and put upon full feed, as it can safely be done, for the possibility of having them ready for a winter market depends upon a good thrift before cold weather begins.—*Western Rural.*

TRAINING COLTS AND CALVES TO LEAD.—

The first attempt to discipline a young animal is to teach it to stand while tied, and to lead with the halter. A calf should be taken from the cow as soon as dropped, and tied up; a strap with a buckle being placed around its neck. A ring should be fastened to the strap, and a light chain, with a swivel in it, fastened to the ring by means of a snap-hook. The calf will not chew nor suck the chain as it would a strap or rope; and this annoying trick will not be learned. It can turn about as much as it pleases without twisting the chain and strangling itself. It should be led to the cow to suck twice a day for four or five days, when it may be taught to drink. Patience will be required the first or second time in teaching it to lead. It should not be dragged along, but should be managed with judgment until it understands what is required, when it will go along very readily. It is desirable at times to lead a heifer or cow, and unless trained in this way when young, difficulty is experienced in doing so. A colt should be trained to remain tied up while the dam is at work; it may be loosed when turned in to the mare at night. Much after-trouble may be spared by preventing a colt from running around and getting into mischief, which it will readily do, by having a halter for it and training it to lead.

The Dairy.

Hints for the Dairy.

The best temperature for the milk to be for the yielding of cream, as shown by the experience of the best butter-makers of a district celebrated for the high quality of the butter made, is 60 degrees, or between this and 62 degrees. If milk be raised to the temperature of boiling water, or nearly this, it will yield a much larger amount of cream than if the temperature be at 60 or 62 degrees, but the butter so made from it will not keep for any length of time. The cream that rises first from the milk is the best for butter-making purposes. Good—at least the best—butter cannot be made from cream which is allowed to remain in the milk till it is old. Cream rises best from shallow vessels, and by far the best material of which they can be made is glass. To lessen the risk of breakage of these, certainly the costliest of all milk-vessels, it is better to offer a reward for all the vessels produced whole at the end of a season, than to inflict a fine for those which may be broken.

The temperature at which the cream is to be churned should be the same as that at which the cream has been raised from the milk; it should not be allowed to exceed 64 degrees. It is a mistake to bring the butter too quickly. A consideration of the "facts" of the case will show the reason for this. The globules of butter in the cream are covered with a thin pellicle of casein; the object is to get rid of this as completely as possible; but it requires time to do this. Quick churning will bring butter, no doubt, more quickly, but as the casein will be in greater quantity than if the churning was more slowly done, the butter will not keep so well.

Much has been said as to the different methods of butter-making, some advocating churning of the whole milk, and some of the cream, and some of the cream and milk combined. A very eminent authority, who experimented largely on the churning of all these mixtures, states that (1) cream alone is more easily churned than a mixture of cream and milk; (2), that the addition of some water, during churning, facilitates the process, especially when the cream is thick and the weather hot; (3), that the butter made from sweet cream has the finest flavour when fresh, and keeps the longest; (4), that scalded cream yields the largest amount of butter, but that it does not keep long; (5), that the most economical mode is to churn the milk and cream in a condition slightly acid, and that it yields a large amount of excellent butter. The same experimenter, after an experience of thirty years, says that he has come to the conclusion that butter is yielded in the largest quantity and of the best quality, by churning the whole milk. This should be kept till it is decidedly sour, and covered with a thick skin, wrinkled or

uneven on the surface. This is churned at a temperature of 65°.

There are various modes of preparing annatto for the colouring of cheese and butter—the following is one: Mix with one and a third gallons of boiling water one pound of annatto, half a pound of concentrated potash, one and a third ounces of saltpetre. Carrot-juice yields a good colour for the purpose, but it requires to be used when perfectly fresh. When the butter is obtained from a cow properly fed there will be no fault to find with its colour.

The salting or powdering of butter requires to be done with great care. The following is the mode adopted in the dairy in which the celebrated Kiel butter is made. The salt used is of the first quality—clean and dry. The butter is made into lumps about thirty or forty pounds in weight; and over the surface of each lump some one-and-a-half or two pounds of salt is sprinkled, or at the rate—say, of three-and-a-half pounds of salt to one cwt. of butter. Allowed to lie for a short time, it is then worked slightly in with the hand. The second working is made with lumps of five or six pounds weight, the salt being well kneaded in, when the lumps are allowed to lie for twelve hours. The last working is very complete, so as to get rid of all the fluid which ought to be expelled; before the third or last working is begun, a little salt, at the rate of one pound to the cwt., is added; no working of the butter in cold water is allowed. Under ordinary circumstances the proportion of salt to butter when made for market in this country is one ounce to the pound of butter; half this quantity when the butter is to be used at once. In Scotland, as is well known, what is called "fresh butter" is largely used, having no salt at all in its composition. This system certainly affords a crucial test of the flavour of the butter, although to the palates of a large majority of butter eaters in England the flavour of saltless or unpowdered butter is insipid and flat.

The proportion of butter to milk in cream varies very much, according to the circumstances attendant upon the breed of the cow, the mode of feeding it, &c. It is generally stated that a quart of cream should yield a pound of butter; but it may be taken as decided that this will be above the average experience of dairymen. One authority gives his at 4 pounds of butter from 7 quarts of cream, little more than one-half of the above estimate. Another authority, however, has it on record that he obtained 15 ounces of butter from 1 quart of cream. The following are statements of different results from the same cows, but with different modes of feeding: 16 quarts of cream gave 12 lb. 8 oz.; 24 quarts, 16 lb. 12 oz.; 30 quarts, 20 lb. 8 oz.; 70 quarts, 49 lb. 12 oz.; 50 quarts, 32 lb.; 60 quarts, 40 lb. According to "general" authority, a quart of cream is obtained from 12 quarts of milk. One special authority, quoting the results of many returns,

states the average quantity of milk required to produce one quart of cream was ten quarts, the lowest range being eight, the highest twelve. The yield of the best out of four cows, at a public competition, was an average of 12 per cent. of cream.

Analysis of Milk.—The quantity of solid matter in 40 lbs. being shown to be 5.06 lbs. as follows: Pure casein, 2.00 lbs.; butter, 1.25; sugar, 1.75; phosphate of lime, 0.9; chloride of potassium, 0.11. Analysis of butter, the quantity of solid matter in 100 lbs. being shown to be as follows: Pure fat or oil, 82.70; casein or curd, 2.45; water with a little salt, 14.85.

The weight of hay required by a cow per day has been estimated at three per cent. of her weight. Thus twenty-four pounds of hay will be required by a cow which weighs eight hundred weight.

The quality of the water used for washing the butter in preparing it for market, is stated to have an effect upon the butter; hard spring water being the worst, soft water being the best. On this point we require more detailed information, although the facts stated in support of this opinion seem very conclusive, and it certainly is a reasonable thing to suppose that the quality of the water used for this purpose would have some influence more or less decided. In making the Kiel butter no working of the butter in water is allowed. The following is the method adopted for preparing the butter for market: As the butter is taken from the churn it is slightly pressed, to get rid of a portion of the whey, and then put on trays and carried into the cellar, where it is made ready for market. A long trough, and which is provided with a few holes at the bottom of the lower end, is placed in an inclined position, and is previously well washed with hot and finally with cold water. The dairymaid taking up some five or six pounds in her hands, which are also washed in hot and finally cold water, keeps pressing the butter against the sides of the trough until the whey, &c., is fully expressed; as the butter gets extended in the process it is then rolled up and again pressed against the trough. The processes of pressing and rolling up are repeated again and again till the butter is perfectly freed from all whey. One churning is finished right off before another is begun.—*Mark Lane Express.*

Notes from Cheese-Makers.

Not long since I received a letter from a cheese-maker in a factory in New England, containing the following queries:—"Will you please tell me what advantage there is in letting a curd 'change' before taking it out? In cooking I raise the heat to 96 degrees or 98 degrees, but before the acid is perceptible the curd gets hard. Would the curd do as well if the heat was not carried so high—and why does it become so hard? Will a curd that is taken out perfectly sweet, cure as fast and become ready for market as soon as one that is changed?" The reply to

the first question of my correspondent would be—much, every way. From the time that the cheese-factory system began to extend beyond the immediate region where it originated, and American cheese became an article of export in any considerable quantity—say, from 1861 down to the year 1865, the great complaint of cheese-dealers, shippers, and English consumers, was the porosity, bad flavour, and ill-keeping quality of American cheese. These three ailments seemed to exist together almost invariably, and they condemned the product of our dairies to a very humble place in the markets of Great Britain. How to avoid these ills became the study of cheese-makers, but up to about 1865 the agency of acidity or souring the curd to a certain extent, to accomplish this purpose, was little understood and less practised. The fear of having sour cheese had deterred cheese-makers from venturing into this unexplored and forbidding field of inquiry. The cheese generally produced at that time was full of holes, and if not used when about thirty days old, it speedily took on a sharp, pungent, acid flavour, very objectionable to those whose tastes in cheese are educated to appreciate a really fine article. Thoughtful cheese-makers noticed that sour cheeses were invariably solid—very nearly or quite free from these pores or holes—and this observation led them at length gradually to experiment and see whether this same acidity, which in the form of sour cheese was very objectionable and dangerous, might not be used to advantage if carried to a certain limit and kept well under control. The result was successful beyond the highest expectations of the few cheese-makers who here and there had been investigating the matter, and eventually there was wrought a revolution, quiet and unostentatious, and yet real and wide-spread, in the system of cheese-making in the best dairy regions, and in the principles governing that system. At first the idea met with opposition, sometimes with ridicule, but it has won its way into almost universal practice. I remember that at the Dairymen's Convention in 1864, when this idea of purposely souring curd slightly first began to be broached, a gentleman largely and successfully engaged in the manufacture of cheese in Western New York opposed the new idea very strenuously, and in the report of the operations of his factory for that year, he says:—"I want the milk to be sweet when set, want it sweet during the working, and want the curd sweet when put in press. I have no sympathy for sour milk or sour cheese." The next year he came to the Convention a thorough convert to the new principle in cheese-making, which he had before so vigorously opposed. A proper degree of acidity or souring or "changing" in the curd before removing it from the whey, or at least before salting, results in a cheese close and solid in texture, purer and cleaner in flavour, and of a character to retain that

purity of flavour in our warm climate a much longer time than it otherwise would. With such cheese, too, there is far less trouble from huffing or bulging and from getting out of shape, than with softer descriptions of cheese. Of course it is a fine point to be able to tell precisely the condition of the curd at this stage, and to know how far it is safe to allow the acidity to advance. And it is just here that bungling and incompetent makers fail, and it is here that the arguments of those who consider cheese-making merely a mechanical operation, are refuted. To the second question advanced by this cheese-maker, I will give a moment's attention. Ordinarily the hardening of the curd takes place at the same time that the acidity or "change" mildly puts in an appearance. Indeed the former is an indication of the presence of the latter. And yet the hardening may occur without the souring, at least to a good degree, for the term "hardening" is too general and indefinite a term when applied to curd, to enable one cheese-maker to determine just what is the condition of a curd which another maker calls "hard," unless he can see and handle it. If I was troubled with curds hardening prematurely I would use less heat, and apply it very slowly and gradually. Many good cheese-makers believe that a temperature of 90 degrees to 94 degrees gives better results in cheese-making than to warm the curd to 98 degrees or 100 degrees, always provided the milk is in a condition to give full and ample time in elaborating it into cheese. The third question proposed has been partially answered in the remarks that have preceded. Curds taken out when perfectly sweet, cure faster than those which are allowed to sour a little; indeed, such cheeses are generally fully ripe and ready for the knife when thirty days old. If not promptly used then, they deteriorate in quality and assume a sharp flavour—go into a species of decay, in fact. Cheeses thus made are quite unfit for export, but frequently are better liked by retailers in our home market than the closer-made and more tasteless ones which suit the foreign market so well. Where such cheeses are preferred, and meet with ready sale and full prices, it is more profitable to manufacture them, because a slightly larger yield of cheese is obtained from the milk than by the other process.—GARDNER B. WEEKS, in *Cultivator*.

PHILADELPHIA BUTTER.—One of the Philadelphia dairymen, who never sells for less than a dollar a pound, puts up his butter in pound rolls stamped with the same stamp his father used, and it is said that not a pound of inferior butter ever went to market with that sign upon it. He keeps his milk pantry at a temperature of 55 degrees Fahr. Philadelphia butter has obtained a high reputation for its delicate colour and exquisite flavour, which in all first-class butter are due almost entirely to the cleanliness and care used in the manufacture.

Horticulture.

EDITOR—D. W. BEADLE,
CORRESPONDING MEMBER OF THE ROYAL HORTICULTURAL SOCIETY, ENGLAND.

Fruit Growers' Association—Autumn Meeting.

DISPLAY OF FRUIT.

The Fruit Growers' Association of Ontario held their autumn meeting at Goderich on Friday, the 15th September. There was an extensive display of fruit, which was exhibited in the Drill Shed, where the Goderich Horticultural Society were holding their Fall Show. The combined collections of fruit were very fine. Most of the day was taken up in the examination of the fruit on exhibition, and it was not until four o'clock in the afternoon that the Association met in the Court House for the discussion of matters of interest to themselves.

The prizes offered by the Association were keenly contested. In the twenty varieties of apples the prize was taken by Mr. John Freed, of Hamilton, who also carried off the premier prize for the best twenty varieties of pears, and for the best dozen quinces. In apples, Mr. J. Stewart, of Goderich, was second, and Mr. James Torrance, of Porter Hill, was third. These were all very fine samples of fruit. In the twenty varieties of pears, Mr. Geo. Leslie, Jr., of Toronto, was second, and Mr. M. D. Baldwin, of Brantford, was third. The collection of pears to which the premier prize was given was one of the finest samples ever exhibited in this Province.

The collections of grapes were exceedingly fine, and some of the samples laid upon the table for exhibition merely were such as to call forth expressions of astonishment from every one. Three bunches of the Wilder grape (Rogers' No. 4) were of surpassing size and beauty. They weighed respectively sixteen, eighteen, and twenty ounces, and were the growth of Mr. Matthew Bell, of Hamilton. It was stated by gentlemen at the meeting, who had seen the grapes growing on the vines, that no ringing of the vines had been practised. The highest prize for the best collection of ten varieties of grapes was given to Mr. W. Haskins, of Hamilton; the second to Mr. John Freed, of the same place; and the third to Mr. A. M. Ross, of Goderich.

The display of plums was very fine, though the greater number of fine varieties had been ripe for some time, and were mostly gone. Goderich and vicinity has been famed for fine crops of plums of the highest quality, and it was to be expected that the prizes in this fruit would be carried off by gentlemen resident there. The highest prize was won by Mr. A. Watson, of Goderich, and the

second by Mr. J. Stewart, of the same place. We did not learn who gained the third.

There were but two collections of crab apples, of fine varieties, and these were both from Hamilton. They were very beautiful specimens of this very pretty fruit. Mr. W. Holton received the first, and Mr. W. H. Mills the second prize.

The prize for the best Canadian seedling apple was given to Mr. Geo. Smith, of Brantford. The apple to which this prize was awarded was of very fine texture and pleasant flavour, though, not being in season, it is quite impossible to tell how fine a quality it would have when perfectly ripe. It was of a dark red colour, smooth and free from blemishes.

There were no seedling pears exhibited that were thought by the judges to be worthy of a prize. The only samples we saw were inferior both in size and quality.

There were some very fine seedling peaches exhibited, especially prominent a considerable collection from Mr. Cowherd, of Newport, near Brantford. Several of these were cling-stones, and though of good flavour in that class, the fact that they were cling-stones rendered them less desirable. But the variety to which the judges awarded the prize was certainly a very fine peach, of good size, handsome appearance, and excellent flavour. It was a yellow fleshed fruit, with dark crimson cheek, and was marked No. 1. It is a very highly commendable feature in the action of the Directors of the Society that so much effort is made by them to induce amateurs to undertake the production of new varieties of these and other fruits; and we confidently expect that we shall yet have produced among us a class of peaches, &c., of excellent quality, and better adapted to our climate than many of the sorts now in general cultivation.

In seedling plums we noticed only one plate, which was placed on the table by W. H. Mills, Esq., of Hamilton. It was of medium size, ripening rather late, we fear, for general usefulness in this climate, and hardly of sufficient excellence of flavour to rank higher than a cooking plum.

There were several varieties of Canadian seedling grapes exhibited. One was shown by Mr. J. Dougall, of Windsor, grown from seed of the Clinton, sweeter than that variety as grown in this climate, and evidently ripening earlier, though in size of berry and form of bunch much resembling the Clinton. Mr. Arnold's seedling varieties were also on the tables, and though the berries are not large, yet the character of the pulp is a great advance on such grapes as the Concord and Isabella. From what we saw of these grapes at this time, and from tasting them on our own grounds and elsewhere, we are disposed on the whole to give the preference to the variety which Mr. Arnold calls "Canada." It is fully ripe now, Sept. 18th, sweet, fine flavoured, free from pulp, and only lacks size to make it a very popular

grape. Another seedling grape was shown by the Rev. Mr. MacLeod, of Chippewa. It was a chance seedling, raised by the late Albert Oxley, of Font Hill, but fruited by Mr. MacLeod. It was a white grape of very fine appearance, of good size, both in berry and bunch, and of good flavour and free from pulpiness, though hardly quite ripe. Judging from the appearance of the fruit, it belongs to the Chasselas grapes, and is probably a seedling of one of them. Some experiments in the raising of seedling grapes from European varieties, which have been made in the State of New York, lead to the hope that varieties have even now been obtained which endure our climate well, do not suffer from mildew, and yet retain the excellent qualities of this class of grapes.

There was but one plate of Canadian hybrid grapes not before exhibited, and this was shown by Mr. W. H. Mills, of Hamilton. We fear it ripens too late to be of general usefulness, though it is too soon to be positive on any point concerning it.

There were also a number of seedling crab apples shown by Mr. George Smith, of Brantford, some of them very handsome, which received the commendation of the judges.

MEETING.

The meeting of the Association was called to order by the Rev. R. Barnet, President; and after the reading of the minutes of last meeting, some discussion was had concerning the printing of the essays which are read from time to time before the Association. On motion of Mr. A. M. Ross, seconded by Mr. Mills, it was resolved that the Directors be requested to cause such of the essays that are presented to this Association, as they may deem best, to be published from time to time in the CANADA FARMER.

The President introduced to the meeting Mr. Van Wagoner, the inventor of an instrument for dusting vines and plants with sulphur or hellebore, or other powder, and requested him to exhibit his instrument and explain its construction and use.

Mr. Van Wagoner came forward, and exhibited to the meeting a very neat, convenient, and efficient instrument for dusting plants with any powdered substance. It is more convenient than the well-known De La Vergne Bellows, distributing the powder much more perfectly and rapidly. The wind which effects this is created, not by the action of the bellows, but of a rotary fan, which keeps up a constant current of air, throwing the sulphur or other powder in a continuous stream, and not in interrupted jets. A committee was appointed to draw up a report expressing the views of the meeting with regard to this most useful instrument.

ESSAYS AND PRIZE.

The Secretary presented an Essay on Fruits and Fruit Culture, by Mr. W. Saunders, of London. It being lengthy, and the time of the meeting already largely taken up, it was

ordered to be received with thanks to the writer, and referred to the Committee on Publication.

The Secretary further reported that the committee appointed to read the essays received in competition for prizes, had awarded the second prize to the one bearing the motto "I moisten the roots of all that grow;" and that on opening the envelope bearing this motto he found within the name of P. E. Bucke, Esq., of Ottawa.

Some discussion was had upon the subject of offering prizes by the Association for fruits already in general cultivation; and after eliciting the opinions of the members present, it was, on motion of Mr. Arnold, seconded by Mr. Holton, unanimously resolved that in future this Association shall restrict their Fruit Prize List to new and seedling fruits.

DISCUSSION.

The management of vineyards was proposed as a topic, for discussion, and Mr. Farrell, of Cayuga, inquired whether any person could give any information of the effect it would have upon an established vineyard if it were laid down in grass.

Mr. Laing, of St. Thomas, replied that he had recently been in Cleveland, Ohio, and had there seen a vineyard that was a complete lawn, with the exception of a narrow strip of about one foot in width on each side of the row of vines, and that it seemed to be in a very flourishing condition.

Mr. Shoff, of McGillivray, said he had seen a small vineyard in South Huron which was growing in sod, and seemed to be doing well.

Mr. Arnold, of Paris, said that his neighbour, Mr. Hamilton, had tried sod, and afterwards removed it. He thought that in a dry season the effect would be very injurious.

Mr. Dougall, of Windsor, thought thorough cultivation would be best. He had seen buckwheat sown among the vines, and both turned out bad.

Dr. Cross, of St. Catharines, described the vineyards of Cooksville, where alternate spaces between the rows of vines are laid down to grass.

The effect of ashes upon barn-yard manure.

Dr. Cross stated that the chemist knew that alkalis would not combine with each other; that the ammonia in manure, and potash in ashes, were both alkalis, and that when the potash came in contact with the manure the ammonia was set free, and went off into the atmosphere.

Mr. Shoff had used leached ashes, 160 to 200 bushels to the acre, with very beneficial results.

Mr. Arnold had thrown it broadcast upon grain, but without any perceptible benefit.

Mr. Holton had composted manure and leached ashes in alternate layers for a month, and then applied it to young trees, plunging it into the soil, with very beneficial results.

Mr. Bennett, of Brantford, had found an abundant supply to have a marked beneficial effect for several years.

Mr. Dougall had experimented with ashes, lime and plaster upon corn, applying these to ten rows of corn, and leaving ten rows without any, but saw no benefit whatever from their use.

Dr. McDougall, of Goderich, stated to the meeting that he burned some sulphur in his vinery for the purpose of checking the mildew, and that it caused the leaves to fall off from all those vines which were planted in a border, while those vines which were growing in pots, though trained to the rafters of

the same vinery, retained their foliage perfectly, and did not show any signs of having suffered from the burning sulphur. He asked for an explanation of this singular phenomenon, but no one ventured to give any.

The best variety of pears to be grown for profit.

Mr. Shoff recommended the White Doyenne, Flemish Beauty, Louise Bonne de Jersey, Duchesse d'Angouleme, and the Urbaniste. He said the Bartlett was tender with him, and a delicate grower.

Dr. Cross stated that he gets more profit from the Bartlett than from any other pear. Next to this he placed the Duchesse d'Angouleme, which does not yet seem to be troubled with the blight.

Dr. Dougall had found the Flemish Beauty to split and crack so badly at Windsor as to be quite worthless. He had noticed that only the very early or the late pears were of any profit; those that ripen when peaches, plums and grapes are most plenty, do not sell for enough to pay for growing them. Of the very early sorts he named Elliot's Early, which he said was a new sort, and that Mr. Roy, at Berlin, had found it to be hardy there. To this variety he would add Beurre Giffard and Supreme de Quimper, both excellent sorts. The Bartlett had been too largely planted to be any longer saleable at remunerative prices. This year it would not bring in their market two dollars per bushel. It is, however, one of the best for canning, and where there are large canning establishments is saleable for this purpose.

Among the late varieties he named as profitable the Duchesse d'Angouleme, Beurre Clairgeau (very productive and very profitable), Onondaga or Swan's Orange, Beurre d'Anjou: for winter, the Lawrence, which is always fair, never spots; Willemoz, best and largest winter pear; Alexander Dumont is very fine; Madame Eliza, one of the best.

Mr. Smith, of Brantford, had found the Bartlett the most profitable. The Flemish Beauty was also an enormous bearer, and also the Louise Bonne de Jersey. Among the later sorts he thought highly of the Beurre Diez, Winter Nelis, and Great Moroccan. His soil was sandy, hardly enough clay to be fit for pears; had suffered this year very much from the fire blight.

Mr. Bennett said the Bartlett had done very well with him. The Flemish Beauty and Louise Bonne de Jersey were also among the best. The Winter Nelis he esteemed the finest pear he raised. The Lawrence, Easter Beurre, and Beurre Diez, are also very fine. Osband's Summer, Dearborn's Seeding, and Bloodgood, are the best early kinds.

Mr. Ross, of Goderich, had found the Bartlett to do very well. Onondaga one of the best bearers, fruit fair and fine size, and the tree healthy. The Louise Bonne and Flemish Beauty do admirably.

Mr. Arnold had found the Bartlett the most profitable pear, and the most prolific. In his experience winter pears were very variable in quality, once in a while the flavour was good, but as a rule very unreliable.

Mr. Leslie, of Toronto, stated that the market in Toronto had been glutted with pears. Beurre Giffard brought eight dollars per barrel, and Bartletts nearly the same price, and also the Ananas d'Été. He had found Flemish Beauty and Louise Bonne de Jersey to be enormous bearers. These, with Vicar of Winkfield and Duchesse d'Angouleme, were the most profitable. For winter, he preferred the Josephine de Malines and Winter Nelis. He had found the Sheldon to bear well.

Mr. Parnall, of St. Catharines, stated that dealers complained that the Flemish Beauty

did not ship well, that it came out of the barrels badly discoloured. He knew from personal experience that the fruit blow off badly, and that oftentimes he lost a large part of the crop by their being blown off long before they were fit to gather.

Mr. Shantz, of Waterloo, said the Flemish Beauty bears well, and thrives well in that section. He had kept the Flemish Beauty quite late into the winter by packing the fruit in maple sawdust.

President Buret desired to call the attention of the members to some varieties of pear not generally known. He had found the Fondante de Malines to be superior to the Belle Lucrative. The Graslin was a variety which does not spot; is large and profitable. Ananas d'Été is hardy, and better than the Bartlett. Duchesse d'Orleans is a very handsome and desirable fruit. Madame Eliza is also very handsome. Willemoz is very hard to ripen well. Viscount de Spailberg is a very fine winter sort, ripening about Christmas. Of the older varieties, he remarked that the Winter Nelis requires to be well fed, and it is then one of the very best of the winter sorts. The Vicar of Winkfield should be kept in barrels in the cellar until near the time of ripening; then should be placed in paper bags, and kept in a warm room for about a fortnight, when they will be found to be good. The Lawrence is a very fine pear, always fair. The Sheldon bears great crops about Hamilton, and is much sought for in the market. The Louise Bonne grows well, bears abundantly, and sells well. The Flemish Beauty is one of our most hardy varieties, thriving well even in the vicinity of Ottawa.

Mr. Mills, of Hamilton, keeps the Vicar of Winkfield in the cellar the same as apples, but ripens them by wrapping a few at a time in hannel, and placing them in a drawer in a warm room.

Mr. Leslie keeps only the best specimens of this pear; places them in a warm and dark garret, and they ripen up very fine. The tree is very healthy and hardy.

Mr. Watson, of Goderich, finds the Oswego Beurre a fine bearer, very hardy and profitable. The Louise Bonne is a good grower, and very productive, especially if supplied with a good dressing of ashes.

Dr. Cross stated that he had lost half of his trees of the Vicar of Winkfield with the pear blight, and thought the variety quite subject to this disease.

Mr. Post had grown it for eight years, and found it healthy, and Mr. Arnold said he had grown it for twenty years, and the tree is yet healthy.

Mr. Dougall said they were not troubled with the pear blight in the vicinity of Windsor and along the Detroit River. He had found the Howell a tender tree, and the fruit not of first quality.

Mr. Leslie had met with the same experience.

Mr. Ross said the tree grew well about Goderich, and was a great bearer, and the fruit was of fine appearance, but only of second quality. He had found the Beurre d'Amalis to be a great bearer and of good quality.

Mr. Dougall said the Oswego Beurre did not sell well at Windsor.

Mr. Mills had found the Beurre d'Anjou a good market pear; the tree is not a very abundant bearer, never overloads, and hence the pears are always of fine size, and command a high price; from twenty to thirty dollars per barrel in the Boston market.

The President had noticed that the Swan's Orange or Onondaga was too acid to be ac-

ceptable to many, and that every five out of six objected to it on account of its acidity.

The discussions having been protracted until a late hour of the evening, and many of the members being obliged to leave on the morning train, the meeting was adjourned to the call of the President.

The Potato—Mode of Planting, &c.

The extensive use of this esculent, and the important position that it occupies, not only in the household but in the economy of the farm, renders the consideration of its cultivation a subject of no inconsiderable consequence; in fact, it has come to be one of the most important that engages the attention of farmers, so much so as to result in the production of not only innumerable varieties, in contrast with the few of a short time ago, but also those that, compared with old varieties, possess much greater value for culinary use.

This state of affairs was probably in a great measure brought about by the "potato disease" that prevailed to so great an extent some time since; since in consequence of the scarcity and liability to disease, the effort was made to produce seed from the potato ball, which, proving successful, introduced many new varieties, and in one sense a change of seed, which proved to be highly beneficial to the general crop. There is undoubtedly every reason to believe that one cause of the potato disease was in consequence of the continued use of seed from the same varieties, year after year, which would of necessity result in deterioration, which, in the case of the potato, could be exhibited in no more forcible manner than the course of almost entire decay that for some little time prevailed. Admitting this position to be correct, then upon the use of the balls for the re-supply of seed, the cause of decay, i.e., continued use of seed, being removed, of course the effect of necessity would cease to exist, and hence the general disappearance of potato disease, which has for like reason failed to renew its appearance. But this was not the only benefit derived; much was learned with regard to the manner of cultivation and the use of seed, so that some of the old prejudices regarding planting were either wholly removed or terribly shaken. It was formerly believed to be necessary to simply divide a good sized tuber only once or twice, and so plant two pieces in the hill. This did very well while potatoes were comparatively cheap; but upon the introduction to the notice of planters of those celebrated varieties of later times, which were sold at from four to fifty dollars per pound, most purse strings would forbid the excessive use of so expensive seed, and, as a consequence, there was a division of tubers into minimum proportions for the purpose of spreading the seed over a maximum surface of ground, so that in contrast with one division of a tuber and two pieces in each hill, was seen, even

sub-division of the eyes, with pieces of the tuber of the size perhaps of a pea, and only one of these pieces to each hill. And what has been the result? Instead of failure, both in size and quantity, as most would at first suppose, judging from the impression that the parent tuber is necessary to the early sustenance of the young plant, the result has been a perfect success both in size and quantity. Numerous instances might be cited, in which, from so dividing a single tuber of only good fair size, the yield was a bushel and over. Now, who supposed that by taking the same potato, sub-dividing it, and planting both pieces in one hill, anything like such a yield could be exhibited? Thus we see how the force of circumstances will sometimes produce results that are of themselves exceedingly valuable. And as stated above, the practice of a few years has placed an entirely new phase upon the belief and practice of farmers as regards the quantity of seed to be used in the planting of potatoes; and the practice now is to scatter the seed more—that is, sub-divide the potato much more, and place one piece for a hill, and the hills much nearer together. In this practice it has been found that, while perhaps the number of tubers is considerably less in a hill than by the old method, they are much more uniform in size, and from the increased number of hills the aggregate yield upon an acre is considerably increased, which is a matter of consequence in the cultivation of the crop. It still remains an unsettled question regarding the influence of the size of the potato that is used for seed upon the product of the crop; and still the use of seed with so small a portion of the original tuber as has been explained, which resulted in what might be termed perfect success, would induce the belief that size has but little governing influence in the matter, unless it were that from there being the same number of eyes upon a small potato that there are upon a large one, the seed is more concentrated, and hence as a natural consequence the potatoes produced being more crowded, would not grow to the proportions that they otherwise would, and therefore the small seed would be accredited the yield of small potatoes, when in fact it should be to the mode of planting.

W. H. YEOMANS.

Columbia, Conn., July 24, 1871.

The Davison's Thornless Black Cap Raspberry.

Three years ago I was persuaded to try Davison's Thornless Black Cap. My object is not to find fruit for profit, but for enjoyment, and, possibly, profit afterward—fruits that will contribute to make a rural home delightful.

I have tested scores of all kinds of berries, and generally found it necessary to discard them, but Davison's Thornless Raspberry I put down as about every way a good satisfactory home fruit.

In the first place it is hardy—as hardy as a Black Cap that meets the sharp frost with sharper thorns. It is a superb grower. For growth of canes, on my soil, it surpasses all other varieties.

The canes in size and strength were maximum. But what has all this to do with the fact that any one can crowd through, and under, and handle the bushes without one serious scratch. There are small thorns at the jointure of the leaflets, but they are only imitation. A lady's dress is safe, and the gatherer's hands are safe. Just contrast your experience with any of the thorny varieties—clothes torn, hands bleeding, and temper worse off than either clothes or hands. You are caught and twitched at every move. No sooner has one plague let go with a piece of your skin, than another takes you by the coat tail; till you feel fairly whipped and afraid to enter. All well enough when urchins are hired to do the picking, and you never see a berry till they sit beside the cream bowl. But I want a berry that I can visit at its home, and eat out of hand, and not have to run for my life, as if I were a thief, for touching it.

I set the Davison about twice as closely as any thorny variety, and then mulch the whole surface of the soil with a thick covering of long manure and sawdust. Raspberries naturally crowd together, and in their native condition shade their own roots. Of course thorny varieties must be set far enough apart to allow of free passage. The Thornless can be allowed to stand in hills far enough apart one way for the pickers, and far enough the other way to work between with a hoe. Of course I speak now of patches cultivated for home use, and not of large fields, where the object is the market. Alongside of Lanning's White Strawberry, therefore, set down Davison's Thornless Black Cap as a fruit for our country homes.

—E. H. Powell, in *Horticulturist*.

How to Pack Grapes for Market.

When the grapes are fully ripe the bunches should be cut from the vines with a pair of hand-shears, always taking hold of the stem when moving the bunch. This precaution is necessary, so that the "bloom" may not be rubbed off by handling the berries. The grapes are then carried from the vineyard to a cellar or packing house. All green berries should be removed from the bunches before packing. This can be rapidly done by holding up each bundle by the stem and cutting out the unripe berries with a pair of long-pointed shears. Grapes bring higher prices in New York market when packed in small boxes, holding not more than five pounds each. These boxes are now manufactured extensively in grape-growing districts, and at very low prices, by the quantity. They are made of either very thin slips of wood, or stiff pasteboard. When ready to pack, the

bunches should be carefully placed in the boxes, one bunch at a time. The box should be shaken a few times while being packed, so that the fruit will settle firmly and not be displaced by the jarring of railroads, or rough handling on the way to market. When the cover is removed from a box of grapes that has been well packed, the stems of the bunches are not visible, and the berries of the top layer should be level with the side pieces of the box. Eight, ten or a dozen of these small boxes may then be encased in a strong, but roughly constructed crate, similar to those used by Southern "truckers" in forwarding vegetables and peaches to Northern markets. The consignee should be notified by mail of each shipment, stating clearly, but briefly, the quantity and quality of the fruit shipped.

The bunches of grapes should be assorted at the time of gathering. Small or straggling bunches should not be packed in the same box with well formed shouldered bunches. Each kind will bring more when packed separately. The class of buyers who are willing to pay high prices for large and well formed bunches will not buy poor bunches at any price.

Carelessly gathered and badly packed grapes, sent from a distance to New York, or other Northern markets, arrive in a damaged condition, and are sold at a low price, if at all; and this has heretofore been the case with much of this fruit shipped from the South. There must be a reform in this matter, or grape growing for the market will not pay.—*Rural Carolinian*.

Strawberries - Comparative Productiveness.

During a recent visit to the grounds of H. E. Hooker, of Rochester, who is well known as one of the most intelligent and successful cultivators of fruit at that place, he gave us the following list of strawberries, which he preferred for family supply:—Large Early Scarlet, Wilson, Triomphe de Gand, and Russell's Prolific. The Early Scarlet is valuable for its earliness, good quality and reliability. Taking the Wilson as the standard of productiveness, the Scarlet bears about one-fourth as much. Triomphe de Gand varies from one-fourth to one-half the crop of the Wilson, and the Russell, if well fertilized, about one-half, but sometimes about three-fourths as much. Green Prolific, although not of very high quality and too soft for market, is valuable for its great productiveness, being nearly or quite equal in this respect to the Wilson, and many would therefore find it valuable as a berry for family supply. Jucunda is somewhat uncertain in its crop, but comes nearly up to Triomphe de Gand in productiveness.—*Country Gentleman*.

Raspberries in Cincinnati Market,

Mr. Ritz says of the merits of red and black Raspberries as a market fruit:—"The yield of Black Caps was large, and prices ruled low; too low, in fact, to pay for raising them. If some of our fruit growers would plant more of the red and less of the black varieties, they would find it more profitable. Black Caps have been selling during the season from \$1 to \$5 per bushel, not averaging, in many cases, more than \$2 to the grower, while the Antwerps have ranged from \$8 to \$16, and have been scarce at these prices. During the last ten years red raspberries never sold for less than from \$5 to \$6, most higher, and always averaging at least \$6 during the season. The purple cane family, however, including the Philadelphia, does not sell much, if any better, than the Black Caps."

How to Raise Melons.

The luscious melon, though it be a tropical fruit, we can have in our own gardens. For varieties I prefer the White Japan and the Christiana, they being not only early and productive, but sweet and luscious. The ground should be well worked the previous year to have it in its best condition, and should be a sandy loam with a southern exposure. After the ground is well warmed, or about the 20th of May, plough it fine and lay out the hills about four feet apart each way. Dig holes for the hills one foot deep and three feet in diameter, to be filled with one-third old, well decomposed manure or compost heap, one-third muck treated with lime and salt, and one-third soil such as is around the hill; let this lie a few days to warm, and then plant the seed as shallow as they will bear and not dry up; sift on the top of the hill charcoal dust to draw the heat and force the growth of the young plant.

The hills should be raised a little above the level if the ground is inclined to be moist; this gives greater heat, but care is to be taken to keep the hills from drying up in a dry time. Hoe the ground often, stirring it well between the plants, but keep the top covered with charcoal dust, unless the soil is dark coloured, as it keeps the hill warm and forces the growth. When the plants are ready to run, thin them down to four in each hill; afterwards do not handle or molest them only to stir the soil carefully and keep the weeds down. When the melons are ripe, they will readily part from the stem without any force. The earliest melons are the best for seed; and commonly the first ripening crop is sweeter than those that are last to ripen, the last crop not being fully matured before the frost hurts the vines.—*The People*.

Roses This Year.

I am again tempted to give you my notes on the Roses with me this year. The four that have given me the most unmixed pleasure have been La France, Marie Baumann, Baroness de Rothschild, and Xavier Olib.

Of these, La France has bloomed continuously, every bloom good, with the finest perfume of any Rose I know. Last week I had two perfect blooms over 5 inches in diameter, well filled up to the centre. This is, indeed, a first class Rose. The other three have bloomed continuously and well. Duke of Edinburgh is very fine, but hard to keep in colour. Louis Yan Houtte, good grower, a splendid Rose, bloomed well for a young plant. Madame Eugenie Verdier, Marquise de Mortemart, fine flower, but shy grower. Dupuy-Jamin, lovely rose, fair growth, and fine bloomer. Princess Christian, an honour to its raiser will, I think, be equal to Baroness Rothschild Thyra Hammerick, very profuse in bloom, but very hard to get a perfect flower. Clemence Taux, more peculiar than beautiful, not one in twenty-four fit to put in a stand. Edouard Morren, the same fault, but when a perfect bloom is obtained it is splendid; both these, with Pierre Notting, are very prone to mildew. Reine Blanche, very rough, but at times fine. So much for my experience of the new perpetuals. Of old favourites, I have had magnificent blooms of John Hopper, Victor Verdier, Jules Margottin (always ready and always good), Duke of Wellington, and Lord Macaulay; in fact, of all my stock of old favourites I have had a fine supply.

Of my particular friends, the Teas, it is yet too early to say much, as I always pinch them back so as to have my chief blooms in autumn. I am more and more delighted each season with Rubens and Souvenir d'Elise. Of these two I have blooms now which will go in a stand of twelve which will be grand; they are, I am certain, among the best of the Teas. Marechal Niel, owing to cold east wind, has not been up to the mark of previous seasons. Many of my friends, when I have mentioned Madame Falcot, have replied "Oh! it is very well in the bud." I find in early spring and late autumn that it is only second to Marechal Niel. Any who were at the Bath May Show must have remarked the splendid examples of that Rose shown there.

Of the new Teas, Unique is much more inclined to make wood than bloom, but it is certainly beautiful when in perfection. Adrienne Christophle cannot fail to become a favourite, it is so very distinct. I am more favourably inclined to Montplaisir than I was, but it will never equal its parent Gloire de Dijon nor yet its sister Belle Lyonnaise.—*Cottage Gardener*.

NEW WHITE WEIGELIA, *Weigelia Nivea*.—We have cultivated this beautiful shrub for the past two years, and value it very highly. It is one of the most profuse flowering varieties of this lovely genus of plants that we have seen, the plants continuing in bloom during the greater part of the summer and autumn.—*Rural New Yorker*.

Colman's Rural World says that the curculio is becoming almost as destructive to peaches as to plums. It is almost impossible to find a single peach uninjured by this insect some years. The past season, on account of the incessant heavy rains, they did not injure the crop as much as usual; many of our most intelligent peach-growers are devising means to prevent the ravages of these insects.

Violets.

The Sweet Violets are among the most charming little gems of the spring garden, and they will grow almost anywhere, provided they get pure air; but what they most delight in is a rich, deep, loam soil, with liberal soakings of manure water during the flowering season. The following are a few of the most distinct: King of Violets—Dark violet, a good grower, free bloomer, and fit for greenhouse or out-door culture. The Giant and the Czar—If not the same, are very much alike; both have large flowers, with long stalks, which make them very valuable for either bouquets or vases. Devoniansis—In bloom the whole season, and has a long flower stalk, which makes it valuable for gathering; is of a light violet colour. Neapolitan—One of the most beautiful, second to none, remarkably sweet-scented, with charming pale-blue flowers. These are all worthy of general cultivation.—*Florist and Pomologist*.

A Miscellany.

To the Editor.

SIR,—I have enjoyed nothing so much for a long time as that interesting letter from "Sarawak." He rambles along over his trees and grounds with such a quiet ease, telling you about his dwarf pear trees, and dwarf apple trees, his superphosphate and his grape vines, in such friendly-like way, that you like the old man, for he very frankly tells you he is over sixty years old, and take an interest, one hardly knows why, both in him and his trees. And then he has such an easy way of asking you questions, and such long headed questions too, that he evidently believes you know everything, and should certainly feel highly complimented by the entire confidence in your wisdom which is so delicately implied. Of course he does not expect you really to reply to half of his questions, he does not suppose that you are acquainted with the quality of every ton of superphosphate made in your city; but such is his high esteem of your opinion that he would like to hear you discourse upon its effects upon different soils, and especially upon a stiff clay loam. I have had some little experience with superphosphates, and have thought that the weather had something to do with their effect the first year. When the weather was dry during a large part of the growing season, there seemed to be but little effect from them upon the crop. But this is not so much of a question with me as whether, on the whole, it pays a Canadian farmer to buy superphosphates at such a high cost? By carefully saving all the manure made on the farm, and when that will not suffice, by occasionally ploughing under a crop of clover, I believe we can manure our farms far more cheaply, and quite as efficiently. In the worn-out soils of

the old world, where the phosphates have been taken off in the grain, and the milk, &c., for many centuries, it may pay to restore it in superphosphates, guano and the like, at very high prices; but in our comparatively new soils, every thoughtful farmer will surely supply himself with all the manure he needs by using all that can be made on his own farm.

I have also had some experience in the use of bones; but I did not suppose that salt, soap-suds, ashes, liquid-manure, and the like, had any power of dissolving bones. I have always used sulphuric acid, and would suggest to "Sarawak" that he read up a little on chemistry before he again proceeds to dissolve bones. Sometimes perfectly green bones have been placed in a fermenting manure heap, and the process of fermentation has slaked the bones so that they were easily crushed; but usually it will be found necessary to employ sulphuric acid.

I notice, too, that "Sarawak" asserts that the Flemish Beauty pear will not succeed when budded on the quince stock. In this he is certainly mistaken, for I have growing on my grounds a Flemish Beauty pear on the quince stock, which bears fine crops of fruit every year. It is true that for the first two or three years the Flemish Beauty does not grow as rapidly when worked on the quince stock as many other varieties of pear, and on this account nurserymen do not usually bud it on the quince. Dwarf trees of this variety do not sell for any more than other varieties, and as they require to be cultivated one or two years longer before they can be sold, it is quite natural that those who grow trees for market should grow those which they can raise with the least expense. It is a noble pear, and equally fine when grown on a standard tree. True, the fruit is so large and heavy that it is very easily blown off by our high autumnal winds, and this is probably what "Sarawak's" neighbour meant when he laughed at him for pinching off the blossoms. I have suffered not a little from the blowing off of my finest specimens, but have adopted the plan of allowing my trees to branch out near the ground, and think that partly from this cause and partly by reason of the shelter afforded by the growth of other trees, the fruit is not blown off so badly now. I must say that I believe in low branched trees for our climate, both on account of our high winds and our severe winters.

What kind of a pear tree was it that produced such very different sizes on the same tree? To be sure, it may be hasty to form an opinion from one or two years of fruiting, but if that is the regular habit of the tree it can't be worth much. But it may be that it is not the habit of the kind, and I hope you will tell us, Mr. Editor, how it happens that this tree should bear eight large pears on one branch, while all the other pears on the tree were not more than half as large. I have seen a branch of a grape vine

on which the bunches were much larger and the berries fully twice as large as any on the other parts of the vine, and for some time I was exceedingly puzzled to account for it, until the cunning cultivator showed me a wire wound tightly two or three times around the branch near its junction with the main stem. Perhaps "Sarawak" has been doing something of that sort, and wants to puzzle your editorial brains a little over his own shrewdness. And yet the old man writes in such an easy, honest sort of way, that if one did not see the quiet twinkle in his grey eyes, as he looks up inquiringly from his pear trees, it would be quite impossible to believe he was quizzing.

I had some dwarf apple trees that would act just like "Sarawak's," plenty of leaves on the ends of the twigs, and then a long bare space before there were any more leaves. I did not like the looks of it, and went to work as soon as I found it out, and pruned them back severely, cutting off all the tufted ends and three-fourths of the bare space. This was done just after the trees had leaved out in the spring, and the buds that were left on the tree after a while broke and put forth leaves and branches of varying length. I took the hint, and since then, every spring, just as the buds are breaking, I go over my dwarf apple trees and cut back the young shoots that have made a long slender growth, and am no more troubled with these vagaries.

I am sorry my old friend can not think of any other early grape to plant than the Clinton. The Concord is not a very early variety, but with me it is a much better table grape than the Clinton, which is more used as a wine grape than for table use. "Sarawak" ought to join the Fruit Growers' Association and get an Eumelan grape vine, and see what that will do for him. And then there is the Israella, the Massasoit, Wilder, Delaware, and Creveling, all of them earlier than the Concord, and much better table grapes than the Clinton.

Some years ago I planted out a lot of fruit trees of different kinds. I had not taken all the pains I ought to put the soil in good condition, and some spots were very poorly drained, and in one or two places that were high and dry enough the soil was a very poor white clay. Three or four years after, I was greatly gratified by the appearance of a fine show of blossoms on quite a number of my trees, and was somewhat surprised to find, on closer examination, that it was for the most part those trees that were on the poor white clay that were blossoming so profusely, and some that were in the most badly drained places. I began to think I had made a fine discovery in fruit culture, and concluded that the great talk about thorough draining and all that was sheer nonsense. But I came, fortunately for my reputation, to the conclusion to give the matter a thorough trial before I ventured to give my great discovery to the public. One or two years

more, and my bearing trees ceased to bear and ceased to live, and now I believe that their early bearing was owing to a sickly condition of the trees, caused in some cases by starvation, and in others by excess of water. If "Sarawak's" trees fruit early from any such cause, it is surely a bad sign, but there are some varieties that come early into bearing naturally, such as the Red Astracan apple and the Bartlett pear.

Excuse my long letter, but I was so interested in "Sarawak's" experiences that I thought you might like to have my own.

WINOOSKI.

VIOLET RAYS.—A good deal of discussion has been going on lately amongst our neighbours in the United States, on the subject of growing plants under blue or violet coloured glass. The practice, on a small scale, is an old one in England, but we were never satisfied that any extraordinary results were attained, and we doubt whether the revival of this plan on the larger scale now proposed will repay the cost and trouble.

ASPARAGUS.—Conover's Colossal was sent from New York to Boston to carry off the prizes at the Exhibition last June. The best bunch of Conover, containing eighteen stalks, weighed fifty-six ounces, but a Boston bunch of common asparagus, containing only twelve stalks, weighed fifty-three ounces. Colossal will have to try again.

DESTROYING ANTS.—A French agriculturist reports that, after trying every method known for the destruction of ants infesting some of his fruit trees, he succeeded in effecting his purpose in the most complete manner, by placing a mixture of arsenic and sweetened water, in a saucer, at the foot of the trees. For the larger species, he made use of honey, instead of sugar; and found, in a few days, he could exterminate them completely.

THE APPLE CROP in the county of Elgin is much lighter this year than it was last. The old trees are but sparsely filled with fruit; young trees just beginning to bear are better laden than the older trees. The R. I. Greening is evidently a very popular variety throughout the country, and seems to have been introduced at an earlier period than its companion sorts, the Baldwin and Roxbury Russett. Yet wherever these have been planted they seem to thrive equally well, and will eventually be held in high esteem. So far as our information extends, the apple crop is lighter than usual, not only in Ontario, but in Western New York and in England. The extreme dry weather which has prevailed in some of the apple growing districts has been unfavourable to the growth of the fruit, and autumn and early winter varieties are ripening unusually early.

Judging by the specimens at our principal horticultural exhibitions, it would appear that the past season has been favourable for the growth and ripening of pears.

Barren Seedling Vines.

To the Editor.

SIR,—In the September number of the CANADA FARMER is a query from the *Rural New Yorker* as to the best means to be adopted to render fruitful a barren seedling vine. Except in the case of hybrids, in which the union is remote, I cannot admit the theory of barrenness without a traceable cause.

In the correspondent's vine under notice blossoms were formed freely, but a few hours after opening strewed the ground. Many English gardeners make the same complaint of grapes in the vineries under their charge, notably of the Muscat of Alexandria and Canon Hall Muscat. There are also several other varieties that are bad setters; splendid bunches appear to open freely, only to strew the ground. First-class gardeners manage these shy setters so that they set as well as Black Hamburgs; but then they can command a very strong dry heat at will; also the laterals are from eighteen inches to two feet apart. Those acquainted with these shy-setting grapes know there is a very copious flow of sap in these vines till after setting, forming gummy exudations on the leaves, wood, &c., affecting consequently the pollen, which requires a much greater dry heat to ripen and dry it so as to fit it to pass down the receptacles of the stigma. Noticing how on all occasions, whenever a bunch rested on the upper side of the leaf (instead of under it), and so received the full heat and light of the sun, how well these bunches set, I formed the idea that if all bunches at the time of flowering were so exposed they would set equally well; nor was I disappointed. From that time forth I carefully placed the flowering bunch on the leaf, or tied the leaf back so as to give it the full sunshine, and the Muscats set as well as the Hamburgs in the same heat and same vinery. But supposing your theory of imperfect organs of fructification to be correct, I hold it would be occasioned by poor soil, or more likely unripe wood; it is so common to leave vines to grow nearly as they like till flowering time, and then to rush knife in hand, cut off a foot or so from each lateral, and the sudden cessation of demand induces a torpid action of the root till the new formed buds expand. In the meantime the starved blossoms expand, to fall off for want of that sap their foolish owners thought they were taking the most sure means of getting. Now no fruit is found. They are left to themselves again till autumn, and then the sap that should be stored up in round, hard, plump buds, is cut off in long sprays and laterals.

Let the owner of the barren vine try careful training and thinning of shoots and laterals, and exposing the blossoms, not bunches, to the full and direct action of the sun, and report progress.

J. THOMAS,
Fergus, Ont.

Entomology.

Entomological Queries and Replies.

LARGE WATER-BUG.—Mr. J. S. Walsh, Co. of Norfolk.—The "small beast picked up on the steps," that you recently sent us, is a specimen of the gigantic Water Bug (*Belostoma grandis*), one of the largest insects that we have in this country. It lives in water, and feeds on aquatic insects and small animals; occasionally it flies about at night, and comes into houses, apparently attracted by light. Though rather an alarming looking creature, it is perfectly harmless. The other insect sent us is an *Asilus* fly, a species that feeds voraciously upon other insects, catching them when on the wing. It may be readily distinguished by its long tapering body, dusty wings, and swift flight. The specimen before us is nearly an inch and a half in length, while its narrow wings expand nearly two inches. A large species, found in the Western States, preys upon the Honey-bee, and often commits great havoc among the hives. Our Canadian species, so far as we know, are beneficial, destroying noxious insects, and not interfering with the bees. The larvæ of these insects are vegetable feeders, living in the ground, and deriving their sustenance from the roots of plants. The larva of one species (*A. sericeus*, Say.) feeds upon the roots of the rhubarb, but is not sufficiently common to attract much notice.

LARVA ON BEET ROOT PLANTS.—SARAWAK.—The larva that you sent us from your beet root plants was unfortunately dead and shrivelled up beyond recognition when it reached us. Has it been at all destructive? If you send any more specimens, please send several enclosed in a stiff pasteboard, wooden or tin box, and with some leaves of the food-plant as well.

PLANT-LICE AND LADY-BIRDS ON WINDOW BEANS.—W. LUCAS, Cartwright.—The insects that you "found in hundreds in a bed of English beans," and which you supposed to be feeding upon the plants, are the larvæ of a common species of Lady-bird (*Coccinella novemnotata*.) Instead of being injurious to your beans, they are your very best friends—in fact they are the most useful insects that we have in this country, being sworn foes of all plant-lice, and devourers of the eggs and larvæ of a large number of other noxious insects, among others the Colorado Potato Beetle, the Apple Codling-moth, &c. You casually mention that your "beans are also covered with lice." These are your real enemies, and not the larger Lady-birds. The latter are attracted to your plants by the lice, and but for them would never go near your beans. The Plant-lice (*Aphides*), about which we have often written in this journal, are excessively destructive to vegetation of all kinds, appearing usually in innumerable

numbers, and sucking out the sap—the life-blood—of whatever they are upon.

BETTERIES ON PLUM-TREES.—A SUBSCRIBER, Lancaster.—We regret that your communication with others should have remained so long unattended to. The editor of this department was laid up for a fortnight with rather a severe attack of illness, and since his recovery he has been travelling about in order to fully recover his health and strength. He trusts that his correspondents, and all who take an interest in his department of this journal, will excuse his unavoidable shortcomings. The small beetles which "literally covered your plum trees, commencing to appear about June 20th, are apparently a species of *Cymon*—a small genus of beetles that frequent water-plants. We are not at all sure of our determination, not having yet had time to examine them thoroughly. We shall be glad to learn further particulars concerning them; whether, for instance, they fed upon the leaves of the plum tree, or only rested upon them; what damage they did, if any; how long they remained; and anything further that you may have noticed respecting them. If destructive, they are a new enemy to the plum tree, and we should like to know more about them.

SLUGS ON CHERRY AND PEAR LEAVES.—D. S., Dingle, Township of Grey.—The insects that you complain of as affecting your pear and cherry tree leaves are the Common Slug of these trees, the larvæ of a Saw-fly, (*Selandria cerasi*, Peck.) They may be destroyed by dusting them with ashes or quick-lime, or by drenching them with cresylic, whale oil, or other strong soap-suds. You will find a full account of the insect in the CANADA FARMER for Sept. 1, 1865, page 262.

GRASSHOPPERS.—J. K., Clark, complains that the grasshoppers are doing an immense deal of damage this year to wheat, oats, barley, pasture-fields, and in fact to almost every green thing. We have observed similar complaints in the local newspapers in other parts of the country. The best and most profitable remedy for them that we know of is to keep large flocks of turkeys, and allow them free range over the fields. They will devour immense numbers of grasshoppers, and will be found to bring in a very satisfactory addition to the housewife's purse at Christmas time. We know of no other effectual remedy for this pest.

Trapping the Squash Bug.

I have found the "Ransom Curculio Trap" of more service in catching the stinking squash bug than the little Turk, for which it was specially recommended. I lay two or three boards of shingle or thin board near the hill of plants, the ground being a little rough so that the bugs can crawl under them, as they will do every cool night, and on turning over these covers early in the morning the bugs can be easily crushed with the sole of the boot or with a flat stick.

For striped cucumber bugs and cut-worms, I have found no remedy so easy and efficient as sprinkling over and around the plants sawdust that has been saturated with carbolic soap-suds. I use a pound of the Plant-Protector Soap (as sold by Bowman & Biewett, of New York,) dissolved in six or eight gallons of water; this will saturate two or three bushels of sawdust. Care must be taken not to use it dripping wet, as in that case the liquid will injure the plants; but if only moist or damp, it will do no damage, if used in moderation. As a protection from the ravages of cut-worms, this remedy is quite valuable; a little of the sawdust dropped around each plant, once in three or four days affording complete security. *Journal of Horticulture.*

Codling Moth or Apple Worm.

FIRES, LIGHTS, BOTTLES OF LIQUID AS REMEDIES.

I have elsewhere given it as my decided opinion that neither fires, lights or bottles of sweetened water, vinegar, or of any other liquid, can be used with any degree of success in fighting the Codling moth, and I have good reasons for so doing. During one whole summer, three years ago, I had a patent moth catcher constantly in a garden surrounded by several old apple trees badly infested with this insect, and I never caught a single specimen of *Carpocapsa pomonella*. The trap was made of bright tin, with an inverted cone so placed in a basin that I could attach a light, and fill the basin with sweetened fluid. During the whole of last summer I was in the habit of working till late at night in an office surrounded by apple orchards known to be badly infested. I worked by the aid of two large kerosene lamps, each having a strong reflector, and the light in the room was so bright as to form a constant subject of conversation among the neighbours. Insects of one kind and another would fly into the room by hundreds, and on certain warm, moist evenings would beat against the windows with such rapidity as to remind one of the pattering of rain. Yet during that whole summer I caught but one or two Codling moths in that room, and there was more reason to believe that they had bred in the house than that they were attracted from without. At the same time I had hung up in an orchard close by, many wide-mouthed bottles, half-filled with various liquids, such as diluted syrup, sugar water, and vinegar more or less diluted. Every two or three days these bottles would contain great numbers of insects, which were critically examined. Many of them would be small moths of one kind or another; some of them larger moths known to be injurious, and many—such as beetles, true bugs, wasps, and two-winged flies—that were beneficial. Indeed there were almost as many beneficial as injurious species. From my notes I find that but three Codling moths

were caught in these bottles during the summer. Indeed, so small is the proportion of Codling moths which I have caught by the above mentioned process, that the chances of their accidentally flying into such situations are about as great as of their being attracted. I might add further experience on this head, but it is unnecessary at present. Upon showing specimens of the Codling moth to many dozens of eminent and intelligent fruit growers, who have had to do with apple orchards, and consequently with apple worms, most of their lives. I have seldom found one who did not candidly confess that he had never before identified the insect; and under these circumstances it is not surprising that other similar moths should have been mistaken for the genuine article. That the Codling moth is occasionally caught by lights and fires, is therefore apparent, and in the face of other intelligent testimony the fact cannot be denied, though the experiments on this head of non-entomologists are conflicting. But whether we consider that the few so caught are really attracted, or are captured accidentally, I believe that the methods indicated have no practical value. They are blind ways of shirking the more sure and efficient remedies.

The apple worm or Codling moth is an imported insect. There are two broods each year, and the second passes the winter within the cocoon in the larva state. Use hogs and sheep in the orchard wherever it is feasible to do so. Place no confidence in lights and bottles, but rely on the bandage system. Have the bandages in place a week after the first Wilson's Albany strawberries ripen, and destroy all the cocoons underneath them every two weeks till the apples are harvested. Be sure and destroy, as soon as the ground thaws out in spring, all the cocoons found around storehouses. Urge your neighbours to combine with you in this work. *C. V. Riley, in Rural New Yorker.*

THE CURRENT BLACK CATERPILLAR.—Our correspondent "Vectis" writes:—This pest, which proved so destructive in some gardens for two or three years past, has this year entirely disappeared—only here and there a single moth is discovered, although on the previous years, by this time, the currant bushes were swarming with the moths of the second crop. The gooseberry bushes and red currant trees, too, are free from them. The gooseberry and currant saw-fly, and the second brood of the same insect made their appearance in due season this spring, and again in the summer; but both times they readily yielded to the white heliobore water, and the leaves of the trees were mostly preserved. It is, however, quite clear that the absence of both these pests is not caused by human agency. No doubt they have been attacked by the several parasitical flies which are their natural enemies, and which have thus kept the intruders within bearable numbers, though I have seen no accounts of the appearance of the several Ichneumon flies that affect caterpillar life.

Apiary.

A Young Lady Apiarian.

The following letter is addressed to the *American Bee Journal* by Miss Kato Grimm, the daughter of a very intelligent and extensive apiarian residing in Wisconsin:

MR. EDITOR,—If your time is not too valuable and space not too scarce, please insert the following short account of the last few months with my bees.

It was on the 29th of May that my father came home from his northern apiary, and told me that he was to take charge of it the next day (May 30th). It was nothing very unusual to me, because I have done so yearly for the last four years, and therefore I was ready immediately to enter my services.

June and July had always been the most lonesome months of the year for me, and so the former proved to be this year, but the latter was far different, as you will hear.

When I first came here I had only forty-eight stocks to take care of, and indeed I must say that it seemed almost impossible for me to stay with so few, as I had been used to have at least over one hundred.

During the month of June I had thirty-eight young swarms from the forty-eight; but still they were far from being enough to give me a chance to spend all my time in attending to them.

When I came home one evening, to report to my father (as I do every Saturday), I complained to him of my few hives, and told him that though they were all very busy, and doing their very best, I could not be satisfied; so he promised to send me more in a day or two. Two days afterward I received a load with eighteen hives; in about a week another; and some days afterward a third one. Then I thought that there would be more of a chance to be doing something, and so indeed there was.

The stocks which father sent me were mostly young swarms, some of which swarmed twice again, others only once, and most of them only once; so that after the first of July I had nineteen more young swarms, and a little honey, as you will soon learn.

June 30th, father was here to examine my hives, when he also made twenty double hives, from which I was to extract honey about every three days, as he thought that during that time they would be filled. July 5th, I extracted my first half-barrel, which was one hundred and eighty-five (185) pounds. When I was through with it, I felt pretty well tired out, and thought it was quite a task for one day; but I had then no idea of what was still to be done. July 8th and 9th, I extracted 1½ barrels, so that I then had two barrels. July 14th, I extracted 1½ barrels, and during the rest of the week 2½ barrels; July 17th, two barrels; July 19th and 20th, one barrel; and four or five days after-

ward filled the tenth barrel. By this time I had given up the notion of half a barrel being a day's work. You will bear in mind, Mr. Editor, that I was all alone, so that I not only extracted the honey, but also took out the frames, and put them in again.

The room in which I lived all this time was so filled up with barrels and boxes that I feared its breaking down, and was obliged to have some of them removed to another apartment.

This shows what can be done with bees, when there is a good season, and they are properly managed. I am very certain that those twenty double hives, which were mostly young swarms, gave me three times as much honey as they would have given me, had I not extracted the honey. Had there been two strong men, instead of a girl of seventeen years, to take care of more double hives, we might have had a larger number of barrels of honey.

With the honey extracted at home and at our southern apiary (of which my elder sister takes charge), we will have nearly thirty-five (35) barrels of honey, each barrel containing three hundred and seventy (370) pounds. How much box honey we will have I cannot yet tell; but it will not be a little—perhaps 12,000 or 15,000 pounds. And all this honey was gathered by two hundred and ninety (290) hives—all that my father had left after his spring sales—with their increase, making in all six hundred and fourteen (614) hives. If the month of August should be as favourable for bees as it was last year, we may have another five thousand (5,000) pounds of fall honey.

Does not this show that bee-keeping pays? Even if bees did sometimes sting me, so that I got almost discouraged, when the time came again to put on or take off honey boxes, or extract again (which was almost every two days), I felt very much pleased that I could again fill several barrels. I did not blame my bees for stinging me, and indeed would not have bees which do not sting, else mischievous boys would come and steal the honey.

I have not been absent from my bees a single day for the last few months; but as the honey harvest is over now, I think I shall again get leave to come home.

Of course I can say very little about bee-business, for I only take charge of my apiary during swarming and harvest time; but I am almost convinced that that is the time when the greatest amount of work is required. I have had to work very hard sometimes these last few weeks, but my work has indeed been rewarded.

Although nothing is more simple in theory and practice than the history and care of bees, it yet requires constant and unremitting attention, if we aim at either instruction or profit. Can anything be well done and to advantage without these?

Bee Superstitions in France.

In Brittany, if a person who keeps bees has his hives robbed, he gives them up immediately, because they never can succeed afterwards. This idea arises from an old Breton proverb, which, says, being translated, "No luck after the robber." But why the whole weight of the proverb is made to fall on the bee-hives, it might be difficult to determine.

In other parts of France, they tie a small piece of black stuff to the bee-hives, in case of a death in the family; and a piece of red on the occasion of a marriage—without which, it is believed, the bees would never thrive.

To Get Honey from the Comb.

As this is the time when bee-keepers are taking up weak stocks and taking off surplus boxes, it may be well to give a few hints how to clear honey.

It will be generally understood that virgin honey, taken in surplus boxes, is most marketable in that form, and is generally considered most palatable eaten in the comb. Still that portion of it that is uncapped is liable to sour and lose its flavour; hence such pieces of comb should have the honey extracted by the honey extractor, or be broken up and the honey strained out. It is also necessary to clear honey taken from weak stocks, or any old or queenless stocks that are taken up, as only small portions of the combs are pure enough for table use. In clearing honey, it is well to select all such pieces of comb as are free from brood, and clear it by itself, as the honey will be better than that contained in comb mixed with brood. The comb should then be placed in a cheese cloth and broken up, and the honey allowed to drain off. It is well to have a large dish or cullender, and lay the cloth into that. The dish can then be set over a crock or dish to receive the honey, and set away in the cellar, or some room away from the flies, and the honey allowed to drain off slowly, occasionally turning the comb with a spoon. The honey will be all the better for this slow clearing, as it will contain less small particles of comb and bee-bread. A large dish-pan, with holes punched in the bottom and a rim soldered on an inch and a half deep, is just the kind of cullender required, and is better for all culinary purposes than the old style cullender. All the coarse and dirty comb, and comb containing brood, may be treated in the same way, though large patches of brood should be cut out and thrown away. After the honey has drained off, the comb may be placed in a tight dish and covered with water; let it stand and soak for a day; then strain the water off, and use it for making vinegar. The honey may be left to candy; or if put on the fire and brought to a scalding heat, and put into fruit jars and sealed, it will not candy, but keep for any length of time.

J. H. THOMAS.

Correspondence.

Successful Farming.

To the Editor.

STR,—Farmers would succeed better if they had higher aims. I do not presume to be a teacher in farming, for I consider myself only a learner—glad to learn from any source how to increase the fertility of the soil, for in doing so I increase my profits; but before I owned an inch of soil my aim was, and still is, to be one of the best farmers in the world. And that aim has helped me in this way: It has brought the brain to work as well as the hands, and so made farming a pleasure instead of a drudgery. While my body is at rest from its day's labour, my brain is at work investigating the experience and researches of others, as they are recorded in books. The mind and body being thus trained to work, the health of both is preserved.

Perhaps some farmer may say he does not know when any of his fields are exhausted. Liebig says a field is not exhausted so long as it yields remunerative crops, without needing the replacement of those mineral constituents which have been carried away. My system of farm book-keeping, explained in my former article, tells me at once when I have a field exhausted. If there are any young men who doubt whether there is a bright prospect for them in becoming farmers, I would say that I commenced at the foot of the ladder, and my success may satisfy their doubts. I have no desire to make a public parade of my private affairs, but I have a strong desire that the Canadian farmer may flourish; and if by mentioning some of my success I can help my brothers in the same vocation to assume the position they ought to have, and can have, I do not feel it right to withhold the information. I believe there are many farmers who have succeeded better than I have, yet I have succeeded well, so that I consider my farming operations a success. I was born and brought up in the city of Glasgow, where I remained till I was seventeen, when I came to Canada in 1843, suffering from ill-health, the consequence, it was thought, of a severe attack of typhus fever, from which at one time I was not expected to recover. I went to work on the farm. The first year was a very hard one: for in trying to do as much as another I was, like many a beginner, expending twice the ordinary strain of muscle, because I had not the previous practice to enable me to work with ease or advantage. But in less than one year health and strength came to my relief, and labour was then a pleasure to me. From the wages of eight years' labour I saved \$300, and when I went on to my first hundred acres I was \$2,400 in debt; still I had courage enough to hire two men and a girl. Some of my friends advised me to be more

cautions, as they thought I never could raise enough to pay their wages. Some years it seemed as if my wife and I were working hard, and as if it took all to pay our hired help; but in favourable seasons the effect of labour put on the farm was seen in good crops; and when I bought another hundred acres I was \$4,000 in debt, and the first year in working that 100 acres, which was 1864, I sustained a loss on my farm operations of \$211 93; but under a better system of farming than the farm had ever received before, in 1868, the sales from the 200 acres amounted to \$2,219 79, leaving a net profit for the year of \$1,373. In 1869 the sales amounted to \$2,484 95, leaving a net profit for the year of \$1,459; and in 1870 the sales amounted to \$2,433 24, leaving a net profit for the year of \$1342, and over and above that there was food from the farm for a family of about thirteen.

With regard to my stock, I keep 24 cattle, 8 of which are milch cows; raise 8 calves, and fat 8 cattle each year; and we think now that the farm is in condition to keep 30 cattle, and intend to increase the herd to that number, viz., 10 milch cows, 10 calves, and 10 cattle to fat each year. We have also 50 ewes, and we fat the increase of that number, reserving always the best as store sheep. We cannot tell what a pound of beef, mutton, or pork costs; but this we do know, if we sold what we feed to our cattle our land would soon be so exhausted that we should not have much to sell from it. We keep a memorandum of our cattle. The following may serve as an example: Bright (steer), born 23rd February, 1869, sire Sam, dam Sally; butchered 6th January, 1871; live weight, 900 lbs.; beef, 528 lbs.; hide 73 lbs.; tallow 36 lbs.—637 lbs.; value \$43 48.

My stock or side-hill barn is different from any I have seen. Others have their root cellar along the side that the bank is on, but I object to the plan, for it prevents a good ventilation for the cattle; it is, moreover, too warm for the turnips. My turnips keep well in my cellar. We have often 3,000 bushels in it from five acres. We have a wooden box 6 feet by 8, running along the bottom of the cellar. The box is tight at the bottom and top, but has holes bored in both sides, connected with a box that runs up both sides above the stone-work, and that again connected with another on each side, which carries any hot steam from the turnips to the outside. For the last four years the produce of my stock, namely, the butter and cheese made from the 8 cows, the mutton, &c., sold from the increase of 50 ewes, and the beef sold from the 8 fat cattle, have brought me in an average each year of \$628, besides leaving all the mutton, beef, butter, cheese, and milk, that my family needed.

One word with regard to the selling of farm produce. Every farmer ought to have a pair of good scales that will weigh 2,000 lbs.;

then he can weigh his own cattle, and everything he sells, as well as all he buys and all he sends to and receives from the grist mill.

In conclusion, let me add one earnest word of counsel to all who would lay a solid basis of prosperity—Remember your dependence on the Almighty, and rely much on the promise, "Give unto the Lord the first fruits of all thy increase, so shall thy barns be filled with plenty."

ROBERT EADIE, JUNR.,
Olive Leaf Farm,
Oakland Post Office, Ontario.

Farming as a Profession.

To the Editor.

SIR,—Your correspondent "Frontenac" takes objection to the use of the word profession applied to farming, and states that occupation is the right word.

This gentleman has met what he delightfully terms "mud students" in the north of England, who pay a large premium to a farmer to learn the profession of farming, and as they employed their time in "larking," farming cannot be a profession. I have met a great many officers who have paid large premiums at Sandhurst and in the purchase of a commission, who can't for the life of them put a company through; yet that fact will hardly reverse the propriety of speaking of the "profession of arms."

The first thing, then, that forbids the application of the word profession to the calling of the farmers is want of refinement and loose ideas about the duties of good neighbourhood. I am afraid, if the same test were applied to the lawyers and doctors of this country, a good many would sink into the category of "occupationals."

"When the majority of Canadian farmers become something more than shiftless drudges, then it will be high time to talk of the profession of farming; as it is, bad farming is the rule, good farming the exception." Just so, and the way to bring about this improved state of affairs is, in the opinion of "Frontenac," to pourtray all the worst qualities of the most uncouth Canadian farmer, and to measure the nobleness of an occupation by the standard of its most boorish professors.

"Frontenac" is too sensitive for the Eastern Townships, and I would advise his settling at

ANCASTER.

MORTAR ON LAND.—We should advise P. M., of New Carlisle, to keep the mortar as near the surface as possible, in order that frost and rain may have their full sway in effecting a separation between the lime and the sand. If his land be a heavy clay, it might have a good mechanical effect when ploughed under; but we think that the best mode of application would be as a top-dressing upon the meadows.

My Farm.

To the Editor.

SIR,—My farm and I are inseparable, and if I talk about I, I must give you the news of my farm—in fact, talk shop.

Fall wheat—that has been the cry for the last week, not only the up and down price of that grain in the market, but the particular job of sowing. Now, I think no land farmed on the mixed husbandry principle can be doing right without there is a good field of winter wheat to put in, and my field has cost me a deal of thought.

The fact is I've got a new farm, and it puzzles me at times to know how to get it running in rotation, and the best that I can make of it is this year to put fall wheat in a field that I don't feel satisfied is fit. Well, as it isn't fit now, I'm going to make it fit. The field was in peas and oats on a two-year old poor clover sod. The peas were good, and the oats very poor. The land is rolling, and had lots of stumps.

First we pulled the stumps; we cut round the roots, and then put a team on with the logging chain. There was a five-year old colt in the team. Before the man had used them a day the colt wouldn't draw a pound; so I took the team myself, and they drew the rest of the stumps.

I only mention this to warn your readers to be careful how they let anyone take young horses to draw stumps. If the teamster isn't very careful and very patient, I know no better plan for making balky horses.

Well, we pulled the stumps out, and the next Sunday it took us two walks to the field after church before we had our fill of the beauty of the improvement effected by the removal of those ghastly bugbears of Canadian farm scenery, the ghosts of departed monarchs of the forest. We then ploughed the field very lightly with a skim plough attachment, and completely hid the stubble. We broke the plough twice against blind roots, which reminded us that we hadn't done our job of stumping as thoroughly as we should.

In a few days the oats and peas had sprouted beautifully, and many noxious grass seeds too, and so we put on our ploughs again and covered them all up.

We next manured our hills heavily with year old black thoroughly rotted barn-yard manure, spreading on the new ploughing and incorporating by means of the cultivator and harrows. We also harrowed in bone-dust at the rate of 200 lbs. per acre. Now I am sowing Deihl wheat, and have tried to get a pure sample of seed. I don't believe such can be got. The wheat is a hybridized wheat, and I was told by a gentleman who is a great experimenter with different varieties of wheat, that he has sown the apparently pure white Deihl, and there was red wheat in the produce of the harvest.

We pickle our wheat in salt and water

strong enough to float an egg; skim off small grains that come to the top; dry in gypsum, and sow.

I'm going to thrash next week. I'm going to have a separator that is the "bully" about here, and a ten horse-power that isn't as good as a five-horse donkey engine.

This horse-power thrashing is a disgrace to Canada. A good engine and separator, such as they use in England, should do twice the amount of work in the day, and would assuredly make a far cleaner job of it than any two of our present Canadian travelling separators. Here is the way it has been with me: Machine runs for twenty minutes, bang goes a belt; stop the horses; start again, smash goes something; stop again, and off to the machine shop. And then I am expected to pay them so much a bushel for thrashing, keep a lot of extra hands sitting in all sorts of comfortable attitudes about the mow, and feed them like fighting cocks as long as it pleases them to remain smashing down in my barn. Thrashing is a nuisance. As soon as any farmer can afford it, he should buy a steam-power, and have a stationary separator in the barn.

If you express yourself interested in the doings of my farm, I shall be happy to write you again; in the meantime soliciting criticism and kind advice on the part of the CANADA FARMER and its numerous readers.

I cannot leave you without expressing the gratitude that I feel for the rain we had to-day. Not only am I grateful for the rain as rain, but I, being out of wood, got a lot up, and I expect to spend some time to come without ever hearing the word "firewood" uttered in the house.

AN OLD COUNTRYMAN.

Sept. 16, 1871.

Music for the Farm.

To the Editor.

SIR,—I am a farmer's daughter, and one that reads your paper, and am especially interested in that part that gives us some hope that our long-cherished wish for a piano will at last be realized and fulfilled. We are quite willing to work and do all that we can to make home what it ought to be, namely, a happy place for our fathers, mothers, brothers and sisters, and, as we sometimes hope, in future for some one else; but we must and do feel the absolute necessity of something more to raise the standard of our homes. Music, above all, is wanted. If we can compass the piano, we can manage a teacher and the music, and then see what delightful dances we can have. I confess I do love dancing and music, and there is no harm in it after all. City people dance often enough in the winter, and do you think we farmers' daughters do not love it as well as city girls do? Your delightful correspondent C. seems to understand the farmer's nature better. I wish he was here now to tell us all about the piano—where to get one, how we are to pay for it, and above all, how we

are to be sure we are not going to be cheated in buying some rubbishy Yankee article. We bought some American apple trees, and they all turned out bad fruit, and father would not buy anything made in the States that he could buy in Canada.

By giving this an insertion you will serve the cause of

A MADOC FARMER'S DAUGHTER.

SILVER BEET SEED.—Enquirers on this subject are informed that though the plant produces an enormous quantity of seed, we have appropriated to it but a small plot of land. The seed is not yet ready for distribution, and indeed as it cannot be sown before next spring it will probably not be distributed before the beginning of the year.

WILD OATS.—The specimen of oats sent from East Wawanosh is a panicle of that most troublesome of all farm weeds, "wild oats." Our correspondent cannot be too careful to avoid disseminating the pest.

INSECTS ON BEET ROOT LEAVES.—"Sarawak" complains of insects eating the leaves of his beets. The leaves of the beet root are often slightly affected by some insect that eats holes in them; but hitherto, so far as we are aware, the injury has never been felt, and no enquiries have been necessary. Continental growers of beet sugar never mention, and do not seem to fear, any insect enemy as affecting that crop, and we trust that Canada will not be the first country in the world to produce a beet root destroyer. We both hope and believe that the destruction of our correspondent's beets has been by some accidental interloping insect, who is as much a stranger to the root as we are strangers to the insect as a beet eater, and that it will amount to nothing.

The Canada Farmer.

TORONTO, CANADA, OCT. 16, 1871.

The Bountiful Harvest of 1871.

The crops of the present season are now so far saved, and the results ascertained, that the harvest may safely be pronounced the most plentiful that has blessed the labours of the husbandman in Canada during the last ten years, if not for a longer period.

Fall wheat averages, over a large extent of country, more than double what it has done for many years past. Peas and oats have been a noble crop, and barley has yielded well. Every grain has given a rich return for the labour bestowed on it. Farmers regard this as a sign of returning prosperity, and they have taken advantage of it by doubling the breadth of wheat sown this fall, and making preparations for more than usually extended spring operations.

To what is all this to be attributed? Doubtless, in the first place, to the goodness

of an over-ruling Providence, which has sent us such a season, that even Canadian bad farming has not been able to keep the produce of the soil down to its usual average, or prevent our barns from overflowing. But it is to be doubted whether our agriculturists deserve any credit whatever for this unwonted prosperity. The great mass of Canadian farmers have farmed as badly as usual. The land is no better drained; no more than the usual quantity of green crops have been raised; the weeds are in as great number and rife as ever; and, taken as a whole, the seed has been no better than in former years. We can, therefore, take no credit for our success; but nevertheless a great lesson is to be learned from it. We have been in the habit of saying that the seed is "run out." The present season shows us to the contrary; for not only have the new sorts of seed yielded well, but the old sorts also. That excuse, therefore, fails us. We have blamed the land; but the land is no better this year than last, and yet the crops are excellent. Our second great excuse is clearly not available.

We may therefore conclude that the fault has been in great measure our own. We have all seen, and we see every day, that some farmers' crops are better than others. This year's crops, however, do not show the usual difference. Good farming has not produced a correspondingly better crop, while bad farming has produced far more than it deserved. Let us not, however, allow ourselves to become negligent or careless on this account. For after all, the good farmer and a sound system of agriculture can command a paying crop, and generally a good one, and it is a constant series of moderate successes that ensures the farmer's fortune and independence. We must do more for the land by manuring and deep culture; we must induce extra fertility; and by drainage and well chosen crops we may contrive or make ourselves, as it were, masters of the season.

More intelligence must be thrown into the work of the farmer, and his every-day life—more industry of mind, for we fully allow that there is plenty of industry of body, perhaps even too much, for a weary body makes a sluggish mind. Our farmers as a class must read, study, and become well informed. Educating the mind on any subject opens the door to knowledge on many more.

We see around us matters that used to be considered entirely out of human control, now brought within the comprehension of all; and so will it be with agriculture for those who study, and keep up with the progress of the time. Formerly all we thought of doing in epidemics, either of man or beast, was to oppose a hardened front to fate, and submit blindly to what was supposed to be a special judgment of heaven. Now science and modern lights show us that all these several plagues have their causes, by avoiding which we may escape the effect. Till very lately we could form no reliable prog-

nostic of the weather; now, every day's weather is announced in the daily journals, and with such a measure of accuracy, that, were this a "catching" climate, as Great Britain is, the farmer might to a considerable extent guide his operations by what he would see in the morning paper. And it is not unreasonable to expect, from the progress made in meteorological science, that even the probabilities of the season in regard to rainfall may come to be anticipated with tolerable accuracy.

There are certain lands especially where a proper preparation for a wet season or the reverse, or even a rational presumption on the question, would be of inestimable advantage. We remember in particular a certain farm in England where this foreknowledge would have saved the tenants from ruinous failure. This farm, situated in the south of England, contained between 600 and 700 acres, and was called "Ashley Farm." It consisted of a proportion of poor hill pasture land, some few rich fields of intermediate land, and about three-fourths of extensive flat fields of heavy clay, lying nearly on a level, but nevertheless with sufficient fall to get off the water more or less. This land was of strong yellow clay, which, if ploughed at a wrong period, baked with the sun into such hard masses that the ordinary implements of the farm were comparatively powerless on them, and "spiked" rollers were not then to be had. The farm was notorious for two things: it almost universally ruined the tenant who occupied it; and once in about every ten years, but at uncertain periods, it bore an enormous crop. If this crop happened to come on the last year of the lease, the tenant might retire from the farm with his original capital not much injured; but if it happened to come at the beginning of the lease, certain ruin was the consequence; for such a splendid crop was sure to lead to greatly increased expenditure, in permanent improvements, under the idea that the farm had been belied, and that it was some excellence in the management of the tenant that produced the extra crop. The land which was intermediate between the high and the low parts of the farm, and which lay sufficiently high to get the water off, but the soil of which was the same as the wetter clay flats, was what is known there as "wheat bean" land—that is, it would bear cropping with wheat one year and beans the next, then wheat and beans again, for any length of time.

The past season in Canada very forcibly recalls the history of the estate just alluded to. Farm on it as you would (according to the lights of fifty years ago), the result was the same—namely, poor crops year after year, and then suddenly, without apparent reason or notice, but merely because "the season" seemed to suit it, it would produce the most glorious crop that could be imagined.

An early friend of ours took that farm; he had good capital, and was a man rather in advance of the age. When he had attained the fifth year of his lease he happened to have all the land that could possibly be so appropriated sown to wheat. The remainder of the low land was in beans; he did not know it was going to be a good year; nobody did or could, but it was; and he harvested the heaviest grain crop that was ever known in that part of the country. Prices were good, and he determined to take advantage of them. In moist England, grain generally has to "sweat," and "dry" in the mow or stack before it can be thrashed, and it was more so at the period referred to than now, as the weeds cut with the grain had to be dried, as well as the straw and grain itself. Our friend reaped his wheat so high that he left the weeds in the field and the stubble knee high. As he intended to sell at once, and either throw up his lease or sub-let, time was an object, and he considered that the stubble would be the best guarantee of quality he could have. He thrashed, and got his lease taken off his hands, and was the first man that ever retired from that farm with his capital rather increased than diminished. He has often since remarked that he trembled whenever he thought how near he was to ruin. All that farm wanted was draining and the modern improvements, such as every man can now get capital for in England. The rent now yielded by that estate is far greater than it used to be, and no doubt all the modern improvements have been made. So level was the land that we have seen a ditch a quarter of a mile long, with the water standing in it to the same depth at both ends, and the surface of the adjoining soil equally level, and yet there was quite a sufficient outlet if proper drainage appliances had been made use of.

The season was everything to that farm, as it has been to Canada this last year. But drainage and manure have since compelled the season to be favourable to the place, and we must by good management and good farming in like manner compel the season, if we mean to succeed and become a wealthy agricultural population.

Co-operation of Farmers.

In towns and cities and densely populated centres the principle of union for mutual advantage has been carefully cultivated and carried to important and practical issues. There the several trades have united to protect one another from fraud and from any attempts to deal unfairly with any of their numbers. Although these unions have been at times carried to such ridiculous excesses, that they have caused very serious disturbances, yet the principles upon which they rest are sound and well worthy of imitation.

Farmers, probably owing to their being more isolated and living so independently as not to perceive the advantages of mutual co-operation as readily as townspeople, have done but little in the way of union.

Our agricultural shows have been a step in this direction, and it is very satisfactory to see with what rapid strides our exhibitions have become of great national interest.

These exhibitions have been the means of diffusing a great amount of information amongst farmers, and have proved a great incentive both to the country and to the individual to excel in produce.

In order, however, to raise such animals and such crops as shall compete with those shown by the farmer of large capital, it is necessary that costly seed and valuable stock be obtained. Now both these are entirely out of the reach of the ordinary farmer, and the only plan by which he can hope to obtain them is by union with his brother farmers.

It is very observable that certain counties are noted for superior stock of certain classes. For instance, the county of Waterloo is noted for its superior class of farm horses; and if a farmer requires a few good breeding ewes or some good cattle, ten to one he goes towards the county of Wellington. This good report is in every case traceable to the possession in these counties at some time or another of some individual horses or other stock of very superior quality. The influence which one good stallion has upon the future class of horses in that part in which he is travelled is very general.

Now, there are very few of us who can import horses or cattle from the great stock breeders, or even when such imported stock only consists of a thorough-bred Cochin cock. By union, we may, however, attain that which we cannot compass individually. There are very few farmers who are not convinced that some certain breed of cattle, pigs, poultry, &c., would be a great improvement to their stock. Where such is the case, let a few farmers unite, and clubbing together, buy the animal required. Say it is a bull; let the farmer who has each year the best accommodation keep it, and be paid so much a month by the others for so doing; or let each keep it in turn. Surely our farmers are not so un-neighbourly that they cannot arrange and carry out agreeably such a plan.

The question is sometimes asked whether it would be advisable for agricultural societies to employ their funds in importing first-class male stock for the use of the members, upon certain conditions. Such a plan would be productive of immense benefit to a township, as the society would be able to buy the very best, such as would be far above the reach of individual purses.

This is union, with a tangible end in view, having for its avowed object the benefit of all connected, without usurping the rights or privileges of any other class.

Agricultural Prosperity.

The Canadian harvest is over; the yield has been pretty well ascertained, and has been found amply to reward the labours of the husbandmen. We have the authority of the President of the Provincial Agricultural Association for stating that with the single exception of hay all the crops of the Province are greatly above the average both in yield and quality. To say this in such a country as Ontario is to say that we are to have a prosperous season, and that all interests and all industries will more or less feel the beneficial effects of abundance. It so happens, also, in addition to what is usual that there is every likelihood of the prices of grain ruling high for the coming year. The crop in Britain is undoubtedly a short one, and the only question now is, as to the extent of the deficiency. Sufficient is already known to make it evident that a large amount of foreign grain will be needed in addition to what is required on an average every year. Speculation, of course, will be ready to take advantage of this, and for a time may seek to run up prices unnecessarily; but even in legitimate business it is all but certain that higher rates will be secured than have been current for some years past. A few months ago there were plenty of Ontario farmers actually grumbling at their abundant crops from the fear that prices would be put down to a very low point. In any case, it is a curious and unhealthy symptom to find people actually annoyed at the fertility of their own fields; but even this ground of annoyance is taken away. The yield is large and the price equally encouraging. When wheat is up in the Toronto market to \$1 35 a bushel by the end of September, he would be a very discontented seller who would have the face to grumble.

Our farmers have been prospering for a good many years past, and upon the whole they have been making a good use of their prosperity. They had a good though very severe lesson after the prosperous times of '54, and they have benefited by it. Elated by the amount of money coming into their hands during the Crimean war and the railway inflation, a large number lost control of themselves and acted foolishly. Extravagance was the order of the day. They built houses and bought farms, and speculated on village lots to a lavish extent. Many who had been thought sober, sedate people, took the land fever very badly, with fatal results. Instead of improving the property

they already had, erecting convenient farm buildings, and introducing new and more efficient methods of husbandry, they thought of nothing but additional land, and with reckless eagerness bought often without even taking the trouble of looking at their purchase. Reckoning on the war lasting for a generation, they spent all their ready cash in making the first payment on these new purchases; nay, even mortgaged the homestead for this purpose, fully assured that they would meet all the instalments as they came due with perfect ease.

The result is notorious. Many were glad to sacrifice all the payments on their purchases if they could only get free from their obligations, and not a few found themselves in the long run as destitute as when they came first to the country, not only stripped of their new acquisitions but of their original farms. They were beggared by that very property which they were not able to use moderately and prudently for their own good and for their country's genuine progress.

There has been no such folly since, for there has been no such temptation. Things, however, have been gradually gathering to a head again, and the good harvest with the high prices may, unless good care is taken, issue quite as disastrously as that of 17 years ago. The troubles of former times have become in the popular estimation mythical, and in present prosperity we are all so apt to forget the difficulties and privations of former days that it is possible the voice of warning may be unheeded. In that case, those who get their fingers burnt will have themselves to blame. Let the first work of everyone be to clear off debt. Of all the ornaments on a house or a farm a mortgage is the worst. But our farmers will act very foolishly if they stop at merely getting their farms paid for. The great mistake of many Canadians is not in having too little land, but in having a great deal too much. To speak in railway phrase, they have not nearly enough of rolling stock. They are hampered at every turn from want of capital to carry on farming to advantage, or from want of skill to turn their capital to profit, and on this account often heartily vote farming a "poor business." In the old country it is calculated that a farmer ought to have capital at least to the extent of fifty dollars an acre in order to conduct his business to advantage; and the ruin of multitudes there, with all the advances that agriculture has made, is that they enter upon the work with neither sufficient capital nor sufficient skill. It would be too high

a figure to put the needed capital at the same rate in Canada, but it is notorious that the land hunger leads many men in all quarters of North America to "take up" far more acres than they can turn to profitable account. The profits of the most prosperous years can in most cases be invested to the very best advantage in the farm itself. It is all very well to be buying land for the whole colony of "boys" that may be growing up around a farmer's table; but in the meantime how are matters attended to on the "old place?" Draining, fencing, manuring; improving the breed of stock; erecting commodious and substantial farm buildings, where the cattle and crops can be safely housed and cared for, and where indoor winter work can be conducted comfortably and to advantage; and procuring the latest and most improved implements;—these and kindred matters ought all to be attended to before another acre of land is thought of, or before a single dollar is put out in mortgage.

One who knew Canadian farmers well used to say that he was sometimes in doubt whether the extra good crop or the bad one did most harm. This at any rate he affirmed—he was sure that many farms that were kept clear of debt in the owner's struggling years, got crowned with a mortgage when wheat was abundant and the price was good.

While land speculation may be one danger to which a good crop and a high price for grain tempt people both in town and country, and while personal and family extravagance may also be thus unduly stimulated, there is another danger to be guarded against,—being led by the good price to turn back to the old thriftless plan of cultivating wheat almost exclusively. From that evil habit the farmers in Ontario are just emerging, and it would be a thousand pities if any delusive expectation of more immediate gain should induce them to make wheat again their great dependence. No farming worth speaking of is possible without rotation of crops, extensive growth of Indian corn and roots, and careful attention to stock, so that as far as possible a large amount of the produce be consumed on the farm, and be returned to the soil in the shape of manure. It might perhaps be a disagreeable necessity, when wheat was almost the only article that brought cash, for farmers to look to that as their great staple and sacrifice everything, even their future prospects in the land, for its production. But things are different now, and no possible price ought to induce any

one to turn to the everlasting "wheating" of other days.

The progress of Canada has upon the whole been steady and healthy. We have very unnecessarily been spoken of as "slow coaches," and some have got a craze for pointing always to the other side in order to show us what enterprize and progress really are. We are now prosperous to as great an extent as any part of the States. Let us turn our prosperity to good account, and we shall find that there is no necessary connection between prosperity and a crash, for the collapse can be avoided by inflation being wisely guarded against.

Exhibitions.

Our annual Provincial Exhibition is now over for another year, and, as usual, has been a success. In some departments it may not have compared favourably with that of last year, but on the whole it tells of gratifying progress, and also gives additional proof of the great benefit accruing from such meetings, not merely to the particular district near the place of meeting, but to the country at large. Those who remember the earlier years of these exhibitions can tell how marvellous and how gratifying the change both in the quality and quantity of the animals and articles exhibited, and how improved even the spirit and bearing of the exhibitors as well. The Ontario of to-day is, in an agricultural point of view, a far different place from what it was twenty years ago, and a very large amount of that improvement we hesitate not to ascribe to the direct and indirect influence of the various agricultural Associations and Exhibitions, culminating in the yearly general display of the different products of our farms and factories gathered from one side of the Province to the other. So long as an individual lives isolated by himself or in a very circumscribed circle of neighbours and friends, he will have but little stimulus to exertion and will soon come to the persuasion that he has attained to all possible excellence in his particular craft or occupation. His little circle is all the world to him. Its applause fully satisfies all his wishes, and when he is recognized as first, or even nearly so, within his own limited range, he asks no more. He has seen an end of all perfection. When everybody had miserable long-nouted hogs grubbing about the roadsides, as coarse and scraggy as can well be imagined; when every one's cows were as thin as were Pharaoh's, and showed as little good-breeding as did those ancient animals, eating everything that a hog

could, except perhaps bones; when all the horses of the neighbourhood had the most of the deformities of the "auld man's mare," and farming implements in general were cumbrous and unhandy as in the days before the flood; it was taken for granted that all was right. "Sure," as the Irishman said, "it was always so." But then exhibitions came into fashion, and curiosity was awakened, and the contempt which ignorance and conceit are so apt to display, by-and-by gave place to far different feelings. This one got a different breed of pigs, and they were found not only to look better, but feed more easily, and to bring a better price. Some one else turned away his long-haired, thick-skinned, big-boned, unshapely cow, and invested in a comely-looking heifer, to the great merriment of the bucolic ignoramuses around him. But the merriment did not last long. The new cow gave more milk, had finer calves, commanded a better price, took prizes; in short, was seen to be a good investment; and the most ignorant and conservative could not resist the temptation to go and do likewise.

All that has been going on upon an extensive scale in this Ontario of ours for many years, and the results are seen on every side. Every kind of farm produce is vastly improved; our farmers are better off; the fields are better cultivated, and the general community better served. Of course the wider the area embraced in such competitions, and the larger number that can be brought to be interested in them, so much the greater stimulus and so much the greater improvement. Better that there should be township shows than none, and still better that the farmers and manufacturers of a county should meet in friendly rivalry; but better still that there should be meetings to attract and interest the people of the whole country, when the most spirited and enterprising in their various departments should meet at regularly recurring intervals to compare notes and exhibit what they can do, and when others who may be neither spirited nor enterprising should be able, at any rate, to see what can be accomplished, and be stimulated to exertion, or at least silenced in their self-conceit.

Our Provincial Exhibition for agricultural products and manufactures has been doing this work for many years, and has been doing it well. But it has not as yet fulfilled altogether its mission, and they are no true friends to our noble Province who would have it given up and supplanted by something smaller

and more localized. Yet such a thing has been talked of. And one result of such talk is seen in the institution of a rival gathering in London, which is promised to be yearly, and to do all the work which it seems needs to be done in the west. We have no words of deprecation for a London exhibition or for any local efforts, but we must say that the attempt to break up the Provincial Exhibition and have three, or four, or five local ones in its place, is short-sighted and mischievous in no common degree. It is urged that the great bulk of those who attend such exhibitions, either as exhibitors or as mere sight-seers, are drawn from the near neighbourhood of the particular place of exhibition, so that a local fair held in Hamilton, or London, or Kingston, would attract as many, and of very much the same classes, as though it were called Provincial and be professedly for the whole country. To a certain extent this is true, and yet not true. No doubt the great majority of the exhibitors and visitors will always be drawn from the adjoining country; but those who have attained special excellence in any department, or are specially ambitious, come from all quarters to a Provincial Exhibition, while they would not to one merely local. To have the greater number of exhibited animals and manufactured goods drawn from a particular district at any one exhibition can do no harm, so long as there are there for comparison and contrast the very best of each kind which the whole country can produce. But once make these gatherings merely local and this will cease to be the case. The people about London will compete simply with themselves. So will the people of Hamilton. So all over. And the result will be that the spirit of enterprize and improvement will be checked, the credit attached to prize-taking greatly lowered, and conceit in comparative mediocrity encouraged and intensified. The shop-keepers in each locality favour the idea of a permanent local exhibition every year, from the idea that it will bring grist to their own mills. They are quite mistaken. In a few years such gatherings would become insignificant and uninteresting to even the limited general public around, and it would be found that what was spent at a Provincial fair held in each city at intervals of four and five years would pay the shop-keepers better than the smaller and more frequent ones every year. This very effort to have merely local gatherings

is of itself a proof of narrowness of spirit and of the absence of anything like wide, generous rivalry of feeling. By our improved means of travel, every part of Ontario is brought nearer the great centres than very limited districts but a short time ago. Instead of coming down to narrower areas it would be more becoming to speak of extending the field of operation. This has been spoken of, as our readers know, and an exhibition for the whole Dominion approvingly hinted at. Perhaps, in the meantime at any rate, that would be going to the opposite extreme. The distances for the conveyance of valuable stock even by railway would be too great, and any such exhibition would, we fear, have to be limited from physical causes to manufactures of various kinds, and perhaps also to seeds and fruits.

People think of one exhibition for England and another for Scotland, and say, why not one for the Dominion? but we forget that, great and important as these countries are in physical extent, they are small compared with Canada, while the conveniences of travel are very much greater than we are yet privileged with. The exhibition in Ontario however, for the whole Province has been tried, and every year with increasing success; and it would be a step in the wrong direction, and little creditable to our spirit of enterprise and progressiveness, if we went back to mere local meetings, which, however good in their own way, can never afford so wide a field for competition, nor bestow so distinguished a mark of approbation upon success, as that of which Kingston has just been the scene, and in which all the Province has participated.

Fish Culture.

In addition to Mr. Wilmot's successful efforts in the propagation of salmon and other native Canadian fishes, he has just obtained direct from England about one hundred young *charr* of last spring's hatching. They vary in length from one to two inches, and to all appearances are very much like the fry of the salmon. They were brought over in a large glass jar, the water in which was not changed during their time of transportation of fourteen days. Only some half-dozen died in their passage. Those on hand are now taking food, and appear very healthy. It is to be hoped that this, the first introduction of one of the most beautiful and delicious fishes of Britain into America, will meet with that success which Mr. Wilmot's laudable ef-

forts in the work of fish culture are so justly entitled to.

Charr (*salmo umbla*, by some *salmo salvelinus*) is a fish of the same genus with the salmon found in the lakes of Britain and of the continent of Europe; they abound in the lakes of Cumberland and Westmoreland, and some of those of Ireland and the north of Scotland. It is the celebrated *Ombre Chevalier* of the Lake of Geneva. In Britain it is considered the most delicious and also the most beautiful of the salmonicks. Its haunts are in clear, cold lakes and streams, ascending the latter late in the autumn to spawn. Generally speaking they are not very dissimilar in their appearance and habits from the speckled trout of this country.

It is also gratifying to know that Mr. Wilmot's efforts in forwarding fish culture in Canada are producing equally beneficial results in England. Mr. Parnaby, the gentleman who brought over the *charr*, was Mr. Wilmot's first pupil in pisciculture, having engaged him as an assistant at the Newcastle establishment during the season of 1868. Being an apt scholar he soon obtained a knowledge of the work. The same year he proceeded to England, and, from the knowledge obtained, commenced the work of artificial fish breeding near the lakes of Cumberland, and his establishment is now considered second to none in England or Scotland. A very large number of *charr* and other fry were hatched out by Mr. Parnaby this season. He purposes taking with him to England some of our Canadian fishes.

The introduction of the white-fish of Canada (*coregonus albus*), into the fresh water lakes of Britain would be a most desirable undertaking. Whilst this fish, for delicacy and richness of flavour, is, perhaps, unequalled in the world, it is also one of the most important commercial fishes that frequent the inland waters of America.

New Varieties.

While an undue estimate of mere novelty is the fault of some speculative and sanguine minds, there is an opposite mistake into which too many farmers fall in Canada. When a new variety of cereal or root first makes its appearance, they are very often over-cautious, and wait to see how it will pay the neighbours who attempt to grow, before they themselves are willing to give a trial. Business men are always on the *qui vive* to introduce a new article, and will endeavour to push it before the eyes of the public before it has become too common, and are thus enabled to ask that fancy price

which every new article for which there is a great demand, and of which there is little stock, must command.

Farmers should show a little of the same enterprise. When you hear of a new variety, find out if you can obtain reliable recommendations, and be prompt—not rash—in making a trial of its merits. If we risk nothing we can make nothing. It is as cheap to raise a first-class product, for which, owing to its scarceness, there must be a demand, as to go on with the old samples, which inevitably deteriorate in value. Where is the old Red Chaff wheat? the Soules? the Meshanic potato? They are worn out. Somebody must originate the new kinds of both cereals and roots; let each farmer say I will be that one, and gain for myself the advantages which in most cases do accrue to such enterprising individuals.

Notes on the Weather.

The month of September has been characterised by an unusual amount of dry weather, and a prevailing temperature below the average. Pastures have suffered somewhat in consequence, and root crops have not made the usual advance—though judging by the samples at the exhibitions, there are plenty of well-grown specimens of all kinds to be found. Still the crop will probably not come up to the usual standard, and fodder certainly will have to be provided for stock early, and will require to be carefully husbanded through the winter. The report of the Toronto Observatory is as follows:—

Mean temperature 54°.8, being 3°.8 colder than the average, and 7°.0 colder than the similar month of 1870. The highest temperature occurred on the 5th, when it registered 81°.8; and the lowest on the 21st, 34°.0. Sharp frost on several days in the last week, and thin ice on shallow water. Snow fell in several localities on the night of the 29th and morning of the 30th.

The warmest day was the 5th, of which the average temperature was 70°.6; and the coldest day, the 21st, with an average of 41°.8.

Rain fell on 8 days, and amounted to 1.290 inches, being only one-third of the average quantity, and about one-half of the rain-fall of September, 1870.

The amount of clouded sky has exceeded the average, and may be divided as 6 clear days, 7 clouded, and 17 partially so.

Wind has varied considerably, although W. winds prevailed as a whole. E. and S. E. winds predominated in the early part to a great amount.

The award of Prizes at the Provincial Exhibition will be published in the next issue of THE CANADA FARMER, after the list has been officially revised.

Agricultural Intelligence.

The Provincial Exhibition

THE FAIR GROUNDS

The grounds are situated, just outside of Williamsville, a suburb of the city about two miles from the City Hall. At the time of the last fair here it was promised that before this one the Exhibition building would be moved to a more convenient site, but that promise, like many another one, was made to be broken. After this fair the city authorities will be compelled to remove the buildings off the present ground, as it belongs to the Government and is now required by them for another purpose. The ground is in itself perhaps about the best exhibition ground in the Province. It is of an oblong shape, running north and south, is high and dry, and forms a sort of ridge in the centre, on which the Crystal Palace is built, sloping gently away northward and southward. One of the chief objections to it is, that the supply of water required at an exhibition must be brought all the way from the river. A large number of puncheons have been sunk into the ground near the sheds for the live stock, and to keep them filled must necessitate a great amount of labour.

THE BUILDINGS.

The Crystal Palace is a light airy structure of pleasing exterior, having four wings 72 x 60 feet each, with a space 60 feet square in the centre. It is without a gallery, and being therefore too small to hold all the articles that are usually put into the Crystal Palaces at Toronto, Hamilton and London, a subsidiary building has been erected a little north-west of it. The new building is a plain wooden structure, one story high and 160 feet long by 30 feet wide. It was used for the exhibition of stoves, heavy hardware and machinery. The lower story of the Agricultural Hall—a two-storey building 180 feet long and 30 feet wide—will be used as heretofore for the exhibition of agricultural and dairy products, and the upper storey for fruits and flowers. The poultry shed, situated just west of the Agricultural Hall, has been enlarged, and 100 new coops have been added to the old ones, making 300 in all. For horses, 16 new stalls 12 feet square have been erected, and 35 new boxes 12 x 6 have been added to the old ones, making altogether 136. The sheep pens have been increased by the construction of 90 new ones, 8x6, to 175, and the cattle pens to 132, by the building of 50 new ones 12 feet square, besides which there are 32 old bullock pens 12 x 6. For pigs there are now 143 pens altogether, 30 new ones having just been constructed. In addition to the above three barns for the storage of forage have been built—one 30 x 24, on the south-east corner of the ground near the horses' quarters, and the others near the cattle and sheep pens. All these buildings were erected under the supervision of Mr. Jno. Power, architect, of this city.

STOCK.

In the various sections of blood horses there are only twenty entries, which is certainly very small in comparison with the entries in the other classes of horses. Mr. John Shedden, of Toronto, is the largest exhibitor in this class, and shows in the section for aged stallions the grey horse Thunder, by Lexington, out of Blue Bonnet, by im-

ported Hedgford. Thunder is a well-known horse in Canada, and also in the United States, and proved himself the best horse of his year; he is full brother to the famed horses Lightning, Loadstone and Lancaster. In this section Mr. James White, of Bronte, shows the five-year old horse Terror, by Rusie, out of Mantanna; this horse being in training does not show to the same advantage as those horses that have been prepared for the purpose of being exhibited. Mr. Herchmer, of Kingston, exhibits the bay horse Roscoe, by Charles Ball, a very fine powerful animal.

The only exhibitors in the section for three year-old stallions are Mr. Shedden and Mr. Lawrence, of Bradford. The former shows a very strong-built horse sired by Thunder, his dam being Queen of Trumps by Black Jack. In section three the only colt shown is Norlander, by Lightning, out of Vannie Ream. Norlander gained the first prize at last year's Provincial, and in the section for the thoroughbred stallion of any age we would not be at all surprised if he is placed before Thunder. The only brood mare on the ground is Julia Adams, by Vandal, also belonging to Mr. Shedden.

We should have very much liked to have seen some more of Mr. White's stock on the ground, as of late years he has been the breeder of a number of excellent animals.

Road and carriage horses are well represented, there being upwards of two hundred and seventy entries in the various sections. In section one, for stallion four years old and upwards, fifteen horses are shown. Mr. Buckland, of Guelph, exhibits the imported horse "British Champion," and bred by William Hairsine, Broomfield, Yorkshire, England. We are much pleased with the style and substance of this horse, and we have no doubt but he will very much tend to improve the breed of carriage horses.

Mr. Orr, of Georgetown, exhibits "Young Whalebone," also a very fine horse, and the winner of several first prizes at previous Provincial Exhibitions. The judges will experience some difficulty in deciding as to the respective merits of these two horses. Mr. Cunningham, Erin, County of Wellington, has a very powerful horse, also sired by "Whalebone." In this class the veteran importer of stock, Mr. Simon Beattie, has a representative in the imported horse "Grand Turk."

Mr. John Clarke, Nepean, Carleton, shows the black horse "Black Pirate," a very powerful horse and a first-rate mover. In the class for agricultural stallions, aged, the same gentleman exhibits a very fine specimen of the agricultural horse; he is of a beautiful brown colour, with great bone and muscle, and shows superior action. Such an animal is very hard to defeat.

In the class for the matched pair of roadster horses, a pair of blacks, the property of Mr. R. Pringle, of Grafton, were very much admired for their style, action and speed. They are both sired by the American stallion "Pumble Bee," at one time owned by Mr. Pringle, and for their inches we are confident cannot be surpassed in the Dominion.

A few of the heavy draught horses were paraded on the grounds.

Mr. Simon Beatty shows a splendid animal that has won several prizes in Britain, and is very likely to stand first in his class in the awards of to-morrow. Mr. Shaw, of Bowmanville, shows a very good horse; and also Mr. James Lawrie, of Scarborough, who has just returned from Scotland, bringing with him a number of Ayrshire cattle, also two yearling colts of the Clydesdale breed.

Although the Kingston exhibitions as a general rule do not present the same superiority as regards numbers and quality of stocks as the Fairs of Toronto, Hamilton, etc., yet the turnout of this year is worthy of the highest admiration, and reflects credit on the enterprise of our Canadian Agriculturists.

The Judges commenced their labours at an early hour on Wednesday and in most of the classes they experienced a considerable amount of difficulty in giving their awards. In the class of aged stallions of the heavy draught breed, the competition for first honours was between Mr. Simon Beattie's imported horse, and Mr. Shaw's, both very superior animals, but we prefer Mr. Beattie's as being the best type of the heavy draught. The younger animals were very fine. Mr. Miller, of Pickering, showed a beautiful bay mare, three years old, and lately imported from Scotland. However, she was only placed second on the list, the first prize being awarded to Mr. Davidson's bay mare by Netherby, and this mare received the first prize at last year's exhibition.

Mr. George Miller, of Markham, gained the first place with the two year old mare that was awarded first honours last week at the Toronto show.

The brood mares were not such a large show as we have seen on former occasions. In this class Mr. Shedden exhibits his fine mare with foal at foot, by imported Brutus.

Mr. McConnachie is also on the ground with his famous mare.

In the class for French Canadian stallions Mr. Robertson, Glengary, carried off the first premium with a black stallion, a perfect specimen of his breed.

Mr. Joseph Hickson, of Montreal, was second with a good-looking brown horse. The same gentleman also exhibits an entire Shetland pony in the class for extra horses.

Mr. Ferris obtained the diploma for the best stallion of any age with his third imported horse, A One, that was prized first at the Toronto show last year. He is a very fine horse, with good action and perfect symmetry. Mr. Ferris' horse, Scottish Chief, also obtained a prize in the class for aged stallions. The entire horses in all the sections of this class are superior animals, and many of them have taken first prizes at exhibitions both in England and Scotland.

The judges of the road and carriage horses decided for the Association Diploma for the best horse of any age, and Mr. Simon Beattie's two-year-old imported colt gained the honours. He is a very strong colt, and shows a great deal of breeding.

The entries of matched carriage horses and single carriage horses were very numerous, but the turnout in these sections was inferior to the display of some former years. The roadster horses appeared superior to the heavier carriage horses.

Some of the single driving horses showed speed and action, but were deficient in substance. The saddle horses were very poorly represented as to number. Mr. Duff, of Kingston, was awarded the first prize, and Mr. A. Smith, V. S., of Toronto, gained the second place with a five-year-old bay by "Kennet."

Mr. Porter, of Bowmanville, showed a beautiful three-year-old entire horse of the "Clydesdale" breed, that gained the first prize at the Highland Society's Show held in the town of Perth in July last. We must congratulate Mr. Porter on his selection, and we have no doubt this horse will somewhat recompense him for the great losses he sustained last season.

A considerable number of sales took place to-day and some very high prices were realized. Mr. Beattie, we are informed, disposed of his five-year-old heavy stallion for the handsome sum of three thousand dollars, and some of the young stock, Canadian bred, changed hands at prices varying from seven to twelve hundred dollars.

CATTLE.

The show of cattle on the first day was small. The Durhams exhibited, though of a good general order, were not numerous nor as good as we have seen at former Provincial Fairs. In the arrangement of the cattle sheds, the management, if they erred at all, did so upon the right side, as the show grounds, far from being at all crammed with animals, were but sparsely filled.

The bulls were securely housed in sheds provided with doors and locks, so that no possible accident could arise from the interference of strangers in the absence of the caretakers. The stalls for all the cattle were roomy, dry, and so built that, while strong, the accommodation for the sight-seeing public was perfect.

Such animals as were exhibited in the Durham class were in good order, reflecting great credit upon the care of our breeders, and the beasts seem to have suffered very little in their long journeys by rail.

The exhibitors in attendance seemed to have been well satisfied with the arrangements for providing them with feed and water, and with the special accommodations provided for their cattle.

SHORTHORNED.

For the first, or "The Prince of Wales' Prize," for the best shorthorned bull, and five of his calves under one year old, we noticed the "Oxford Chief," exhibited by John Bellwood, Newcastle, and bred by George Miller, of Markham, being sired by Bell Duke, of Oxford [550].

For the same prize, "Fawsley Chief," a bull, showing every inch of his pedigree, was exhibited. He was imported from the herd of Mr. Tow, Great Grimby, Lincolnshire, and on the dam's side claims descent from the "Booth" blood "Oxford Mazurka" another bull imported by Mr. Miller of Brougham, was bred by R. A. Alexander, Woodford, Kentucky; sire Royal Oxford, and grand-sired on the dam side by the Duke of Airdrie 11th (5533.)

Snell and Sons, Edmonton, shewed London Duke, also imported bred by A. Renick, Clark & Co., Kentucky. The Knight of Canada, owned and bred by Mr. F. W. Stone, is well-known in all our shows.

Among the progeny of Oxford Chief we observed London Prince, and amongst those of the dark roan Oxford Mazurka, were Nelly Bly 5th, 2 year old heifer, Isabella 2nd, Lorne 2nd, yearling heifers.

Bell Duke of Oxford, the property of Messrs. Birrell & Johnston, Pickering, Ont., was imported from the herd of R. A. Alexander, Esq., Woodford County, Kentucky. He was sired by Royal Oxford, (18774)

Several calves by the Bell Duke were exhibited, and all show such points as would lead us to place him among the leading male stock of this continent.

Among the 3 year old Durham bulls, besides Fawsley Chief, already mentioned, we noticed another importation, Lord York, roan owned by Simon Beattie, Bangor, Ont., and bred by Mr. Winterford, Kidderminster, England, from the Duchess herd by 7th Duke of York (17,754)

Forest Duke, the property of George Miller and sired by Bell Duke of Oxford, is a 2 year old bull giving every promise of a very fine development—clean in limb, small and compact in body.

Joe. Johnson, a very handsome yearling exhibited by J. Snell & Sons, drew much attention. He is well set up in front, where so many of the present young stock fail, and he inherits the body of the good old Loudon Duke, with a very well marked roan colour from his dam, Mary Gay. It may not be out of place to remark here that Loudon Duke is looking in good order, shiny and contented, even as we have often seen him look in public.

Among the Durham bull calves, we observed Marquis of Lorne, Gladstone and Buckingham, from Loudon Duke, the property of J. Snell & Sons; Bogus, Fourth Duke of Clarence, and Smith Duke of York, of Mr. F. W. Stone, sired by the Knight of Canada

Amadens 1st, imported by F. W. Stone, and bred by John J. Stone, Esq., Monmouthshire, is a rich roan, and a likely calf.

The show of cows in this breed was hardly up the mark of former years. Among the importations were Nelly Bly, from Illinois, the Rose of Strathallan, from Auchterarder, Scotland, Cherry Bloom, from Dalington, owned by John Millar

Cherry Bloom shews excellent breeding, and is from the Chilton stock, the far famed for their Teeswater connection.

The Rose of Strathallan, also imported from Auchterarder, Scotland, has many laurels which she won in the various Highland Society's shows, and her dam, the Rosa Bonheur, was also a great prize winner in Scotland.

In Durhams, cows 3 years old were also shown by F. W. Stone,—his Cambridge 10th. Sanspareil 15th.

Oxford Mazurka's stock was shown in Nelly Bly 5th, the property of Jno. Miller, Brougham.

Lady Julia (imported), owned by the same gentleman, was very noticeable. She was bred by Wm. Ladds, Kimbolton, Hants, Eng. She is of the now justly celebrated Juliet line, generally believed to be direct lineal descendants of Collings' Princess, who was the ancestress also of the Gwynne and Elvira branches of the Princess line.

Necklace, and Lady Bell, the property of Geo. Miller in this class stood in condition, clean cut of fore-part and necks and roominess, fair representatives of the latter calves of Bell Duke of Oxford [530.] We were shown by Mr. Miller, of Brougham, Ont., 4 two-year old heifers—Nelly Bly 5th, Miss Hamilton, bred by himself, and Duchess of Airdrie and Careless, the latter two imported from Kentucky. These four had lately been sold to Mr. Benson, of Prescott, for the gross sum of \$2,300. The first two—the exhibitor's own breeding—fetched respectively \$750 and \$650, while the latter were sold for \$450 apiece. W. B. Telfer, Pilkington, exhibited an animal in this class, which, imported from Wm. Chalmers, Esq., Aberdeen, Scotland, will, if properly served, add some fine stock to our shows. Her name is Royal Alice.

In the next class (yearling heifers) we noticed Lady Oxford. Her appearance does not belie her pedigree, which is, immediately as follows:—sire Baron Oxford (23,375); dam, Lady Butterfly, by Great Mogul (14,631,) a bull, from the celebrated Col. Towneley herd. She is of old Towneley Vestris tribe, 50 of which were sold at the Towneley sale in 1864, for £103 14s. 9d. each. This tribe is in direct descent from Mr.

Chas. Collings' Countess, sold in 1810, when nine years old, for 400 guineas. She stands a picture Red, without a white hair, except a few in the tail.

Cherry Vine, another importation from the stock of J. Currie, Edinburg.

Coquette, from the same, and Missio, from Aberdeen, are heifers worthy of remark.

HERFORDS—In these, Mr. F. W. Stone, of Guelph, was the only exhibitor. All, with one exception, are bred by the exhibitor, and are worthy of his well earned reputation.

DEVONS—The show of Devons were not as good as usual. "Wilmot," a dark red bull, bred by Mr. Scott, of Wilmot, sire "Young William," (1,031,) is an animal well worthy of notice. He is owned by W. and L. Courtice, Bowmanville. "Prince Arthur," four-year-old bull, bred by Nathan Cloute, Hope, is a fine bull, and his stock exhibited—viz: "Splendour" and "Sampson," yearling bulls, "Hector," bull calf, "Princess 2nd," two-year-old heifer, "Pink," "Graceful," and "Rosebud," heifer calves—shew him to be a very fine stock-getter. "Duchess," "Ladybird," and "Tulip," three very fine Devon cows, were exhibited by George G. Mann, Bowmanville.

AYRSHIRES—The entries in this class were numerous, but the stock was inferior in merit and condition to what we have seen at previous shows. We noticed a very handsome imported bull, "Robbie Burns," the property of Thomas Irving, Hochelaga. There was a large number of entries in the yearling bull class, amongst which "Lord Lisgar," bred by Alex. Crawford, Montreal, and "Carnet," bred by J. W. Hough, of Brockville, and the property of Thos. Guy, Oshawa, were noticeable. "Sir William," sired by imported "Robbie Burns," was a particularly promising bull calf. There was a large number of entries in Ayrshire cows, all in poor order even for milkers. Also, very large entries in Ayrshire heifers. This breed seems to be gaining ground amongst Canadian breeders.

GALLOWAYS.—The cattle exhibited in this class were not numerous, and, with but few exceptions, were confined to the herds of Messrs. Wm. Hood and Thos. McCrae, of Guelph, and Mr. Arthur McNeil, Vaughan, York. The two bulls "Our John" and "Black Prince," were fine specimens of the breed—the property of Messrs. Hood & McCrae respectively; while in the yearling bull class Arthur McNeil brought into the exhibition "Rodger," a very handsome beast. There were no females specially worthy of remark, and we observed no fresh importations of this stock.

GRADE CATTLE—Were far inferior to those exhibited at many previous meetings, and we observed none worthy of special notice.

FAT CATTLE—In this class we observed some very fine specimens, among which were specially observable four fat steers shown by J. S. Armstrong, Guelph.

JERSEY CATTLE—The entries in this class were entirely confined to Messrs. W. L. Rutherford, Waddington, N. Y., and Moses Ellis, of the same place. They were excellent specimens of their class, and we were particularly struck with the fine appearance of the Jersey bull, bred by Jas. Barnet, Mass. This bull is a perfect model, and fills perfectly all those minute points which make up the symmetry of the high bred animal; very fine in the limbs, and clean cut, small head, and carries the straightness of back clean out to the root of the tail. Has taken several first prizes in his class. "Princess," an imported cow from the Island, was very perfect in symmetry, and the exhibitors state

that she was making her 14 pounds of butter per week when she left the State. We see that no less than nine extra prizes were awarded to these cattle. The Jerseys are not favourites with farmers, and are hardly profitable except in the neighbourhood of large cities, but for the use of a private family in town or village they cannot be surpassed in value, for they are small, very gentle, require very little food, and are rich and generous milkers.

Altogether the arrangement of the animals exhibited was not as complete as it should have been in order that the public might have the best opportunity of observation and of gleaned information and instruction. The animals are not exhibited in classes, but are placed in herds according as they come in. Now, of course, this is very convenient for the exhibitors, as they have all their cattle near one another for attention and feeding, but the public is debarred from comparing animals in their own classes, and the printed catalogues sold upon the grounds are consequently of very little use. We believe that by placing the animals together, according to their class,—the bulls by themselves, the cows of each age by themselves, and so on,—the extra trouble to the exhibitors would be but very slight, and the advantage to the public, (that public for whose instruction these shows are especially designed,) to the judges, and we believe to the respective departmental superintendents, would be very great. The same complaint is made in the sheep department, and amongst the pigs we came upon an immense Suffolk boar in the class devoted to other small breeds. The pens were, however, good throughout the grounds, and the arrangement for the distribution of straw, food and water was highly spoken of by those in charge of the stock.

SHEEP.

The exhibition in this department of live stock was specially worthy of notice. In no other class has a greater spirit of enterprise been shown than is manifest by the extraordinary number of new importations among the entries in sheep. Never before at any Provincial exhibition was there an equal number of imported animals; and the number would have been still greater if all the animals entered had been on the ground. There were over 70 entries this year of imported sheep, chiefly Cotswolds and Leicesters. A large number of these were actually on the ground, and the show altogether was a remarkably good one. There was close and worthy competition in nearly all the classes, and the home-bred animals have in not a few instances carried off prizes over their imported rivals.

COTSWOLDS.—This class was very largely represented, and is evidently the favourite breed in Canada. There were over 170 entries. The competition lay chiefly between Messrs. Snell, J. Miller, F. W. Stone and Jas. Russell, of Markham, though W. Miller, junr., Pickering, G. Mitchell, Darlington, and others showed remarkably fine animals, and succeeded in carrying off some of the prizes. In the aged rams J. Snell took first prize with a fine imported animal, Jas. Russell the 2nd, with another new importation, and George Miller, of Markham, the 3rd.

The shearing rams presented a splendid show, and formed the most numerous section in this class. The judges had no easy task to come to a decision. In the line before them, when they were brought out for comparison, there were no fewer than thirteen imported animals, and a finer lot has not been brought together at any previous exhibition. John Snell succeeded in carrying off all the prizes. The entries of Mr. John Miller were more numerous than those of

any other exhibitor, and he deserves special credit for the spirit he has shown in importing so large a number of valuable animals, for the improvement of Canadian stock, during the present year. Mr. Stone's Cotswolds, in this section, were, it is needless to say, for the excellence of his stock is too well-known, remarkably fine specimens of breed.

The ram lambs were also a beautiful lot. The first prize went to Mr. Stone, the second to Mr. Snell, and the third to Mr. Russell.

The ewes in all the sections made a very fine display. It is not necessary to particularize the success of individual breeders, as the awards of the judges will be seen by the prize list. As in shearing rams, so also in shearing ewes, Mr. John Miller has been a most spirited importer, and entered no less than twelve of his new importations in this section alone.

The competition for the best pen, consisting of three ewes and two ewe lambs rested between Mr. Snell and Mr. W. Russell, and the palm was finally awarded to the former, though not without a well-merited commendation from the judges on the excellence of Mr. Russell's pen of ewes.

LEICESTERS.—There were a large number of entries of this breed, and, in point of merit, they were on a par with the Cotswolds. There were over 170 entries, and of ram lambs alone not fewer than 44. Mr. Snell was the most successful exhibitor, though he shared the honours with others of very great merit,—W. H. Wallbridge, of Belleville, Adam Oliver, of Downie, and Jas. Russell, carrying off many of the prizes. Indeed, there were quite a number of competitors in this class, and several showed imported animals; and among the number are some who are only just entering on this enterprise. Besides those already mentioned, John Scott, of Lobo; Hugh Love, of Hay; Joseph Kirby, of Trafalgar; John Jackson, of Grahamsville; and Donald Fraser, of Odessa, all had imported animals among their entries.

Mr. Wallbridge's importations in this class attracted considerable attention, and were deservedly much admired.

The competition for the best pen, consisting, as in the class of Cotswolds, of three ewes and two ewe lambs, was between Mr. Wallbridge, Mr. Snell, and Mr. Oliver, and a splendid lot of sheep the three pens presented. The prize was awarded to the first named exhibitor.

SOUTH DOWNS.—The classes in medium-wooled sheep, though well represented, were not so numerous as the long-wooled. Mr. Stone carried off a very large share of prizes, and his animals were certainly fine and in beautiful order. W. Forfar, F. Van de Bogart, and N. Bethel had also good specimens of the same breed. The shearing rams exhibited by Mr. Stone were new importations.

HAMPSHIRE DOWNS.—This breed was represented almost exclusively by the very beautiful flock of H. H. Spencer. Mr. F. Van de Bogart shewed some animals in the same class. They bear a general resemblance to the South Down, possess many of their good qualities, are hardy, and well adapted for this climate. Mr. Spencer's animals were of merit sufficient to have won distinction in a much larger competition.

ENTRA.—Mr. W. H. Wallbridge showed three splendid specimens of Lincoln sheep, all ewes, and imported this year from Great Britain, where they had previously won honours in the show yard, one of them having been a prize-taker at the Royal Society's exhibition at Oxford last year.

MERINOS.—There was a larger show than usual of these fine-wooled breeds. Many of the animals shown possess in a marked degree the excellencies of their class, in the closeness, length and fineness of their fleece, though their ungainly shape, and greasy and dirty appearance render them far from attractive objects to the general eye. The exhibitors in this class were F. Van de Bogart, Richmond, Lennox; R. D. Foley, Bowmanville; W. Smith, Barford; P. Hinman, Grafton; H. Macaugherty, Pittsburgh, and C. Foster, East Flamboro'.

PIGS.

The show of pigs was exceedingly good, and the provision for the accommodation of this class was carefully and perfectly attended to. Among the Yorkshires, the breeding sow of W. H. Wallbridge carried the palm for size.

SUFFOLKS.—Amongst the importations we notice a very handsome boar, one year over, exhibited by Mr. James Main, of Trafalgar. The Suffolk sow shown by Mr. James Main, of Trafalgar, reflected great credit upon the fattening propensities of the breed, but her condition rendered her practically useless for breeding purposes.

BERKSHIRES.—We notice a breeding sow, one year over, belonging to J. K. Macaulay, of Kingston, low set and well formed over shoulder and back, but showing slightly that fault so universal among our pure Berkshires, a falling away behind of the quarters.

"Lady Gloster" sow, 16 months, "British Queen," 7 months sow, and "Royal Briton," 14 months boar, the latter imported from the Royal Agricultural College, Cirencester, England, and the winner of the second prize in the (under one year) class at the Royal Show at Wolverhampton, are three very superior stock.

An improved Berkshire boar, 4 months, bred by H. Webb, is a picture of the improved Berkshire, and carries his clean cut and breadth of back completely over the loins and clear back to the root of the tail. Two boars and two sows, 5 months old, and all from the same litter, were well worthy of notice.

ESSEX.—An excellent show of Essex pigs, chiefly exhibited by Messrs. Craig, of Edmonton, and Geo. Roach, of Hamilton.

Among other breeds we notice an imported small breed sow and boar, 7 years old, from same litter. Also, Cheshire boar, 1 year and over, exhibited by J. Featherstone, Toronto township. A successful exhibition in several other sections.

POULTRY.

The show of poultry at Kingston in 1867, it may be remembered by those who visited the exhibition in that year, was a very poor one. It was very gratifying to find a marked contrast between that and the present exhibition in this class of stock. The stimulus given to this department of stock raising by the Poultry association, the interest still kept up by the *Poultry Chronicle*, with the valuable information it continues to disseminate, have evidently produced good fruit. The Exhibition this year will compare favourably with any of those held by the Provincial Association. The number of entries exceeds 300, which, considering that the greatest number of the birds have been sent from a distance, and that a section of the west which has usually contributed a very large proportion to poultry exhibitions was entirely unrepresented, is a very respectable number. Of the quality of the birds, it may be safely said that taken as a whole they have not been surpassed by any previous show. The chicken classes were particularly

good, and among them were birds that would have taken prizes in competition with adults. The varieties most meagrely represented were the Hamburgs, though there were good birds among them; and of pigeons also there was a very small show. Of the larger breeds of fowl, especially the dark Brahmans and Cochins, there was a fine display, with some magnificent specimens recently imported. The discrepancy between the number of entries and the amount of accommodation or the number of birds actually sent rendered it very difficult to make proper arrangements for the disposition of the birds according to their breeds, and the show was lacking in this element of order and instruction.

Among the adult birds the Cochins were represented by some magnificent specimens of the three varieties, cinnamon, white and partridge. Of Mr. Forsyth's birds, imported this year from Great Britain, we have before spoken in noticing the exhibition of the Toronto Electoral Division Society, at which they were previously exhibited, and where they deservedly swept the prize list in their respective sections. His adult birds were all imported, and the magnificent partridge cock which gained a prize at Birmingham was, strange to say, passed by at Kingston without any award, whilst a first prize was awarded to a cinnamon cock, with dark hackles spotted with black feathers.

Mr. H. M. Thomas, of Brooklyn, showed also some fine Cochins, from imported stock, or actually imported last year; and Mr. Russell, of St. Catharines, had fine birds of cinnamon and Partridge Cochins. Of the latter variety there were particularly good specimens—all imported.

The light Brahmans were scarcely up to the mark, either in merit or numbers; but there was a very fine display of the dark Brahmans, all birds of recent importation. Mr. Forsyth's, which gained the first prize, were particularly good. Mr. Thomas' specimens, of the same variety, were also very fine, though they give place in the judges' award to a trio in which the cock had a single comb.

Mr. Wallbridge had also good imported birds of this variety.

The Dorkings were a remarkably fine class, better, taken altogether, than we remember to have seen at any previous show. Mr. Miller gained the first prize, and Mr. Jas. Main, of Trafalgar, the second for an imported trio.

Game fowls were shown in considerable numbers, but were not, as a class, so meritorious as those already mentioned.

The Polands were not very numerous, but there were good birds of the different varieties.

The Hamburgs, as already mentioned, were not so well represented as usual. Mr. Briggs, of Kingston, showed the only pair of silver-pencilled. Mr. Wallbridge and Mr. Thomas showed each a trio of imported golden-spangled Hamburgs.

There were only a few hens of Spanish fowl. Mr. Miller's were the best.

Of French fowls there were a few hens of Creve Coeurs and Houdans recently imported, shown by H. M. Thomas, J. A. Miller, and Simon Beattie.

In the extra class Mr. Thomas showed a beautiful pair of English pheasants, for which a first prize was awarded.

There was a small show of bantams, the white feather-legged variety predominating. If there were any birds of special merit amongst them, they escaped our notice, partly perhaps from their diminutive size, and partly that they were placed in the lowest tier of pens.

There was little to notice among the ducks, with the exception of the Ayleburys, of

which there were some very good specimens, as well as others very much misnamed and misplaced. Mr. Forsyth's first prize Ayleburys were very large and pure. Mr. Miller's ducklings of the same variety were also excellent birds.

There were but few of the larger class of poultry, (turkeys and geese. Mr. J. Cullis, of Hamilton township, showed, as heretofore, very fine specimens of the white variety.

Of the chicken class, we can only say that it was, without exception, the best display of the kind that we have ever seen in Canada; and they were shown to advantage, being in excellent feather, while the season of the year was unfavourable to adult birds, many of which were in bad feather, and none, of course, at their best. The Dorking chickens were a beautiful lot. The larger varieties also were remarkably fine. Mr. Forsyth's Partridge-Cochinicks, just arrived from England and exhibited here for the first time, were astonishing, and bid fair to be magnificent birds in the spring. Nearly all the chicken pens were good, and reflect great credit on the exhibitors.

In awarding the prize for the best collection of poultry, the judges departed from all precedent, and certainly adopted a new principle of interpreting the terms of the prize list. There were but two collections of poultry shown as such—Mr. Forsyth's and Mr. Thomas's; but instead of confining themselves to these, the judges took into consideration all the separate entries, and gave the first prize to Mr. Miller, of St. Catharines. That gentleman certainly exhibited a very large number of poultry, and of excellent quality, having entered something in nearly every section, and deserves great credit for his enterprise; but he had not, like the other two just named, any separate collection. In awarding the prize for the "best collection of fruit," it has never been the custom to look over all the tables and all the entries, and award the prize from such a general comparison; but the judges have only looked at the displays of fruit entered as such and disposed by the exhibitor in one lot. The same principle, it is supposed, is to be adopted in other departments. If otherwise, the exhibitors should know it. We understand that a protest will be made, and we think very properly, against this decision.

IMPLEMENTS.

This department of the show shared in the general improvement, as compared with that of 1867, which has characterized nearly every part of the present exhibition. At the last Provincial fair held in Kingston, the show of implements was indeed rather meagre, and very far below what is usually to be seen in any of the other cities where the Association holds its annual gatherings. But this disparaging contrast has been completely removed, and the display of implements will compare favourably with any that have been seen during the last few years. Many of the implements are well known throughout and have become well-established in the estimation of farmers; some others are less known than they deserve to be, while a few among the number are entirely new, and are the result of that increasing need of agricultural machinery felt by every farmer in consequence of the scarcity and cost of manual labour. There is scarcely a department of farm work in which machinery of some kind is not destined to supersede the old-fashioned, slow and laborious methods of procedure with which so many of the pioneers of agriculture in Canada have been content to plod along after the fashion of their fathers.

Labour is becoming scarcer and dearer, and as it will no longer pay to reap grain with the sickle, neither will it be found profitable to sow or harvest, or prepare for use or feed, any other product of the field, or indeed perform any of the ordinary work of the farm, in the rude methods hitherto practised. An exhibition of agricultural implements is a very good index of the status and progress of agriculture in any community, and to the practical farmer is one of the most instructive and interesting features of an exhibition like the present. There was much intelligent discussion and comparison among the visitors on the ground, whose taste or knowledge of the great wants of the farmers' calling led them to this part of the show.

Most of the classes in the prize list were fairly and some very fully represented; though in a few of the sections there were no entries. Many of the exhibitors also have apparently failed to bring all the articles entered for competition.

MOWERS AND REAPERS.—There was an excellent and extensive display of these machines, ranged in three lines, according as they were entered, as single mowers, single reapers, or combined machines. Of the first class there were seven or eight on the ground, including a Sprague mower shown by John Abell, of Woodbridge; a Kirby, exhibited by A. Harris & Son, Beamsville; a Cayuga mower, by Brown & Patterson, of Whitby. These machines gained prizes in the order named; though the last had been successful at the trial of implements at Paris, in carrying off the first prize. Among so many excellent machines perhaps no two sets of judges would give exactly the same awards. Certainly every one who has used the Sprague mower speaks in the highest terms of its efficiency and lightness of draft. Mr. Watson, of Ayr, exhibited his Humming-Bird mower, another extremely light and compact machine, which, notwithstanding the lightness of the draft, its small size and apparently slight construction, is still capable of doing good work on heavy grain. It is all of iron, with but few castings, and no belts to get out of order. L. D. Sawyer, of Hamilton, exhibited a Woods mower; John Forsyth, of Dundas, and W. H. Wallbridge, of Belleville, and Bell & Son, of St. George, had also their excellent single mowers on the ground.

In the section of reapers we find for the most part, the same name, amongst the exhibitors, the largest proportion of whom showed the Johnstons reapers. The successful competitors for premiums in this section were, in the order named, Brown and Patterson, Forsyth and Abell. Of combined machines there was even a larger display than of either of the single class. John Forsyth, of Dundas; J. H. Grout, of Grimsby, and Hagger, Brothers succeeded in carrying off the prizes. The only additional names amongst the exhibitors in this section, besides those not mentioned already in other sections, were those of G. & J. Brown, of Belleville, and John Herring, of Napassee.

PEA HARVESTERS.—There were three of these much needed implements on the ground, in the neighbourhood of the reapers and mowers, among which they are very naturally looked for as belonging to a similar class of harvest implements. One of these is simply an attachment consisting of long projecting iron teeth that may be affixed to any ordinary reaping machine. This appendage was shown by Anderson and Johnson, of London. A second implement, in principle much like a reaper, was shown by

George Davis, of Guelph. This may be attached to any mower bar, is strongly made, and said to do good work, while its cost, from \$10 to \$15, according as it has a table attached, or not, is exceedingly moderate. Both these machines, it will be observed, are cutting implements, which some contend are liable to divide the pods and scatter the peas. The third pea-harvester, exhibited by Mr. John Tennant, of Paris, is constructed very much on the principle of an ordinary horse hay-rake, with wooden teeth; but between each pair of these are shorter iron teeth. This machine does not cut, but pulls the peas. It is said to do very clean work among peas, and also to be extremely efficient in raking hay or stubble. It was exhibited at Paris at the implement trial in August, but was not then submitted to trial, as there were no peas sufficiently ripe to harvest in the neighbourhood; but subsequently, at the trial held by the County Society—to whom the Provincial Committee delegated the arrangements—Mr. Tennant's pea-harvester was awarded the first prize.

THRASHING MACHINES.—These gigantic specimens of farm machinery were not mustered in such imposing array as they often present at our Provincial shows; but nevertheless there were on the ground a number of the best of these splendid inventions. John Abell showed a thresher adapted for steam power, and worked by a portable steam-engine—the only one on the ground. Mr. Abell has made a recent addition to these magnificent machines, by which the grain is most effectually winnowed and cleaned. The improvement (for which a patent is applied) consists of a fan elevator and scourer attached to the side, and subjecting the grain, after it has been threshed from the straw and passed through the ordinary separator, to a second screening. The grain is thus delivered in a remarkably clean condition, and is at once fit for market. The same exhibitor had also another thresher adapted for horse-power. This is also provided, like the steam threshing machine, with the fan elevator. Besides these was a smaller machine, shown also by Mr. Abell, designed for cleaning clover. Glasgow, McPherson & Co., Clinton, again showed their Climax thresher, which has more than once gained a first prize at Provincial shows. L. D. Sawyer & Co. also exhibited an extremely well got up threshing machine. G. & J. Brown, of Belleville, exhibited an excellent thresher with patent shaking rake attached to the shoe, safety couplings, and a triple gear horse-power. E. G. Gordanier, of Ernestown, showed an American machine, of somewhat peculiar construction, with the driving power raised on wheels, thus obviating the necessity of loading and unloading every time it is moved.

Two vibrating threshing machines were on the ground, one shown by J. Watson, of Ayr, that gained the first prize at Paris, and the other exhibited by John Scott of Caledonia. The power attached to this was, like the American one already mentioned, raised on wheels. A small thresher and carrier, (without a separator) and adapted for a four-horse power, was shown by W. H. Wallbridge, of Belleville. This would be found a convenience to some farmers who would prefer to do all their threshing without extra help and all the cost and trouble of the large travelling machines. Another thresher, also well adapted for the farmer's own use, was shown by Joseph Shannon, of Stratford. This has, moreover, the greater advantage of being a complete separator and cleaner, as well as thresher. It is of comparatively small size and small cost; has been now favourably known for some years, and is, we under-

stand, gaining rapidly in the estimation of farmers who have used or seen it in operation. Many will be able to appreciate the great convenience of being independent of the larger travelling threshing machines, the advent of which causes no small stir in the farmer's household, and no small drain on his purse.

PLOUGHS.—There was quite an extensive and diversified collection of ploughs of all sorts on the ground, and the variety of construction formed a striking feature and an instructive subject of comparison and study. The elongated form of share, mould-board, beam and shafts, characteristic of the ploughs in use in the western section of the Province, such as the Morley plough, was conspicuously contrasted with the short-looking implements, with their broad shares, which seem to find favour in Kingston and throughout a large section of the surrounding country. Probably the nature of the soil has much to do with the prevailing form in this implement.

Commencing with the double-furrow plough, we observed Gray's efficient and powerful iron implement, with which Mr. Rennie, of Toronto, has now made the frequenters of agricultural exhibitions quite familiar. It would have been interesting to have seen it tried under more favourable conditions than those which attended the exhibition at Paris, and which were very adverse to any ploughing.

Of iron ploughs there were a number of very well constructed specimens shown by well known makers, such as J. & G. Morley, Thorold; G. Wilkinson, of Gormley; John Gray, of Scotland, through his agent, Mr. Rennie; James Chisholm, of Paris,—prize takers all these at the trial of implements in August last; N. Wilmot, Kingston; T. Yeandle, of Stratford.

There was, perhaps, a still larger assortment of iron beam ploughs, with wooden handles. One firm alone, Raker & Shannon, of Picton, showed no fewer than seven of these—all somewhat different in detail, but presenting a general resemblance to the prevailing short plough of this eastern district; while Abell, Morley, Wilkinson, and Williamson of Seaforth, exhibited the western styles of the same implement.

There were fewer entries of wooden ploughs, and even these were not all forthcoming. In this section Morley, Barker & Shannon, Chown & Cunningham, of Kingston, and Jacob Neads, of Bowmanville, were the principal exhibitors.

There was but one gang plough on the ground. This was shown by J. & G. Morley.

A double-shear trench plough, shown by S. Hulbert, of Prescott, looked like a useful implement.

Double-mould ploughs were exhibited by C. Thain, Guelph; Morley, Chown & Cunningham, and S. Hulbert.

There were three gang ploughs, the manufacturers being Barker & Shannon, Joseph Fleury, of Aurora, and R. Dean, of Stratford, the last of whom took the prize at Paris. Barker & Shannon showed also a single-horse corn plough.

CULTIVATORS AND HORSE HOES.—Of these implements also there was a good display. The combination machines made by H. Collard, of Gauanoque, and which have now become well known, are entered in nearly all the sections; for by altering the parts they may serve a variety of purposes, making an efficient weed cleaner, sculler, or cultivator, and are well adapted for working among turnips, potatoes, or corn.

Joseph Linton, of Orono, exhibited a very admirable iron two-horse cultivator, which is very simple in its construction, the parts being few and strongly made. A good two-horse wooden cultivator, which gained the first prize at Paris, was shown by J. Borer, of West Flamborough; also by Barker & Shannon, of Picton, and B. Bell & Sons, St. George. Single-horse hoes were also represented by a few useful-looking implements. D. H. Winter, of Athol, shewed a good corn cultivator.

The iron clod crusher, manufactured by J. Abell, consisting of a number of wheels, the rims of which are bluntly toothed, revolving separately on a common axis, was the only implement of the kind on the ground. It is a thoroughly efficient machine, and has been described and illustrated in the CANADA FARMER.

HARROWS.—This class of implement was rather slenderly represented. There were a few both of wood and of iron, with which our agricultural readers are quite familiar. Collard has introduced some recent improvements in his excellent iron section harrows. The improvements consist principally in the form of the teeth, which are flattened and present sharp edges in the direction of the draft, and in the mode of insertion, which is by an oval in place of the usual square tenon.

ROLLERS.—The competition in these was limited; yet there were some excellent examples, both of iron and wooden rollers. The prize list will furnish the names of almost every exhibitor in this section.

GRAIN DRILLS.—In this section also there was only a small display, Maxwell & Whitelaw, Sawyer, and Watson being the only three exhibitors. Two good combined machines were on the ground for cultivating and broad-cast sowing at the same time, or separately if it were desired. One of these was shown by Brown & Patterson; the other by J. Westlick, of Hope.

There was but one turnip drill on the ground. This was shown by C. Thain, of Guelph, and recommended itself by its simplicity of construction. It is an implement that we have no doubt would work well, and not be liable to get out of order.

MISCELLANEOUS.—Turning from these lighter implements to machines of considerable power, we noticed one example each of a stump extractor, a stone lifter, and a ditching machine. The latter was shown by J. Abell, made after Carter's patent. The stump extractor, a large machine on very high wheels, so that the stump can be carried away as well as pulled out—was shown by W. Jamieson, of Glengary. The stone lifter, somewhat similar in appearance and principle, was exhibited by J. A. McColl, of Wooler.

Messrs. Bulmer & Sheppard, Montreal, exhibit a model of a patent brick-making machine.

Several horse powers for threshing machines, or other purposes on the farm, were on the ground. These varied in capacity from two-horse to ten. Maxwell and Whitelaw showed in this section; and W. H. Wallbridge had also a number of them.

Only one sulky horse-rake with iron teeth was exhibited. This was the implement manufactured by G. Davis, of Guelph, that gained the first prize at Paris. Two others with wooden teeth, and, like the foregoing, mounted on wheels, were on the ground; one shown by H. Murphy, Port Hope, and the other by A. Kerby, of Napanee. Of horse-rakes not on wheels, there were also two specimens of the ordinary construction—Barker and Shannon, of Picton, and W. Barker, of Glenvale, being the respective manufacturers.

There was not the usual display of horse pitch-forks and tackle. Indeed, though there were several entries, we saw but one on the ground, shown by Andrew White, of Galt.

Straw Cutters, Grain Crushers, and Root Cutters were well, if not numerous, represented by the beautiful and well-known implements of Maxwell & Whitelaw and J. Watson. The former showed also a combined machine for cutting straw and crushing grain. His root cutter has a reversible motion, and is adapted for cutting into larger pieces for cattle or smaller for sheep. This firm also exhibited for the first time in this Province a novelty which will, there is reason to expect, become almost essential to profitable root feeding, namely: a Pulper, constructed after Bentall's English patent. This useful machine has been fully described in the Agricultural department of THE GLOBE and CANADA FARMER.

Two machines for sowing grass seed by hand were on the ground. The one shown by D. Bateman, of Scugog, is worked by hand, and designed to be carried on the shoulder. The other is similar in principle, but is set on a frame with a single wheel in front, which gives the requisite motion to the slide.

H. Sells, of Vienna, was again to the front with his well-known and excellent eider mills.

A few farm waggons were displayed under an open shed at one side of the grounds along with the lighter and more finished carriages and sleighs.

The tools and implements for hand use, mostly, of course, under cover, were somewhat dispersed in different parts of the buildings. Tuttle, Date, and Rodden, of Toronto, and J. J. Higgins, of Montreal, were the principal exhibitors in this department, and showed an excellent assortment of nearly every variety of farm tools. Our manufacturers have gradually improved in the construction of these articles on this side the Atlantic, and now supply a far superior article, especially for lightness, to those made in England.

Fanning-mills have never been exhibited in any great number at these exhibitions. There was, perhaps, a little more competition than usual. A. Brown, of Pittsburg, showed Tyson's Patent Dominion Fanning-mill, a very complete and effective one, containing some new features. W. A. Serolamy, of Tara, and G. Walker, of Kingston, were also exhibitors in the same class.

Among the extra articles shown were a fruit ladder by J. Losee, of Cobourg, and a corn-sheller by the same exhibitor.

Dunn & Co., of Stratford, showed a portable fire-engine, worked by two handles, and two small horizontal pumps.

Mr. J. Brokenshire exhibited four of his celebrated Atlantic ship pumps, three of metal and one of wood. One of them is intended to be operated by two men and will throw out of a vessel about 6,000 gallons of water per hour. Another, a wrecking pump will it is said throw out from 18,000 to 20,000 gallons of water or 600 bushels of wheat without choking per hour, eight or ten men working it. It may also be operated by steam. He also exhibited a new description of ship pump called the Pacific, which being worked by a short perpendicular handle will require comparatively little room. Mr. Brokenshire also exhibited the "Village and Cottage Fire Engine," a force pump constructed on the same principle as the Atlantic pump. It is said that with a two-inch nozzle this pump will throw about 50 gallons of water per minute a height of 75 to 100 feet.

DAIRY IMPLEMENTS.—In the same building with the dairy products was an assortment of dairy implements. G. H. Pedlar, of Oshawa, showed a steam apparatus for butter and cheese factories; also, two cheese vats. The steam heater appeared to be a well-contrived, simple, and economical apparatus.

Hatch and Company, also of Oshawa, exhibit another dairy heating apparatus, which works on a very simple principle—by the circulation of hot water. Besides the heater, they had on view a vat, cheese press, cheese hoop, and an assortment of cans very strongly made.

Chown and Cunningham also showed a first-class assortment of factory milk cans and pails.

There was the usual competition in churns, which presented considerable variety in the appliances for lessening labour.

James Goodwin, of Stratford, was successful in winning the first prize for a machine that no doubt works well. There are two dashers that revolve in opposite directions, like paddles, and thoroughly agitate the milk. The second prize was awarded to C. Stapleton, of Peterborough, for a churn which has, in addition to the usual dashes, a simple contrivance like a miniature fanning-mill, for aerating the milk while it is being churned.

AGRICULTURAL PRODUCTS—GRAIN.

WHEAT.—Canada Company's Prize for best 25 bushels of winter wheat, 7 entries, awarded to James McNair, Richmond Hill, who also with the same sample takes the prize for best 2 bushels winter wheat, the Deihl variety: yielded 50 bushels to the acre and weighed 66 lbs to the bushel; the weight was tested in the building. Like all the Deihl wheat it has a slight sprinkling of red grains; was grown thus—upon pea stubble, after sod mowed three years, manured on pea stubble, ploughed twice, and sowed broadcast, 2 bushels per acre, upon the 10th and 11th of September. The seed was imported by Mr. McNair some six years ago from Indiana. There were several competitors in this class. Mr. Forfar gets 2nd prize, and Mr. McKivior the 3rd prize.

Mr. Forfar's Deihl wheat, which took the 2nd prize in this class, was grown upon his farm at Scarborough, a clay loam; sown on summer fallow, manured; yielded 40 bushels to the acre, weighing about 66 lbs. to the bush. We would mention here some wheat the result of experiments in hybridizing by Mr. Forfar. The experiment was made upon the Deihl wheat as a female by the use of the pollen of the Soules' wheat. The result is satisfactory as far as the experiment has gone. The qualities gained to this hybrid wheat are the prolific nature of the Deihl, the hardness of the Soules, and a strengthening of the Deihl straw. Mr. Forfar has from 40 to 50 different combinations of Treadwells, Deihl, Soules, Michigan amber; the result of which experiments cannot but be of immense advantage to the farming community at large.

The samples of wheat both red and white shown at Kingston are probably superior to those shown at any former meeting of the Association.

PEAS.—Marrowfats, shown by John Gillis, Hamilton, a most superior sample, while those to which were awarded the 2nd and 3rd prizes were hardly a whit behind. Small Field, a good sample, and other field peas, fine sample, shown by Chas. Foster, East Flamboro', gained without hesitation the first place.

BARLEY, 2-rowed.—The best of this, shown by Alexander McKenzie, was an excellent sample, bright and plump. 6-rowed—A medium sample.

OATS, white.—A good show, in which a sample of potato oats were conspicuous. Black—a very inferior lot shown, which the Norways did not redeem.

RYE.—Only a few lots and a poor sample. We notice also a fine package of 112 lbs. dressed hemp, shown by Edward Shaw, Kingston.

INDIAN CORN.—Several entries in Red and White Corn; as a rule a lot of poor samples.

Tobacco; one sample of broom corn; and some very superior black and white tares; buckwheat, inferior; beans good; mangel wurzel seed, good; white mustard seed; turnip seed; several bags of very good timothy, amongst which we should think judges would have difficulty of decision; several bags of very pure red clover, also Alsike clover; millet and flax seed.

HOPS.—Four bales were exhibited from London, West Niasouri, and Sophiasburg, all excellent samples—bright, fresh, and full of gum.

ROOTS.

POTATOES.—Eight entries in Early Goodrich; small, owing to dryness of season. Eleven entries in Early Rose; small for their kind. Five entries in Buckeyes; some superior samples. Four entries in Cups; medium. Five entries in Harrison; firm, but medium-sized sample. Flukes, one entry. Several entries in Peach Blows. Peerless, two entries; we believe these are the first that have been shown at our provincial exhibitions. The sample before us was solid, and of good size for the year; the skin is thin; the inside very white, and, like the Goodrich, very full of starch. They received 1st and 2nd prizes among "Potatoes of other sorts." Several entries in the class collection, comprising all the old varieties, with Early Rose, Peerless, Harrison, and Breese's Prolific in addition.

TURNIPS.—Very poor. Grey stones and White Globes; among the swedes we notice the following varieties:—Marshall's Improved, Skirvings Green Top.

MANGOLDS.—Good. Varieties were: Red Globe, Yellow Globe, Long Red.

BEETS.—None shown, but a white beet—we presume the Silesian White Sugar Beet.

CARROTS.—A very clean, well shaped and solid sample, short in the neck: varieties, Belgian White, and the Common Red.

PARSNIPS.—A good sample.

KOHL RABI.—Small bulbs, but compact.

CHICKORY.—Inferior.—Several samples of the Mammoth squash; nothing extra. Fine samples of Common Field Pumpkin.

HORTICULTURAL DEPARTMENT.

of the Exhibition was set out in the upper story of the Horticultural Hall, which was neatly decorated with evergreens, and conveniently arranged for showing the Horticultural products. The centre of the room was occupied with a long table, extending the entire length, which was entirely covered with fine samples of fruit; and against the walls, on either side, were tables with flowers, and such of the fruit as could not be accommodated on the centre table. There is a very large collection of the different varieties of apples, which are already become a staple of this Province, and form no mean item of export to the Mother Country, where our Russets and Ribston Pippins and Baldwins are in good demand, and the Beaver brand always takes a foremost place in the market.

The display of pears was proportionately large, and the samples of great excellence, showing that an increased interest is being taken in the cultivation of this delicious and somewhat capricious fruit. The number of varieties shown by gentlemen and professional nurserymen was considerably in advance of the average of past years, and it will not be long before we shall be able to become exporters of pears as well as apples.

The display of fine grapes was a feature of this Exhibition. Some of them are hot-house varieties, and, of course, have been grown under glass, but a very large quantity, including a number of varieties, are hardy, out-of-door sorts, and very finely ripened in the open air.

There were also some peaches and plums on exhibition, together with a few very fine quinces, but it is not to be expected at this late season that these should appear in any great quantity.

In flowers from the garden the collections were necessarily confined to those which appear in the autumn, embracing Chrysanthemums, Stocks, Dahlias, Verbenas, Fuchsias, and Gladioli, and these not in very great profusion. The weather was too cool to admit of the removal of many hot-house and conservatory plants to the Hall, hence but few of these were to be seen here. A very large Oleander, covered with a profusion of rose-coloured flowers, adorned and nearly occupied one end of the Hall, and occasional floral designs and bouquets add to the beauty of the whole.

Vegetable productions were out in strong force, and large cabbages, monstrous squashes, with tomatoes, onions, red peppers, and all the variety of the vegetable garden, showed that there are those who appreciate these less showy but none the less useful products of horticultural skill.

FRUIT—NURSERYMEN'S LIST

There was a spirited contest among professionals in the several collections allotted to them. The sample of fruit shown was very fine, and the standard of excellence in the quality is evidently improving from year to year.

In the collections of thirty varieties of apples, the first prize was taken by the nurserymen residing in the old Niagara District, Messrs. Beadle & Buchanan, proprietors of the St. Catharines nurseries. This part of the Province has been so long noted for the excellence of its fruit that it might be expected to take the lead; but we are glad to see that our much-esteemed friends of the Toronto nurseries, Messrs. Geo. Leslie & Sons, have shown that the climate and soil on the north shore of Lake Ontario is only second to the far-famed Niagara District, by carrying off the second prize for thirty varieties of apples.

Mr. Jas. Williams, of Bloomfield, received the third prize, thereby demonstrating that the section of country in which he resides is capable of producing very fine samples of this most valuable of all our fruits. That the apples raised at Bloomfield cannot be far behind those of Toronto is manifested by the award of the second prize made to Mr. Williams in the collection of twenty varieties, the first having been taken by Beadle & Buchanan, and the third by Leslie & Sons. That our readers may know what varieties of apple are most esteemed among us we give the names of those to which the first prize was awarded. They were the Pomme Grise, Northern Spy, Ribston Pippin, Gravenstein, Rhode Island Greening, Roxbury Russet, Norton's Melon, Esopus Spitzenberg, Swazie Apple, Mother, Dutch Mignonne, Snow Pomme Grise Golden Russet, Hubbardston

Nonesuch, Swaar, Baldwin, Vermont Pippin, Pickman Pippin, Blue Pearmain and Pennock. The greater part of these are apples of the highest excellence; the Blue Pearmain is somewhat variable, not attaining its full excellence every season, and besides that the tree is not of that robust constitution and vigorous growth so essential in our variable climate. The Pennock is very variable—in some seasons it is badly affected with bitter or dry rot. It is not worthy of a place among the best twenty varieties, nor indeed worthy of cultivation at all in our country. We are glad to see the Pickman Pippin in this collection. It is a very valuable variety, keeping well throughout the winter. For cooking it has but no rival in its season, and that is the Esopus Spitzenberg. It is a fruit of the highest quality in richness and flavor, and the tree is hardy and vigorous, and a liberal cropper. The Mother is another variety deserving the attention of fruit-growers, of handsome appearance, having a fine aromatic flavour, and the tree an abundant bearer.

In Pears there was a truly splendid display: the nurseryman having the most favoured localities taking rank in the order that might be naturally expected—B. A. & Co. Buchanan first, Geo. Leslie & Sons second, and J. P. Williams third. The collection of six varieties which obtained the premier prize was composed of Bartlett's, Flemish Beauty, White Doyenne, Beurre Bosc, Beurre d'Anjou, and Belle Lucrative—all of them fruits of the very highest excellence. Unfortunately the Beurre Bosc is too tender to endure the climate of many parts of the Province, thriving best in those localities where the peach is found.

The display of Peaches by the nurserymen was confined, we believe, to Messrs. Beadle & Buchanan, of St. Catharines, who staged a collection of Peaches, and the best three varieties.

The first prize for open air Grapes was taken by Geo. Leslie & Sons, and this collection demonstrates most fully that beautiful grapes, and of most excellent flavour, can be grown in the vicinity of Toronto.

In the amateurs' list there was a most creditable display of fruit of all kinds, and the first prizes fell in very large share to the fruit from the old Niagara district, not less than sixty-nine of the prizes for fruit having been taken by residents of this part of the Province. The Baldwins, Golden Russets, Pomme Grise, Spitzenberghs and Swazie Pomme Grise, Roxbury Russets, Gravensteins, Spys, R. I. Greenings and Portus, which received prizes, all come from this district. But in snow apples, L. Springer, of Hamilton, took the first prize, and J. L. Nicol, of Kingston, the second, showing the fact that this variety prefers a somewhat cooler atmosphere than the summers of the great fruit peninsula. The best Seek-no-further comes from J. C. Hawley, of Fredericksburg, first, and Thomas Wilson, of Kingston, second; from which fact we learn that this fruit attains a high degree of perfection in that neighbourhood. The Fall pippin also does well about Portsmouth, Mr. Angus Shaw, of that place, having carried off the second prize in that variety. There too, the Alexander, a very large and showy Russian apple, attains a high degree of perfection; Mr. Hawley taking the first prize and Mr. C. Caraduff, of Smith's Falls, the second. The best plate of St. Lawrence came from Jas. Daly, of Kingston, and of Swaar, from John Smith, of Barford. The finest plate of Ribston pippin, and most magnificent specimens they were too, were from Hamilton, exhibited by L. Springer.

In pears the first prizes were taken by residents of the Niagara district, with the exception of the first prize for the best four

varieties, and for the best Seckels, and best Sheldons, which were awarded to Mr. L. Springer, of Hamilton, thus very clearly demonstrating that, at present, our best pears are grown between Lakes Erie and Ontario.

But when we come to plums the tables are completely changed. The first prizes for collection of plums, and for the best twelve cooking, were taken by Mr. W. Benham, of Vaaloph, and only one first prize and one second in this fruit were taken by residents of the great fruit district.

In out-of-door grapes, too, the honours are more widely scattered. The best collection was shown by J. A. Allen, of Kingston, and the second by Jas. A. Miller, of St. Catharines; the best six varieties by Mr. Allen also, and the second by John Forsyth, of Toronto. In order that our readers throughout the Province may know how well the several varieties of grapes will thrive in various parts, we give a full list of those which received the first prizes. From this it will be seen that a large number of really excellent varieties may be ripened in many and widely distant places, and a valuable guide furnished to the grower who are desirous of planting the varieties which thrive well in their own vicinity.

Delaware grapes, from J. Forsyth, of Toronto, received the first prize, and from Geo. Durand, of Niagara, the second. The best Dianas came also from Mr. Forsyth, and Mr. James Brown, of Toronto, had the second; while in Allen's Hybrid the tables are just reversed, Mr. Brown being first and Mr. Forsyth second. Toronto, in the person of Mr. Forsyth, takes the lead in Bartford Prolific, and Mr. J. A. Allen, of Kingston, comes in for the second; in Concord, also, he takes the second prize, while Niagara gets the first through Mr. Durand. In Cleveland, however, Mr. Allen takes the first prize, which he does also in Adirondac and Rogers' Number Forty-four. In Rogers' No. 3, and Rogers' No. 4 Mr. Forsyth gives Toronto the lead, followed very closely by Mr. Allen; but in Rogers' No. 19 Mr. Forsyth takes the second place, yielding the palm to Mr. James A. Miller, of St. Catharines. The best Israella, (not to be confounded with Isabella,) were shown by J. B. Hay, of Elmhurst East, and the second by Mrs. E. J. George, of Kingston. The best Iona were shown by James Brown, Toronto.

There were some most magnificent specimens of Exotic Grapes, fine in bunch and berry, and delicious in flavour. We are much gratified to see the increasing interest manifested in their culture, for there is no reason why every gentleman in the land, of the most moderate means, should not enjoy this most delicious fruit.

In the Nurserymen's class Mr. John Gray, of the Brockton Nurseries, Toronto, had a fine display of some fifteen varieties, and carried off seven first prizes. His Grizzly Frontignan were unusually fine, better than they are often seen in England, and his Muscat Hamburgs magnificent to the eye and exquisite to the taste.

Among the amateurs we see that Mr. John Riordon, of St. Catharines, takes the first prize for the best collection, and Mr. G. G. Fraser, Kingston, the second. We trust the day is not far distant when the number of entries of this class of grapes will be ten-fold to what it now is, thus demonstrating that Canadians know how to grow and enjoy the finest grapes of sunny Italy despite all the rigours of our less favourable climate.

FLOWERS.

The display of flowers was meagre, but the dahlias and pansies were of very fine

quality, and the bouquets truly beautiful. Mr. Bristol, of Picton, deservedly won the first prize for cockscombs, which were exceedingly well grown and showy. Mr. Flanagan, of Kingston, carried off the first prize for the largest collection of dahlias; for the best twelve dahlias, the best collection of phloxes, of double zinnias, of scabioceas, of double daisies, and the best twelve verbenas, and the best twelve pansies. The first prize collection of verbenas was awarded to Mr. G. G. Fraser, of Kingston. Among the dahlias shown were some truly fine varieties; of these we desire specially to mention Queen Mab, Stafford Gem, Mrs. Harvey's Cakes, Hebe, LaPhare, and Calypso, varieties that deserved a first place in every collection. Mr. E. Baiden, of Portsmouth, received the first prize and J. L. Nicol, of Kingston, second, for collection of six single petunias, most of them very prettily marked.

GARDEN VEGETABLES.

The cabbages were very large and coarse, too coarse to deserve a first prize for table use. They might do for cattle or for the manufacture of sour kraut. Only a few cauliflowers were shown; two of these were very fine and would no doubt have received a prize had not the rules called for three; as it was, the prize samples came from Portsmouth. The tomatoes were all very smooth and fine, a great improvement over some of the great, coarse, gnarled and twisted sorts we used to see exhibited.

The prize Early Horn Carrots, from Mr. C. George, Kingston, were a very fine grained and beautiful table vegetable; and in the judging of these and of the Beets and Turnips, the decision of the judges is to be highly commended, for in all these they awarded the first prize, not to the coarse and monstrous specimens, fit only for the barn and sheep yard, but to the truly fine-grained and beautiful samples of more moderate dimensions, which alone deserved a place on the table. The Intermediate and Long Red Carrots were well grown by Mr. S. N. Watts, of Portsmouth, as were also his Salsify, which deservedly took the first prizes. The collection of Parsnips was very small, George Croft, of Portsmouth, taking the lead. Red Peppers were in great abundance and variety. The Yellow and White Table Turnips, shown by Mr. Beeham, of Guelph, and which most richly deserved and obtained the first prizes, were most beautiful specimens, clean, smooth and fine grained.

The Beets which received the first prize were shown by G. J. Miller, of Virgil, near Niagara, and were the finest sample of table beet we have ever noticed at a provincial exhibition.

There was a very good collection of Yellow and Red Onions, but Mr. George Croft, of Portsmouth, was the fortunate winner of first prizes in both these.

DAIRY PRODUCE.

There was a large show of factory-made cheeses: this year, all of a very much superior quality to that exhibited hitherto.

The hand-made cheeses, Stilton, were confined exclusively to Mr. Geo. Morton, of Kingston.

A large show of butter, but we think, from a few samples we tasted, not as good (flavour as heretofore, probably owing to the dryness of the season.

BEE-HIVES AND HONEY.

There was only a small display in this department, and there was not the usual interest manifest among the visitors, who are generally attracted in considerable numbers about the hives and "busy bees" at work among them; but there were none of these

to be seen on the ground. There were five exhibitors of hives, all of whom showed frame hives. The first prize was awarded to N. Chase, of Garden Island, and the second to — Nicholle, of Lindsay. Mr. Loser showed his hives and a honey extractor of simple and inexpensive design, on the centrifugal principle.

There was a limited display of honey in the comb and strained, also of bees-wax—all of good quality.

THE RECEIPTS.

The amount of money taken at the gates was as follows:—

Tuesday	\$ 278 42
Wednesday.....	2,983 44
Thursday.....	2,695 05
Friday	278 42
Total	\$6,235 33

This amount, it is estimated, will fall short of the amount paid in prizes and the expenses of the exhibition by nearly \$11,000, although the receipts were more than 50 per cent. more than at the last show held here. At the exhibition held last fall in Toronto, the receipts were:—On Tuesday and Wednesday, \$9,476; on Thursday, \$6,113; and on Friday, about \$2,000; total, \$17,589.

Annual Meeting.

The annual meeting of the Provincial Agricultural and Arts Association was held this evening in the Ontario Hall. There was a large attendance of delegates from all sections of the Province. Hon. James Skead, President, was unable to attend, owing to fractured arm and indisposition. In his absence the chair was taken by the Vice-President, Mr. Stephen White. With him on the platform were Mr. H. G. Joly, M. P., President, and Mr. G. Leclere, Secretary, of the Quebec Provincial Agricultural Association; Mr. Henry Bulmer, Mr. Louis Beaubien, M. P., Ald. Rodden, A. A. C. Lariviere, President of the Quebec Board of Arts, and J. M. Browning, all of Montreal, members of the Quebec Association; Hon. Mr. Hathaway, Premier of the Government of New Brunswick; Gen. Mr. Macdougall, Mayor Rochester, of Ottawa; Sheriff Ferguson, Kingston; Prof. Buckland, Mr. Jas. Young, M. P., Galt; Nathan Choite, Port Hope; Mr. D. B. Chisholm, Mayor of Hamilton; Mr. J. C. Rykert, M. P. P.; R. W. Scott, M. P. P.; F. W. Stone, Guelph; Mr. Shipley, Middlesex; Mr. Wilson, E. Mallory, Napanee; Mr. Farley, Thos. Stock, Wentworth; Mayor Livingston, of Kingston; Mr. Buell, Mr. McDonald, and Mr. Gibbons. All the members of the Council were present except Messrs. Christie, Morton, and Barrett.

The Chairman explained the cause of the President's absence, and said that Mr. Wright, of Ottawa, who acted as Senator Skead's private secretary, would read his address.

On motion of Sheriff FERGUSON, seconded by Mr. E. MALLORY, a vote of thanks was tendered to Senator Skead for his address.

Mr. THOMSON, Secretary, called over a roll of delegates, and 130 answered to their names. He also read the minutes of the last meeting, which were adopted.

Mr. D. W. Beadle, St. Catharines, and Mr. F. W. Stone, Guelph, were elected Auditors.

QUEBEC DELEGATES.

The CHAIRMAN, referring to the visit of Senator Skead and Mr. Macdonald to the Quebec exhibition, as repre-

sentatives of the Ontario Association, said that there were present six delegates from the Quebec Association, who would at a subsequent stage address the meeting on the subject of a joint Exhibition. These delegates were then formally introduced to the meeting, and were received with cheers.

The CHAIRMAN said the question of the selection of the place of the next Exhibition was now before the meeting.

Mr. YOUNG suggested that before that question was taken up they should hear the delegates from Quebec.

This suggestion was readily agreed to.

DOMINION EXHIBITION.

Mr. H. G. JOLY was called on, and spoke briefly on the subject of a Dominion Exhibition. He said the idea originated with the delegates from Ontario, but they of Quebec heartily supported it. He spoke of the beneficial results of all the Provinces meeting in friendly competition at a common exhibition. He and the other Quebec delegates came here at the invitation of the President of the Ontario Association, and would be happy to listen to the discussion, but he did not think it becoming in them to lead the discussion on this matter.

Hon. LOUIS BEAUBIEN, being called on, said the Agricultural Association and Board of Arts of Quebec had decided to assist in a Dominion Exhibition if the other Provinces, and especially Ontario, concurred in it. If there was anything in the law of Ontario preventing the Association of that Province joining in a Dominion Exhibition it might be amended next session.

Mr. STOCK, while glad to meet Quebec delegates, thought it would be premature to act upon that matter further than taking the opinion of the meeting and afterwards submitting it to the County Societies.

Mr. YOUNG said there was a distinguished gentleman present from New Brunswick, and suggested that he be invited to address the meeting.

Hon. Mr. HATHAWAY was received with cheers by the assemblage. He said that while favouring the idea of a Dominion Exhibition in the abstract, he was of opinion that it would not be desirable at this particular time to enter into a question of that magnitude. The Maritime Provinces had not yet been able to have a Union Exhibition for want of means of communication, which were not yet completed. It was true that the Western Extension would soon be completed, and he was happy to say that he had just received a telegram from the President of the New Brunswick Council, now in England, that capital had been secured for a Riviere du Loup line. (Cheers.) When those lines were completed a Dominion Exhibition would be practicable. He spoke of a closer union of the Provinces, and said though at first opposed to Confederation he was now prepared to join heart and hand in carrying out that scheme. (Loud cheers.)

Mr. J. C. RYKERT moved that in the opinion of this meeting it is highly desirable that at an early day there should be a Dominion Exhibition, providing the same does not interfere with our Provincial Exhibitions.

Mr. THOMAS STOCK seconded the resolution.

Several gentlemen spoke to the resolution.

The proposition of having a Dominion Exhibition was very favourably received, but it was felt that it was impossible to do more just now than express an opinion on the subject. At the suggestion of several gentlemen the motion was amended by striking out the provision, and it was then carried unanimously.

PLACE OF THE NEXT EXHIBITION.

Mr. J. C. RYKERT moved that Hamilton be the place of the next Provincial Exhibition. He believed if they went to Ottawa next year it would be the last Provincial Exhibition.

Sheriff FERGUSON supported the motion, because last year Hamilton supported Kingston.

Mr. R. W. SCOTT considered that a very pretty piece of log-rolling. He supported Ottawa, and said it was the second city in Ontario in wealth and population. If the Exhibition was held there next year it would be a success. They could raise \$10,000 or \$20,000, or any other sum necessary to make it a success. He moved that the next Exhibition be held in Ottawa. He moved it with the view of testing the question whether Ottawa was to be permanently one of the places of exhibition.

Mr. MCKAY WRIGHT seconded the amendment and spoke warmly in its favour. He said that it was humiliating for the Ottawa delegates to have to come year after year begging for the Exhibition, and if they did not get it this time he believed they would not ask for it again.

A DELEGATE said he had exhibited stock at all Provincial Exhibitions and many of the county fairs, and had found the best accommodation at Ottawa, and sold a good deal of stock there.

ANOTHER DELEGATE from the Ottawa district warmly supported Ottawa, and spoke of the resources and progress of that district.

MR. THOS. STOCKS supported Hamilton, not in the interest of that city, but in the interest of the exhibitors of the whole province, as Hamilton offered the best facilities.

MR. FARLEY supported Ottawa.

MR. ROCHESTER, Mayor of Ottawa, handed in a resolution passed by the Ottawa City Council, guaranteeing all the necessary accommodations for the exhibition, if held there next year. If they did not get it this year he would go to Hamilton next year and try again to get it. He believed there was not another place in Ontario where stock breeders and manufacturers of agricultural implements and machinery could find so good a market as in Ottawa.

MR. CHISHOLM, Mayor of Hamilton, had no resolution of his Council to present, but he and other members of the Hamilton City Council who were present were prepared to offer a pledge that the required accommodation would be supplied.

The vote was then taken, with the following result:—"For Hamilton, 108," for Ottawa, 32.

The PRESIDENT therefore declared the fair would be held at Hamilton.

Mayor ROCHESTER said they would be at Hamilton next year to try again and get the show to Ottawa.

VOTES OF THANKS.

Votes of thanks were passed to the corporation of Kingston for having provided for the wants of the Association, to the Judges, and to railway and steamboat companies for accommodation and cheap rates.

The meeting then adjourned.

ADDRESS.

Gentlemen, Officers, and Members of the Agricultural and Arts Association of Ontario,—

A short twelve months has brought us from Toronto to Kingston, and from the able and exhaustive address of my predecessor

in office to my own, which, in accordance with time-honored custom, I submit to you this evening. Without apologizing for the treatment, I may say that the theme is deserving of the ablest effort. We are met together at this city of Kingston to exhibit to all who may favour us with their presence what the farmers and mechanics of the Province of Ontario have lent their time, talents, and abilities to achieve during the past twelve months. The result of their labours in their respective departments have been openly exposed to view, and it is for those who have seen to decide if in this northern climate of ours, if in this land for a short space matted in its snowy drapery, old mother earth does not throw out from her ample bosom as fair and slightly products as flourish and thrive in more southern latitudes. Here it is the hand of man which wrests from Nature what she gives elsewhere more ungrudgingly; but in a contest men learn to fight more bravely and succeed more brilliantly, and Nature to yield more graciously and abundantly. The very obstacles in our way stimulate our energies and crown our hopes. Thanks to the Giver of all good, the harvest of this season has been a fruitful one. Amidst profound peace the husbandman has gathered his grain into the garner. Whilst in other parts the hand of man has been raised against his fellow man, to slay and destroy, we have escaped the clash of arms, our only strife being one of friendly rivalry to show how far Canada could contribute her quota towards advancing the peace, prosperity and well-being of all mankind. Fortunately, in the deliberations of those who control our public affairs, moderate councils have prevailed, and the small black cloud in the distance which at one time seemed to overshadow us, is rapidly passing away, and there is drawing upon us the prospect of a more perfect understanding between two neighbouring peoples, who, possessed of the same language, literature and ideas, should only rival one another in peaceful arts, and strive to excel in excellence.

The maxim of the British Empire is peace, and we, of all her Colonies, are deeply interested in construing that word literally. Our motto is defence, not defiance; and although on any and every occasion ready to resist oppression, we do not desire nor could we gain anything from an aggressive policy. Already the simple and primitive argument of mutual interest is extending our possessions, until we have stretched in one Anglo-Saxon belt from the Atlantic to the Pacific—an infant Hercules, immature as yet, but giving evidence of inherent strength and qualities which, when properly formed and directed, may be powerful enough to sway the destinies of a universe. Thrown together in this new and northern world, representatives of many distinct families and nations, our special care should be union and amalgamation among ourselves, and a constant and easily attainable object to give to the country of our adoption a standing and a position among the nations of the earth. A kind and beneficent Providence has smiled upon the labours of the husbandman during the past season, and I have to congratulate you, gentlemen, upon the result of this year's harvest. Except perhaps in a single staple, hay, the crops have been above the usual average; timely showers throughout the season have filled our barns and in some cases over-filled them. It would be of immense advantage could a proper and more efficient system of drying grain by artificial means be adopted, and the great cost of the storage in bulk of grain and straw be in some measure lessened. As farming, like other business pursuits,

comes to be more systematized, and a fair proportion between the number of acres cultivated and the capital employed is better understood, improvements and amelioration would naturally follow, until the whole is reduced to the position as a scientific pursuit to which its great importance to the community entitles it.

The scarcity and high price of labour naturally lead to the introduction of machinery to supplement manual labour. The mower and reaper has supplemented the scythe, reaping-hook and cradle used not many years ago; and as we progress in a more perfect understanding of other mechanical contrivances will replace our present crude implements.

Progress should be the farmer's aim. He should study how to obtain the greatest possible yield from the least quantity of land with the least possible expense; he should educate himself to that intent, and not alone himself, but those who may come after him in the same occupation. The son should be taught that the occupation of the father is not the mean ignoble one it is the somewhat common error to suppose it to be; he should be shown that properly to till the soil requires all the intellectual faculties men are commonly endowed with; that it is not merely a question of brute force and ignorance, but requires also head and intelligent effort. The true farmer is a member of one of the noblest professions: he is a chemist, a mechanic, an astronomer, a botanist, and in fine, an intelligent observer of God's works in nature; a man of intellect as well as of action. It is the great mistake of the day to imagine that the farmer's son who gives the smallest possible evidence of brains is altogether a too superior being to tread in the footsteps of his father, but must perforce be thrust into some one or other of the so-called learned professions; whereas, in reality, he forsakes the avocation he was most suited for by nature.

Thews and views are no disgrace to any man, and it were well that the present generation should pay more attention to the manners and customs of their forefathers, who reduced a primeval forest into cultivated fields.

The farmer should endeavour to make his calling attractive to his children; he should introduce a little taste into his surroundings; it is not enough to own a house merely, but something should be done to make that house pretty, pleasing and attractive—a nucleus around which would gather the affections and sympathies of the entire family. The old homestead should be a thing of beauty as well as use; shady trees should overtop its rafters; bright flowers and fruit should find their place in the indispensable garden plot; in short, the whole should point it out as the well-loved home of a rational, civilized Christian man, and not the abode of a mere animal. The children playing around the door-step form their impression from their surroundings. The bleak and barren birth-place can produce no feeling of love, no wish to live the homely life of the farmer, but rather drives them from it and throws them into other pursuits.

Here in Canada the care of stock in the winter months is a very important feature. Thus, housing and economical feeding deserve the farmer's strictest attention. Every animal owned requires shelter, and farm buildings should be arranged to give the greatest amount of shelter with the least expense.

Farm architecture is well deserving of greater attention than it receives in this country. In England, where properly constructed buildings are not absolutely indispensable, as they are here, it has almost

assumed the proportion of a separate branch of the profession; and it may now safely be said that Canada and her agricultural interests have reached that point when the farmer should abandon the hap-hazard measure of construction which places his buildings as fancy or the convenience of the moment dictate, the inevitable result being a confused and irregular mess, unsightly to the eye and but ill adapted to the purposes for which they were originally intended; a constant source of annoyance, causing more trouble and expense to the owner in the care of his stock and the supervision of his farm duties than would have sufficed twice over to have reduced the whole, in the first instance, to a well-digested and organized plan pervading every department, lightning his labours, and gladdening both heart and eye—a source of profit as well as pride.

There is no good reason why the buildings on a farm should not be arranged for the introduction of machinery on a greater or lesser scale according to the extent of business done. A few feet of shafting in each farm, with either steam or horse power as the motive agent, could not fail in a short time to repay to the full the first cost.

In the management of the buildings the root cellar should be carefully looked after, as the storage place of one of our most important crops, it should for convenience of feeding be easily accessible in all weathers—in fact serve as a point around which should cluster the other buildings. I have no doubt that feeding of cattle would be much more profitable than it now is were the steaming or fermentation and cutting of their food more systematically attended to. Without pleasurable manuring no successful result can be expected from the farm, and the best manufactory for that manure, and where it can be most readily and profitably procured, is from the cattle fed at home, whether they be in the form of beef for the market or in the still more desirable form of dairy cattle. In connection with this last subject I am pleased to see that throughout the country generally farmers are paying increased attention to the products of the dairy. The trade in butter and cheese is already an important one, but is still susceptible of great enlargement. Cheese factories have become an institution amongst us, and their good effects are most sensibly felt in the districts in which they are located. I hope that in a short time no section of the country will be without its factory, and that our exports of these two articles will be greatly augmented. Cattle fed at home consume for the most part those products of the farm which should not, unless under peculiar circumstances, ever be sold off it. In return for what they eat they give you meat and many things beside, as well as the material for enriching your soil. The man who understands his business will always have his proportionate acreage of roots; and I expect to see, year by year, that proportion extended, as it is undoubtedly the foundation stone of all good farming, and its thorough cultivation forms a school of agriculture in which to educate our young men. Our staple roots, such as turnips, carrots, mangels, and the rest, require but little notice at my hands. Their importance is already recognized and appreciated; but there is one branch of agricultural industry to which I wish to direct your most particular attention as being most important to the country at large. I refer to the cultivation of the sugar beet, an industry which is not at present to any great extent located among us, but which in France, Belgium and Germany forms their leading crops, and has become a source of wealth to those nations. Lately the English

farmers, ever alive to improvement and profit, have taken it up, and there is now forming in England a company for the cultivation of the beet-root, and manufacture of sugar therefrom, with a capital of two hundred thousand pounds sterling. Of such moment is the question of its introduction into England considered, that the Hon. Robert Lowe, Chancellor of the Exchequer, in introducing into Parliament a bill for the remission of sugar duties, spoke as follows:—"We know that the beet-root industry of the Continent is spreading very widely. There is the prospect to grow it with the same effect in this country; and could we hope for anything so good as that it could be introduced with success, it would be one of the greatest blessings that could befall the country."

And, again, Professor Voelcker, perhaps the highest authority on agricultural matters in England, writes to the journal of the Royal Society that the growth of beet-root for the manufacture of sugar in the north of Germany has tended, more than anything else, to raise the general standard of agriculture in the larger districts in that country; and he believes it would have the same effect in England. It is asserted also, on reliable authority, the spent beet-root pulp which is the residue left after the saccharine juices are extracted, is better food for cattle, and has more milk-giving properties than even the root crop, and that its culture as a rotation crop—a consideration which should ever be present in the farmer's mind—prepares the soil for a heavy and superior crop of wheat. I am indebted to my friend, Mr. S. G. Harvey, for many valuable suggestions on this subject. He informs me that when in the year 1853, the late Emperor of the French visited Valenciennes, he passed under an arch upon which was inscribed the great extent of land under cultivation with wheat in this district, and the largely increased production of the soil since beet root had become an article of extended growth.

1st. The hectares of wheat (2½ statute acres) which formerly yielded only 19 hectolitres per acre, now (1853) produced 27 hectolitres.

2nd. Where formerly there were only 4,202 hectares under wheat, there are now (1853) 9,240 hectares sown.

3rd. The number of cattle in the District increased from 6,995 formerly, to 40,656 in 1853.

The *Pall Mall Gazette* of the 25th of March last says:—"In many parts of the continent beet sugar has nearly, if not quite driven cane sugar out of the market, and the percentage of it taken by us is gradually becoming far higher than the percentage representing the general augmentation of our sugar supplies." The total production of beet root sugar for the past three years was in 1868, 650,000 tons; in 1869, 841,000 tons; in 1870, 925,000 tons. At a meeting of the English Society of Arts held on the 8th July last, James Caird, Esq., C.B., the Chairman, stated that the "quantity of sugar imported was equal to one-eighth of the entire consumption of wheat, both foreign and native grown, while the foreign sugar imported was equal to one-fourth of the import of foreign wheat." If such be the results in other countries, why should not so important a branch of industry be tried here. There is surely nothing in the soil or climate of Canada which would forbid its growth, on the contrary, if properly tried, I am convinced it would prove eminently successful and add another to the best of our national products. I would earnestly recommend action in the matter, and would suggest the subject for the considera-

tion of this Board, and of the Government of the country.

Another important feature in the agricultural industry of this Province is the cultivation of flax, which even this year, although not grown to the extent its merits entitle it, is entirely satisfactory. There is every prospect that the price will be a remunerative one, and the great objection to its more extensive cultivation, the fact of great amount of manual labour required in its manipulation is being gradually done away with, and labour-saving machinery is quickly simplifying its manufacture and productions. I am informed that a machine is now manufactured in Woodstock which makes as great a revolution in the culture of flax as the mowing machine made in the curing of hay. In this Province of ours where our immense resources are but beginning to be brought to light, where the spirit of its people is but beginning to exert its energy towards the solution of the question of the future destinies of Canada and its position in the fore-ranks of civilization, it surely becomes us to give prominence and direct attention to any subject which may perchance assist the one and secure the other. Let no one calling himself by the well-loved name of a Canadian stay behind in the endeavour to contribute his mite towards making that name to be respected. For my own part could any act of mine—I will not say word, well knowing its feebleness—cause two spears of grass to grow where only one grew before, I shall be satisfied, and to that intent my constant efforts will be directed. I ask you, gentlemen, to take these last two subjects to which I have adverted into serious consideration, and by precept and example encourage the experiment of introducing them into general cultivation; for if successful you will have added two more pillars to prop up our national greatness. In his address at Toronto my predecessor in office treated you to an elaborate and exhaustive history of the progress and objects of the Board over which I have had the honour for the last twelve months to preside. It would be superfluous for me to recapitulate what has already and so much better been said. He traced its course from the budding sapling to the stately tree it now resembles. I have only to add that its progress has so far been uninterrupted, and its prospects for the future still continue high. The balance remaining in our hands from last year amounted to \$12,765. The Denison matter is proceeding in a satisfactory manner towards settlement, the Association holding good security by way of a guarantee for the amount of their claim, with interest at eight per cent. The Veterinary School of Toronto, which is affiliated with this association, is, I am happy to say, under the able management of Dr. Smith, progressing in an extremely satisfactory manner; the number of pupils entered for the course of instruction next session is thirty second and third year students, besides a number of agricultural students, and the number who have graduated since 1866 is upwards of thirty. There is a prospect that, in a short time, every part of the country will be supplied with an educated, intelligent, and skilled class of veterinary surgeons, and that the care of the sickness and disease which from time to time assail our stock, now so much improved and valuable, will pass out of the hands of the country horse-doctor into those of the competent surgeon. With reference to the Entomological Society, our grant to that society is still continued with, I believe, the best possible results. The objects of that society being so similar to our own,

they deserve every encouragement at our hands.

As to the question of the Government assuming the direction and control of this association, I have only to endorse the conclusive arguments of my colleague, Mr. Christie, against any such course. I think it would be extremely injudicious for the Government to interfere in that way, and cannot see that any possible good would result from it; in fact, I would strongly deprecate any action on their part in that way. In the department of arts and manufactures I am glad to see that the progress is commensurate with the requirements of the country. Every branch has been fully and more than fairly represented, and we may well feel proud that Canada can boast of possessing such a body of artisans and mechanics as those who have contributed specimens of their handiwork at this exhibition. This is particularly noticeable in the department of agricultural implements, a trade which is rapidly assuming vast proportions, raising up huge factories, and giving employment to large numbers of our people. The labour question, always one of great difficulty, has lately so shaped itself as to tax all the ingenuity of our inventors and mechanics to devise expedients to enable the farmer who does not possess the necessary help within himself at all successfully to carry on his business. Immediately that a really good labour saving machine makes its appearance in the market, the demand exceeds the supply, and thus two classes are benefitted, without the third, the labouring class, being in the least degree injured. In all the other manufactures of the country we find the same healthy tone. New industries are continually springing up, with our immense facilities for manufacturing—such as water-power, of which we possess an inexhaustible supply—and the rest being more and more developed. Our position in the geographical situation of the earth seems to point us out as a large manufacturing people, and by uniting the two branches of agriculture and arts gives us a sure pledge for the future.

You will unite with me, Gentlemen, in reverentially thanking a beneficent Providence for His many mercies towards us during the past year. Our fields have literally, when tickled with the plough, laughed into the harvest. We may safely call this a good year, and following upon a comparatively poor one, it is all the more acceptable. In the section of the country which I more peculiarly represented, last season was an unusually dry one, and in the month of August, 1870, a disastrous fire swept over a large area, consuming everything before, and leaving behind but a weary waste of blackened stumps and charred cinders to point where the hard-won home of the forest pioneer had once stood. Houses, barns, fences and crops, and in a few instances human life, in a short hour or two, all passed away as though they had never been. The sufferings of the people, now made outcasts, was something terrible. Deprived of their little all they knew not what to do; but the hand of charity of their fellow-citizens was an open one, and almost immediately subscriptions came pouring in until they reached something over \$70,000, the Government of the Province voting \$25,000, and that of Quebec \$3,000. The whole of the amount has been distributed to the sufferers as appears by the report of the committee, a copy of which has been sent to each subscriber. The report speaks for itself, but I may add that, thanks to those liberal donations, to the recuperative farmers, to the people themselves, the burnt district has recovered from the blow, and

out of evil much good has come. We may congratulate ourselves, gentlemen, upon the results of this year's exhibition, and point to it as an indication of the generally healthy state of the country. It is said that Kingston is too far east for the holding of a completely successful exhibition, but certainly that statement has not been sustained by what we have seen during the past few days. But even if it were true that would be no reason to abandon our present system. Our exhibitions are intended to be, so to speak, camps of instructions designed to show to the farmers and mechanics of every section of the Province all that was best in the several branches of industry. To do that effectually, and really to carry out the spirit of our organization we should as far as possible bring our exhibition within the reach of all. As a rule it is more equitable to require the exhibitors and prospective prize takers to follow our exhibition, than to expect the mere spectator to do so. That question, however, is in your hands and it is for you to express an opinion.

Gentlemen, farmers and mechanics of Canada, blessed with free institutions, living under the freest constitution in the world, the destinies of your country are in your own hands. Yours is the task under Divine Providence of raising her to the level of the highest, or sinking her to the lowest ranks of civilization. Nature has endowed her with all the necessary requisites. Let art step in, and complete the picture of a prosperous, happy, and God-fearing people in a peaceful and plentiful land. Fill up the vacant gaps in your own sections and then when the proper time comes the rich broad plains of the western prairies lie waiting to absorb your surplus population—a place where under the broad aegis of the old-time flag your sons and daughters may perpetuate British pluck, energy and institutions, and form a connecting link in that chain of peoples who, hailing from the glorious trio of sea girt islands, have always pushed to the front wherever the rights of liberty, justice and equality were imperilled.

Fruit Growers' Association.

The following address of the President of the Fruit Growers' Association, Rev. Mr. Barnett, was read at the annual meeting at Kingston, by the secretary Mr. D. W. Beadle, in the absence of the President:—

Another Horticultural year has terminated, and finds the members of the Fruit Growers' Association assembled in annual meeting. Provision has been made that your President should deliver the usual address, and present some subjects of interest that may have engaged attention during the past season. Allow me, at the outset to tender to the members, present and absent, my sincere and hearty thanks for having placed me in this chair, and for the uniform urbanity and kindness which have marked all their conduct towards me during my presidency, and to assure them of the feelings of gratitude and satisfaction with which I shall ever look back to the friendly and interesting intercourse which has existed during the whole period of our official connection. The past season has been one of great interest to the fruit grower in many ways. Exceptional in point of weather, it has been productive of many important lessons to the Horticulturist. The extreme drought has tested many of our choice varieties of fruits, and has been the means of affording criteria of rare value in regard to sorts of which we

had not much information, and which it was needful to have tried by extremes in the weather. The advancement of our Association in membership, activity, and substantial progress has been all that could be desired. Indeed, the means employed for the good of the Association have been singularly beneficial in their results. The dissemination of the fruit reports, discussions and essays have created an interest in the public mind which begins to render our contemplated objects second only to the agricultural interests of our Province.

The systematic and admirable report of the Entomological Society which was presented to the Bureau of Agriculture has made an impression on the general public, and on fruit growers in particular, which has given a mighty impulse to our special cultivation. I have only to utter the heartfelt wish, that the very intimate and close relationship at present subsisting between the members of that society and our own may be perpetual and that our only rivalry may be to advance our common interests to the best of our ability.

The plan of making the whole Province an experimental garden for the test of old and new fruits has been followed by the most happy results. It has not only been the means of creating more than usual interest among the members, furnishing important data as to the capabilities of soil, and the variations of climate, but has nearly doubled the membership. Such beneficial results could scarcely have been anticipated, and they surely indicate a road to further advancement in the same direction. If we mistake not the true interests of our association, and discern the best mode for their accomplishment, we would say, let us continue in this path on which we have so auspiciously entered. We are vain enough to believe that we wisely suggested the use of another important lever to effect our purposes, when proposing recently to our Directors that Secretary Beadle's work on Horticulture should be sown broad-cast among our members by the Association during the coming year. It would crown the work already begun in the distribution of plants, give an impetus to fruit culture, and, on account of its Canadian origin and adaptation to our wants, supply at present a hiatus in fruit and vegetable growing which is patent to all lovers of our associated interests. The different local meetings throughout the year have been well attended, and have not lacked in interest—indeed the interest in fruit growing has been deeper and more felt than ever before. At Goderich, the display of fruit was something wonderful, and that district of country, at no distant day, is destined to take an important place among fruit growers. The plums, grapes, and apples grown in that locality startled members unacquainted with its capabilities. The benefits accruing to the Association from various local meetings throughout the Province ought not to be lost sight of. I could personally testify, were it needful,—and the members present could add their testimony to mine,—of the interest thereby created in many minds, and of plans formed for the cultivation of fruit: interest and plans which would never have had existence but for the presence of the association. Among all the interests, however, which the members of our association are banded together to further, there is none at present so important, and in the future will be so profitable to the fruit culturist, as grape growing. It needs not much discrimination to perceive that this culture is to prove of immense benefit to large tracts of our country. The soil, aspect,

and climate of many portions of our large province around our lakes are singularly adapted for grape-growing. When the late Mr. Underhill, of Albany, was recently among us, he pronounced the western shore of Lake Ontario as one of the best for this culture. He expressed his astonishment at its capabilities, and wondered that so little had been done in the way of developing our resources. What is true with regard to the western shore of Ontario is equally true, after trial, of the north-western, and more than true of the northern shore of Lake Erie and the north-eastern of Lake Huron. The most sceptical on this latter point must have had their scepticism removed at the late meeting of the association at Goderich. The adaptability of soil and climate being taken for granted, nay, demonstrated by experiment, the half of the vine grower's battle is more than fought, and there is only need of the helping hand of our association, to develop the capabilities of soil, and the amenities of our climate, to make our available districts famous, like a land of old, for its vineyards. If the practical experience of your President is of any use in fastening the initial step of the ladder, it is heartily at your disposal. His experience is only to be taken for what it is worth, and those who know better and more, must just step forward to the front and give us their experience and light. I have fruited one and twenty varieties of grapes, and know more or less of ten varieties more. I am to speak, therefore, only of what I know. The Isabella and Catawba were the first I fruited, and I was enamoured at my success with the former. During the fourteen years cultivation of the Catawba, I succeeded in twice securing ripe fruit, and only twice. I question if we have yet a better wine grape than the Isabella. For hardiness and fruitfulness it can scarcely be excelled. With the exception of the Clinton and Concord it has as yet no equal as a wine-maker. The Catawba we have been compelled to discard. The Hartford Prolific, and Delaware, Concord, and Creveling, were our next addition. The Hartford Prolific has a place in all collections simply on account of its earliness. We esteem it but a poor grape. The Delaware is hard to beat. It is a favourite both for wine-making and dessert. We might with truth say that it is a universal favourite. Vineyardists and amateurs alike find it a profitable variety for cultivation. A grower near Hamilton last year sold his Delaware on the ground for six cents per lb. The wine from the Delaware has always seemed to me more agreeable than that from any other hardy grape which I have tasted. The Clinton and Concord are ranked together. There are no better grapes yet grown for profit. The Clinton is profuse in its bearing, and the Concord does not lack the same character. The Clinton with me does best on the arbour. I have tried it both ways. Indeed, it scarcely pays to cultivate it on the trellis alone. Immense success has attended its culture at Cooksville, Hamilton, St. Catharines, and on Lake Erie shore. It is thoroughly hardy, and while I have seen in my garden, during certain trying winters, the Delaware and Iona a little the worse of the severity, I have not yet seen the Clinton the least scorched. The Concord is what may justly be called a standard hardy grape. In point of bearing qualities, we venture to affirm that it has no equal. It is emphatically a heavy cropper, with fair, beautiful, large fruit, better for wine making than the table, yet not to be despised for dessert. The wine from this grape has perhaps, at present, the highest commercial value of any variety grown. It ought to rank among the varieties grown by the vineyardist who culti-

vates for profit. We question if there be a more profitable variety cultivated. It does well trained on the trellis, and needs only ordinary care, and good manuring for the production of a prolific crop. The Creveling is one of the best sorts for dessert. Few varieties excel it in flavour, and as a wine-grape it stands among the best, if not the very best. We have tasted wine two years' old from this grape, and we found it excellent. A drawback to its cultivation is that the berries are sparse on the bunch. This characteristic has appeared in my cultivation and among some of my neighbours, but with others the characteristic is altogether the other way. At the recent Horticultural Show at Hamilton, Mr Buchanan, of St. Catharines, declared that he had never seen such bunches of Creveling as were grown within a stone's throw of his garden. While it is in general a sparse bearer, the superior flavour of the fruit, its beautiful bloom, and fair size of berry, will always render it a favourite variety of cultivation. Arnold's varieties come next for observation, viz.:—Othello, Autuchon, Canada, and Cornucopia. Othello is, to our taste, a little too acid; Ellwanger & Barry, of Rochester, N. Y., say that it is sprightly. The bunches are handsome, the berries fair, but we esteem it inferior to several of Rogers' hybrids. The Canada and Cornucopia are good varieties. Canada is really a finely flavoured grape. Arnold's No. 8, and his Canada, are our favourites in point of flavour of all his hybrids. His Autuchon is not much, if anything, behind the former two; it is a white grape, pretty compact in the bunch, and of fair size in berry. It is unfortunate for Mr. Arnold's reputation, that his friend and collaborator in hybridization, Mr. Rogers, is in the same field which he has been cultivating, and that Rogers' varieties have got both the ear, and the taste, we presume, of the public. We must not overlook, in any remarks on the culture of the grape, the prominent share Mr. Arnold has had in giving a lift to grape-growing by his hybridization, and grape culture in general. I know too little of Mr. Reids' hybrid to speak emphatically of their character, and merely notice that for several years he has shown some beautiful hybrids, both at the Fruit Growers' Association meetings, and also at the Provincial Exhibition. We also cultivate the Adirondac, Eumelan, Israella, Iona, Diana, Ives' seedling, Rogers' No. 1, 3, 4, 15, 19, 33, 41, 42, 53, and can speak of these varieties in the highest terms. We are deeply impressed with the thought that for various reasons Rogers' varieties will carry the palm over all other varieties. The berries of all his varieties range from medium to very large. And to those of us who know the marketing propensities of our wives and daughters, in always choosing large bunches and large berries, there can be no surprise at the popularity of Rogers' varieties. They all have very similar characteristics,—rampant growers, fair fruited, and excellent flavour. No. 15 has the repute of being like the Creveling, a sparse bearer. This is a mistake. When young, and in certain localities, this drawback may mark its growth, but it does not when properly cultivated. Grape-growers, we fear, have been too much in the habit of too closely cutting and pruning Rogers' varieties. From their mode of growth they require to be allowed to run, with plenty of room, light and air. Their bunches will then be astonishingly large, and this can be truly said of No. 15. No. 3, to our taste, is a superb grape, amber-coloured, or, as Rogers terms it, red-coloured. It is conspicuous for the beauty of its berry, and is a fine addition to the dessert table. It, too, is a free

grower, and must not be curbed in its tendencies. Nos. 1, 4, 19 and 33 are similar in character and flavour. The skin of 19 is thicker considerably than that of Nos. 41 and 42. No. 19 is in all respects a desirable grape; so is No. 4; it was long my favourite. Indeed, No. 4 cannot be too highly spoken of. The bunches have large compact berries, and the berry itself is of exquisite flavour. No. 4 is one of Rogers' best varieties and does well in our neighbourhood. All the above mentioned varieties, however, must yield the palm to Nos. 53, 42 and 41, and of these 41 is the best. The Salem, No. 53, is an old favourite, but it must give place to No. 41, which we believe stands highest of all Rogers' varieties with which we are acquainted. No. 42 follows at no inconsiderable distance. These latter varieties, like those formerly noticed, require to be allowed to run. Mr. Kilborn, of Beamsville, on a rich bottom, allows his Rogers' varieties to bear without stakes, just trailing on the ground. We can safely say we have seen no such fruit trained on the old fashion in any vineyard. Mr. John Freed, of Hamilton, raises them about two feet only from the ground, by branch stakes. He get wonderful crops, and beautiful fruit, both in quantity and quality. This low mode of cultivation is yet destined to take a prominent place in our country, and notwithstanding the drawback of sand, and rainy seasons, will yet come into general practice. We have not yet said our all on Rogers' varieties, until we say that we cannot speak of the wine-making qualities of his grapes, never having made any and never having tasted the wine from any of his varieties. For market and for table use we fearlessly affirm that they will carry the palm over all others. The best of Rogers' which we know are classed thus in the order of merit: Nos. 41, 42, 53, 4, 19, 1, 33, 3, 15. We notice that No. 42 is classed as amber-coloured by nurserymen: with us it is almost a black grape, with an amethyst tinge, and of very superior excellence. No. 41 comes nearest to the flavour of a hot-house grape than any other hardy grape which we have cultivated. Israella and Iona, the one a black and the other a red grape, are well worthy of cultivation; when fully ripened, and the bunches well-developed, they are both superb grapes; highly flavoured, and at the same time delicate, they leave, when eaten, no harsh, tartar flavour in the mouth. One or two of Rogers' varieties do this. The tongue, after eating them, smarts with an acid flavour. The Israella and Iona are entirely free from this quality. Wine from the Israella is good, really good, and fine flavoured, with a nice bouquet. Ives' seedling and the Eumelan promise well at Hamilton and in the neighbouring locality,—the former is one of the best wine grapes. Mr. William Haskins, of Hamilton, has some experience of the Alvey, and gives it a foremost character for its wine qualities; the bunches are fair, berries very compact, and, if it ripen with us a little before the Isabella, will suit well for general cultivation. Norton's Virginia, which Missouri growers have thought would not ripen in our northern latitudes, matures well in the locality around here; it does well at Niagara, and probably after further trial may do well throughout the more favoured vine-growing districts of the country. The Eumelan is certainly a nice grape; fanciers, however, are already beginning to complain that the berries are small. We can testify that the wine made from it is excellent. The general trial which it is getting, from the Eastern Townships to Windsor, will soon be productive of valuable results. From general experience alone can a knowledge of the worth

and properties of fruits be obtained. The "To Kalon" is to be found in a number of collections—in and around Hamilton its reputation is good; but I know too little of it for me to speak in any way dogmatically. The Rebecca is a delicious grape, and arrives at great perfection in this quarter, but it is better suited for the garden than the vineyard. It is highly flavoured, bears well, a slender grower, but quite hardy. The Allen's Hybrid bears fine fruit, but is scarcely worth cultivation. It milder worse than any other known variety, although we have seen some beautiful undewed bunches matured from it when allowed to grovel in the grass and dirt without being tied up. The Walter has fruited with us, and is a superior grape. We have tasted wine made from this grape, and can pronounce upon its excellent quality. It ripens early, and is likely to prove a good variety of early hardy grape with us. It may be considered a companion grape to the Eumelan. This list must be brought to a conclusion with a brief notice of the Diana Hamburgh. Mr. Murray, of Bruce & Murray, of Hamilton, gave us a bunch of this variety a fortnight ago. We have never tasted a more delicious hardy grape. It has many of the characteristics of the Black Hamburgh, and if it sustains the excellence we found it to possess this season, it will shortly prove an immense favourite among grape-growers. It ripens at the same time as the Creveling, Rogers' 15, &c., &c. We cannot speak from our own experience in grape-growing of the diseases and insect pests peculiar to the vine. The most prevalent disease on my vines is the mildew. I recently, through the kindness of Mr. Whitton, our Hamilton premier microscopist, examined this mildew, and found it a plant, luxuriating in the richness of the vine, and bearing seed-vessels abundantly, which, to our vision, were in process of disseminating their abundant spores in all directions. Capsules were found in the section of the skin, and the rootlets of the plant had found their way into the pulp of the berry. Husmann, I observe, imagines that mildew is a fungus. It is a fungus, and something more, it is one of the most beautiful, though destructive plants, which I ever saw. Might it not be well for our Association to offer a prize on the microscopic appearances of mildew? It might assist horticulturists, and tend, perhaps, to settle the conflicting opinions entertained of this pest. The recent notion that vines take up the spores of the parasite from the oleaginous manures applied to the roots through their spongy sponges, and that they find their development in and on the fruit, may be found to be not so very far from the fact. Mr. Van Wagner's "sulphur blower," exhibited to our Association, and which has received its endorsement, will be found the best help to prevent the ravages of mildew. We entertain the opinion that mildew can be greatly modified if not altogether prevented by good, generous cultivation: manure rich in potash, carbon, &c., &c., will go far to remedy the evil. When ever the food of the vine is stinted its vigour wanes, and consequently opportunities are given for the development of all manner of parasitical and insect pests. The leaf roller is an insect pest which of late years has appeared with us; its ravages are not very deadly and may be easily prevented with a little care. The Thrip, after all, is, at present, our greatest pest. When down on a visit to Ohio and Kentucky, a year ago, I found it a common practice there for grape-growers to destroy this pest by means of torches at night. One carries the torch, another disturbs the vines, and the enemy betakes himself to the flame. Mr. Saunders,

of London, two years ago, discovered a pest in the pip of the Clinton grape, but our experience fortunately has not made us further acquainted with its ravages. Grapes can be kept for a lengthened period by having them carefully strung and kept in a dry airy room. W. H. Bolton, Esq., the Grange, Toronto, keeps them for months in this manner. For the encouragement of grape-growers to prosecute this branch of horticulture, I refer them to the statistics of grape-growing on the last pages of Husmann on grapes and wine. Again renewing my grateful sense of your courtesy, gentlemen, and expressing my continued interest in fruit growing and its development throughout the Province, I wish you in the heartiest and sincerest manner every success in your laudable and patriotic efforts for the advancement of horticulture.

ROBERT BURNET,
President

Quebec Provincial Exhibition.

QUEBEC, Sept. 15.

Now we have a crowd indeed! A crowd in and around the exhibition buildings so great that the streets in other parts of the town are so deserted as to look like Sunday when the people are in church. Those who know by experience the crush there is at the ticket boxes of the London theatres may form an idea of the press there was at the ticket-office outside the building for the space of two hours. More than half this crowd was English-speaking, English, Irish, Scotch and American. This is a town of 70,000 where three fourths of the people are of French origin, shows where the enterprise lies.

There was a very good show of horses, more, perhaps, of the ornamental than of the useful in an agriculturist's view. However, there was a splendid Clydesdale, a fine Percheron, and a magnificent Suffolk—all stallions. We may, in a few years, expect an improvement in our farm horses.

Of sheep there were not very many, nor of pigs. Mr. Cochrane carried off a good many prizes for sheep; the Cotswold, especially, were good. There were some large pigs of the Yorkshire and Berkshire breeds. I believe it is being discovered that the small breeds are most profitable for the pork producer. This portion of the Province should become a good sheep country, and in view of the severity of the climate, I should think that a small, fine-wooled variety would be the sort to suit us.

There was a good show of horned cattle, the prizes being mostly carried off by Hickson, Cochrane, Irvine and Gibb. The Ayrshires seemed to predominate.

The agricultural machine department was strongly represented by Mr. Evans, of Montreal, who carried off numerous prizes, and who deserves success, which I am sure he will get down here if he goes the right way to work. Some one showed a potato harvester. In working it the potato would be thrown out against a net-work screen, on which it would be projected with some violence. I do not suppose it would be more roughly used than in any of the ordinary ways of harvesting that necessary tuber, but the sooner people learn that the potato is delicate in structure, thin-skinned, and easily damaged, the sooner people learn to handle them as carefully as apples, the sooner the country will save millions of dollars yearly; and any invention that can harvest them gently will eventually carry off the palm.

Of the Horticultural Department very little can be said. It was extemporized in a hurry and was a failure. There were people visiting it and constantly observing that they had better flowers at home. And I know that in some instances they had. All the more shame for them that they did not exhibit them. Mr. Le Moine of the Inland Revenue showed (though not competing) some very fine grapes and peaches. The prize was taken by Mr. O'Kill Stuart. There was a fig-tree with ripe fruit grown in the open air in a back yard of John street. The only one and it got a prize. One large basket of vegetables was certainly an achievement in gardening. There was everything one would desire for the table in the highest perfection. The floral ornaments were heavy as they always are down here. Quantity and colour more than artistic arrangements seems to be the rule here.

The show of poultry was small. There was a good pair of Muscovy ducks in the way of novelty, and a beautiful pair of game fowls, with a challenge on behalf of the cock to fight any other in the Dominion. I was very sorry to see this. Next day the challenge was accepted, and there will be the demoralization of a cock-fight somewhere soon. I think that the Society for the Prevention of Cruelty to Animals had better look after this.

No prizes in any department of the Agricultural Exhibition are as yet declared, some delay having occurred. I suppose to-morrow this will be arranged.

There were about 1,500 people on the grounds, but twice or thrice that number will be there to-morrow, it being a cheaper day. The band of the 60th enlivened the scene with its well-executed music. The horses were exhibited in a ring, and much interest was taken in them; but the exhibition was tame compared with that of a saddle-horse which got loose, and careered and curveted, galloped and trotted to its heart's content, to the annoyance of its owner and the admiration of the crowd.

I was glad to see a number of washing machines. These are a great desideratum now that it is becoming so difficult to procure servants. The increase of labour-saving machines for the house is becoming as necessary as those for the field, and it is a gratifying sign to see the attention of inventors turned more and more in that direction.

There is plenty of scope down here for their use, this district being new ground in that respect. The community is slow, and has therefore as yet not taken much advantage of these inventions. One reason is that they did not know of the existence of many of them—a reason which will exist no longer after the show made of them at this exhibition.

All, or most at all events, of the owners of dogs sent their quadrupeds to the corner of the cattle yard, which was set apart for them. More interest was shown by exhibitors in this department than in the horticultural, for many of them who sent dogs might also have sent flowers and fruits as well. Among the dogs were setters, deer-hounds, bull-dogs, lap-dogs, spaniels, Newfoundland, greyhounds, some of which were grey, the St. Bernard breed, &c. There were two dogs of what they call the wolf breed, one of which had a history attached to it, having been found a great many score of miles from Red River in the bush by itself. It was tame and gentle enough when I saw it.

INDUSTRIAL DEPARTMENT.

This was under cover in the rink. Messrs. Drum came out strong in this for their furniture, carrying off numerous prizes. One

drawing-room set did not gain a prize, because they had had no time to put the finishing strokes upon it. This firm spent the prize money they gained in tickets for their work-people,—a very wise as well as praiseworthy object. Mr. Vallier showed well.

The rubbers produced by the Quebec Rubber Factory were various and good, and showed great finish. I do not think that they could be beaten anywhere. This is a new branch of industry in Quebec.

From Danville there was a hand-loom with the shuttle moved by the motion of weaving, thus saving a vast deal of time and simplifying the process.

Of washing-machines, there was an excellent one, "The Excelsior," from Cookshire. It gained the first prize, and seemed to be the nearest approach to the principle followed in washing by hand that I have seen in these *desiderata*.

The mineral department was very fine. There was some good stone from Murray Bay, but very little else that I saw. Our chemical works, another branch of industry new to this city, showed some sulphuric acid. Messrs. W. & D. Bell carried off the prize for drain-tiles.

There were some very beautiful horse-shoes by Cummings. They comprised racing sleets, trotting bars, carriage horse-bars, winter concave shoes and hinge shoes, as well as the common shoe.

M. Daquet showed his famous clocks, and an excellent model of a steam-engine in brass.

One of the curiosities of the Arts' Department consisted of a beautiful model of a bedstead, a wash-stand, a walking-stick, and a cradle. They were each joined by hinges, and the wonder of the invention consisted in this, viz.: that the bedstead had a drawer in it which could be converted into a child's bedstead by night and shut up by day. The cradle could be turned into a chair, the wash-stand into a lady's work-table, and the stick into a camp-stool. All these things would pack, one in the other, in the space of a fair-sized trunk. They would be very useful at the sea-side. The inventor was a sick minister.

A magnificent buffalo-robe, 11 feet long by 6 broad, was shown by Renfrew & Manon. A model of a brick machine was to be seen. The machine puddled the clay, made the bricks and delivered them ready for the kiln at a fabulous speed. Of course, Quebec came out strong in leather, which is one of our staple manufactures. This department was very much crowded, so that things did not show to advantage. Indeed, the first three days it was impossible almost to possess one's self with a true idea of the relative merits of what was shown. It was only by coming in the evening, when the cold (for the nights were pretty cold) kept a great many away, that one could see things properly. But if this were crowded, the room which contained the ladies' department was crammed. I went two or three times, but it was a case of "Move on, move on, ladies and gentlemen, *Ne touchez rien*." If this were intended as a translation does not appear; but it would appear so to the uninitiated, for the gentleman who surrauded out this would sometimes vary it with "*Avance, avance, s'il vous plait!* Don't touch anything, if you please." Well, I moved on, but, being in the middle of the crowd, saw nothing but the pictures that were highest on the walls. Of the pictures I will speak. The exhibition was meagre; but I don't think a man who has been often to the Royal Academy, the Vernon Gallery, the National Gallery, and the Art Union, ought to criticize the Provincial

Exhibition, for he seldom sees much perspective, any atmosphere, or very correct drawing. There were, however, some good things of Kreighoff's, and some fair specimens of amateur artist work. The rough-water pieces of S. W. Harrison were good; but the others, by the same hand, not nearly equal to them. Some picture frames in leather were quite works of art, and showed great taste. Some come frames were good but heavy. The needlework was excellent. The specimens of insects by Abbe Provencher were quite the thing in that line. It is needless to say that there was always a crowd of ladies about the ladies' department in needlework, which is a healthy sign in these days of sewing machines. There was a very fine rag carpet made of rags, but whether the work of a lady or gentleman I cannot say. However, it was very economical of everything but time, of which much must have been at command in the making. It was handsome and heavy and as warm as a Turkey carpet, and quite good enough for a farmer's drawing-room, though I dare say as expensive as a more showy one.

A wonderful piece of work by the pen got a prize. It was a history from the Bible and was written so small that it was necessary to take a glass to read it. It got a prize, and its price was \$100. (I do not know the utility of such things one can say nothing. It seems to me to show a waste of time.)

Of Norway oats there was a small sheaf, 5ft. 6in. high. The grain was black and small. I have myself fields of what they call English oats, plump as barley and almost as round, with more grain to the head than the Norway produces, and straw from four to five feet high.

The exhibition closed on Friday morning. As the time drew nigh the interest began to slacken. People looked about them at other things than the articles exhibited. Vans began to arrive. Articles of all sorts got carried off in a very small space of time. Visitors began to stream out. The exhibition was over.

No prizes were offered for fruit, which should surely come within the scope of an Agricultural Exhibition. This Province can produce fruit, but does not to any extent and never will, I fear, unless some stimulus is applied.

Taking the Exhibition as a whole, it was a success, though not so much so as it would have been further west. But looking upon it as a gigantic advertisement it will achieve its ends to some extent. We know down here, thousands of us know what we did not know before of the existence of machines which will save months of labour on every farm and in every house, and it will be a wonder indeed if some few do not make a beginning in improved methods of tillage in consequence. Housekeepers will also soon take the means now presented to them to escape some of the wearing drudgery they so desire to avoid. Things will go on more smoothly.

The manufactures of Quebec will also become more generally known, and when known will be appreciated. Others will no doubt be established, and our people will be able to find some employment at home in the winter. The stirring up of the ideas of a somewhat passive people is of infinitely more value than the stirring about of a few thousand pounds over the average. The former will be lasting while the latter will be evanescent. So that we may hope to reap some lasting improvement from the exhibition in this place.

Hamilton Central Fair.

The Central Fair at Hamilton was held in the Crystal Palace and Exhibition grounds, on the 4th October and two following days. It was in every respect, both as to the number and character of entries and the attendance of visitors, a success. The Arts department was well filled, but our agricultural readers will be chiefly interested with an account of the live stock and farm produce.

LIVE STOCK DEPARTMENT.

The display of live stock, as might be inferred from the fact that several of the foremost breeders in the Province were among the exhibitors, was of first-class excellence. All the classes were well, and some of them very numerous, represented; and making the usual deductions for the discrepancy between the number of entries and the animals actually on the ground, there was still a large and exceedingly good display.

HORSES.

There was a larger number of entries in this class of stock than in any other, and although, taken as a whole, the display was certainly a very fine one, yet the number was very largely swelled by a reprehensible proportion of inferior animals, with no merit to entitle them to a place in even a county or local exhibition. This remark especially applies to the "buggy" and roadster horses, which were the most numerous in the list.

The show of blood horses was small and confined to very few competitors. Mr. White, of Bronto, was the principal exhibitor of this class; indeed, was alone in the section for young animals. In stallions and brood mares he shared the competition with Mr. Waddell, of Hamilton, Mr. Simcoe Kerr, of Franklin Square, and Mr. Bishop of Ohio.

The entries for general purpose horses were more numerous, amounting to eighty against eighteen of the former. In this class there were many useful animals, and the gradual improvement in the character of the horses principally used on the farm is very noticeable; greater bone and strength are marked characteristics of this important class—the most important of all to the largest section of our population. The use of heavier stallions than was formerly the custom has improved the substance without unduly diminishing the activity and speed of the Canadian farmer's horse.

The class of road or carriage horses was the largest of all, and the most promiscuous, there being no fewer than 320 entries in all; of which number 45 were for spans of carriage horses, and 93 for "buggy" horses in harness. Mr. Buckland, of Guelph, showed in this class the same horse that was successful in Kingston; and there were many other very splendid animals.

The heavy draught horses were, next to bloods, the fewest on the ground, but the show in this class was, nevertheless, of great excellence.

Altogether the display of horses was the most popular and attractive feature of the exhibition, and the ring was surrounded throughout the day by a dense crowd of spectators.

CATTLE.

The show of cattle, especially of Durhams, was remarkably good; and the visitors to the late Provincial exhibition recognized at Hamilton most of the prominent and successful competitors at Kingston.

DURHAM.—Wherever Messrs. Miller, Small, and Stone, with other breeders of scarcely less eminence though fresher in the field, exhibit their splendid specimens of this breed, the show cannot fail to be a good one, and

these gentlemen have contributed their full share to the excellence and consequent success of the Hamilton Central Fair. It is interesting to note how far the decisions at Kingston are repeated or reversed in this subsequent exhibition. John Miller's "Fawsley Chief" is again at the head, and received the diploma for the best short horn bull of any age.

In aged bulls "Fawsley Chief" also gained the first prize; "London Duke," the sire of so many of Mr. Snell's Durhams, took the second prize; and a good-looking bull, "Conrad," the property of Mr. Watt, of Nichol, stood third in this section.

The two year-old bulls were not so well represented as the others. The first prize was won by John Weatherstone, of Bronte; the 2nd by Henry Reid, of Glanford; and the 3rd by Thomas Easterbrook, of East Flamboro'.

The yearling bulls were a far better class, and the honours went to Mr. Snell for "Joe Johnstone," 1st; A. Watt, for "Oxford Prince," 2nd; and J. & R. Hunter, of Pilkington, 3rd, for "Oxford Duke."

The bull calves were also an extremely good and promising lot, among which Mr. Stone showed a recent importation of great promise.

In aged cows Mr. Snell took the first place for Clara Barton; Mr. J. Miller the second for Cherry Bloom; and J. & R. Hunter the third for Dominion Belle. In the section of three-year-old cows Queen of Sunnyside, exhibited by J. & R. Hunter, was first; Mr. Stone's Sanspariel second; and Mr. J. Miller's Rose of Strathallan third. The two-year-old heifers were another remarkably good class, in which Mr. Snell's Nannie Rice, Mr. Miller's Lady Juliet, and Mr. Stone's Sanspariel 16th took the prizes in the order named. The yearling heifers were a very pretty-looking lot. The first prize was awarded to Lady Oxford, exhibited by Mr. J. Miller, and Mr. Snell gained the second; and third for Rosa Bonheur and Blanche Bertram; Mr. Hunter, in the same section, showed two beautiful heifers, Lady Fanny and Princess, the first just imported from England.

The prizes for heifer calves, also a good lot, were won by Messrs. Snell, J. McDougal, of East Flamboro', and F. W. Stone.

A special prize of \$75 was offered for the best herd of Durham cattle, including one bull, and, as the prize list expressed four cows, instead of, as was most likely intended, four females, admitting the heifers as well, the only herd literally fulfilling the conditions was that of Messrs J. & R. Hunter, to whom the judges awarded the prize, throwing out the fine herds of Miller, Snell, and Stone.

Mr. Stone was the only exhibitor of Herefords, a breed for which he stands unrivalled in the Province, and one that deserves to become a favourite with Canadian farmers. His splendid bull, "Sir Charles," was in beautiful condition, and looked the perfect type of a beef-making or working breed of cattle. The Ayrshires were also almost confined to one exhibitor, G. Jardine, of Saltfleet. Mr. W. Hood carried away the largest share of honours in Galloways, with some very pretty specimens. Devons, too, were only represented by the entries of Mr. Rudd, of Guelph, who has before been a successful exhibitor of this breed in Provincial competitions. There were a large number of grade cattle, but, with some meritorious exceptions, these were an inferior class.

The entries for fat cattle were not numerous. Mr. Armstrong, of Guelph, showed the splendid beasts that attracted admiration and substantial honours at Kingston.

SHEEP.

The sheep were unusually well housed in a spacious shed, the pens occupying each side, and the place for spectators, the centre; an excellent arrangement as regards the comfort and convenience of both visitors and animals. There was, however, some deficiency of light, which might easily have been remedied without sacrificing any of the advantages of shelter. All the classes were well represented, the Long-wooled being a remarkably good lot altogether. Mr. Snell, as usual, carried off a large share of the honours, gaining first and second prizes for aged Cotswold rams, and first and third for Shearling rams. Mr. S. Miller, Mr. Stone, Mr. W. Russell, Mr. J. North, and others were also successful, especially with ewes. For aged Leicester rams, Mr. Kirby took the first prize for a fine animal just imported, and the second for an imported Shearling ram.

The prize for the best pen of Long-wooled sheep was won by Mr. Snell.

The Southdowns, among Medium-wooled sheep, were another very excellent class, in which there were more than the usual number of competitors. Mr. Stone, it is scarcely necessary to say, carried off the chief honours.

PIGS.

There were a remarkably good collection of pigs, both large and small breeds. The class was altogether unusually good, nearly every pen containing a good animal. Mr. J. Mair was a very successful exhibitor of the large Yorkshire breed, and Mr. Featherstone had also fine specimens of the same, which gained several prizes. Mr. Fortune, of Ancaster, took a second prize for a Yorkshire sow over one year old. Mr. Stone showed two fine imported pigs of the so-called improved Yorkshire breed—a smaller and firmer variety than the old sort—but obtained no prize, as they did not come under any class included in the prize list.

The small breeds were particularly good, Messrs. Roach, Main, and Featherstone taking the largest share of the premiums. Several of the animals were recent importations, especially among those exhibited by Mr. Roach. In Berkshire and Essex this enterprising exhibitor carried off the chief share of the prizes. Several of his animals of these breeds were successful competitors at the recent exhibition of swine in Chicago, where over four thousand entries were on the books.

POULTRY.

The show of poultry, as far as regards the number of entries, was large; indeed, there was not room in the miserable and dark shed provided for their accommodation to contain all the birds, and several exhibitors had theirs in their own coops outside the building. These outsiders had at least the advantage of the light. There was a lack of arrangement as well as of accommodation, and, altogether, this portion of the exhibition did not impress the visitor so favourably as the other departments of live stock. There were undoubtedly some good birds, but there were also more poor ones than we have been accustomed to see of late years at first-class exhibitions.

IMPLEMENTS.

There was a very good display of implements, though the principal exhibitors were from the immediate neighbourhood of Hamilton. The firm of L. D. Sawyer had many entries. They showed the only threshing machines—a vibrating machine and Pitt's thresher—also a clove mill; Carter's ditching machine; combined mowers and reapers, and their prize grain drill; besides straw-cutters, both for hand and power.

Of Mowers and Reapers—chiefly combined machines—there was altogether a good display. A number of the principal manufacturers being among the exhibitors, including the prize takers at Kingston: Haggert, Bell, Maxwell & Whitelaw, Forsyth, Harris, Grant, and others.

There was also a very good collection of ploughs—iron, wood, and iron beam. We saw but one pair of harrows, and several cultivators. An ingenious combined machine was shown by by Misener & Borer, which is convertible into a corn planter, a cultivator, or a double mould-board plough. Maxwell & Whitelaw's excellent straw-cutters, root-cutters, and grain crushers, as well as Watson's implements of similar character, were on exhibition.

An excellent cheese press was shown by John Armor, jr., of Hamilton. It is a combined screw and lever, with an eccentric lever on the point of the screw. The machine is capable of exerting any desired amount of pressure, and is easily regulated. The same exhibitor shows also a good pattern of cheese hoop.

There were a few churns; among them that which gained the prize at Kingston.

A conspicuous apparatus, which also made itself heard by the whistle as well as seen by its tall projecting chimney, attracted considerable attention and drew together a large crowd. This was a boiler and steam engine provided with the patent safety gauges, manufactured by the "Steam Boiler Detective Gauge Company." The object of this contrivance is to indicate by sound—an alarm whistle—the dangerous conditions of low water, high pressure, or that which is known as "foaming." It appears to be a valuable invention.

AGRICULTURAL PRODUCTIONS.

There was a large display of the various kinds of grain, particularly of wheat, barley and oats. These samples shown are of superior quality.

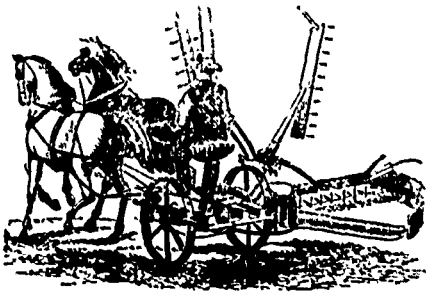
HORTICULTURAL PRODUCTIONS

The same may be said with regard to this department. Better samples of fruit could not be found in the Dominion. Apples of every variety were displayed in tempting fashion, and were pronounced by the judges to be of superior quality. The pears were also especially worthy of notice, and show what the neighbourhood of Hamilton can do in raising this somewhat tender and capricious fruit. The show of grapes also was remarkably fine, both in varieties grown under glass and in open air grapes; which last were shown in great profusion, well coloured and ripened, and of good size.

DAIRY PRODUCTS, &c.

This department is pretty well filled up. The factory-made cheese interest is well represented; the cheese is a fair sample of the superior article now manufactured in Canada. Of butter there were over twenty samples put up for exportation in firkins of not less than 30 lbs., and sixty samples of rolls or prints. The farmers of this section evidently excel in making good sweet butter.

The Grimsby Fruit Canning Company make a very large display of canned fruit and vegetables. They claim a new and superior method of preserving fruit, and exhibit the preserved fruit as a proof of the merits of their process. The remainder of this class comprises a few samples of molasses, sugar, an assortment of jars of preserves, some half-a-dozen jars of clear honey, and a similar number of honey in the comb, a large collection of pickles, some forty samples of home-made bread, a few sugar-cured hams, and a few samples of wine.



THE JOSEPH HALL
MACHINE WORKS
OSHAWA, Ont.

ESTABLISHED 1851.

THE JOSEPH HALL
MANUFACTURING CO.,Y,
PROPRIETORS.

WE DESIRE TO CALL ATTENTION TO OUR

No. One and Two Buckeye Combined
Reaper and Mower, with Johnson's Self-Rake Improved
for 1871.

We believe this machine, as we now build it, to be the most perfect Reaper and Mower ever yet offered to the public of Canada.

Among its many advantages, we call attention to the following:

It has no gears on the Driving Wheels, enabling it to pass over marshy or sandy ground without clogging up the gearing, thereby rendering it less liable to breakage. It is furnished with **four knives two for mowing and two for reaping, one of which has a sickle edge for cutting ripe, clean grain, the other a smooth edge for cutting grain in which there is grass or seed clover.**

It has malleable guards both on the Mower bar and Reaper Table, with best cast steel Ledger Plates. It is also furnished with our **new Patent Tilting Table for picking up lodged grain.** This is the only really valuable Tilting Table offered on any combined Reaper and Mower. The Table can be **very easily raised or lowered by the Driver in his seat without stopping his team.** This is one of the most important improvements effected in any Machine during the past two years.

Any one or all of the arms of the Reel can be made to act as Rakes at the option of the Driver, by a Lever readily op-

erated by his foot. The cutting apparatus is in front of the Machine, and therefore whether Reaping or Mowing the entire work of the Machine is under the eye of the Driver while guiding his team. The Table is so constructed as to gather the grain into a **Bundle** before it leaves the Table, and deposits it in a more compact form than any other Reel Rake.

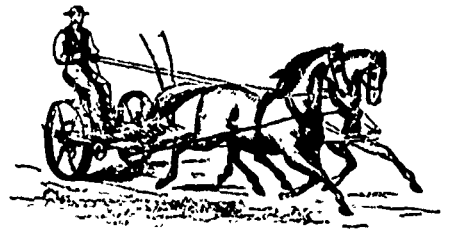
The Table is attached to the Machine both in front and rear of the Driving Wheel, which enables it to pass over rough ground with much greater ease and less injury to the Table. The Grain Wheel Axle is on a line with the axle of the drive wheel, which enables it to turn the corners readily.

The Rakes are driven by Gearing instead of Chains, and therefore, have a steady uniform motion, making them much less liable to breakage on uneven ground, and more regular in removing the Grain. The Gearing is very simple, strong and durable. The Boxes are all lined with

BABBIT METAL.

The parts are all numbered, so that the repairs can be ordered by telegraph or otherwise, by simply giving the number of the part wanted. There is no side Draught in either reaping or mowing, and the Machine is so perfectly balanced that there is no pressure on the Horses' necks either when reaping or mowing. All our malleable castings, where they are subject to much strain, have been **twice annealed, thereby rendering them both tough and strong.** Our Johnson Rake is so constructed **as to raise the Cam so far above the Grain Table that the Grain does not interfere with the machinery of the Rakes or Reels.** We make the above Machines in two sizes—No. One, large size for Farmers who have a large amount to reap—No. Two, medium size for Farmers having more use for a Mower than a Reaper. With the exception of difference in size, these Machines are similar in every respect. Our No. 2 Machine supplies a want heretofore unfilled, viz.: A medium between the Jun. Mower and large combined machine, both in size and price. We shall distribute our sample machines in March among our Agents, that intending Purchasers may have an early opportunity of examining their merits, and we **guarantee that all Machines shipped this season shall be equal in quality and finish to the samples exhibited by our Agents.** We invite the public to withhold giving their orders until they have had an opportunity of inspecting our Machines, as we believe that they are unsurpassed by any other machines ever yet offered on this continent. We also offer among other Machines,

Johnson's Self-Raking Reaper, impro-



ved for 1871, with two knives, smooth and sickle edge, and malleable guards.

Wood's Patent Self-Raking Reaper.
Buckeye Reaper No. 1, with Johnson's Self-Rake.
Buckeye Reaper No. 2, with Johnson's Self-Rake.

Ohio combined Hand Raking Reaper and Mower.

Cayuga Chief Jr., Mower.

Buckeye Mower No. 1.

Buckeye Mower No. 2.

Ball's Ohio Mower No. 1.

Ohio, Jr., Mower.

Taylor's Sulky Horse Rake.

Farmers' Favourite Grain Drill.

Champion Hay Tedder.

AND OUR CELEBRATED

HALL

Thresher and Separator,

Greatly improved for 1871, with either Pitt's, Pelton, Planet, Woodbury, or Hall's
8 or 10 horse-power.

We shall also offer for the Fall trade a new Clover Thresher and Huller, very much superior to any other heretofore introduced.

A NEW AND COMPLETE
ILLUSTRATED CATALOGUE
OF ALL OUR MACHINES

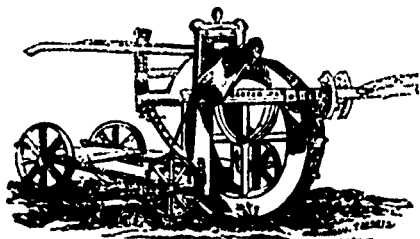
Is being Published, and will be ready for early distribution, free to all applicants.

All our Machines are warranted to give satisfaction, and purchasers will have an opportunity of testing them both in Mowing and Reaping before they will be required to finally conclude the purchase.

For further information, write

F. W. GLEN,
PRESIDENT,
OSHAWA, ONT.

Advertisements.



WE BEG TO NOTIFY INTENDING PURCHASERS OF CARTER'S DITCHING MACHINE

That the following are the only parties authorized by us to manufacture the said machine in Ontario, from whom certificates and other information as to the working of the machine can be obtained:—

- John Abell, Woodbridge P. O., County of York.
- Eyer & Bros., Richmond Hill P. O., County of York.
- L. D. Sawyer & Co., Hamilton.
- John Watson, Ayr P. O., County of Waterloo.
- McPherson, Glasgow & Co., Fingal P. O., County of Elgin.
- Do., do., Clinton P. O., County of Huron.

CARTER & STEWART,
Proprietors,

v3-9-3t. Aylmer P. O., Elgin Co., Ont.

MILLER'S (ANIMAL)

TICK DESTROYER!

SHEEP OWNERS—FLOCK MASTERS—As you value the health of your Sheep and the growth of Wool, use the above preparation. A single application is sufficient to prove its merits. A 35 cent package will clean 20 Sheep.

HUGH MILLER & CO.,

v3-10-2t. Druggists, Toronto.

FALL PLANTING.

TORONTO NURSERIES.

WE offer for FALL PLANTING, a large and excellent Stock of

- Standard and Dwarf Fruit Trees,
- Ornamental Deciduous Trees,
- Ornamental Evergreen Trees,
- Small Fruit Plants,
- Flowering Shrubs, Roses,
- And General Nursery Productions.

OUR SALES will continue until the Ground is hard frozen. Packing done in the best manner and carefully.

Send two-cent Stamp for our Priced Descriptive Catalogue.

GEO. LESLIE & SONS.

v3-10-1t. Leslie P. O., Ont.

VINEGAR—how made—of Cider, Wine or Sorgo, in 10 hours. F. SAGE, Cromwell, Conn.

BREAKFAST.

EPPS'S COCOA.

GRATEFUL AND COMFORTING.

THE very agreeable character of this preparation has rendered it a general favourite. The Civil Service Gazette remarks:—"By a thorough knowledge of the natural laws which govern the operations of digestion and nutrition, and by a careful application of the fine properties of well-selected cocoa, Mr. Epps has provided our breakfast tables with a delicately flavoured beverage which may save us many heavy doctors' bills." Made simply with boiling water or milk. Sold only in tin-lined packets, labeled—

JAMES EPPS & Co.,

v2-11-12t Homoeopathic Chemists, London.

AGENTS WANTED for a strangely fascinating, Powerfully Written, and thoroughly reliable Book.



A Thrilling account of that life in all its phases, WRITTEN BY A CONVICT IN A CONVICT'S CELL, and fully endorsed by responsible and well known citizens. It hits the nail and reveals the horrors of that life under the old system of brutal treatment, starvings, whippings, shamed-faced criminalities with female convicts, mutinies, murders, &c., also the advantages of the new system of kind treatment, lately inaugurated. It is full of soul-stirring incidents and vivid pen pictures, FACTS as exciting as fiction. It is profusely illustrated, is creating a profound sensation, and is sure to prove the great popular, FAST-SELLING book of the season. The reports of agents just commencing indicate this. One just reports 43 subscribers in 2 days, another 61 in 5 days. Circulars, copious extracts and 15 sample engravings sent free; or a bound prospectus of 164 pages for 80 cents. C. F. VENT, Publisher, 38 West Fourth Street, Cincinnati, O. 10-11.

Windsor Pigs for Sale.

PIGS from three to six months old, imported and bred from imported Stock.
For sale by **ROMEO H. STEPHENS,** Slocum Lodge, St. Lamberts, near Montreal.
v3-10-11.

Markets.

Toronto Markets:

"CANADA FARMER" Office, Oct. 15th, 1871.

FLOUR AND MEAL.

The market has been fairly active. Considerable uncertainty is felt as to the effect of the great fire in Chicago on prices, but as yet no change is reported. Wholesale prices are as follows.—

Flour—Superfine, \$5 30 to \$5 60; Spring Wheat, extra, \$5 60; Fancy, \$5 70; Extra, \$5 90 to \$6 00; Superior Extra, \$6 25 to \$6 50.

Oatmeal—\$6 25 to \$6 50.
Cornmeal—\$1 25 to \$1 50.
Bran, in car lots, \$15 to \$11.

GRAIN.

Wheat—Soules, \$1 32 to \$1 33; Treadwell, \$1 30 to \$1 31; Spring, \$1 25 to \$1 24; Do Midge Proof, \$1 15 to \$1 20.
Barley—No. 1, 60c; No. 2, 50c to 50c.
Oats—37c to 37½c.
Peas—70c to 72c.
Rye—62c to 65c.

HAY AND STRAW.

Hay, in fair supply, at \$15 to \$18.
Straw, scarce, at \$12 to \$15.

PROVISIONS.

Beef, by the side, 6c to 7c.
Mutton, by the carcass, 6c to 7c.
Apples, per brl., \$1 to \$2 00.
Potatoes—New, per bag, 75c to 80c.
Poultry—Turkeys, 75c; Chickens, per pair, 35c to 45c; Ducks, per pair, 50c to 60c; Geese, 50c.
Pork—Mess, \$16 to \$16 50.
Hacon—Cumberland Cut, \$1 2c to 9c; Canada, 8c to 8½c.
Hams—Salted, 10c to 11c; Smoked, 12c.
Lard—10½c to 11½c.
Butter—Dairy, 15c to 17c.
Eggs—Packed, 15c to 16c.
Cheese—9½c to 9¾c; Recesor's Stilton, 15c; Royal, 17c.
Dried Apples—7½c to 8c.
Salt—Goderich, \$1 50; Liverpool, per bag, 75c to 70c.
Live Hogs—\$3 50 to \$4.

THE CATTLE MARKET.

Beves (live weight) \$2 75 to \$4 50 per cwt.
Sheep—\$7 00 to \$5 00.
Calves—\$3 to \$8.
Lam's—\$2 to \$3.

PROVINCIAL MARKETS.

Hamilton, Oct. 10.—Wheat, Delhi, \$1 25 to \$1 32; Soules \$1 30 to \$1 30; Treadwell, \$1 26 to \$1 26; Winter Red, \$1 20 to \$1 20; Amber, \$1 20 to \$1 20; Spring, \$1 20 to \$1 22. Barley, 65c to 66c; Corn, 65c to 70c; Rye, \$0 50. Buckwheat, 85c to 95c. Oats, 38c to 38c; Bran, 60c to 66c. Flour, Superfine Extra, barrel, \$7 to \$7 50; Extra, \$6 50 to \$7; Superfine No. 1, \$8 to \$6 50; do. No. 2, \$5 50 to \$5 75; fine, \$5 to \$5 50. Oatmeal, \$3 to \$3 25. Cornmeal, \$4 75 to \$5 Bran, 80 to 90c. Shorts, fine, \$1 25, coarse, \$1 10 to \$1 20. Butter, rolls, 18c to 25c; do, tub, 10c to 10c. Eggs 14c to 15c. Cheese, 9½c to 15c. Potatoes, 75c to \$1. Honey, 20c. Apples, per bag, 50c to 75c; dried, do, per bush., \$1 25. Wool—Canada fleece, 40c to 40c, superfine pulled, 35c to 35c; combing, pulled, 32c to 35c. Hides and Skins—Green, No. 1, inspected, \$3 50; do No. 2, \$7 50; Calafkins, green, 10c; do, dry, 15c to 20c; lambskins, 50c to 60c; pelts, 30c to 40c.

Montreal, Flour market firm and buoyant, but no advance of consequence established. Sales of extra to a fair extent at \$6 42½ to \$6 50; fancy at \$6 35 to \$6 40, Canada super, sold at \$6 15 to \$6 20; and \$6 25 to \$6 30 for strong. Latest sales, city brands were at \$6 25. Wheat—White held at \$1 29. A cargo of choice red on spot brought \$1 39½, spring taken in car lots at \$1 35. Peas—Cargo sold at 89c per 60 lbs; car lots on spot worth same price. Provisions—Flour. Butter—Very dull; buyers holding back in consequence of adverse cable advices. Cheese—Steady. Lard—in fair demand.

New York, Flour—Less active, shade easier; receipts 20,000 brls; sales, 8,000 brls at \$6 50 to \$6 65 for super. State and western; \$7 10 to \$7 60 for common to choice extra State; \$7 to \$7 75 for common to good extra western. Rye Flour—Quiet and unchanged. Wheat—Dull, 1c lower; receipts, 208,000 bush; sales, 71,000 bush at \$1 56 to \$1 58 for No. 2 spring; \$1 61 to \$1 63 for winter red western; \$1 65 to \$1 68 for amber western; \$1 70 to \$1 75 for white western. Rye—Quiet and unchanged. Corn—Without decided change, receipts, 1,000,000 bush, sales 59,000 bush, at 79c to 81c for western mixed in store and afloat. Barley—Dull; receipts 25,000 bush. Oats—Shade better; receipts 68,000 bush; sales 54,000 bush, at 53½c to 54c for western and Ohio. Pork—Shade firmer at \$13 70 to \$13 80. Lard—quiet and steady at 92c to 102c for steam; 10c to 10½c for kettle. Petroleum—Crude, 14½c; refined, 24½c.

Contents of this Number.

	PAGE.
THE FIELD:	
Securing Roots.....	361
Harvesting Turnips; Curing Corn Fodder; Subsoiling at Small Cost.....	362
Failure of Grass Seeds; Silver Beet; History of a Canadian Farm.....	363
Beet Root Sugar.....	364
STOCK DEPARTMENT:	
Extraordinary Competition for Thorough-bred Stock.....	365
Canadian Sheep Breeding.....	366
Fattening Animals for Winter; Taking off Hides; From Grass to Winter Feed; Training Colts.....	367
THE DAIRY:	
Hints for the Dairy; Notes from Cheese Makers.....	368
HORTICULTURE:	
Fruit Growers' Association—Autumn Meeting..	369
The Potato.....	371
Davison's Thornless Black Cap Raspberry; How to Pack Grapes for Market; Strawberries—Comparative Productiveness.....	372
Raspberries in Cincinnati Market; How to Raise Melons; Roses this year; Violets; A Miscellany.....	373
Barren Seedling Vines.....	375
ENTOMOLOGY:	
Entomological Queries and Replies; Trapping the Squash Bug.....	375
Codling Moth or Apple Worm.....	376
APIARY:	
A Young Lady Apiarian; Bee Superstitions; To Get Honey from the Comb.....	377
CORRESPONDENCE:	
Successful Farming.....	377
Farming as a Profession; My Farm.....	378
EDITORIAL:	
The Bountiful Harvest of 1871.....	379
Co operation of Farmers.....	380
Agricultural Prosperity.....	381
Exhibitions.....	382
Fish Culture; New Varieties; Notes on the Weather.....	383
AGRICULTURAL INTELLIGENCE:	
The Provincial Exhibition.....	384 391
Annual Meeting of the Agricultural and Arts Association—President's Address.....	391 394
Fruit Growers' Association—President's Address.....	394
Quebec Provincial Exhibition.....	396
Hamilton Central Fair.....	397

THE CANADA FARMER is printed and published on the 15th of every month, by the GLOUK PRINTING COMPANY, at their Printing House, 26 and 28 King Street East, Toronto, Ontario, where all communications for the paper must be addressed.

Subscription Price, \$1 per annum (Postage Free) payable in advance.

THE CANADA FARMER presents a first-class medium for agricultural advertisements. Terms of advertising, 20 cents per line space. Twelve lines' space equals one inch. No advertisements taken for less than ten lines' space.

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

GEORGE BROWN,
Managing Director.