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# THE CANADA FARMER



VOL. I. No. 10.      TORONTO, CANADA, OCTOBER 15, 1869.      NEW SERIES.

## The Field.

### On the "Tchornoi Zem." or Black Earth of Russia.

The soils comprised under the designation of *Tchornoi Zem*, or Black Earth, have long been known for their great extent and extraordinary fertility. They occupy the great central plain of Russia, and although their boundaries have never been rigidly defined, they are computed to cover at least sixty or seventy thousand square miles. These soils occupy a considerable portion of Hungary, and from recent observations are supposed to extend, northeast, into the vast plain of Siberia. In the settled portions of Russia, this soil already supports a population of more than twenty millions, and yields vast quantities of wheat and other grains for exportation to various European countries. It must not be supposed, however, that this vast extent of country is occupied by soils of the same high and uniform fertility. This Black Earth occurs, indeed, in areas sometimes consisting of several large parishes, and is invariably the superior deposit, covering all other accumulations of clay, sand, &c. In thickness it varies greatly from five to twenty feet. "In travelling over these black tracts," observes Sir Roderick Murchison, "in the dry summer of last year, my companions and myself were often, during a whole day, surrounded by a cloud of black dust arising from the dried-up 'Tchornoi Zem,' which, even in rich grass countries, like those east of Odoyef, is of so subtle a nature as to rise up through the sod, under the stamp of the horses' feet, and form so dense a cloud, that on arriving at our station, we were often amused at our chimney-sweep appearance."

These soils,—for the "Tchornoi Zem" differs somewhat in its chemical and mineral composition, (although as a whole it is most remarkable for its uniform character)—have long been distinguished for extraordinary productiveness in grass and grain, and among the peasants of central Russia, the use of manure appears to be almost unknown. Vast heaps of it are said to have accumulated on most of the farms, often constituting a great nuisance, and wasting away by the natural process of decomposition. Under a system of constant and indiscriminate cropping, with imperfect cultivation, carried on for a great number of years, diminished returns at length resulted; a circumstance that roused the attention of the proprietors, who awakened the tenants to the necessity of improved methods of culture and the application of manure. Root and forage crops, which were formerly unknown, have of late years been partially introduced. It would appear that nothing more is required to sustain the high natural productiveness of the soil than clean tillage and moderate manuring, apart from the use of all extraneous substances.

This soil, as its name indicates, is, when moist, of a jet black, and when dry, of a dark brown color. It is remarkable for having its organic and mineral constituents so minutely divided and intimately mixed. The organic portion varies considerably, but it is always relatively large, varying in the dried samples that have been subjected to analysis from six to eighteen per cent. Its different parts being so thoroughly commingled, the mechanical texture is comparatively free and open, thus allowing air and water a ready communication with the roots of plants; a condition highly favorable to nutritious and healthy growth. The amount of nitrogen which it contains is always considerable, and thus a large quantity of ni-

trogenous compounds is formed by the agency of air and moisture, so favorable to the growth and maturity of farm crops.

Professor Johnston observes that "in this black earth the composition of the mineral or inorganic part is also such as to promote fertility. In one of the richest varieties, in which the organic matter amounted to eighteen per cent., the mineral was found to consist of:—

	Per Cent.
Potash. . . . .	5.81
Soda . . . . .	2.31
Lime . . . . .	2.60
Magnesia . . . . .	0.95
Alumina and oxide of iron, with traces of phosphoric acid. . . . .	17.32
Silica, of which 7 or 8 per cent. were soluble. . . . .	70.94
	99.93

The above analysis clearly indicates how admirably nature has adapted the mineral constituents of this soil to the growth of plants. That celebrated French agricultural chemist, M. Payen, after analysing a portion of this black earth, remarks:—"The composition of this earth is remarkable for the proportion of azotised matter which it contains, and the volume of the azote. The connection between this earth and the organic substance, when the latter is so rich in azote, appears to me to be essentially one of the surest indications of the fertility of the soil, other conditions of chemical properties and mineral composition being favorable. In this respect, and according to my compared analyses, the earth in question approaches very near to two of the most fertile soils in France: that or the Limagne d'Auvergne (valley of the Upper Loire), and that of the neighbourhood of St. Denis, near Paris, notably in the farms of Marville and Stains." He observes further, that the peculiar gaseous contents of the black earth may be the

principal cause of its fertility; so that it would seem without a close attention to the proportion, not only of the soluble and insoluble constituents of soils, but also to their gaseous contents and their mechanical aggregation, it must be very difficult to estimate correctly their fertilizing powers.

With respect to the origin of the Tchornoï Zem, much speculation has taken place, and a considerable difference of opinion has obtained. The most prevalent opinion in Russia has been that it is the humus arising from decayed forests or vegetables in former and very remote periods of the earth's history; and in this view a number of eminent scientific men have concurred. "But," observes Sir R. Murchison, "I am obliged to dissent from this opinion, seeing the uniform nature of the soil, and its distribution at all levels without reference to the existing drainage; and also from the fact, that in no part of the empire did my associates or myself ever perceive a trace of trees, roots, or vegetable fibre in the black mass. It is in vain to say that such vegetables may have been entirely decomposed; for in the deep denudations which expose fifteen to twenty feet of this matter, surely some remains of the forests or bogs would be found in the lowest parts of the solid earth, just as we find roots and branches of oak, pine, birch, and hazel in our own peat bogs."

Sir Roderick, finding that in the absence of all fossil remains in the Black Earth, it cannot be compared with any of the many drifts existing on the surface of the earth, asks whether the very peculiar nature of the physical, geographical, and geological conditions of Russia may not help to a solution of the problem? Unlike all great regions hitherto examined, Central Russia is void of rocks of igneous origin or intrusive character, and all her strata deviate from horizontality only by the slightest undulations. From this fact and from the incoherent texture of the rocks, it is clear that her subsoil, which, on account of its marine contents, we know to have been formed *under the sea*, must have been raised and desiccated by very gradual and even movements. Judging from the evidences of geological succession also, and seeing that, without the aid of great fractures or dislocations in the crust of the earth, some of the older rocks of Russia, such as the mountain limestone, are covered conformably by the inferior oolite, whilst the lias and, to a great extent, the new red sandstone are wanting, we see in these facts the proof that, either the former bottom of the sea was raised above the waters and remained dry for

long periods, or that, in this very tranquil region of the earth's surface, the absence of all widely-spreading powerful currents ceased, at intervals, to extend from the neighbouring seas and rivers. Pursuing this mode of reasoning from the more ancient phenomena to those which immediately preceded our own era, we are led by positive evidence to conclude that the whole surface of Central Russia, (however parts of it may have had formerly dividing barriers) was during that period again depressed beneath the level of the sea, in which the marine shells of the government of Archangel and the Southern Steppes were accumulated, and over which the sand, clay, pebbles, and blocks of the north, as we have before described, were deposited."

The writer, after referring to the fact that in no part of the great northern drift is any trace found of the Black Earth, and that it is natural to suppose, when the northern drift ceased to advance, or unagitated by any disturbing force would become covered with fine silt or mud, such as is often found in Mediterranean waters, removed from the action of currents, thus concludes:

"The absence of any marine shells in this fine sediment is, it is true, a negative fact, which, if unaccompanied by some explanation, might indispose my readers to admit this hypothesis. We must, however, bear in mind that, after their emersion, the central parts of Russia, if but slowly and slightly elevated, may have long remained in an intermediate state of mire or slough with little egress for water; so that the remains of delicate testacea (if they existed), may have been entirely decomposed by the alternations of aqueous and atmospheric agency. But whether we adopt this view or not, we cannot, I repeat, look at the very great uniformity of its composition over such vast tracts, and its independence of existing drainage, without rejecting any theory which would account for the production of the 'Tchornoï Zem' by subaerial causes only, and on these grounds we must, I think, account for its origin by aqueous deposit, and the subsequent modifications which it underwent in passing into a terrestrial condition."

We may observe in conclusion, that of late years Russia has manifested, in several parts of her vast territories, a strong disposition to agricultural as well as other improvements. The steam plough has been introduced with marked success, and railroads are in the course of construction through some of the most fertile portions of the Empire. Education is

commencing an important work, while serfdom has been abolished by Royal decree. There can be little doubt that Britain, and other grain importing countries of Europe, will look more and more for their supplies to this immense granary of Central Russia; and we in the Dominion of Canada, and also our neighbours south of the great lakes, will have to improve our modes of cultivation in order to meet successfully this formidable competitor in neutral markets.

#### Experiment on Deep Subsoil Culture.

Much controversy exists relative to the advisability of deep sub-soil cultivation, or the contrary. To test its utility, during the summer of 1866 I caused about half an acre of land similar in quality to the surrounding portion, in the centre of a fallow field, to be thoroughly and deeply sub-soiled. No manure was or ever had been used, and the field was sown with fall wheat, in the fall of 1866, and the result carefully watched. The land was deep clay loam—so much so that the second plough, following in the furrow of the first, failed to bring up any hard pan or hard intractable soil, nor did it raise the sub-soil to the surface, but only moved it to the depth of 12 or 13 inches, and for the most part allowed the crumbled earth to fall back from whence it was raised.

This was repeated each time the land was ploughed, the second team always following in the rear of the first; thus a second time was the subsoil thoroughly moved and broken up.

The limits were staked out, and as before stated, the result carefully watched. Contrary to expectation, we did not see any marked improvement, or indeed any difference during the fall succeeding the wheat sowing; and as soon as the snow passed away and the thaw would admit, the wintering and growth were carefully examined, but still no amendment was perceptible, and when the crop was harvested, so far as I could notice, no benefit whatever could be traced to the subsoil, nor is there any apparent to the eye to this day, and the land is now sown to clover and has an abundant plant on it. This is rather a remarkable instance, as the facts and results were just as detailed. The situation of the land was tolerably high, so that nothing like a reservoir could have been caused by the deep ploughing, whereby stagnant water could have injured it, and we so constantly hear of the benefit derived from deep culture, that the failure in this instance need form no barrier to future trials, and I would by no means therefore recommend others to allow a single failure, (although ever so well authenticated), to interfere with other trials; but would rather feel that circumstances may, for some reason unexplained, at the time, have caused the experiment to fail,

and that the failure was probably due to conditions that would not apply to other localities. My own impression was at the time, and still is, that to derive any material benefit from subsoiling, manure must be plentifully ploughed under as deeply as possible, thus rendering the lower stratum equally as fertile as the upper. A former experiment, when I ploughed under green crop, succeeded well. I should have said that the land was almost new land, having been cropped only about four times. It is now seeded to clover, as before stated, and when the plough again breaks it up, we shall have an excellent comparison between the experimented portion and that surrounding it, thereby to test Professor Volcher's opinion relative to the fertilizing effects of clover. There will be an excellent chance for such investigation, as from the deep subsoiling and failure of benefit directly derived therefrom, and subsequent sowing with clover, the fertilizing effect of clover roots will certainly have an opportunity of comparative test under such different circumstances.

C.

### The Uses of Lime as a Manure

The following is extracted from an address delivered to the students of the Illinois Agricultural college:—

Lime, as found in nature, is usually in the form of a carbonate. The carbonic acid, however, is comparatively loosely held, since it can readily be driven off by heat, as is done in the process of lime burning. It is now caustic or quicklime, and in this state it is sometimes used for agricultural purposes, as in the killing of grubs, destroying thistles, and other noxious vegetables, but its action is too energetic for ordinary use, as it is liable to prevent seeds from germinating, and to destroy tender vegetation. This caustic property may be modified by slaking the lime, as is done in preparing it for mortar, and then letting it remain some days to absorb carbonic acid from the air; but a preferable way is to use only as much water as will be absorbed by the lime, leaving it as dry as before. In this state it is known as hydrated or mild lime, and is, or can be easily reduced to a fine powder. It differs in no essential respect from air slaked lime, which is a mixture of the hydrate and carbonate of lime. When caustic or hydrated lime is exposed to the action of the air, it absorbs carbonic acid and has the same chemical composition it had previous to being burned. The principal uses of lime in agriculture, apart from directly furnishing an essential ingredient of vegetable tissue, are these: 1st. It corrects the acidity of land, particularly when the soil is cold or productive of sorrel. 2nd. It hastens the decomposition of vegetable matter in the soil—especially when it is damp and inert, as is the case with muck—partially decayed straw, and the roots of plants that have been ploughed under. 3rd.

It forms, with other mineral substances in the soil, compounds which are soluble, and are therefore in a state to be taken up by the plant. A notable example of this is found in the case of silica, which is so essential for giving strength to the stalks of all the cereals. 4th. It is lasting in its results, increasing the fertility of the soil in various ways, for an indefinite period after it is applied. 5th. It increases the effect of the vegetable manures previously or subsequently applied to the soil, by putting them in a form to be more easily assimilated to the plant. 6th. It enables the farmer to raise larger crops from the same number of acres, as has been abundantly shown by numerous carefully conducted experiments, both in this country and in Europe. 7th. It improves the quality of nearly every cultivated crop. This is shown in wheat, which will produce more flour to the bushel, and of a more nutritious nature, from soils manured with lime. Potatoes are more mealy and of finer flavour, this may be accounted for from the fact that lime hastens the maturity of this crop, as it does most others, and a rapid growth is very essential to the excellence of the potato. No doubt the superiority of the potatoes raised in Aroostook Co., Maine, and in the adjacent British Provinces, is largely due to the lime soil in which they flourish. In stating all these advantages that ordinarily occur from the judicious application of lime, we should do injustice to the subject if we failed to notice some of the bad effects that may follow its use. Foremost among these results is one that comes from the practice of some farmers of placing caustic lime in the soil in connexion with fresh animal manures; by so doing, most of the ammonia is immediately set free, and passes off into the air. Lime and stable manure are each of great service to the plant, but a period of at least six months should intervene between the times of applying them. Again, too plentiful a use of lime is liable to render the soil more porous than it should be to retain sufficient moisture. Unfavourable results have also been found to attend the use of lime in the raising of flax, as it diminishes the tenacity of the fibre; the same is also probably true in relation to hemp. In the neighbourhood of lime kilns, the farmer may economise much by buying that which is unsuitable for building purposes, from its being over burned or under burned, or which has become partially slaked by falls of rain before it was barreled and housed. Lime also that has been stored for sale, and has undergone spontaneous slaking—absorbed water and carbonic acid—is in a state for farmer's use, and can often be bought at a merely nominal cost.

### Culture of Early Horn Carrot.

It is not generally known that Early Horn carrots will produce an enormous yield per acre, and at some times be as thick in the row as if potatoes were strewed along in a

line. I have at this moment a crop of Early Horns so thick and abundant that I am confident there will be at least at the rate of twelve to fifteen hundred bushels per acre. A horticultural friend of mine, who often visits my garden, was there at the time of the first hoeing, and when I showed him how thick I was leaving the young plants, he was loud and demonstrative on the absurdity of so doing. The other day, whilst he was looking on, I laid hold of a double handful of the short, thick greens, and drew up a perfect mass of carrots, most of them about five to six inches long, and about one half to two inches in diameter. The rows as they appear now are about six inches wide, and as the seed drills were originally twelve inches apart when sown, it follows that the carrots have now only about six inches of unoccupied soil between the rows. When fall digging time comes, if a hoe is taken, and the surface cut away, leaving the carrots exposed, they will appear so thick as to be almost solid, one touching the other so nearly as hardly to allow of the point of the finger being inserted between them. For many years I have followed this course with similar results. We sow the seed thinly but widely distributed in the drills, and never thin out any except for the table, as wanted all through the summer. We thus have an abundance for use, and a heavy crop to dig in the autumn.

For their field culture, nothing more is required than to manure heavily in the fall, with well rotted cow manure if possible, and sow as for the garden crop in spring, without ploughing, taking care to harrow several times at intervals before sowing; this harrowing kills all weeds near the surface, and makes further cultivation almost unnecessary, as the rank growth of carrots will smother all weeds but such large ones as lambs-quarter or wild spinach.

To harvest the crop in autumn, take an old scythe and mow the green quite close, then plough and harrow the land, when all the carrots will come to the surface, and great quantities can be gathered into rows with an ordinary hay rake, which greatly facilitates their collection. Early Horns must be carefully preserved in an airy, dry root-house, just cold enough not to freeze, and not warm enough to promote vegetation. Either extreme will cause decay.

C.

### Hemp.

We have received from Messrs. Fawcett & Bengough, to whom we sent some of the hemp seed which the liberality of Mr. Joly placed at our disposal, some excellent samples of the crop that they have raised at Embro. The specimens consisted of both male and female plants of the Piedmontese and Kentucky varieties. The largest stem was of the former kind, its length being close upon ten feet. The others, which we are informed are fair samples of the average

height, measure about eight feet in length, be straight and free from branches, and would, no doubt, yield excellent fibre. Speaking of the crop, Mr. J. Bengough says that, except in a few places where the ground was wet, "the plants are tall and very thick on the ground, the fibre is very fine, and the plants very clear of leaves or anything that would injure the texture of the fibre. I am sorry you have not had the opportunity of seeing the crop yourself. There are some plants that have branched like a tree. These had been sown in hills for seed, and judging from their appearance, will yield about a quart of seed to each plant. Upon the whole the experiment is a success. The field was not prepared properly for the crop, never having been ploughed in the spring. It was fall ploughed, but not manured as prescribed, and I observe a very great improvement in the growth of the plants where manure had been deposited, giving me evidence that the land requires to be rich in order to get a good crop. I expect to have a considerable quantity of seed, and shall be happy to supply any of your friends if I find I have any to spare."

We are glad to learn that so far the experiment has been successful, and trust that others will test the suitability of the Canadian soil and climate for the growth of this important crop. There can be no doubt that a good demand and market would be found if the culture of hemp proved practicable in this province.

We are much obliged to Messrs. Fawnes & Bengough for their specimens, which were carefully packed, and reached us in good order. We shall be glad to hear the results of their further efforts in the preparation of the fibre.

### Experiments with Nitrate of Soda and Salt on Fall Wheat

In September, 1867, I was led by the result of some carefully conducted experiments in England, to use nitrate of soda on fall wheat. At the same time, while trying this manure, I determined also to test salt, both in conjunction with the nitrate and alone.

The idea I had with regard to nitrate of soda and salt was, to divide one acre into a succession of squares, by driving down posts or stakes on one side, parallel to the furrows, and by sowing alternate strips of soda and salt, missing one strip altogether between each article. I first sowed when walking with the furrows, repeating the operation when walking across them, and opposite the line of stakes. It followed that the acre was sown with successive squares of each sort; i.e., one manured with soda, then an unmanured square, then one manured with salt, followed by another unmanured. And to see the effect of double portions of each, where the stripes crossed each other, was one great end to be answered. There were sown

salt to the acre. This would, by the plan adopted, show the effect on every alternate square of twice that quantity, and would give means for an accurate comparison where both soda and salt were omitted.

All through the fall the result was carefully watched, but contrary to all expectation, there was no alteration in the appearance of any portion of the numerous squares; all seemed alike. Where either single or double quantities of soda or salt had been used, no perceptible benefit could be seen over the space where neither had been sown. The same result was seen after harvest, and I became convinced that to sow nitrate of soda or salt on fall wheat was simply a waste of time and money. Since my experiment, I find that some eminent writers, and well-known seedsmen and manufacturers of manure, have fallen into the same error, and have published their experience. They, however, persevered, and repeated all their experiments, by sowing in the spring instead of autumn, and added both nitrate of soda and salt to many other sorts of soluble manures—and after a succession of elaborate trials, have decided that all kinds of soluble manures must invariably be sown in the spring as a top dressing, and not in autumn. If this is true—and we have little or no reason to doubt it—we ought to use the liquid manure from our farm yards as a spring dressing for wheat. A very simple contrivance would enable this to be effectually done in the construction of the carriage used in carrying it out, which should be made of a light hollow roller, of considerable diameter, which, whilst passing harmlessly over the wheat, would distribute a stream of liquid manure in its rear. A very ingenious friend of mine lately hit on a plan which, from its extreme simplicity, and ease of action, merits a place in your journal.

This plan was to form a hollow cylinder of wood, say of two inch oak plank, six feet long and three feet in diameter, hooped exactly like a large cask, but with very little of what coopers call "bilge," that is swelling in the centre (there would be no difficulty in constructing one without any). Through the centre is to be passed a hollow pipe about four inches in diameter, which forms the axis on which the roller turns, and to which are attached the shafts, and through the centre of each end of the cask the stream of liquid manure pours and is distributed. The way this was arranged was this. The hollow shaft was open like an angular spout inside the case, with the open side always upwards, and the centre of it, lengthwise, formed into a kind of bow, the highest part being raised about twelve inches in the centre. Projections in the walls inside of the cask carried up the manure, and when it reached the angle of about 45°, precipitated it on to and into the open spout, which, from its bowed shape (the back upwards) formed an excellent run towards the hollow axis, from whence it flowed, in a greater or

less stream as required, out of both sides at once on the land. One practical difficulty, however, was found in using this apparatus for wheat. It was necessary to convey the manure round to the back of the roller or cask, so that where the roller went once the wheat was rolled and manured all at the same time.

The cask had a door about 6 inches in diameter near the centre, formed of boiler plate, with hasp and hinges. The manure pump readily filled the cask, and when full, the team was driven off with the load, exactly like many an ordinary roller, only in this instance it was filled with liquid manure. Of course, the hollow axes were fitted with a sluice plug to each, to prevent the exit of the liquor until the time came when the plugs were withdrawn, and the liquid manure poured out at such a speed as required, and according to the quantity wished to be used. The revolving projections on the inside of the cask carried up the last drop and deposited it in the trough. When the roller was empty, the team was turned towards home for another load. C.

### Farm Carpenter Tools.

There is no more important branch of farm industry than that of carpentering on an amateur scale. First, it saves many a dollar to be paid to the mechanic. Second, it saves many a day lost in taking the broken implement to the mechanic's shop, and again going for it, when it ought to be done, but too often to return disappointed, to go again next day. But the most important view of the case is this, that your sons learn to use the tools, and you yourself, although possibly middle aged, soon acquire some considerable knowledge of their use also. The difficulties are not so great in getting the materials for buildings and the thousand and one little jobs about a home-stead, as in paying for the labour. The labour must be paid for in cash, whereas the material can often be paid for in work of some kind during winter. Suppose a farmer wants some oak, maple, or other lumber for the next year's buildings or repairs. During the winter he hauls logs to the nearest mill, and gets them cut on shares, when probably he would be doing little or nothing else. The team must be kept, and the labour of one of his sons is often available; and thus the material is provided. But not so the labour. For this cash must be paid, and here begins the difficulty, and the building or repairs too often go undone because the farmer does not feel that he can spare the money to pay for them. But the case is most materially altered when the material is obtained as above, and the labour is found at home during the winter season, or on wet days or other idle hours. To do this, however, tools, and good sharp tools too, are absolutely requisite. I have often seen an amateur carpenter trying to use a dull saw, too close set to cut even

were it sharper, or boring with a miserable borrowed auger, that never in its best days was a good one, and at the time required was absolutely worthless, being buckled throughout from having been used without setting. I might enumerate instances without number of such misery and bad work, for no possible good can be done with such wretched tools, and no mechanic would try to work with them for one moment; whereas the amateur is apt to feel that any tool is good enough for his miserable attempts—and indeed any such tools generally are quite good enough to lend, which is one of the most difficult things to avoid in the country. Now, lending tools I abominate, and will not allow. If a neighbour wants a hole bored in a reach, harrow, or other implement, if instead of the tool being taken to the article in need of its services, it can be brought to the tool, I always desire that it should be. My tools are always bright and sharp, and in excellent order as to handles, and when I show such to a wooden-headed, bungling fellow who comes to borrow, he really feels fearful of injuring them, and often prefers bringing the implement to the tool to incurring the risk of borrowing; for if any tool is injured in such use, I at once say, "Take the tool, and pay me the highest price for a new one"—and all allow it to be quite fair to do so.

The value of such tools would not exceed twenty dollars, or say twenty-five dollars, to procure in addition a reasonably good iron vice and bench screw for a wooden one; and I will venture to affirm that no money was ever laid out so well, always, however, provided that there is a place more or less good for a carpenter's shop, and that the tools are kept clean, free from rust, sharp, and ready for use at any time.

Without such tools, no job of work can be satisfactorily completed. If mortising is to be done, and you have no good square, plane and chisel, with proper auger or bit to bore with, the work is all awry, and ten to one if it is not split and spoiled in driving the parts together; whereas if all be done right, tools sharp, and lines carefully worked to, the result is a square, tight, and probably a handsome piece of work. I therefore earnestly urge on all my brother farmers to take this small matter into their consideration, and if they are candid, they will in some future number of this journal confess that they find themselves sufficiently benefited never to regret the year's subscription for the paper, and twenty dollars expended for tools.

C.

### Economy in Manures.

To the Editor.

SIR,—It is said that "those who look on see most of the game." It is certain that an outsider can often make a valuable suggestion to those who are employed about some business they are intent upon. Thus theory

helps practice, and the "mere theorist," the man who suggests, is not to be despised. I am a mere theorist, and do not wish to be despised when I make a suggestion to my friends, the agriculturists. I am going to throw out some ideas about manures.

We hear constant complaints of shortness in the supply of manure in places too far removed from towns, or some artificial supply of plant food. Now if my memory is good for anything, I think I do remember that vegetable physiology once showed me that plants get exceedingly little out of the ground for their support, and very much from the atmosphere. In fact I believe that manures act as a stimulant to the plant, more than anything else. This being so, it ought to be, that although much may be carried away from the land in produce sold, yet there ought not to be that lack of plant food which every one feels more or less.

If these things are so, there must be some leakage somewhere which precludes the farmer from making the most of the manures produced on the place. And this is so. I know an excellent farmer who has thrown out of his front door, slops, rich in plant food in quantities sufficient to keep a nice sized garden in fertility. Why not throw five or six dollars in the dirt every year?

The night soil of the household is almost invariably lost, yet it is abundantly sufficient to manure a large field of turnips. If a farmer wish to take care of this, let him make arrangement to destroy the disagreeableness of such a material by using dry earth in his closets, and getting the result distributed and used as soon as possible in the field or garden. It is calculated that the urine of one man contains sufficient nutrition and stimulating power to bring to perfection about four bushels of wheat.

I need say nothing about the waste of liquid manure, for everybody knows that most of the juice, so to speak, of the rich heaps of fertilizing matter runs away to waste.

But there is another source of loss in the manner of storing up manures. Much of them get devoured by insects. They attract flies and all sorts of beetles, which lay their eggs in the substance, and forming grubs, the manure takes unto itself wings and flies away, just like other riches. If much earth were mixed with the manures as they were stored up, I think a good deal of this would be avoided.

Meechi avoids all these losses. He puts his stable drainings, his solid manures, in vessels. He mixes them with the proper proportion of water, and applies it to his plants in the form in which they can directly appropriate it. He loses nothing in the ways I have indicated, but his system is far too complicated for any but a rich proprietor to think of imitating, and I should imagine that the system would only be applicable to a moist climate.

Yet I think something might be done more than is done to save more of the fertilizers produced on every farm, and to preserve them from deterioration when collected.

If I do not get a hornet's nest about my ears for these suggestions, probably I may return to this subject at some future time.

PHIALA.

Quebec, Sept. 2.

### Early Rose Potato.

The present season seems to have been prolific in evidence of the good qualities, and especially of the productiveness of this much lauded potato, and to have established its reputation as one of our most valuable varieties. It has proved itself to be a rapid grower, maturing early, and yielding, in some instances, an enormous crop of well formed, large sized tubers of excellent quality for the table. We have seen many very fine samples, and have noticed some remarkable yields. Among others, Mr. Crompton, of Yorkville, states that he bought in the spring, for 12½ cents, a quarter of a pound for seed, which he divided into sets containing two eyes each, and planted three sets in a hill. On the 30th of August he dug the produce, and found the gross weight sixty-seven and a half pounds, or at the rate of 270 pounds from one pound of seed. If there is no mistake, this is certainly an extraordinary yield, and shows what might be the produce of an acre, if the same care that the small experimental patch receives were bestowed on larger areas in the field. There should be no lack of seed next season. Similar statements respecting the remarkable productiveness of the Early Rose have been made by several correspondents from various quarters, but we have not space for the insertion of these accounts, especially as they all bear a close resemblance to each other. Without exception, they speak very favorably of this variety. The extended experience of another season, for doubtless a large breadth will be planted next year, will determine its true character and relative value. It has not yet shared the fate of too many belauded favourites.

BOARD DRAINS.—There are drains at the Insane Asylum, at Utica, N.Y., which have been down thirty years, made of boards, two nailed together at one edge, leaving a space of about four inches at the other edges, which are placed on a third board laid in the bottom of the drain. They are laid in a deep clay soil, at a depth of three and a half feet.

The *Dixie Farmer* for August 19, says the condition of things in several counties in Middle Tennessee is really distressing, from the dry weather.

A single grain of wheat in Boise valley, Idaho, has produced one hundred and twenty stalks, bearing heads averaging thirty grains each.

## The Dairy.

### Cream and Butter.

I. The best temperature for setting milk, to get the cream, is at about 60° to 62°. The range of temperature should run no higher than 65°. The butter makers of Orange county, N. Y., are of the opinion that the best quality of butter is made from cream that has been obtained at a temperature a little below 60°. Cream can be obtained in a short time, and in large quantity, by raising the milk to a temperature near boiling, and then setting aside to cool; but such cream has more of the casein or cheesy particles of the milk mingled with it than milk set without the application of artificial heat, and the butter will be injured in its keeping qualities. In butter making it is important to get good quality—butter that will come of good colour, that is hard and has a waxy consistency, and that will retain that peculiar aroma which imparts so much pleasure in eating it.

To accomplish these ends successfully, the milk, as soon as drawn from the cow, should be cooled down to 60° or 62°, and this temperature maintained as far as possible while the cream is rising. And to do this properly, there should be a spring-house and tanks of water in which to set the milk. It is very difficult to arrange a dairy house, so as to control the temperature of the milk while the cream is rising, without water. Orange county plan is to have tanks six feet wide by ten or twelve feet long, and twenty inches deep, which are constantly supplied with running water. The milk as it is drawn from the cow is placed in long tin cans, which are at once plunged in the water and kept there until the cream rises. Generally the cream is all up in from twelve to twenty-four hours. The butter makers of Pennsylvania, who make the celebrated Philadelphia butter, have the water flowing over the bottom of the spring-house. Here the milk is set in pans. Narrow walks are arranged in the spring-house, so that the dairymaid may pass in and out and handle the milk conveniently. In both plans the principle of preserving an even temperature of the milk is the same, for it will be observed that the spring water that is constantly flowing in the vats or spring-house varies but little in its temperature when about the milk.

When it is not convenient to have a spring-house, the best arrangement with which we are acquainted for setting the milk is the Jennings' pan. It is of tin, and sets upon a shallow wooden vat, which is to be filled with water from the well or pen stock, as the case may be, and thus the milk is rapidly divested of its animal heat, and a pretty even temperature maintained while the cream is rising. The cream that first rises is the best, and to make choice butter the cream should always be taken from the milk before it has

become old and sour. The greater the decomposition of the milk, the more will the cream be affected, and, as a consequence, the more difficult will it be to obtain from it a nice quality of butter.

Now, there is great difference in opinion as to what constitutes a nice quality of butter. Some people, who have always been accustomed to an ordinary article, judge from a low standard, and will pronounce a sample good that is really intolerable to those who are in the habit of eating and handling a "tip-top" thing. Again, butter may be very good if it is to be eaten when freshly made, but if kept it soon begins to deteriorate. When we speak of good quality we do not refer to that class of goods that is fit only for present use. The manufacture of this kind of butter is not to be recommended; the markets are full of this stuff, and great losses are sustained in consequence.

Butter to be good must have some keeping qualities, for it cannot be consumed from day to day as it is made. We have seen butter that when freshly put up would pass as excellent to the taste, and yet in a few weeks it becomes rancid and intolerable. Well-made butter, if properly cared for, should retain its flavour and sweetness for months, but we cannot expect to obtain such butter from cream that has been badly managed.

II. Cream that has been raised in a temperature of 60° to 62° is about the same temperature. Butter makers do not like to have the cream churned at a temperature above 64°, as it injures the butter. If the temperature fall below 55° the labour of churning will be prolonged. We do not believe in great haste in churning, or the "shortest time" in which cream can be turned into butter. We often hear of churns in which it is claimed the butter will come in three minutes. It is possible that good butter may be got from the cream in that time, but we have yet to be convinced that it can be done. That cream can be churned into butter in three minutes we are well aware, and have often seen it accomplished in our own dairy, and although the butter may be tolerable for present use, we have never been able, in our experiments, to get a good, keepable article when the churning was done in so short a space of time.

The butter globules are inclosed or surrounded with thin pellicles of casein. In churning these are broken and separated from the oily particles. If the churning is done rapidly the separation is imperfect, and hence we get an article of butter in which there is too large a proportion of the shells of casein. It is the casein or nitrogenized constituent of milk, that decomposes and injures the flavour of butter. If all the shells of casein could be separated from the butter, it could be preserved readily without salt. Pure fat or oil is very easily kept sweet. In some countries butter is melted, and the impurities taken out by "trying" it like lard. Of course butter treated in this way loses its

texture and aroma, but we mention the fact for the purpose of showing the principle to be observed in obtaining butter of good keeping quality. In churning we do not care to have butter come sooner than from half to three-quarters of an hour.

The butter makers of Orange county, who have had long experience, and who produce butter that sells in the market for the highest price, say that the churning process should occupy from forty to forty-five minutes to one hour. Their opinions are worthy of consideration, because they make an article that is unrivalled in the market, and from long and varied experience they ought to be able to settle this point definitely. It is a great saving of time and labour to have butter come in a very short time, but the experience of the world has shown that nothing really excellent can be produced without time and labour, and we do not know why butter-making should be an exception to the general rule.

In conclusion, we may remark that no one should attempt to make butter without using a good thermometer, especially in preparing the cream for churning. Old and experienced butter makers may guess at temperature pretty accurately, but the temperature of the surrounding atmosphere varies so much from day to day that no one can be sure of being right without an accurate instrument for determining the degree of heat required in the cream to produce the best results.—*Rural New Yorker.*

### The Cheese-Fly.

Most dairymen understand pretty well the habits of the cheese-fly. Many, however, do not know how to provide against its depredations. Some people profess to be fond of skippy cheese, and regard it as an index of what the English understand as "a cheese full of meat," that is, rich in butter. And it must be confessed that the cheese-fly has great partiality for the best goods in the curing house. They do not so readily attack your "White Oak," and skim milk varieties, hence the notion that cheese affected with the fly is rich in butter is not so far out of the way.

The primary cause of skippy cheese, of course, is want of care. Cheese in hot weather should be closely examined every day. They require to be turned once a day in order to facilitate the curing process. The bandages and sides are to be rubbed at the time of turning, in order to brush off or destroy any nits of the fly which may happen to be deposited about the cheese. If there are cracks in the rind, or if the edges of the bandage do not fit snugly, they should at once be attended to, since it is at these points that the fly is most likely to make a safe deposit of its eggs. The cracks and checks in the cheese should be filled with particles of cheese that have been crushed under a knife to make them mellow and

plastic. When once filled, a strip of thin tannin paper oiled and laid over the repaired surface, will serve as a further protection of the parts. The cheese in the checks soon hardens and forms a new rind. Deep and bad-looking checks may be repaired in this way so as to form a smooth surface scarcely to be distinguished from sound parts of the cheese. It is a great mistake to send cheese that have deep checks or broken rinds to market. For, in addition to their liability to be attacked by the fly, they have the appearance of being imperfect and are justly regarded with suspicion. A few such cheeses in a lot will injure the whole, causing a larger depreciation in price on the whole lot than if the imperfect cheeses had been separated from the rest and sold by themselves for what they would bring.

Some dairymen think that a darkened curing room is best for cheese, and at the same time is the best protection against the fly. We think this is a great mistake. Cheese cures with the best flavour when it is exposed to light, and besides it can be examined more minutely from time to time, and freed from any depredations of skippers.

August and September are generally the worst months in the whole year to protect the cheese against the attacks of the fly. Some years the trouble is greater than others, and various means have been resorted to for the purpose of avoiding the pest, such as rubbing the cheese over with a mixture of oil and cayenne pepper. These things generally do not amount to much, and are not to be recommended; the best protection is cleanliness. Sharp eyes and good care of the cheese. Whenever a lodgment has been made, they must at once be removed. Sometimes it will be necessary to cut down into the cheese and remove the nest with the knife, but if the colony is young and small in numbers, a thick oiled paper plastered over the affected part so as to exclude the air, will bring the pests to the surface, when they may be removed. The oiled paper should again be returned to its place and the skippers removed from time to time, until all are destroyed.

If skippers begin to trouble the cheese, the best course to be adopted is to commence at once, and wash the ranges and tables on which the cheese are placed, with hot whey. This will remove all accumulation of grease and dirt about the ranges, giving a clean surface which does not attract the flies. If the cheeses also are washed in the hot whey and rubbed with a dry cloth, the labour of expelling the trouble from the curing rooms will be greatly facilitated. We have seen this course adopted with entire success in many instances, when much time and labour had previously been employed without effecting the desired object.

Keep the curing room clean and sweet: see that the cheeses have a smooth rind, that the bandages are smoothly laid at the edges; turn and rub the cheese daily, and there need be no trouble from the cheese fly.—X. A. Willard, in *Western Rural*.

### Report on Abortion in Cows.

The report of the second year's investigation of abortion in cows, undertaken under the auspices of the New York State Agricultural Society by Dr. A. Carmalt, has been published, and like the preceding report, is chiefly negative in its results. One or two points of importance, however, have been more carefully noted and prominently brought forward than heretofore, such as the influence of early pregnancy, of removal and travelling, and especially the effects of prolonged lactation during the period of pregnancy.

Among the negative results, the opinion that deleterious substances in the food produce the disease is discredited.

"The Commissioner concludes the disease is about three and a half times as likely to recur upon an affected farm as it is to appear upon a previously non-affected farm. He also concludes that immature animals should not be used for breeding. He states the affirmative results obtained as follows:—

"1st. That cows, which have first calved at under three years of age, are more liable to abort during their subsequent pregnancies, than those who first calved at three years of age or over, in the proportion of five to three; and that 83 per cent. of the cows raised on the farms reporting them, do first calve at under three years of age.

"2nd. That cows subjected to removals at any time, are liable to abort, over those raised on the farm, in the proportion of 7 to 4; and that 63 per cent. are thus removed.

"3d. That cows, subjected to removals during pregnancy, are liable to abort, over those moved while not pregnant, in the proportion of nine to two; and that 70 per cent. of those moved yearly are pregnant, and 17 per cent. are moved yearly.

"4th. That arrest of development is the condition immediately preceding the abortion; that an excessive drain upon the secretion of milk, during pregnancy, has a tendency to produce arrest of development in the fetus, from inanition; and that an excess of 70 per cent. of milk is demanded from the cows in this district where abortions prevail."

HOLDING UP MILK.—A writer in one of our exchanges says the best way to prevent cows from holding up their milk is to milk the forward teats perfectly dry, then change to the two hind teats, and milk very fast, and the desired result will most likely be obtained. He has tried this experiment on an old milky cow that possesses a great deal of obstinacy in this line, and with success. Another writer suggests that it is a better way to take two stones, weighing fifteen or twenty pounds each, and tie them to a rope two feet long, and when you go to milk hang it across the small of the cow's back.

### Stock Department.

#### Mr. J. O. Sheldon's Short-horns.

Returning from New York Fair, we took the route via Geneva. From Elmira to Watkins, at the foot of Seneca Lake, we passed over the Northern Central Railroad through a valley hemmed in on each side by high hills. At Watkins we took the steamer about 4 P.M. The scenery up the lake, which is about fifty miles long by two to four miles wide, was most beautiful, the banks rising precipitously for about twenty feet and then gradually sloping up for several miles, giving a most charming panorama of well-tilled farms and elegant residences. Landing at Geneva about 9 P.M., we staid over night, and early next day went out to White Springs Farm, the residence of Mr. Sheldon, situated on the slope of the bank about a mile from Geneva, and commanding a splendid view of the lake and surrounding country. Mr. Sheldon farms some three hundred acres of as nice land as can be had, soil gravelly loam; the buildings are of brick, and the best arranged for the convenience and comfort of stock we have ever seen. Mr. Sheldon was at home, and gave us a most cordial welcome, but we were sorry to find he had been an invalid for some weeks, and although able to go about a little and show us some of his stock, he was unable to stand any fatigue, and had to depute a part of the work to his manager.

His herd of Short-horns, now numbering over one hundred, and mostly of Dutchess or Oxford tribes, is about the best in America. His present stock bulls are, Baron of Oxford by Duke of Gloster from Oxford 13th, and Royal Duke of Oxford, by 2nd Grand Duke from Lady of Oxford; each of them but three descents from the celebrated Matchem cow. His two year old red bull, 4th Duke of Geneva, by Baron of Oxford from 7th Dutchess of Thorndale, is a magnificent animal, and is to be used as the herd bull next year. He is of perfectly pure Dutchess blood, and is undoubtedly the premier bull of America. A nine months old roan bull, 8th Duke of Geneva, by Baron of Oxford from 3rd Dutchess of Thorndale, had just been sold to go to England, for eight hundred guineas, the purchaser being C<sup>r</sup> W. Harvey, Esq., of Walton-on-the-Hill, near Liverpool.

Among the aged cows now on the farm are Romeo's Oxford, a noble old roan cow, now fifteen years of age, got by Romeo (13619) from Oxford 5th, a grand-daughter of the celebrated Matchem cow, the progenitor of the well known Oxford tribe that stand in such high favour in England. 2nd Lady of Oxford, roan, is a good cow, now eleven years old, but Gem of Oxford, a rich roan, ten years old, is a really fine cow. 2nd Maid of Oxford, red roan, has a nice two year old roan heifer to 2nd Duke of Geneva. 6th Lady of Oxford is a small but well-shaped cow. 3rd Maid of Oxford is nothing extra.



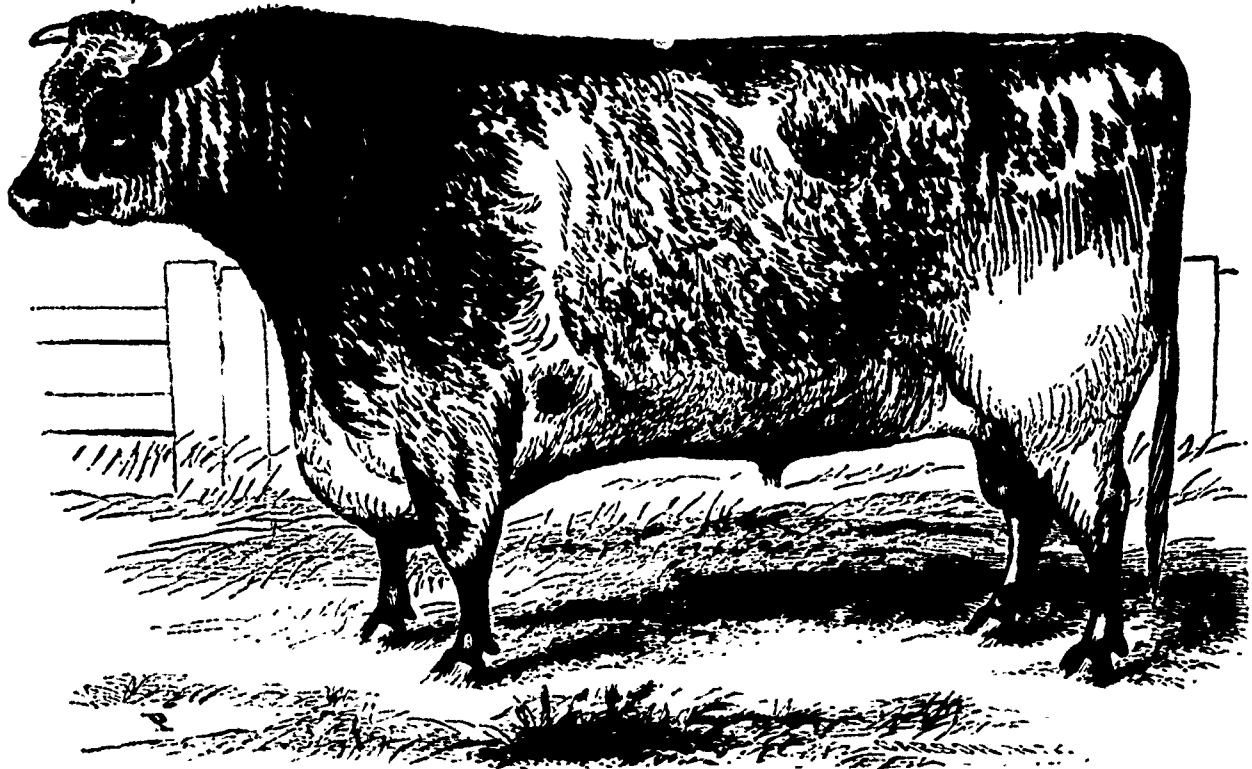
7th Lady of Oxford, red and white, has bred a fine roan heifer, 11th Lady of Oxford, to 10th Duke of Thorndale. Among the old cows we saw April Morn, a splendid roan cow bred by James Douglass, of Athelstaneford, got by Captain Balco from Little Red Rose. She is fourteen years old, and has not bred for some years. Buttercup 2nd, roan, bred by Colonel Townely; she is of the Barmpton Rose tribe, and though now fourteen years old, has bred up to this year. Brightness, a white cow by Lord Oxford, is from her, as also is a white bull, Buttercup, by 6th Duke of Thorndale.

Mazurka 9th, red roan, is a peculiar-looking, but good cow, with horns growing into her eyes so much that they have had to be cut off. She has bred a fine red heifer calf

white, with a light roan heifer, 10th Duchess of Geneva, to 2nd Duke of Geneva. 6th Duchess of Geneva, red and white, is a very large three-year old heifer from 4th Duchess of Geneva, three years old, has a red heifer calf to 10th Duke of Thorndale. Besides these, there are quite a number of other Duchesses, Oxfords and Mazurkas, and notably a very fine roan cow, Blooming Heather, just purchased from Mr. Thorne, and a roan cow, Lady Susan, bred by T. L. Harison. Mr. Sheldon has sold several fine young heifers and bulls to different parties in Canada, and takes so much pride in keeping up the purity of his herd that he breeds pretty closely, and sends many of his stock to England, where they bring the highest prices.

this class of animals on the continent. Though posthumous in more senses than one, the portrait will no doubt be of interest to the admirers of short-horns, and serve to place on record the fine characteristics of this noble bull. The publication of this excellent likeness is more-over due to Mr. Snell, inasmuch as in the first number of the CANADA FARMER, in 1864, a portrait of Baron Solway appeared, which did not by any means do him justice. The present picture is as faithful as it is beautiful and artistic.

Mr. Joseph Kirby, Esqueneing, has sold his young short-horn bulls Roan Duke and Young Breadalbane to the Mersea and Goodfield Agricultural Society, at fair prices.



**BARON SOLWAY, (45.)**

Moselle 5th, to 2nd Duke of Geneva. Penance, a roan cow, seems a nice one, as also does Butterfly Belle, a roan got by Imperial Oxford, from Miss Butterfly. She has a red heifer calf, Butterfly Beauty, to 2nd Duke of Geneva. Vacuna, a roan heifer of small size, but good shape, has her first calf, a red and white heifer, to 10th Duke of Thorndale.

But the Duchesses were undoubtedly the chief objects of interest to us. There are four pure Duchess cows remaining, namely, 3rd Duchess of Thorndale, red, a very fine cow, that has bred a roan bull calf to Baron of Oxford, 8th Duke of Geneva, just sold for 800 guineas. She has also a red and white yearling heifer, 12th Duchess of Geneva, to Baron of Oxford, an animal that may be claimed to be the best Mr. Sheldon has in his herd. 2nd Duchess of Geneva, roan, the best cow in the herd. 4th Duchess of Geneva, red and white. 5th Duchess of Geneva, a

#### Baron Solway.

In the second number of the present series of the CANADA FARMER appeared an obituary notice of the celebrated bull Baron Solway, the progenitor of Mr. John Snell's best short-horn stock, and one of the best bulls, to say the least, that has been imported into this country. In our last issue we published some notes of Mr. Snell's herd, and fully expected to have been able to illustrate the article by a portrait of this noted "sire," and excellent representative of the characteristics of his short-horn stock, but unfortunately the cut was not ready in time. We have now, however, the pleasure of supplying the omission by giving the accompanying life-like representation from the pencil of Mr. Page, the best portrayer of

#### Sales of Stock.

MR. JOHN SNELL'S SALE.

Wednesday, Sept. 29th, proved a fine day, and we took advantage of it to attend this sale. There was a large crowd, and the bid-dings were pretty brisk. The stock brought good prices. Of short-horns the following were sold:—

Cows—Music, to Hon. Geo. Brown, \$200.  
Nina, Mr. Woodruff, \$200.  
HEIFERS.—Minnie Herman, s. Haycock, \$100.  
Lavina, Hon. Geo. Brown, \$90.  
Lady Harrington, S. Ferguson, \$95.  
Betty Bedford, S. McColl, \$130.  
Rosalie, Irvine Diamond, \$125.  
BULLS—Clifton, to B. Watson, \$100.  
Louden Tom, Hon. Geo. Brown, \$180.  
Telegram, George Purvis, \$225.  
Louden Duke of Solway, Mr. Gowans, \$155.

Bourbon Duke of Solway, I. Diamond,  
\$153.

Albert Edward, A. Whitelock, \$130.  
Darling Duke of Solway, Mr. Bethell,  
\$125.

Prince Imperial, E. Jeffs, \$175.

The Cotswold rams went at from \$65 to \$16 each, the ewes from \$16 to \$9 each.

The Leicesters brought from \$105 for the highest priced ram to \$8 for ewe lambs: the Southdowns about \$11 each. Several sheep were left unsold.

The Berkshire swine were all sold at from \$85 for a sow with nine pigs down to \$9 for a four months old boar.

#### MR. F. W. STONE'S SALE.

Mr. F. W. Stone, Moreton Lodge, Guelph, had an auction sale of sheep on the 30th September. About forty Cotswold rams and twenty Cotswold ewes were offered. Twenty-five of the rams were sold at prices varying from \$80 each for the highest priced ram to \$20 for the lowest, the average being about \$10 each. The ewes brought about \$40 per pair. Some Southdown rams and ewes were offered, but the bidders were so few that they were withdrawn after three or four had been sold. The attendance was much smaller than expected, considering the good notice and fine weather, and the best animals went to buyers from Ohio and other States.

#### Dark Stables.

Any person who has felt the pain and inconvenience of coming suddenly from a dark room into the full blaze of day, will easily conceive the necessity of lighting a stable in a proper manner. This is too often neglected in confined stables, and the consequences are most distressing to a humane observer. The poor horse, led suddenly out to his work, shows his pain quickly in unmistakable expressions, stumbles, and runs against anything that may happen to be near, until the eye has in some degree accommodated itself to the new circumstances under which it is placed. Nor is this all. By a continuance of this change from darkness to sudden daylight, the eyes become seriously injured.

The retina, or sensitive nerve, becomes dull, and more or less useless, the horse's sight is injured; he starts and shies at objects which he sees imperfectly, and many a rider who has received a dangerous injury has to thank his inattention to this simple cause, rather than any vicious habit of the animal, to which it has been attributed.

Blindness is almost certain to be caused by inattention to the above caution, but even blindness is less dangerous to the rider than imperfect sight.

Always loosen the check-rein before giving the horse water. Even if the pail is held so high that the rein is not drawn tight, the position is not a natural one in which to drink.

In January, February and March, 1868. Great Britain imported 23,660,506 pounds of wool. In the same time in 1869, she imported 51,575,631 pounds, of which amount Australia furnished 34,546,516 pounds.

The *Rural New Yorker* publishes statements of two fleeces of wool shorn this season, in Central New York, from Merino rams two years of age, which weighed thirty-five pounds each. One fleece is to be scoured, while the owner of the other does not care to be at the trouble and expense of the operation.

We learn from the *Huntingdon Journal* that a company has been formed under the title of "The Huntingdon Importation Company," its object being that of importing thorough-bred horses and cattle. A meeting was recently held at which \$1,100 were taken in shares ranging from \$50 to \$500 for the importation of a thorough-bred or blood stallion.

**EPIZOOTIC APHTHA.**—The foot-and-mouth disease is assuming, or rather has assumed, in the neighbourhood of London, an aspect almost as alarming as the dreaded rinderpest itself. According to a London contemporary, in a very short period about 1500 head of cattle in the metropolitan districts alone have been carried off. The mortality is likely to increase the pressure on Government to restrict still further, if not the importation of foreign cattle, then the degree of freedom with which they can be moved from the ports of debarkation. The matter is a very serious one for the people, whose supplies of animal food can at present be obtained only at very high prices.

**HORSE FLESH AS FOOD.**—The Society for the Propagation of the Use of Horse-flesh as Food in France, publishes the following information:—In 1867, the shops for the sale of this article furnished to the public in Paris, 2153 horses (including a few donkeys and mules), representing about 430,400 kilogrammes (2 lbs. each) of eatable meat. In 1868, the figures were 2421 and 484,200, being an increase of 269 and 53,800. Last winter, new establishments were opened at Rheims, Troyes, Toulon, Marseilles, Sedan, Bordeaux, &c. The Prefect of the Garonne, by a decree of the 18th June last, has authorized the construction of a slaughter-house at Nismes for these animals.

**TRANSPORTATION OF LIVE CATTLE FROM SOUTH AMERICA TO ENGLAND.**—A promising new source of supply for the British meat market has just been opened up. The steamer *City of Rio* has brought to Liverpool nineteen oxen, the first consignment of live cattle from Monte Video. This transaction was simply an experiment; but a line of steamers—the pioneer of which will be on her station in about six weeks—is in course of construction expressly for the trade, and will, it is understood, be in thorough operation by the forthcoming spring. The South American herds could furnish all Europe with beef. The difficulty hitherto has been to get the article to market, and that is now in a fair way of being overcome.

## Veterinary Department.

### Liver Diseases in the Horse.

Among the many disorders of the digestive organs, the liver is occasionally the seat of disease, and many of the ailments common to that organ present a similarity of symptoms. Acute inflammation of the liver, although happily rare, is occasionally met with in all hot climates, the exciting causes being extreme heat, sudden changes of the temperature, and the continued use of a highly stimulating diet, as feeding largely on Indian corn, peas, &c. The general symptoms are a dull and languid appearance, the pulse is slightly altered, the horse is sluggish in his movements, the bowels constipated, and secretion generally impaired; the mucous membrane of the nose and eye becomes of a yellowish colour, there are signs of abdominal pain, shown by the animal lying down and rolling; the pains, however, are neither so violent nor so continuous as in inflammation of the bowels. These symptoms may continue, more or less, for several days.

In connection with, or as a sequel of other diseases, as influenza, strangles, &c., the liver frequently becomes disordered, giving the animal a jaundiced appearance. The mucous membrane of the eyes and nostrils becomes quite yellow, the skin feels dry, and the hair has a staring appearance; the pulse is quickened and very weak. Rupture of the liver sometimes occurs in the horse, and especially in horses that are kept in a pampered and overfed condition and allowed but little exercise; under these conditions the liver becomes weakened from the continued overfeeding and want of exercise, and when the animal is put to severe exertion, rupture sometimes takes place, followed by severe hemorrhage, which soon produces death. The symptoms are extreme pain, the horse rolling and throwing himself about in his stall, the pulse is quickened, gradually becoming weak and indistinct, characteristics of internal hemorrhage; the mucous membranes become pale and blanched, cold sweats pour off his body, until death soon puts an end to his sufferings.

Biliary calculi have also been found to exist in the horse's liver, in considerable quantities, and without giving rise to any noticeable symptoms. The late Mr. Percival relates a case where ninety of these calculi were taken from the hepatic tubes and ducts of a horse's liver, causing dilatation of the cavities as well as thicken-

ing of the walls. In this case no symptoms were presented during the life of the animal to show or lead to the suspicion that calculi were present in such quantities.

### The Overcrowding of Horses.

Comfortable, healthful lodgings, are essential alike for man and beast. Without sufficient room, pure air and perfect cleanliness are unattainable, health is apt to be impaired, and disease engendered. Amongst the horses in most large towns extreme overcrowding is common. In London, Birmingham, Liverpool and Glasgow, it is, however, considerably worse than in Edinburgh. In all towns the cab and omnibus horses belonging to the poorer proprietors are the greatest sufferers. In some London and Birmingham stables each horse is allowed only 450 cubic feet of space, or about one-third of the amount of space really consistent with comfort and health. Frequently do we find hovels, often low and damp, surrounded with houses, and rendered still more impure by the proximity of reeking manure heaps, containing twenty or thirty horses, when they have not space sufficient for one third of their inmates. Here the poor beast is vainly expected to recruit his exhausted energies after his day's labour, but instead of health and strength he frequently finds only lassitude and disease.

In badly constructed stables—and under this category come most of those where overcrowding is great—there is besides seldom any provision for ventilation. The door and windows usually furnish the only channels either for the introduction of fresh air or for the removal of foul air. To secure warmth, these windows and doors are, however, most carefully closed during the night. But from the lungs and skin of the half-stifled horses there is continuously poured out large quantities of noxious gases, consisting especially of carbonic acid, and watery vapour charged with the noisome waste products of the body. The dung and urine likewise contribute their pungent quota to this heated, pestilent air, which the imprisoned beasts are compelled to breathe throughout the weary night. We do not wonder that when the stable door is thrown open in the morning the acrid atmosphere has become almost irrespirable, and that it provokes coughing when it enters even these seasoned air passages of the veteran stableman, and brings tears to his well tried eyes. But well may we marvel at the wondrous conservative power of nature which enables the horse to bear up, often for years, against treatment so unnatural. From the pure fresh air of his rural pastures what a dreadful change is this. Often, indeed, sufficient speedily to develop serious disease. Many young country horses when immured in such stables take violent colds, or inflammation of the eyes, become permanently damaged in their wind, or worse still, fall from glanders or farcy. It is generally under-

stood that it takes about a year thoroughly to inure a young horse to town work, but it is the town lodgings quite as much as the town work that the animal is with difficulty reconciled to. Like many a hard-wrought, badly housed human being, the horse, poor fellow, becomes only very gradually accustomed to his unwholesome quarters.—*Furrow* (Scottish).

A HORSE WITH FOUR POUNDS WEIGHT OF NAILS, &c., IN ITS STOMACH.—Mr. J. Begg, manager of the Springbank Chemical Works, Kirkintilloch, sends the following letter to the editor of the *North British Daily Mail*:—"Sir,—From the number of horses which pass through our hands in a season, I have often had occasion to remark the gross carelessness of owners or persons in charge of horses in regard to deleterious substances getting mixed up with their food. As an illustration of this, I think it right to give publicity to the following case:—A Clydesdale mare, worth about £10, was brought to our works recently, which, on coming home from from putting in hay, walked straight into a well in the farmyard court. In stooping down to drink, the weight of the cart had forced her, head first, into the well, and before she could be relieved she was drowned. My attention having been called to see the contents of her stomach by one of the men, I took from it the following articles, viz:—Horse nails, broken, 6; round nails, from 1 to 2 inches long, 8; single flooring nails, 10; 1 1/2 inch nails, 21, broken nails, various sizes, 9; 1 1/2-8th inch nails, 35; 1 inch zinc nails, 11; 1/2 to 1 inch tack nails, 55; shoe tacks, 10; slate nails, 3; screw nails, 4—total nails, 269. Also 1 common pin (1 1/2 inch long), 1 blue bead, 1 brass button, 1 pearl button, 5 metal buttons (marked V. M.), 25 small pieces galvanized wire, 3 copper nail heads, 4 small metal washers, 1 hook (of hooks and eyes), 1 hair pin, one half of a needle, 1 small piece of lead, 7 pieces zinc—in all, 55 articles; nails 269. Number of the above, 324 articles weighing 1 lb; also, round gravel and sand, 2 lb. 11 1/2 oz.

Cow Pox Sores.—A farmer's wife, M. P. of Pickering, enquires if there is any application that will heal up the sores on the teats of cows affected with cow pox, the animals being in good condition, but rendered troublesome to milk on account of the sores. In these cases it is not well to do anything that will interfere with the regular course of the vesicles, but sometimes the irritation of milking will aggravate and prolong the duration of the ulcers and scabs that are formed, and in such cases some mild remedial treatment will be proper. A little cooling aperient medicine may be useful, if there is any feverishness. The teats should be kept scrupulously clean, and washed with water before and after milking. A lotion composed of one drachm of sulphate of zinc to half a pint of water may also be applied after each milking. Any mild astringent will probably prove beneficial, and if the foregoing does not afford the desired relief, a weak solution of carbolic acid may be tried, in the proportion of ten grains of the acid to two ounces of water.

## Poultry Yard.

### Hen Talk.

To the Editor.

SIR.—As a practical farmer I am somewhat at a loss to comprehend the utility of paying so much attention to fancy breeds of poultry, except it be to raise the price of certain classes of fowl, and fill the pockets of the successful amateur, by prizes, and sales at extravagant sums; but these advantages do not assist in any way your practical farmer. He has no one to buy fancy fowls from him, even if they have just the right quantity of white round the eye, as in Black Spanish, or the required points and feathers, as in many other breeds. All the talk and prizes are given to these prize fancy fowls, and no one thinks it worth his while to breed from those hens that have universally done the best in raising fine and numerous chickens, laying all the year, or for the greater portion of it, or in fact excelling in any one of her attributes.

In olden time, when gentlemen often lost and won fortunes on fighting cocks, it was "what the cock could do" was most thought of, not "what he looked like." Not so now. The pair of fowls that sweep all the prizes away from all competitors may never have had a chick or laid an egg: much less is any question raised as to how many eggs they have laid or how large, or how many chickens they have raised at one brood, and how many broods each year have gladdened the maternal heart of the parent. Now, I will be bound in heavy penalties, that my brother, when a boy, had an old speckled hen, of no particular breed, that would "beat the boots" off these fancy prize ladies. She never sat on less than from fifteen to twenty eggs, and I oft tried, during the five years we had her, to count the chickens of her various broods, but the task could hardly be correctly accomplished. As my friend, an Irishman, used to say, "I could count them all well enough but those three little black ones, and they kept running in and out so. It was impossible to figure them correctly." And again, for eggs, why, the "old Goldie" would fill a boy's cap when he was fortunate enough to find her nest; but we always left one to delude the old lady with the belief she had kept a bad account, and must not think of sitting, until her nest was full. I dare say she often counted up on her toes the eggs she had been certain were there when she left the nest (which was always in some old hedge or out of the way place), and, no doubt, determined to keep better accounts in future, as some of our most eminent merchants and bankers have often said they would; but like them, after she found all going on right for some days, and stock accumulating, no bills to pay, and trade good, why, she invariably fell into old bad habits, and after two or three weeks again found her accounts rained, and

all the stock gone out and no cash or bills (or but one to represent them). Now, what I want to see is an exhibition of wonderful hens who have done all these fine things; and much more, of course, will be expected from those who rejoice in such foreign names, and have taken such a number of prizes.

If they cannot mend on my brother's "old Goldie," after upwards of thirty-five years improvement of breed, and thousands of dollars paid away in prizes, and fabulous sums squandered in purchases, why it strikes me our old hen would absolutely crow, if she were alive, at the idea of any such lost time and money.

FARMER.

**NOTE BY ERROR.**—In spite of his humor and practical way of looking at things, our outspoken correspondent scarcely puts the matter in its true light. A similar line of argument might be used to throw discredit on the raising of any high-bred stock, and the Durhams might be condemned because there were among them poor milkers who could hardly raise their own young, or the South Downs, because their wool, in quantity of the clip, fell below that of many a common sheep. "Old Goldie" may have been a paragon, but it does not follow that she owed her good qualities to her want of breed, or that all ordinary hens are better than pure-bred poultry. It is notorious that since the origin of the "hen fever," with all its extravagances, the true value of poultry has been considerably raised; their beauty, form, size, and laying qualities have all been improved. It is true that in some cases, in consequence of too close in-breeding, prolificacy and hardiness may have been impaired, but such instances arise from faults of practice, and violations of sound physiological rules, and are by no means inseparable from high-breeding. A good Grey Dorking or Game, perhaps even a "foreign" Houdan that might gain a prize in the show, would be more profitable on the farm than ninety-nine hundreds of the scraggy things that supply our markets with ribs of chickens, and eggs that would scarce weigh twelve ounces to the dozen. No doubt there is truth in the proverb, "Handsome is that handsome does;" but how does our practical farmer imagine that the laying qualities of his hen could be sufficiently tested or certified at a show to make such a criterion a satisfactory ground for awarding prizes?

In breeding poultry, the number, quality, and size of eggs need not be lost sight of, nor are they; and it is the object of the judicious breeder to develop and improve the usefulness as well as the ornamental qualities of his stock, whether it be poultry or any other class.

**PHOTOGRAPHS OF PIGEONS.**—We saw recently some admirable photographs of carrier pigeons, taken by Messrs. Notman & Fraser, of Toronto. The birds were perfect specimens, belonging to Col. Hassard, and their portraits, which it is usually so difficult to obtain by the photographic process, were beautifully clear, well defined and life-like.

### Poultry Exhibition,—Absent Birds and Empty Pens.

To the Editor.

SIR,—In your review of this portion of the late Exhibition at London, you mention the bad effect caused by exhibitors not sending, in many cases, the birds they had entered, and consequently, gaps were formed, prejudicial to the well doing and appearance of the show, and you suggest a fine in all such cases. I am not prepared to give an opinion upon this at present, but I think we may be able to trace the cause in some cases. I am a member of the Ontario Poultry Association, and am therefore aware that the co-operation of that society was invited, but in such a way that it amounted to simply a farce, and the Poultry Department of the Exhibition was conducted much as usual, although ever since the Ontario society gave it the hint, the coops, &c., for birds have been better arranged.

In all exhibitions accidents will happen, fines or no fines, to prevent exhibitors filling up all their entries; but one chief cause at the Agricultural Show is, that an exhibitor must attend or get a friend to do it for him, with, say, even one entry. The consequence is, that at the last moment, business, expense, or some other cause prevents his attendance, and he is unable to exhibit his birds; whereas if the person who takes care of the Poultry Department was placed in the same position as the Secretary of the Poultry Association of Ontario, the birds might be consigned to him, to pen and return after the show. It certainly might be necessary to charge a small sum for food, but this would not amount to the expense and trouble of coming purposely some distance, to exhibit even one pen of birds.

To make the case more clear, I will state my own. I made several entries, meaning, could I have managed it, to have attended in person. I found at the last moment that such a thing as sleeping accommodation at London was not to be had. I found that Mr. Shaw was not, as usual, to look after the poultry; and at last, got a friend to exhibit and take care of two out of several pens entered; my health would not even allow me to run up for the day; so that had it not been for the aforesaid friend, more pens would have been empty.

In former years, I have brought this to the notice of the Society of Agriculture. The reply was: most people that show poultry, show stock, and have to come with it, and can look after their birds. Perhaps they do and can, but they properly think more of the stock, &c., and it is the poultry breeders and fanciers, *per se*, that should be encouraged.

I have not been in a position to see the entries at this show, but at the Kingston show very few outsiders came with birds, and as far as I can ascertain, there was but one entry from Toronto. A great deal of this could be avoided, with no extra expense to the

Agricultural Society, if they would take a hint, without any co-operative interference on the part of the Ontario Society.

In England each pair entered is charged for; this obviates careless entries, and the shows are thus supported entirely by those who have an interest therein. This is as it should be, and the only way to support exhibitions on a firm basis that have no help from Government. It is much to be regretted that the Ontario Society did not start on this plan from the commencement, as it is what they will have to come to to continue their exhibitions.

F. C. H.

### Bearing and Management of Geese.

With regard to the general management of geese little need be said. More than four or five should not be allowed to one gander, and such a family will require a house about eight feet square; but to secure fine stock, three geese are better to one male. Each nest must be about two feet six inches square, and, as the goose will always lay where she has deposited her first egg, there must be a nest for each bird. If they each lay in a separate nest the eggs may be left; otherwise, they should be removed daily.

Geese should be set in March or early April, as it is very difficult to rear the young in hot weather. The time is thirty to thirty-four days. The goose sits very steadily, but should be induced to come off daily and take a bath. Besides this she should have in reach a good supply of food and water, or hunger will compel her, one by one, to eat all her eggs. The gander is usually kept away, but this is not very needful, as he not only has no enmity to the eggs or goslings, but takes very great interest in the hatching, often sitting by his mate for hours.

The goslings should be allowed to hatch out entirely by themselves. When put out, they should have a fresh turf daily for a few days, and be fed on boiled oatmeal and rice, with water from a pond, in a very shallow dish, as they should not be allowed to swim for a fortnight, for which time the goose is better kept under a very large crate. After two weeks they will be able to shift for themselves, only requiring to be protected from very heavy rain till fledged, and to have one or two feeds of grain daily, in addition to what they pick up.

For fattening they should be penned up, half a dozen together, in a dark shed, and fed on barley meal, being let out several hours for a last bath before being killed, in order to clean their feathers.

For exhibition, all geese should be shut up in the dark, and fed liberally upon whole barley or oats thrown into water. It is essential to great weight to keep them very quiet, letting them out in the water, however, for half an hour every day.

### Rural Architecture.



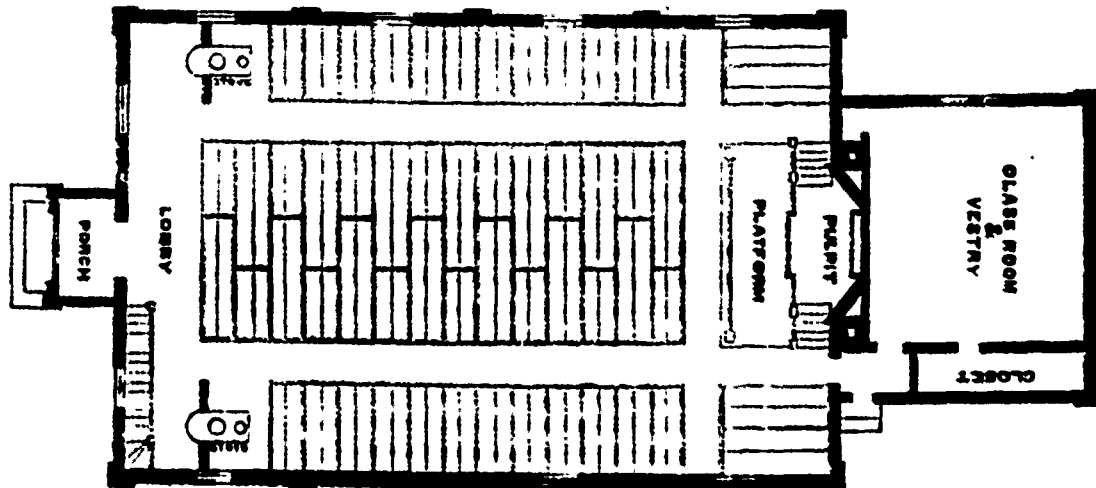
#### Design for a Country Church

The condition of the farmers in this country has improved so much during the last few years, that good and elegant dwelling houses are now springing up in every direction; but we are sorry to say that school-house and church architecture has not received that attention which it

assuredly many honourable exceptions to this state of affairs, but to a great extent it is lamentably true. To aid in stimulating some improvement in this direction, we here present a simple, inexpensive, yet pleasing design for a country church. It is not intended as a perfect model, but to suggest a hint to those thinking of building. It is not

plans and specifications would not only prevent many mistakes, but prove decided economy in the end. The plan is designed for a small frame church, capable of seating about two hundred persons, and could be erected for about two thousand dollars, in a substantial manner. The building is 50 feet long and 36 feet wide, with a convenient

GROUND PLAN TO SCALE 1/8" = 1' 11/16"



deserves. All through the best parts of the country, square, comfortless school-houses and churches are to be seen. This is not as it should be, and augurs a low state of religious feeling. There are

our object to supplant the services of the architect; on the contrary, we would advise that, wherever it is practicable, he should be consulted, as his experience would prove of good service, and proper

vestry, and closets in the rear. The front entrance is protected by a roomy porch. The building has a moderately high-pitched roof, the ceiling inside being arched, with the principal rafters

showing under the plastering, and dividing it into a number of panels. The pulpit is placed under an arched recess in the rear, giving effect to the interior, and leaving more room for the pews. The doors and windows are all arched. The exterior of the building is boarded with vertical sheeting, with a chamfered batten nailed over the joints. The front is finished with a neat and inexpensive belfry, which at once proclaims the character of the building and adds beauty to the design.

The interior woodwork, if it be well executed, and clear of knots and sap, might be simply varnished. It looks much better than common painting, and is a little cheaper.

A margin of stained glass might be run round the windows; this costs very little, and gives a finish to the interior.

The walls might be neatly tinted some buff colour, and lined out to imitate stone; and the ceiling coloured a light neutral tint.

Due attention should be paid to ventilation. In summer it is easily managed, but for the same object in winter, ventilating flues should be carried up alongside the smoke flues. The heat of the smoke would rarify the air in the ventilating flues, and cause an up draught. Openings might also be left in the ceiling, which could be opened and shut at pleasure, and these connected with flues leading to openings in the gables of the building.

The exterior should be neatly painted some light buff colour, in light and dark tints.

The sheds for the horses should not be forgotten. They should be constructed neatly, and in harmony with the church, and the whole appropriately fenced. To keep the surroundings in character, the ground should be sodded or grass sown, and planted with trees, shrubs and flowers. All the associations of the sacred edifice should be attractive and beautiful. Even where the adjacent grounds are set apart for a place of burial, there is no need to render them gloomy; far less should there be any evidence of neglect, to show the passer by how soon and utterly the dead are forgotten. "God's acre" should, like the house of God, be fitly adorned, that its very aspect of quiet beauty may speak of rest and peace. Children should be taught to hold it in reverent love, in place of superstitious dread, or that more common disregard of decency and order too frequently witnessed in town and country churchyards

## Horticulture.

EDITOR—D. W. BEADLE,

CORRESPONDING MEMBER OF THE ROYAL HORTICULTURAL SOCIETY, ENGLAND.

### On the Cultivation of the Pear.

The following paper was read by the Rev. B. Burnet before the Hamilton Horticultural Club in February last:—

The commonly received notion that any man, with any amount of knowledge, however small, can be a gardener, is a fallacy. A successful horticulturist must of necessity have a considerable amount of botanical, chemical, and meteorological knowledge, and without a very considerable smattering of these branches of scientific attainment, he is not likely to cut any very great figure in horticultural pursuits. Without much, or hardly any of such knowledge, I stumbled, at the beginning of my craze for gardening, accidentally as it were, upon one of the radical or first principles of arboriculture—I mean the preparation of the soil. It so happens, by my position at the head of navigation, where the outflow of home emigration breaks upon the western shore of Lake Ontario, that I am often called upon to find employment for the newly arrived strangers. Being often in straits what best to do for our expatriated countrymen, I set some of them who were willing to work to stump and trench my garden patch. It was bush when I entered upon its occupancy. Every inch of it was well trenched to the depth of three feet, and the better soil transferred from the surface to the bottom of the trench.

The very form of the ground favoured my pear fancy. The lot being uneven in front, there was a necessity to raise the hollow to a general level, and four or even five feet of forced earth made an unequalled border for pear trees. I manured highly, dug and exposed the virgin soil to the frost and winter storms, and I thus possess a piece of land, though small, of great capability as regards pear culture.

Position, too, is greatly in my favour. The aspect is due south, well sheltered from the west with a belting of pine, and screened from the north by the house and outhouses. I attribute much of the health of my trees to the shelter the locality affords to my pears. The loss by fire blight during thirteen years has been two entirely blighted, and three partially so. On a kindred soil, Messrs Bruce & Murray have lost many more than I have. Shelter both by aspect and artificial defence must of necessity soon begin to be a chief object to horticulturists. Indeed I mistake much if our agricultural rivals are not losing a deal in allowing cutting, piercing and destructive winds to traverse their acres without one obstacle to arrest their onward

Planting has almost invariably been done by me in the fall, although I prefer the spring. The reason for this course has been that I have imagined that a season was gained by autumn planting. Mulching with turf has invariably preserved all my trees. I prefer turf mulching to any other, even to manure. Its action has been most marked in the health and vigour of the trees. I have always used turf from sandy loam, and the silica imparted has not only been apparent in the fruit, but also in the clean and healthy fibre of the bark. I have also mulched with good rotten stuff from the dung heap made from the byre, and at times composted with the contents of the privy. From observation, I am persuaded that the mixture has a more potent effect than any kind of manure that I have tried. Our club would do well to entertain the question of utilizing night soil.

My pruning, with rare exceptions, has been done by myself. My acknowledgments are mainly due to Mr. Laing, Mr. Weatherstone, and Messrs. Meston and Hill, with scraps of knowledge picked up in my reading. I prune close. My partial experience has taught me that different varieties of pears require different treatment by the knife. The Rostiozer, for example, requires less topping than any variety of pear with which I am acquainted. Long arms left on this variety are sure to reward the horticulturist with a profusion of fruit. I have found, I think, that the Seckel will stand as close pruning as any other kind. The Winter Nellis is almost the only tree that has set all rules at defiance. Prune close, and the tree either sends out enormous wood shoots, or dwindles away and makes little or no wood at all. The season of my pruning has been late fall or early spring. The varieties that have suffered most after the application of the pruning knife, by the frost, have been the Duchess D'Angouleme, Brown Beurre, Beurre D'Anjou, and Jalousie de Fontenay. Some of these have some winters been blackened at the cut tips so much that I have been necessitated to renew the pruning in the spring. Few people—I mean amateurs—are aware of the injury done a fruit tree by allowing a vigorous bud to cover up a frozen top. It may seem for the time being beautiful to the eye, but let a load of fruit appear in due course, and the evil will speedily become apparent. These blackened and frozen tips are fertile in disease, especially to the pear, as owing to a granular tendency of the pear itself, a slight stoppage of the sap circulation by a forgotten or neglected frozen tip, is almost sure to result in blight and barrenness. In pruning I always cut from the inside and leave the bud on the outside branch or stem. I prune my trees regularly as the season comes round. Any standards I have I dwarf by pruning and pinching. I have succeeded before the time, if I may use a Hibernicism, in fruiting standard trees.

I have before the club to hear my experi-

rience in reference to the health of varieties which I cultivate. I have little hesitation in saying that I have found the White Doyenne the Flemish Beauty, Belle Angevine, the Seckel, Glout Morceau, and the Napoleon, with the Onondago and Louise Bonne de Jersey, to be the healthiest trees that I have cultivated.

The hardiest varieties are the Winter Nellis, Easter Beurre, Rostiezer, Beurre D'Anjou, Louise Bonne de Jersey, Bergamotte Cadette, and Brown Beurre. It may appear strange to some members of the club who hear me, when I affirm that I have found it necessary more than once, after a severe winter, to renew the pruning of the Duchesse D'Angouleme, Beurre Diel, Doyenne D'Eté Stevens' Genesee, and the Vicar of Winkfield. The tree that is A 1 in fertility is Louise Bonne de Jersey. This is my own experience in my cultivation. As a matter of fact, I can testify to the same being the case with Mr. Young, Georgetown, with Mr. Chisholm, Oakville—at Niagara, at Guelph, at Beamsville. The Louise Bonne de Jersey seems to me to hold the same place among pears as Wilson's Albany does among straw berries. Next in fertility is the Vicar, and White Doyenne, which for market cultivation are not to be excelled by any variety cultivated by me. These three are regular bearers, the Louise Bonne every year, and the Vicar and White Doyenne generally giving good crops. The Doyenne D'Eté is prolific, but bears only once in two years. The Beurre D'Anjou has a habit peculiarly its own. It regulates the crop to be borne, and has its fruit more evenly distributed over the tree than any other with which I am acquainted. I cannot speak too highly of the cultivation of this variety. Notwithstanding the size of the fruit, it rarely sheds its burden, and for its eating qualities it has scarcely an equal. The Brown Beurre comes next to the Beurre D'Anjou, in my estimation, as a pear to reward the successful cultivation of the horticulturist in our district I prefer it, by a long way, to its congener, the white. I fear its good qualities have not made that impression which they ought, and which they will do on a further acquaintance. It is an abundant bearer, and the quality excellent. As a dessert it mixes well with other varieties, its russet hue being well set off in conjunction with green, yellow, or red checked, rosy coloured pears. The Winter Nellis is a good bearer, and for winter use is not to be beat. The highest winds have no effect in causing the fruit to drop, and this is saying much with regard to a tree whose habit is so slender in its growth. This remark leads me to notice that, of all my varieties, I find the Belle Lucrative the least persistent in its fruit bearing. For several years back we have had a succession of pretty high winds towards the middle and end of August. I have found that invariably I have lost the crop of this variety. This is the only drawback to the cultivation of the

Belle Lucrative; otherwise it stands second only to the Seckel. The Seckel, too, in some seasons, shows a tendency to the same habit, and the stem is apt to be broken. It does not yield at the junction of the stem to the branch, but actually breaks often about an eighth of an inch from the pear. The White Doyenne with me later in the season sometimes sheds its fruit in the same way. The Rostiezer is apt to overbear itself, and as a consequence, several pears of a cluster are very apt to drop. The great weight of the Duchesse at the end of the season causes the fruit to fall at times; its stem breaks similarly to the Belle Lucrative.

In point of vigour of growth, I rank the Napoleon, the White Doyenne, the Glout Morceau, and the Passe Colinar as the most vigorous. The Passe Colinar with me too frequently runs into a broom or besom like form in the branches. Perhaps, however, this fault may arise from my faulty pruning, and may not be a habit of the tree. Two trees in different situations and exposures are characterized by the same tendency.

The Louise Bonne is a sparse grower, and puny rather. The same may be said of the Bartlett. In fact, with me it runs too much to fruit, and in dwarfs is apt to snap at the graft when overloaded with fruit. My varieties for the best habit of growth are the White Doyenne, Beurre Diel, Glout Morceau, Brandywine and Beurre d'Anjou. These all excel as pyramids.

My best fruit is the Seckel, Belle Lucrative, Beurre D'Anjou, Brown Beurre, Winter Nellis, and Beurre Diel. The Duchesse I rank along with these, but do not rate the fruit so highly as some growers do.

Our Easter Beurre is a noble fruit. It has however, generally a granular tendency, which is a great drawback to its excellence as a dessert fruit. When the fruit is fair it is all that could be desired. Before I close my remarks on this variety, I may add that I have found the Easter Beurre to be more liable to the attacks of the curculio than that of any other variety of pear. The most durable pear I possess is the Belle Angevine. The Easter Beurre comes next to it. The Onondaga, Duchesse, and Beurre D'Anjou rank the third in order. In point of shape, I prefer the Jalousie de Fontenay; in point of colour the same pear, and the Brown Beurre, and Winter Nellis. In point of market value in reference to these two qualities, taking them all in all, perhaps the Louise Bonne stands A 1. My finest pears in regard to size, are the Duchesse, second the Beurre D'Anjou, and third the Onondaga. I have grown the Belle Angevine to four and twenty ounces weight. I must not weary you, yet I must just say a word or two about our pests. For several years I found the slug to be a troublesome enemy. A pepper box and a little dry earth, with just a sprinkling of wood ashes, is an infallible remedy. You must have noticed two crops of those pests, one in spring and another when the equino-

tial rains set in. Until lately I was not troubled with the pear curculio. An old wife, whose name shall be nameless, came along one day to see my trees, and advised coal oil as an infallible remedy for the plum curculio. I was soft enough and verdant enough to try it, and effectually succeeded in killing off my trees. I do believe that the enemy, finding his old haunts gone, determined to quarter himself on my pot dwarf pears. For some years, I have had to wage war against the attacks upon my pears. The most radical remedy upon which I have lit is to hold out the inducement of a cent to my bairns for every rascal they nab. I find that this reward has at least a double advantage; it speedily thins the chaps with the long proboscis, and wonderfully quickens the perceptive faculties of the hunters. As I have already said, the Easter Beurre is most liable to the ravages of the curculio, and the Seckel the least. The Brown Beurre and Beurre D'Anjou come next to the Seckel in this respect, followed at no great distance by the Bergamotte cadette and Dearborn's seedling. The most guarded, granular and knotty of all varieties are the Vicar of Winkfield and Easter Beurre. It sometimes occurs to me that by hybridizing we may yet secure a tree whose fruit will be fair and free from blemishes. Were Mr. Freed to give himself to the task, he might become among pear growers what Mr. Arnold of Paris is among the cultivators of the grape.

Blight, or pear blight, will receive little elucidation from me. I am persuaded, however, from various observations and attempts at solving the mystery of pear blight, that it arises from various causes. First and foremost among these are cold and heat. The winter wind is the primary cause, disorganizing the sap vessels. Our sudden transition, the leap from cold to intense heat in the weather, puts on the copostone. After a gentle shower the sun shines forth, and the sap flows. In its progress it meets with obstructions caused sometimes by the wind in winter, at another time by the unseen and hidden damage done by the pruning knife. When the cut has been too near the eye, and the dead wood from above has penetrated below the living stem, the sap there undergoes the process of fermentation from the intense heat, and hence the fetid smell, and the blackened appearance of both bark and wood.

This may sound like theory, but a sample or two of my yesterday's pruning may serve to elucidate my meaning. In two or three rather remarkable cases I have cured pear trees of pear blight, evidencing, so far, that the theory of the root being the origin of the blight is unsound, and not in harmony with facts.

EARLY HARVEST AND EARLY JOE Apples have been quite spoiled this summer, being nearly covered with black spots and very badly cracked.

### Fruit Growers' Association—Meeting of Directors.

A meeting of the Directors of the Fruit Growers' Association of Ontario was held at the County Council chambers in the City of Hamilton, on Tuesday, September 7th, 1869.

Present, W. H. Mills, Esq., President, D. W. Beadle, Secretary, and Messrs. Charles Arnold, Paris, George Lerlie, Toronto, and R. Burnet, Hamilton.

The Secretary stated that only two essays had been received in competition for the prize, one bearing the motto "Whatever tends to promote production, increases the wealth of any nation," and the other the motto "Poma mitia."

After considerable discussion, the following resolution was passed: Whereas only two essays have been received by the Secretary in competition for the prize offered for the first and second best essay on the cultivation of the Raspberry, Blackberry, Strawberry, and Currant; therefore, Resolved, that the time for receiving such essays be extended until the first day of February, 1870, and that the essays already received be retained by the Secretary unopened, with the privilege to the writers to withdraw them, and to substitute others if they desire to do so; and the Secretary shall return them, if applied for.

The members of the association resident at Brantford, having signified a desire that the autumn meeting should be held there on the seventh day of October, it was accordingly

Resolved, that the autumn meeting of the Association be held in the Town Hall, Brantford, on Thursday the seventh day of October, 1869, at eleven o'clock, A. M., to be continued through the day and evening.

Resolved, that the Secretary notify each member of the Association that the annual meeting for the election of officers, receiving of reports, &c., &c., will be held in the Court House, London, at seven o'clock, P. M., of Tuesday, the twenty-first day of September, instant.

Resolved, that the fiscal year shall begin on the first day of July in each year.

Resolved, that the account of the President for disbursements on account of the Association, amounting to the sum of two dollars and thirty-one cents, and the Secretary's account for travelling expenses, to the seventh day of September, inclusive, amounting to the sum of eleven dollars and twenty cents, and the sum of fifteen dollars and fifty-six cents for postage, express charges and telegrams, and the sum of four dollars and twenty eight cents for stationery, and the amount charged by the collector, namely, two dollars and forty cents, as commission for collecting members' fees in the City of Hamilton, be hereby approved, and that the salary of the Secretary-Treasurer for the year 1869 be continued at the sum of one hundred dollars, and the Treasurer is hereby authorised to pay the same.

Resolved, that the Rev. R. Burnet be added to the committee appointed to revise the report on fruits.

Resolved, that the Directors suggest that it is for the interest of the Association that a further by-law should be passed at the annual meeting of 21st. September, 1869, authorizing the Treasurer to pay the reasonable and necessary expenses of Directors in attending the past and future meetings of the Board.

Resolved, that the Board adjourn, to meet at the Court House, in the City of London, on Tuesday evening, the 21st. of September, instant, at seven o'clock.

### The Canada Balsam.

A correspondent writes to us from Newark, Oxford Co., asking our opinion in regard to the Canada Balsam as a screen or windbreak for an orchard, and particularly whether it is not a faster grower, and larger tree, when fully grown, than the Norway Spruce; and at the same time equally as hardy and quite as handsome.

The *Canada Balsam* generally grows to the height of thirty to forty feet. While young, it is a very handsome, compact tree, with a fine conical outline; but when it approaches maturity the lower limbs begin to decay, and the tree loses its symmetry and beauty.

The *Norway Spruce* usually attains a height of one hundred and twenty to one hundred and fifty feet, and when planted singly its branches near the ground, and retains its graceful form to extreme old age. There is not much difference in the rapidity of growth of these two evergreens, nor any difference in their hardiness and ability to endure the climate. The *Norway Spruce* seems to thrive better in all soils than the *Balsam*, and the question of comparative beauty is so entirely one of taste, that we can not do more than say that we believe the majority of good judges give the preference to the *Norway*.

Hoopes, in his "Book of Evergreens," says of the *Norway Spruce*, that "a thickly planted belt of these trees on the north side of an orchard, or of the house and farm buildings, proves an effectual barrier to the high cold winds, and of all the hardy evergreens, this appears to be the most suitable for shelter. Dense and compact in its growth, hardy to the utmost degree, and vigorous in almost every soil, it is certainly the perfection of plants for a screen;" in which opinion we entirely coincide.

Our correspondent will find both the *Canada Balsam* and *Norway Spruce* with all our leading nurserymen, and can try the native variety if he prefers.

### Report of the Fruit Crop in Lincoln.

The following report has been addressed to the President and Directors of the Fruit Growers' Association of Ontario.

I beg to submit the following report of fruit in this locality for the current year. The

season has been wet, cold and backward, causing all kinds of fruit to mature from a week to two weeks later than usual.

STRAWBERRIES are not much cultivated in this neighbourhood, but what few there are yielded a good crop.

RASPBERRIES, Blackberries and Mulberries were very prolific, and the fruit was fine and large, but not as fine flavoured as in warmer summers.

CURRENTS—The worms destroyed the foliage of nearly all the bushes I have seen. It seems that nothing but frequent applications of hellebore will stop the ravages of these troublesome pests. The crop was better than that of last year.

CHERRIES—Crop medium. The Governor Wood, Knight, Early Black and Spanish Biggareau, were very good. The common red cherries were the best, both in quantity and quality, that we have had for several years. The Napoleon Biggareaus all rotted on the trees.

PLUMS—The crop is good; a very large proportion of them were stung by the curculio, and dropped off, but there are more left than the trees can bear; they are rotting badly on the trees. I think the black knot is not quite as bad as in former years.

PEACHES will not be quite an average crop. The Early York and Early Crawford are the most valuable varieties grown here.

APPLES—The crop will be about an average one. The quality of the fruit is variable. The Early Harvest, Snow apple, Seek no Further, Swaar, and Spitzenburg, are inferior in size and spotted, while the R. I. Greening, Red Astrachan, Holland Pippin, Baldwin, Roxbury and Golden Russets, King of Tompkin's County, Hubbardston Nonsuch and Ribston Pippins are fine, both in size and quality. The apple worm is not as destructive as it was last year, but caterpillars are more numerous.

PEARS will probably be about an average crop, but like the apples the quality is variable. Madeline, Bartlett, Osband's Summer, Flemish Beauty, Sheldon, &c, are very fine, while the Bon Chretien and other varieties that are liable to be spotted are very inferior.

GRAPES are a partial failure, and perhaps they may prove a total one, as they are now very backward, and it is a question whether they will ripen in time to escape the frost. Most varieties are badly mildewed, especially where they have been planted too close together and have not a sufficient circulation of air. The Delaware seems to stand the best chance at present, as there are very few of them mildewed.

I am not aware of any valuable new varieties of fruit having been originated or introduced in this locality during the past year.

M. Y. KEATING.

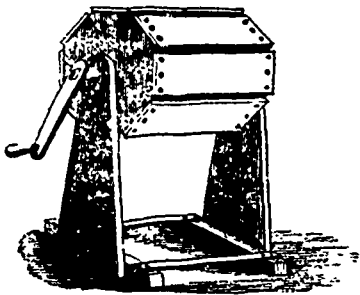
Leath. County of Lincoln, Sept. 7, 1869,



### Garden Work.

The great secret of success in having fine vegetables for the table, is in doing every thing well. We need not advise our readers now, in the autumn of the year, on good clean cultivation, proper thinning, &c. A great deal, however, depends on taking up and packing away vegetables for winter in the best manner. Careless cultivators will tumble them into the cellar without being properly cleaned, trimmed or sorted. A part thus decay, and the foul air they create injures the flavor of the rest, and everything else in the apartment. Instead of this objectionable course, let everything be done in the most perfect manner. First, let the root cellar be made perfectly clean and sweet—whitewashing the walls will be no injury. Next procure clean boxes for storing the roots, or casks or barrels for those in small quantity.

Now, a word in relation to harvesting the crops of vegetables. First, if possible select a clear, warm, dry day, or as near to this as may be. If wet or rainy weather is chosen it will be difficult to remove the earth and clean the roots. Let them lie on the ground for several hours, more or less, when any adhering portions of earth will readily fall from them. Trim neatly, but not too closely, such as require it. Sort and cast all poor specimens aside to be cut up for animals



Then deposit or pack away the good ones properly in the cellar. Some roots, such as beets, are much injured in quality by a little wilting; and it is important to preserve their freshness, and at the same time to prevent moulding. We have found nothing better for effecting this purpose than to fill the interstices among them with fine fresh moss as they are packed away.

It sometimes happens that fine weather cannot be chosen for this work, and long continued rain renders the ground necessarily muddy. In such a case, the best way is to take up the crop and place it on the floor of a barn, where it may remain uninjured for several days. The adhering dirt will become gradually dry and may be readily knocked off, and the roots then taken in a clean condition to the cellar. In fact, this course will always be best where there are heavy or adhesive soils, except during the finest autumns.

It frequently happens when potatoes are dug from a muddy soil, that it is difficult to

remove the dirt readily from them even after they have been drying a week or two on a barn floor. We have found the root cleaner, represented in the annexed figure, an excellent thing for the purpose. It is simply a revolving octagonal box, with slits or openings an inch wide between the boards. One of the boards runs in by sliding or is buttoned on, and a half bushel of roots may be thus thrown in. A few revolutions with the crank and the dirt is all knocked off, and falls down through the slits. By running this cleaner in a trough of water, fed by a running stream, the cleaning is rapid and perfect, and effected with comparatively little labour.—*Exchange.*

### History of the English National Rose Shows.

BY REV. S. REYNOLDS HOLE.

(From the "Gardener.")

\* \* \* Simultaneously with this love of the rose, there deepened in my heart an indignant conviction that the flower of flowers did not receive its due share of public honours. I noticed that the lovers of the carnation had exhibitions of carnations only, and the worshippers of the tulip ignored all other idols. I saw that the Queen of Autumn refused the alliance of each foreign potentate, when she led out her fighting troops in crimson and gold gorgeous. The chrysanthemum, alone in her glory, made the halls of Stoke Newington gay. Even the vulgar, hairy gooseberry maintained an exhibition of its own. Was the Queen of Summer, forsooth, to be degraded into a lady in waiting? Was the royal supremacy to be lost? No; like

"Lars Porsonna of Clusium,  
When by his gods he swore  
That the great house of Tarquin  
Should suffer wrong no more."

I vowed that her Majesty should have her own again, and in a court of unparalleled and unassisted splendour should declare herself monarch of the floral world.

Carrying out this loyal resolution, I forthwith suggested, in the pages of the *Florist*, April, 1857, to all rose growers, amateur and professional, "that we should hold near some central station a GRAND NATIONAL ROSE SHOW, a feast of roses, at which the whole brotherhood might meet in love and unity, to drink, out of cups of silver, success to the Queen of Flowers." And I must confess that when I had made this proposal to the world, I purred internally with self-approbation. I felt confident that the world would be pleased.

For some time after the publication of the magazine I waited anxiously at home. I opened my letters nervously, but the public made no sign. Had it gone wild with joy, or were its emotions too deep for words? Weeks passed, and it still was mute. I was disappointed. I had thought better of man-

kind, but I was disappointed, even as that dog of Thompson's, whose sad story is told in these pages as a warning to the over-sanguine. He heard one morning, at the hour of food, the sound of familiar footsteps. He rushed towards the door, jumping and frisking, for he thought they were bringing him his breakfast; and—they took him out and—hanged him.

The suspense in both cases was extremely disagreeable. I had this advantage; mine was too brief to be fatal, and I had the power to cut the knot. I exercised it by writing to our chief Rosarians the simple question, "Will you help me in establishing a National Rose Show?" Then were all my doubts and disappointments dispelled, and the winter of my discontent made glorious summer, for the answers which I received, as soon as mails could bring them, might be summed up in one word—"heartily." The three men, the triumviri, whose sympathy and aid I most desired—Mr. Rivers, king of roses; Mr. Charles Turner, prince of florists, and Mr. William Paul, who was not only a successful writer upon the rose, but at that time presided practically over the glorious rose fields of Cheshnut, promised to work with me; and the rest to whom I wrote assented readily to all I asked of them.

Shortly afterwards, we met in London, as members of Her Majesty Queen Rose's Privy Council. The council chamber (Webb's Hotel, Piccadilly) was hardly so spacious, or so perfectly exempt from noises as became such an august assembly, but our eyes and our ears were with the rose. We commenced with a proceeding most deeply interesting to every British heart—we unanimously ordered dinner. Then we went to work. We resolved that there should be a Grand National Rose Show, and that we would raise the necessary funds by subscribing £5 each as a commencement, and by soliciting subscriptions; that the first show should be held in London, about the first day of July, 1858; that the prizes, silver cups, should be awarded to three classes of exhibitors, namely, to growers for sale, to amateurs regularly employing a gardener, and to amateurs not, &c. We then discussed minor details, and having agreed to reassemble when our financial prospects were more clearly developed, we parted.

And I thought, as I went rushing down the Northern line, what a joyous, genial day it had been. Personally unknown to my coadjutors, we had been, from the moment our hands met, as the friends of many years. So it is ever with men who love flowers at heart. Assimilated by the same pursuits and interests, hopes and fears, successes and disappointments—above all, by the same thankful, trustful recognition of His majesty and mercy who placed man in a garden to dress it—these men need no formal introductions, no study of character, to make them friends. They have a thousand subjects in common

on which they rejoice to compare their mutual experiences, and to conjoin their praise.

We went back to our homes. We appealed for subscriptions to the lovers of the rose, and they responded as I knew they would. We published a schedule of prizes. We engaged St. James' Hall. We secured the services of the Coldstream band (a mistake, because their admirable music was too loud for in-door enjoyment). We advertised freely. We placarded the walls of London with gorgeous and gigantic posters. And then the great day came.

And then followed a scene beautiful exceedingly. I feel no shame in confessing that when the hall was cleared, and I looked from the gallery upon the three long tables, and the platform beneath the great organ, glowing with the choicest roses of the world, the cisterns of my heart overflowed—

"A flood of thoughts came rushing,  
And filled mine eyes with tears."

"Half the nurseries of England," as Dr. Lushington wrote, "poured their treasures into St. James' Hall." Then the censors reported their verdicts, the prize cards were placed by the prize roses: and then came the momentous question:—

Would the public endorse our experiment? Would the public appreciate our show? There was a deficiency of £100 in our funds, and as a matter of feeling and finance, I stood by the entrance, as the clock struck two, anxiously to watch the issue.

No long solicitude. More than fifty sittings—I humbly apologize—more than fifty intelligent and good-looking individuals were waiting for admission; and these were followed by continuous comers, until the hall was full. A gentleman who earnestly asked my pardon for having placed his foot on mine, seemed perplexed to hear how much I liked it, and evidently thought that my friends were culpable in allowing me to be at large. Great, indeed, was my gladness in seeing those visitors—more than two thousand in number—but far greater in hearing their hearty words of surprise and admiration.

At the close of the exhibition it was my happy privilege to distribute the thirty-six silver cups which had been specially designed for the occasion, and were, as I need hardly say, prettily and profusely engraved with roses. Two cups

were awarded to my own roses, the process of presentation being "gratifying but embarrassing," as Mrs. Nickleby remarked when her eccentric lover would carve her name on her pew.

So ended the first Rose Show. It was, as one of its best supporters, and one of our best rosarians the Rev. Mr. Radclyffe, wrote of it, "successful beyond all anticipations," and I went to bed that night as tired, as happy, and I hope as thankful, as I had so much good cause to be.

The Second National Rose Show was held

in the following year, June 23rd, 1859, at the Hanover Square Rooms, and again we had the best roses of England, a goodly company, and prosperous issues. It was now more evident than ever that no room in London was large enough for the levees of the Queen of Flowers. Next year, accordingly, after a correspondence and arrangement with the directors:—

The Third National Rose Show was held, July 12, 1860, in the Crystal Palace at Sydenham. Here was a throne room meet for Her Majesty, and sixteen thousand of her lieges came to do her homage. Naturally and wisely, the Crystal Palace Company resolved, upon this, to have a Rose Show of their own. Long may it prosper.

The Fourth National Rose Show was held under the auspices of the Royal Horticultural Society, in their gardens at South Kensington, July 19, 1861, and there it has since flourished in all its first strength and beauty. I was very grateful to find such a genial soil and excellent supervision for a plant which was growing rather too large for me—that is, to transfer to abler hands a work which, with all its gratifications, interfered at times unduly with my other engagements. Moreover, to tell you all the truth, in the happy spring-tide of 1861 I had a correspondence which occupied all my time, upon a subject which occupied all my thought—a subject more precious, more lovely even than roses.—I was going to be married in May.

### Finderne Flowers.

The Findernes were Lancastrians, so when, during the War of the Roses, the Yorkists were ascendant, the ruin of the Findernes was unannounced, and Edward IV., in 1473, granted "all the manor, and hereditaments within the Kingdom of England lately belonging to William Finderne," to Robert Radcliffe; no wonder the Radcliffes still delight in Roses. Burke, in his "Vicissitudes of Families," relates as follows:—

The hamlet of Finderne, in the parish of St. Cleover, about four miles from Derby, was, for nine generations, the chief residence of a family who derived their name from the hue of their patrimony. From the time of Edward I. to that of Henry VIII., when the male line became extinct, and the estate passed, by the marriage of the heiress, to the Gaupers, the house of Finderne was one of the most distinguished in Derbyshire. Members of it had won their spurs in the Crusades, and at Cressy, and at Agincourt; the sons were brave and the daughters fair. Finderne, originally erected *tempore* Edward I., and restored and enlarged at different periods, was in 1560 one of the quaintest and largest mansions in the midlands. The present church, then the family chapel, had row of monumental brasses and altar tombs, all memorials of the Findernes. In 1850, a pedicree research caused me to pay a visit to the village. I sought for the ancient Hall. Not

a stone remained to tell where it had stood! I entered the church—not a single record of Finderne was there! I accosted a villager, hoping to glean some stray traditions of the Findernes. 'Findernes!' said he, 'we have no Findernes here, but we have something that once belonged to them; we have Findernes' flowers.' 'Show me them,' I replied; and the old man led me into a field which still retained faint traces of terraces and foundations. 'There,' said he, pointing to a bank of 'garden flowers grown wild,' 'there are the Findernes' flowers, brought by Sir Geoffrey from the Holy Land, and do what ye will, they will never die!'

For more than three hundred years the Findernes have been extinct, the mansion they had dwelt in had crumbled into dust, the brass and marble intended to perpetuate the race had passed away, and a little tiny flower had for ages preserved a name and a memory, which the elaborate works of man's hand had failed to rescue from oblivion. The moral of the incident is as beautiful as the poetry. We often talk of the 'language of flowers,' but of the eloquence of flowers we never had such a striking example as that presented in these flowers of Finderne:—

"Time, Time, his withering hand hath laid  
On battlement and tower,  
And where rich banners were displayed,  
Now only waves a flower."

—(Ollage Gardener.)

### Catalogues Received.

Wholesale Price Current of Agricultural and Vegetable Seeds. Wm. Bryce & Co., Seed Merchant's, London, England.

Messrs. Bryce & Co. state that many of the best seed districts have suffered severely from hot and inclement weather during the spring months. Late peas, and especially the wrinkled varieties, with only a few exceptions, a failure. Parsnips, radishes, cabbages and broccoli are very deficient, and Swedes and Yellow Bullock turnips a short crop.

Catalogue of Dutch flower roots, including tulips, hyacinths, narcissus, crocus, ranunculus, tuberoses, lilies, dahlias, gladiolus, &c. James Fleming & Co., seedsmen and florists, corner Queen and Yonge streets, Toronto.

Illustrated catalogue of hardy bulbs, tulips, crocuses, hyacinths, snowdrops, lilies, iris, isias, ranunculus, seeds for fall planting, &c., &c. James Vick, Rochester, N.Y.

Circular of wholesale prices for autumn of 1869, of Rochester Commercial Nurseries. W. S. Little, proprietor, Rochester, N.Y.

Frost & Co.'s Wholesale Catalogue or Trade List of fruit and ornamental trees, shrubs, roses, bulbs, &c., for the autumn of 1869. Rochester, N.Y.

Annual Trade List of the Cherry Hill Nurseries, West Chester, Penn., for the autumn of 1869. Hoopes Bro. & Thomas, proprietors.

Wholesale Trade List of the Oldcastle Nurseries, for the autumn of 1869. T. C. Maxwell & Bros., proprietors, Geneva, N.Y.

Price List of the Lockport Grape Nurseries for the autumn of 1869. C. L. Hoag & Co., proprietors, Lockport, N.Y.

Trade List of Nursery Stock for the autumn of 1869. Dudley & Merrell, nurserymen, Geneva, N.Y.

**DANLIAS** never were finer than they are this season; the cool, moist weather seems to suit them exactly.

**FLOWERS DESIRABLE FOR FRAGRANCE.**—For fragrance, nothing equals the Mignonette, Sweet Alyssum, Sweet Pea, Erysimum and Stocks.

**THE FLEMISH BEAUTY** Pear, which in some previous years has been very nearly worthless, having been so badly cracked, is this year smooth and fine.

Peaches were late in ripening. The crop in Ontario has not been large, nor was the cool, wet weather favourable to the development of a high degree of flavour.

**CARE OF APPLE TREES.**—A Western New York correspondent writes "a word about young apple trees:—Look out for the borers. Wash the bodies of the trees with strong soap suds; it is excellent for them: but never put on gas tar, it will ruin them."

**HOW TO GROW MELONS.**—Select dry ground inclining to light loam or sand, dig holes two and a half feet deep and two and a half feet in diameter, fill with bard-yard manure to within six inches of the surface, tramping it down; fill with good loam and plant.

The International Exhibition in Edinburgh was confined to British Exhibitors, no foreign competitors having accepted the invitation to send in contributions. The English journals speak of it as a great success, and as having been especially magnificent in the show of grapes.

**WHITE DOYENNE** Pears are cracking very badly. The wet weather gets blamed for it, but we are by no means certain that this will satisfactorily account for it. For some years this variety of pear has suffered badly from cracking in Western New York, and it is not surprising that the disease should have crossed the border.

**PROTECTION OF TREES FROM MICE.**—I think they may be effectually checked by white-washing the trees with lime wash in the autumn. My trees were served in this way, and were not troubled, while those of my neighbours were sadly stripped. Let the wash stand several days before using—as new wash is too strong.—H. C. Packard.

At a general meeting of the Royal Horticultural Society recently, among the objects of interest shown was a magnificent specimen of *Lilium auratum*, on which were over 150 blooms, from the gardens of the Dowager Lady Ashburton. The council specially awarded the Lindley medal to this fine plant.

**MADEIRA VINE.**—An excellent climber, with beautiful, thick, glossy, light green, almost transparent leaves, climbing almost to any desired height. The flowers are small, borne in racemes, and very sweet scented. It thrives in the house better than any climber, except, perhaps, the Ivy; makes an excellent screen for windows; is unsurpassed for baskets, and extremely useful as an outdoor climber, growing very rapidly.

## Entomology.

### Poisonous Worms Again.

A. C. Osborne, teacher at Fort Erie, has sent us three specimens of caterpillars, with the following remarks:—"The largest I found while walking with a friend in the garden, near some celery plants, and which he informed me was the very species of animal that had caused the death of a lady in Drummondville, and the poisoning of several persons in this neighbourhood [!!!]. He has rather a formidable-looking horn on his tail; can he use it? And please tell us what he is. The other two we found on the grape vines, the one with a horn being one of a great number as well in variety of colour as in size. Tell us if they are of the same species with the largest. I am inclined to the opinion that the largest is the Potato Sphinx, which you say is harmless, at least as far as stinging is concerned."

We have had some rather amusing experience in tracing up popular stories of various kinds, and generally found that they had their origin in the same source as the report of the death of Mr. John Robinson, thus described by his friend:—

"Somebody told me that some one said,  
That some other person had somewhere read  
In some newspaper you're somehow dead!"

The "poisonous worm story" we put down to a similarly reliable authority, and are anxious now to follow it up. Our correspondent gives us, we are thankful to find, a little more definite information than usual, so now we must trouble him for a few further particulars. We hope he will not hesitate to give them to us, as all must admit that the question involved is one of the greatest possible importance to the welfare of the whole community. It is not merely the lives of our "wife's male relations," whom, like Artemus Ward, we might be sometimes willing to sacrifice, that are in jeopardy; but our own lives, and the lives of our wives and our little ones. And the danger is not in some distant battle-field, but at our own doors, in our very gardens. If the matter is not settled, how shall we ever dare to go near our tomato patches again! What horrible nightmares shall we not have whenever we venture to taste a tomato, fancying some great big nasty green striped caterpillar crawling at us, and poking us with his horny tail, and sending out his deadly poisonous sting, and slaughtering us then and there. Ugh! Won't it be dreadful! But we must stop all this; so we want to know what is the name and address of our correspondent's friend—the name and date of death of the lady poisoned at Drummondville—the name and address of her medical attendant—the name of the coroner who held the inquest over her—the verdict of the jury. Also, we want to know the names and addresses of the "several persons" in the neighbourhood of Fort Erie who have been poi-

soned by this wicked animal—the mode of the attack—the symptoms of poisoning that followed—the antidotes employed—the length of time during which the ill effects continued—the name of the medical attendant—and any other particulars that may tend to throw light upon the subject. We surely are not asking too much in a case where so many lives are at stake, and we do seriously and sincerely hope that our correspondent will afford us the fullest and most authentic answers to these questions. Should the replies prove that any one has been hurt in the slightest degree by the sting, or horn, or tail of the tomato or potato worm, we shall make the most humble apology and recantation to the public, and the readers of the *Weekly Globe* and *Canada Farmer* in particular, for our ignorance and presumption in ridiculing the poisonous properties of these insects.

Since writing the above we observed the following paragraph on this subject in a morning paper, and cut it out as a sample of many that we see from time to time:—

"Two specimens of a worm infesting tomato vines this season have been discovered at Welland. The *Tribune* says they are about three inches long, striped on the back, and their heads decorated with a pair of horns each. People are cautioned about handling them, as their bite is said to be as poisonous as that of a rattlesnake. A girl in Canboro' is said to have died from the effect of a bite by such a worm."

Here it will be observed that the mode of attack is different; it is no longer the "sting" of the creature, but the bite that is so venomous. And now we fancy we see a faint glimmer of the truth—for there surely ought to be some modicum of truth at the bottom of all these stories. The tomato plant belongs to the Night-shade family (*Solanaceae*), most of the members of which possess very poisonous properties; it may be then, that its juices are noxious when received into a cut or wound, and may even cause death in certain constitutions; and then the caterpillar, being a repulsive-looking creature, gets the credit of the mischief. This is a possible solution of the matter, but we want full and reliable information before we can decide at all. Perhaps the editor of the *Tribune*, as well as our correspondent, will be good enough to afford it, and enable us to set the matter at rest.

The specimens received from our correspondent were (1) the caterpillar of the Plum Sphinx (*S. drupiferarum*, Smith and Abbott): a large green worm with a horn-like tail, adorned along the sides with a series of oblique white stripes, edged with violet. In the autumn it goes under ground and transforms into a chrysalis, from which there emerges in June an ash-coloured "humming-bird moth," whose wings are much variegated with black. This caterpillar feeds also upon apple and other leaves; it is perfectly harmless. (2) The rosy-coloured caterpillar from the grape vine is the larva of the Vine-dresser Sphinx (*Charcoalampa pampinatrix*, Sm. and

Ab.). Specimens of this caterpillar vary very much in colour at different stages of their growth, and are oftentimes quite beautiful objects. Like other sphinxes, they are adorned with a horn-like tail, which does not contain a sting. The moth from these worms is olive-green, except the hind wings, which are rusty red. This caterpillar is frequently very destructive to the leaves of the grape. (2) The smaller bluish caterpillars with black and orange transverse bands, and somewhat humped towards the tail, which also feed on the leaves of the grape, are the larvæ of a very beautiful moth (*Ladryas grata*, Fab.); its fore-wings are cream-white with a purple-brown green edged margin, and its hind-wings, rich yellow with a somewhat similar margin. The parent insect is a most lovely creature, and yet, sad to relate, its progeny are often very destructive, and have to be killed.

### Curculio Notes.

The following interesting and valuable letter we clip from the *American Entomologist*:-

There are two questions connected with the habits of the curculio, of great practical as well as scientific interest, about which there appears to be considerable difference of opinion. The first of these is, Does the curculio produce more than one brood in one and the same season? The other is, What agency, if any, has this insect in producing or promoting the rot in peaches and plums?

Having fought the "Little Turk" with some diligence the current season, I have had an opportunity of making observations that may throw some light upon both these questions.

The females began to deposit their eggs towards the latter part of April, some two weeks later than usual in this latitude, the season being backward and unusually cold; and about the first of June the full-fed larvae were observed to be leaving the fallen fruit and going into the ground. By this time, the curculio catcher having been kept running every day when the weather would permit, there was a very marked diminution in the numbers of the insects, and very soon after there were very few to be found. But about the last week in June there was a sudden and large increase in the numbers caught, and the supply was well kept up until within two weeks past, when they seemed to be again pretty nearly caught out. That this fresh supply was composed of young curculios, the product of the eggs deposited in April and June, and not of old ones or immigrants from other orchards, is proven, if proof were needed, by the suddenness of the increase, by the fact that many of them were found copulating, and by the further fact that most of them were so soft, from their recent emergence from the earth, as to be readily crushed between the thumb and

finger. Finding many of them in the act of pairing, as I often found them on their first appearance in the spring, I supposed them to be preparing for the production of another generation for the present year. But the closest observation has not enabled me to find a single instance of their depositing an egg. I cannot find, on peach or plum, a single recent crescent shaped cut. To satisfy myself more fully, I imprisoned about fifty of them in a box with a glass cover, and gave them a daily supply of green plums and peaches; but though they fed voraciously upon the fruit, not a single egg was deposited. Hence I conclude that the curculio does not, usually at least, produce more than one brood in the same year.

With regard to the second question. I presume that all who are at all familiar with the habits of the curculio know that it feeds upon the fruit, preferring that which is approaching maturity. Very few know, however, how ravenous its appetite is. The peaches and plums given to those I had imprisoned were literally peppered all over with holes, some no larger than a small pin's head, and some large enough for the insect to bury itself bodily in the flesh of the fruit. Even a handful of peach leaves thrown in with the fruit were perforated in a hundred places. Now, that a wound in the skin of a peach just swelling to maturity with its abundant juices, should produce rot, is in accordance with both reason and observation. In every instance where I could detect the rot in its incipient stages, and before the surface had become so much disorganized as to destroy all trace of it, I could distinctly see the abrasion of the skin from which, as from a centre, the decay had proceeded. I caught a curculio feeding upon a peach. It had made a hole half as large as a grain of wheat. I marked the place, and in a few days found a rotten spot with the hole in the centre.

Let me give you further proof. I have five trees of the Hale's Early Peach, which have produced two crops of fruit before the present year, not a single specimen of which ever ripened. They rotted before maturity to the last peach. This season, one of the very worst for rot that I have ever known, these trees have ripened a full crop of sound fruit. I kept the curculio caught on them as thoroughly as possible, and pulled off all decaying fruit as soon as it made its appearance. Those fruits that were eaten into rotted, the rest remained sound.

I have several other trees of the same variety in another orchard that were well loaded with fruit. These were neglected, except that they were well cultivated. The result was that not a single peach ripened. My neighbours, who failed to fight the curculio, but trusted to luck, lost their crops of this variety entirely, or saved them in part only by gathering the fruit so green that it was more fit for grapeshot than human food. At South Pass, as I am informed, those only

who persistently caught the curculio had any decent Hale's Early peaches.

I do not wish to be understood as maintaining that a peach never rots unless the skin is first broken. On the contrary, I believe that if the decaying fruit is permitted to hang upon the tree, or to lie festering in the damp weeds and grass on the ground beneath, it will breed a pestilence that even the soundest fruit may not resist. Every decaying peach is covered by a forest of fungi, each one of which, in a single day, perhaps, ripens and scatters its myriads of invisible sporules. These, in their turn, vegetate and produce other forests, and so the rapid reproduction proceeds until the orchard is foul with the seeds of a disease, whose contagion none but the hardiest fruits can escape.

It seems to me clear, therefore, that the rot of peaches and plums is caused, in most cases at least, by the punctures in the skin of the fruit made by the curculio in taking its food, and that this mischief is done by the young brood, the old ones having perished.

It is possible that the rot in apples may be caused in this same way. Certainly, the small black specks (mostly near the stem) that deform so many of our apples, are the result of curculio bites.

A. M. BROWN.

Villa Ridge, Ill., July 22, 1869.

### Larva Infesting the Parsnip.

(*Depressaria Ontariella*, Bethune).

Last year our bed of garden parsnips turned out so badly, in consequence of the protracted drought of the season, that most of them were not worth digging; thinking, however, that we might as well get some seed from them as they were a good variety, we left them where they were for the winter. When spring came they looked beautifully fresh and green, and soon grew most luxuriantly, sending up tall stems and producing huge umbels of flowers. There was a grand prospect of a fine crop of seed, and we began to promise supplies of it to some of our neighbours, who complained that theirs was not satisfactory—all indeed, looked fair and promising till the last week in June, when "a change came o'er the spirit of our dream!" The fine umbels of flowers began to look rather unhappy. Decidedly *seedy* in one sense, but by no means "seedy" in another. Webs appeared over them, tiny caterpillars were seen to be thick about them, and very soon the big umbels were contracted into shapeless masses of web and excrement, the flowers were all eaten up, the prospect of seed was utterly and entirely gone! After the flowers were all consumed, some of the more juvenile caterpillars tried the uppermost green leaves, but not finding them to their taste they soon left them, and followed the example of the seniors, who had burrowed into the hollow stems, and were quietly

eating the soft white lining, out of sight of all their enemies. Most of them entered the stems at the axils of the leaves, but some few burrowed directly into them, making a round hole in the sides. By the 14th of July, the majority of them had disappeared inside the stems, and there they lay so thick, some in the chrysalid state, that one could hardly cut a stem in two, at a venture, with a knife, without performing the same operation on a pupa or larva as well. Some of the caterpillars were so unkind as to wander off to a bed of the newly sown parsnips and eat a goodly quantity of them, after having destroyed all our second year's crop; in this case they seemed to relish the young green leaves, while in the older plants they would hardly touch anything but the flowers and the lining of the stems.

The insects remained a fortnight in the pupa state, the moths beginning to appear on the 1st of August. They proved to belong to the genus *Depressaria*, of the family Gelechiidae, group *Tineina*. But very few American species of this genus have yet been described, though no doubt many will be found when collectors begin to turn their attention more particularly to the Micro-Lepidoptera. As the ravager of our parsnips is in all probability a native and not an imported insect, affecting some wild plant of the same character, we may call it from the name of this Province *Depressaria Ontariella*. [For a full description of this insect in all its stages, the reader is referred to the *Canadian Entomologist*, Vol. II, No. 1, from which this account is extracted. Ed.]

These moths, or possibly a later brood, though we do not see what a later brood would have to feed upon, hibernate and may often be seen flitting about rooms and emerging from behind curtains even in the depth of winter. They are usually mistaken for clothes-moths, and indeed we always hitherto regarded them as such ourselves, and were immensely surprised when we found them to be the product of our parsnip worms.

As some of our horticultural readers may be troubled with a super-abundance of this insect, and be desirous of learning a mode of getting rid of it, we may suggest a remedy. As soon as the young caterpillars appear upon the flowers, dust the umbels well over with powdered white hellebore, and repeat the operation occasionally, as all the larvae do not appear at once. Should they escape notice at first, and the flowers be destroyed, cut off and burn the affected stalks before the moth has time to emerge from the pupa, and thus reduce the numbers of the destroyer for the ensuing year. As the caterpillars are very active and wriggle about or drop down upon the slightest disturbance, they may easily be dislodged from their haunts and collected in a pan or sieve, and then burnt in the fire. It is possible that various parasites prey upon these insects, and assist in keeping them in check, though none have as yet been hatched from our specimens. Their

numbers in our garden are, however, being rapidly reduced by a Wood-pecker (*Picus villosus*), who daily visits the parsnip stalks and pegs away with right good will at the larvae and pupae within.—*Canadian Entomologist*.

### The Potato Flea Beetle

A subscriber has sent us a quantity of tiny black beetles that he found infesting his Early Rose Potato vines. They resemble very much in general appearance the well known little jumping beetle, popularly called "the fly," that is often so destructive to the turnip crops, and is usually such a nuisance to gardeners in the spring, when it attacks young cauliflower and cabbage plants, radishes, etc. This Turnip Flea-beetle (*Haltica striolata*, Illig.) has a wavy yellowish stripe on each wing-cover, which readily distinguishes it from all the other species of the genus found in this country; but the Potato Flea-beetle (*Haltica Cucumeris*, Harris), specimens of which are now before us, is entirely black, without any coloured marking. It is about the fiftieth part of an inch in length; so small indeed that its form and markings can hardly be made out without the aid of a magnifying glass—and in this respect differs very much from that pest of the grape grower, the Steel-blue Flea-beetle (*Haltica chalybea*, Illig.), which is many times as large. We have called this insect the Potato Flea-beetle for the sake of convenience, but it should with more propriety be termed from its specific name, the Cucumber Flea-beetle, that being one of the principal plants on which Dr. Harris first observed it; it also attacks beans, beets, tomato plants, etc. The way in which it operates to our injury is by eating minute holes into the substance of the leaf which it attacks; the edges of these holes become dry and withered from exposure to the air, and the leaf ceases to perform its functions properly, and thus the health of the whole plant is affected. The larvae, as we may judge from the habits of the turnip insect, lately made known by Dr. Shimer, probably live underground and feed upon the roots of the plants, and very likely do just as much, if not more damage than after they obtain their wings, only their depredations are out of sight. For pests of this kind it is very difficult to suggest a satisfactory remedy. When numerous upon the leaves they may be destroyed, it is said, by watering with weak brine, strong soap-suds, or hot water, but it would be extremely difficult to apply these remedies upon a large scale. With a few pot plants, such as Early Rose Potatoes, hand-picking or catching with a gauze net, would, we should think, be the most effectual means of checking their ravages. Dusting with ashes or lime might be tried.

Reports from Lisbon, under date Aug. 3, state that the ravages of the vine disease in the Provinces are great, although much good has been done by the use of sulphur.

### Garden Enemies.

To the Editor.

Sir,—I send you two specimens of garden enemies. One I presume to be my cockchafer friend in a more advanced state. The other is a stranger to me, and I found him on a rose bush between two twigs, and holding on fast at each end. I found two beautiful asters fading one day, so lifted them off the ground, as they were quite loose, then hunted till I found a cockchafer villain, which I despatched at once, and replaced my two plants, and they have quite recovered, doubtless owing to the abundance of rain.

With regard to the gooseberry and currant caterpillars, I can hardly get them from neighbours, unless they fly a good distance, as the nearest garden to mine is some twelve chains on the one side, and five or six, with the river between, on the other.

When I first came to this place, and for twenty years afterwards, we never knew what the rose slug nuisance was. Now it is an unfailing plague, and I only regard the other as an additional one.

F.

Fergus, September, 1869.

NOTE BY ED.—You are quite right in considering the specimen sent to be the cockchafer in a more advanced state than before. It was in the pupa condition, which corresponds to the chrysalis state of butterflies, and from which it would soon turn into the perfect beetle. A large number of the "white grubs" become beetles in the autumn, and remain underground till the first warm evening in May, while some continue in the grub state until spring. These insects take three years to mature, and continue in the larva state nearly the whole of that time. The other specimen was a Geometer caterpillar of some kind, but as it was not packed in a box, and postmasters have no mercy on natural history specimens, it was too much smashed to be recognizable. Geometer caterpillars, loopers, span-worms, or measurers, as they are variously called, derive their name from their mode of locomotion. Unlike most caterpillars, they have no feet under the middle of the body, and so are obliged, when walking, to curve up the middle of their backs something like an excessively irritated cat. They frequently assume very grotesque postures, and mimic inanimate objects, such as twigs, and the like, to escape observation. The saw-fly, that is the parent of the gooseberry caterpillar, possesses very excellent powers of flight, as is proved by its gradual spread over the whole of Canada, and many of the Northern States. It was originally imported somehow or other from Europe. If our human immigrants would only increase and multiply in the same ratio, the vast undeveloped western country would soon be too small for them, and we should require emigration instead of immigration agents.

## Correspondence.

### Norway Oats.

(To the Editor.)

Sir.—I send for your inspection a few heads of Norway Oats, also for comparison a few heads of the common variety grown in the same field.

The Norway Oat is in some respects the most extraordinary grain that has come under my notice. Three or four points are worthy of remark. First, the astonishing tendency manifested for stouling out. Second, its great prolificness—the heads counting from 100 to 300 grains. Third, the peculiar form of head—the panicles not having that spreading habit of growth common to other varieties. Fourth, the inability of straw to sustain or hold up the great weight of grain. I do not believe the straw, under the most favourable circumstances, can support the great weight of grain yielded, except upon the poorest soils perhaps.

I procured a peck of seed from New York last spring, and sowed in drills upon a rather poor light soil, without manure. The piece presented a magnificent appearance when in full head, but was blown flat by one of our August storms. I also procured from G. A. Deitz, seed wheat farmer of Pennsylvania, the principal varieties of spring wheat, and other grain, including Surprise, White Swedish, White New Brunswick and Black do., Oats; none of the varieties being worthy of note except in the excellence of the quality of the grain. "Norway Oats" from the same source did not prove true to name.

J. F. C.

L'Original, Oat., Sept. 4, 1869.

Note.—The specimen of so-called Norway Oats enclosed was remarkably fine, possessing, as our correspondent mentions, the one-sided growth of the panicle, which is also characteristic of the Polish oats. The kernels are of medium size, but the weight of the head is very remarkable from the number of grains. There has been so much worthless grain sold under the name of Norway oats, that we should advise farmers to be careful of whom they procure their seed, and not to be too venturesome in the extent of their experiments with these lauded varieties.

### Gorse and Broom.

To the Editor.

Sir,—I noticed, in a late issue of your journal, a communication from Mr. McPhail, concerning his neighbour's whin bush. I have had both whins and broom growing here for twenty years or more. They were eight or ten feet long, and two or three inches in diameter; but they will not live if exposed to the frost in winter, as I once saw them and heath or heather partially frozen during a severe protracted frost in Scotland. I save

mine by bending it down with rails or poles, and covering it with a little straw before the snow falls, and raising it again in spring. I got them both frozen one winter, when there was no snow for a long time; but I sowed them again, and have them both growing now. They are yellow with blossom every summer, and bear large quantities of good ripe seed. The whins are of no use here, but the broom is said to be a valuable remedy in dropsy, and many have come a long way to obtain it.

WILLIAM BROWN.

Lake Shore, Sydenham.

Owen Sound, Aug. 31, 1869.

SORREL.—A subscriber at Denbigh enquires how to get rid of sorrel in his meadow without breaking up the grass. It is easily done. We have found an application of unleached ashes, either alone or mixed with plaster, when it is sown in spring, will get rid of sorrel. Sow from one to two bushels of dry unleached ashes per acre, thickest on the spots most overgrown with sorrel. If one application does not get rid of the weed, a second dose next year will generally complete the work.

ADVERTISEMENTS FOR THE CANADA FARMER should in every case be sent in to the office of publication not later than the 7th of each month. Particular attention to this notice is requested, as advertisements received after the above date will be too late for insertion.

## The Canada Farmer.

TORONTO, CANADA, OCT. 15, 1869.

### The Provincial Exhibition.

The Agricultural Association of Ontario and the citizens of London have every reason to congratulate themselves on the brilliant show of 1869. The Exhibition, though held almost at the extreme western end of the Province, has proved an entire success both as regards the show itself, as an exponent of the vast agricultural and mechanical resources and material progress of our country, and also as showing the increasing interest manifested by the people, who attended in greater numbers than ever before. Complaints were made—we think unjustly—of the refusal of the Great Western Railway Company to take passengers who had excursion tickets on all and every train. Having been to the New York State Fair and Michigan State Fair, as well as our own, we were witness to the great difficulties and delays experienced on all the railways in providing sufficient cars to carry the enormous crowds flocking to

the fairs. It could hardly be expected that any railway that makes a business of carrying large numbers of through passengers travelling between the Atlantic and Pacific oceans, would consent to make slow trains of their fast express trains, that are timed to make regular connections, and stop only at very few stations, for the accommodation of a few country people who had plenty of time at their disposal, and could afford to wait for their own trains. The G. W. R. Co. so timed their trains that those arriving at London in the morning could return the same evening if they chose; but of course the crowding on them was great, mainly for want of the use of a little common sense on the part of people coming to the fair, many of whom had perhaps scarcely ever travelled on a railway before.

There are those who advocate a permanent location of the Exhibition at some central place, but the present plan of holding it at points already possessing the necessary buildings has answered so well that we should not wish to see a change. Farmers generally do not care to go far to see a fair, even of the best, and the plan of changing allows those in each section of the country to have a chance to attend when their turn comes.

The character of this year's show, in almost all the departments, has been fully up to the mark, and in some cases shows a satisfactory progress.

The stock classes were generally well filled, and it is noticeable that there are more individual exhibitors in them now than formerly, and the lion's share of the prizes does not fall, as once it did, to one or two kings of the cattle ring. Another thing is worthy of remark. The judges are learning experience, and a monster of fatness in beef or mutton cannot now carry the prize against a well-bred, fine animal that, though not fat, is of pure blood and high lineage, for it must be admitted that the higher and purer bred an animal is, provided it has no defect, the more likely are its descendants or its crosses on native stock to prove of first-rate excellence.

The exclusion of Mr. Cochrane's and Mr. George Miller's fine animals from the Exhibition was a serious mistake, especially as, at the last moment, local exhibitors were allowed to make entries. We fully admit the importance of a more rigid adherence to the rules in regard to making entries than has been the practice heretofore, but the sudden change, without notice, and the consequent exclusion of the best herd on the continent of America, recently imported animals, and

the property of the leading breeder in the sister Province of Quebec—considerations which should have ensured special courtesy and all possible latitude in the application of rules—was assuredly a grave error that has met with very general censure throughout the country.

We have never seen a better show, in many departments, yet still some were deficient, and notably the grain, which did not come up to former years. The short-horn class has also exhibited finer animals in 1860, 1861, and 1863, when Mr Stone, Hon. D. Christie, and Mr. Cochrane brought out their fresh importations. This year Mr. John Miller, of Brougham, was the only one who showed recent importations, and he had but three animals, though they were of first rate excellence. It would be worth while for the Association to do as is done at the New York State Fair—offer special prizes in some of the stock classes for the best animals imported from beyond the Province since the last exhibition.

It was very gratifying to see that in the implement classes the highly polished and flashily got up articles were ruled out by the judges, who awarded the prizes only to those who showed implements or machinery made for actual work rather than show. It was a good sign, also, that the competition in nearly every class of implements was larger than usual. Very few exhibitors had the field to themselves. There is, however, an unavoidable defect in the present system, arising out of the practice of awarding the prizes without any actual trial. In England the trial of the implements is a main feature of the exhibition; and without this practical test it is impossible to judge fairly of the merits of an agricultural machine. Last year, at Montreal, we noticed that every threshing machine was subjected to the test of threshing out a small load of grain. It may be objected that time would not allow of such a test, but an extension of the time is, for more reasons than this one, really necessary to the practical utility of our Provincial Show, and it by no means follows that all the implements should be tried each year. The plan of the Royal Agricultural Society might be adopted in this respect, and only one class of implements tried at each Exhibition. How much more satisfactory, under such a system, would be the awards, and how much better would the prize list then guide the farmer in his purchases.

The show of horticultural productions, and of field as well as garden vegetables, was, as might have been expected from the season, and the increasing attention

devoted to horticulture, really magnificent, and it is a pity that such tangible evidence of the capabilities of the Canadian climate could not be more widely displayed, and especially that it could not be brought home to those who conceive of our country as an inhospitable wilderness of pine and snow.

In the mechanical department the show was fully equal to its predecessors. The want of space for adequate display, and of time for profitable examination, is increasingly apparent in this, even more than in the agricultural department of the Exhibition, and will, no doubt, eventually lead to important changes, if not in the *local*, certainly in the arrangements of these great yearly gatherings of the industry, productions, and population of the country.

#### The Stapleton Salt Works.

Being in Huron county for a few days, we took advantage of the circumstance to visit the Stapleton Salt Works near Clinton.

The well from which the brine is obtained, is situated on lot 33, 1st con. Tuckersmith, about 1½ miles from Clinton station. It is 1,180 feet deep, the last 30 feet being a bed of solid salt, and lies in a hollow between two high hills close to the Bayfield river. It is owned by an English gentleman named Ransford, who also owns 3,500 acres of land adjoining. The brine is pumped from the well by an engine of 16 horse power, to a height of 1,235 feet from the bottom of the well to the level of a reservoir at the top of the hill, about 200 yards distant, where the salt block house is built. The pressure at the bottom of the pump is 616 pounds to the square inch. From the reservoir the brine, which is very strong, indicating 100 degrees on the salometer, or as salt as it can possibly be, runs into two large shallow iron pans in the block house, 20 x 70 feet, and 12 inches deep; underneath these pans are three furnaces, which are kept going all the time, night and day, and consume 12 cords of wood per twenty-four hours. The heat applied evaporates the water from the brine, which ascends through ventilators in the roof above. The chimney is of brick 8 feet square at base, and 46 feet high, to make sufficient draft. The strata of salt next the bottom and sides of the pans becomes hardened and somewhat discolored, and is called scale, only the clean salt above this hard scale being taken out and put up in barrels for sale. The salt when it is boiled slowly comes out in coarse crys-

als, beautifully white and semi-transparent. Two kinds of salt are put up, both of the same strength and quality, and sold at the same price, but one is fine for dairy and table use, the other is in the crystals, and is mostly used by the pork curers, and for making brine, for which purpose it is equal to the best Liverpool in strength, and much cleaner and purer. The scale salt is thrown outside, and is principally in solid blocks, which must be crushed, when they are barrelled and sold to the farmers at a cheap rate, to use as manure for the soil. Those living near enough, carry it away by the waggon load, and so save the expense of barrelling and teaming to the station, which is a considerable item. Solar evaporation has been tried, and we saw one large pan of salt going through that process; but it is found to be too slow, as only 18 barrels of salt per year can be made from each pan, while by the use of fire heat they are now making 120 barrels of 280 pounds per day, and the demand is so great that no orders can be filled, except by each waiting till his turn comes.

The buildings comprise Derrick over well, 60 x 14, 50 feet high; salt block house, 100 x 54; store-house for salt, to hold 1,600 barrels, 44 x 32; saw mill with steam engine of 36 horse power, for cutting stave bolts, logs, &c.; coopers' shop to make barrels; stables for four horses and three yoke of oxen, used in drawing firewood and taking salt to the station; four cottages for hands about the works. About 40 hands altogether obtain work through the salt well, but a siding is going to be built from the store-house direct to the railway, which will considerably reduce the expenses, and do away with the necessity of employing teams to carry so heavy an article to the station, as the cars can then be loaded directly from the store-house, thus reducing the cost of the salt to the consumer very materially. The average price of the fine salt just now is \$1 20 per barrel at the station; but the price varies considerably at times; the demand now exceeding the supply, may cause a rise when fall and winter packing commences.

#### Crops in Great Britain.

Mr. James Sanderson's annual report on the crops appears in the *Times*. He estimates the wheat crop to be four bushels per acre, or about 13 per cent., below the average, and ten bushels per acre, or about 28 per cent., under last year's crop; but believes that a considerable portion of this deficiency will be met by the additional acreage under wheat, as of all the cereal crops. Barley is

most variable. Comparing this year's produce with that of last year, there is this year less wheat, but more barley, hay and straw, and altogether a greater yield of every description of stock food. Instead of the burned pastures of last year, there is this year the richest herbage; instead of barren fallows, there are abundant root crops; instead of grass seeds which were never germinated, there are luxuriant infant plants; and sterile market gardens have been succeeded by an abundant yield of every description of vegetable produce. To the British farmer generally, this year will prove more profitable than the last.

### Crops in Western Ontario.

During the first week of September, we took a trip through several of the counties lying along the Grand Trunk, west of Toronto. In Peel, Wellington, and Waterloo, the grain crops had been mostly harvested, with the exception of spring wheat and oats, of which a few fields were standing out in sheck. The farmers generally through these counties seem to have done well, and the grain crops will be about a fair average, especially in Waterloo, where we noticed that the German settlers take particular pains to keep their farms in good order, and free from weeds. They raise a great deal of flax, which is a good crop. In Perth much of the spring grain was still standing uncut, though nearly ripe, and so far as we could learn, the farmers had little to complain of. Lambton being mostly of a light soil, the grain crops had been harvested, and would be fair, though not equal in acreable yield to those of Perth. Huron is very backward with its spring grains; peas and barley were still to be seen standing in the field; oats were being cut in some places, though much of it was still unripe; spring wheat, of which a large breadth has been sown, is this year unusually late, few fields having been cut up to September 7th, and many fields were still quite green. We found the fall wheat crop was being thrashed out, and great is the disappointment at the yield. Owing to the wet season, much of the fall wheat was more or less rusted, and although standing thick on the ground, with ears apparently well filled, the thrashing machine tells the tale of grain much shrunk, with a great deal of small, evidently abortive grains. Many fields will not yield over half what was expected. Barley, where thrashed, has generally given a heavy yield, but much small grain, and the sample dark coloured.

The root crops are getting an overplus of moisture, and potatoes, especially the old sorts, are rotting badly. Whole fields of

potatoes will have to be left undug, as even where there is a heavy crop, there are so many rotten ones that it will not pay to pick them out. Most of the tops are a mass of blackened rottenness, and the disease is fast spreading to the tubers. The Peachblow seems to have run to stalks, though as yet that variety shows little disease. The great want is proper drainage; and while in ordinary seasons such culture as is given to this oculent succeeds, it is manifest that it cannot succeed on lands that retain moisture to the extent most soils have done this year. The new varieties, so far, seem to have escaped the rot; but then few farmers have them, and it would be well if they would take advantage of the lesson learned this year, and plant largely another year of Early Rose, which seems to be even better than was claimed for it, and has surprised us in its good qualities as well as productiveness. It is perhaps rather against preconceived ideas to harvest potatoes in August, but it must be seen that an early ripening kind, if good in every other respect, is decidedly preferable, and runs less risk than a late growing sort.

### Notes on the Weather.

The cold, wet summer seems to have given place to a dry, warm autumn. The past month of September has been a most delightfully pleasant one, and the late spring crops and fruits have had just the weather they needed to ripen up to perfection.

As yet no hard frost has come, and the face of the country looks bright and green. Heavy dews have fallen at night, and on two or three cold mornings hoar frost has been noticeable, but not sufficient to kill tomato or melon vines.

The average temperature of the month has been  $60^{\circ} 7$ , being  $2^{\circ} 8$  warmer than the average, and  $4^{\circ} 1$  warmer than 1868. The highest temperature was  $81^{\circ}$  on the 20th, the lowest  $34^{\circ} 4$  on the 28th.

There have been 11 clear days, and 19 days cloudy, or partially so, with winds mostly from a south-easterly direction.

The fall of rain has been 4.027 inches, being 0.345 greater than the average, of which 2.350 inches fell on one day, the 7th.

While we, together with most of the continent north of  $42^{\circ}$ , have been complaining of too much wet, those south of that line, especially in the vicinity of New York, Philadelphia, Washington, and all through the Southern and Eastern States, have suffered greatly from a long-continued and severe drought, which has lasted since the middle of September.

### Editorial Notes.

It has been generally thought that it will not pay a farmer, who farms only on a small scale, say 50 acres, to invest money in expensive labour-saving implements, such as reapers, mowers, thrashing machines, &c. But this is a mistake, as a man who has not a large farm, requiring all his time and attention to look after, and also a large number of labourers and teams to cultivate and save his crops, is just the one who can find time to make money and add to his resources, and often to his acres, by purchasing a reaper, mower, hay tedder or thrashing machine, and when he has done with cultivating his own small crop of grain or hay, he can earn a good sum by assisting his neighbours, and more particularly those large farmers who find it so difficult to get enough of reliable labourers and labour-saving implements, and work them to advantage in the short time in which they have to get their work done. Many a man who can ill afford to pay for a reaper, &c., out of the earnings of his small farm, might buy a machine on credit, and pay for it the first year with money earned outside his own farm in this way, and in after years be able to cut or thresh his own crops independent of any outside assistance, and at no additional heavy outlay beyond the ordinary amount of farm capital and expenses.

**PRIZE LIST.**—The publication of the Prize List of the Provincial Exhibition is deferred until the next issue of the CANADA FARMER, in order that it may be officially revised, and given in a complete and correct form, freed from the inaccuracies that are quite unavoidable in the first issues published in the hurry and press of other exhibition business.

**SALE OF SHORT-HORNS.**—We direct attention to the advertisement of James N. Brown & Sons, of Berlin, Sangamon Co., Illinois, who announce an important sale of thoroughbred short-horn cattle, and a fine lot of Southdown sheep, bred from importations of 1867. We are informed, on authority in which we have the greatest confidence, that the cattle offered for sale are a very superior herd.

**ONTARIO VETERINARY COLLEGE.**—This valuable institution will reopen for senior students on the 25th of October, and the classes for junior students will commence on the 5th of January next. The number of young men who attend this school of veterinary art is yearly increasing, and the graduates are becoming settled, and doing good service, in various parts of the Province. The instruction given is thorough, and the teachers in the various departments are eminently qualified for their tasks. The various branches of science embraced in the course are taught by the principal, Mr. A. Smith, assisted by Professor Buckland, and Drs. Bovell and Thorburn.



## Agricultural Intelligence.

### The Provincial Exhibition.

The Provincial Exhibition held in London during the fourth week of September, from the 20th to 25th inclusive, was filled by a larger amount of entries, and attended by a greater number of visitors than any previous show during the history of the Association, was highly meritorious in the character of the display, and altogether successful in its results. We proceed to give a detailed account of the various departments of the Exhibition, beginning with the

#### HORSES

The entries of horses in the various classes were, as usual, very creditable to the Dominion. In the heavy draught section there were fifty-four entries, therefore this important class was very well represented. A great many of the animals exhibited were imported from Britain. In the class for aged stallions seven excellent specimens were shown. Mr. Fisher has imported a horse "England's Glory," which was awarded the first prize in the three year old class last year at Hamilton. He is a very fine horse and has received nine first premiums at various exhibitions. Mr. Fisher also exhibited "Merry Farmer," a four year old horse bred by the late Mr. Poirance, of Scarborough. In this class was a very fine specimen of the Clydesdale horse, he is a beautiful brown, is four years old, and weighs upwards of two thousand pounds, and rejoices in the name of "Robert Bruce." This horse is the property of Mr. James Johnston, of Burford, a well known importer of heavy draught horses.

Mr. Thomas Evans exhibited "Cannaby," imported two years ago from Dumfriesshire, Scotland. He is a very fine bay horse, and the winner of several prizes.

Mr. Moffat, of the township of Reach, also showed a good horse by imported Comet.

In the class for three year old stallions there were only two entries, Mr. R. Ferris, of Richmond Hill, showed his black horse "Scottish Chief," bred by Mr. Hogg, of Aberdeenshire, Scotland, and imported recently by Mr. Ferris. "Scottish Chief" is sired by "Eclipse," and his dam is by "Coldstream Lad," and in July last he gained the first prize at the Aberdeen County Exhibition, and the same prize at the Highland and Agricultural Society's Show held in Edinburgh. Mr. Ferris is certainly deserving of credit for his enterprise in importing such a valuable animal.

Mr. James Laurie, of Malverna, Scarborough, showed two 2 year old entire colts, imported last season, and purchased by him from Mr. Muir, of Hardington Mains, Leith, Scotland. Mr. Muir's name is famous throughout Britain as an owner and breeder of first-class Clydesdale horses. Mr. Laurie's colts are certainly very fine specimens, and must prove a valuable acquisition to the breed of horses in Canada.

Mr. James Kitchen, East Whitby, again exhibited his colt by imported "Netherby," that gained the first prize as a yearling at the Provincial Exhibition of 1868. Of yearling colts there were seven entries, and all of them were worthy representatives of the heavy breed of horses.

In the class for Three year old Mares, Mr. Davidson, Pickering, was again present with

his Canadian bred mare, that took the first prize as a two year old, at Hamilton, last season. He also showed a yearling filly, and his two year old entire colt, "Prince Royal," sister and brother to the above mentioned. These valuable young horses are out of his imported mare "Darling."

Of two year old and yearling fillies there were ten entries.

The Brood Mares were also well represented.

Mr. F. W. Stone, of Guelph, showed a very fine improved Suffolk mare, and Mr. Duncan MacDonochie, of Clark's Co., Durham, exhibited two mares, one aged five years, and her dam aged fourteen; the younger of the two gained the first premium last year.

Mr. Davidson showed a yearling out of the above mare, by imported "Cornet." We consider the show of heavy draught horses to surpass the exhibitions of previous years.

Thorough-bred horses were only a middling exhibition. In the whole of the classes there were only fourteen entries. In the class for 2 year stallions, Mr. McArthur showed "The Taster," imported in 1863 by Mr. Doylan, of Oak Ridge. "The Taster" is a very nice looking blood horse, and has carried off the first premium at two former Provincial Exhibitions.

Mr. Cole Thomas had "Young Trumpeter," by "Trumpeter," out of the well-known mare "Matilda Jordan." He also showed a three-year old filly, sister to "Young Trumpeter." Both of these horses show some very good points of the blood horse, but are too small to be very valuable for breeding purposes. The show of blood horses was not quite up to the mark, and did not bear a favourable comparison with some of the other classes of horses.

#### ROAD AND CARRIAGE HORSES

This class is generally well represented at our Provincial Exhibitions, and this year did not appear to be an exception. The entries were numerous, and many of the animals shown were very fine. In the first class on the list, Mr. Coote showed "Black Hawk Morgan," formerly the property of Mr. Davis, of Richmond Hill. "Black Hawk" is of fine size and colour, and a fast and beautiful horse. He carried off the first prize in his class at the Exhibition in Hamilton in 1864, and in Kingston in 1867.

In the same class Mr. Grand, of Toronto, showed "Turk Chief," sired by "Black Hawk." He is a very fine specimen of the carriage horse, stands 16 hands high, and he inherits the style and action of his sire. Mr. Marshall, of Elma, showed a very good horse. In this class also was "Whalebone," a fine powerfully built horse with good action and colour; he has taken several prizes, amongst which was the first prize for three year olds at the last year's Provincial Exhibition. "Whalebone" is the property of Mr. Orr, of Georgetown.

Mr. Laurie exhibited the brown coach-horse "Phenomenon"—a horse of fine symmetry and muscle, and the sire of a great many good horses.

Mr. George Stevens, of Galt, had a good horse in "Royal George," four years old, and a previous prize-taker.

In the three year old and two year old classes, the well known horse Warrior was well represented by his numerous progeny. Mr. Laidlaw and Mr. John Irwin, of London township, and Mr. James Warren, of Westminster, showed very good specimens of the carriage horse. Mr. John Scott, Lobo, also exhibited a valuable animal by Anglo-American. In these two classes were many entries, and the competition was well worthy of a Provincial Exhibition.

Amongst the brood mares we noticed a very fine, well developed chestnut mare, the property of Mr. McArthur, of Westminster; and Mr. Coles also showed a very useful looking animal in this class.

In the various classes of road and carriage horses there were upwards of two hundred entries.

#### AGRICULTURAL HORSES

In this section there was an excellent display, both as regards quality of stock and numbers exhibited. There were about one hundred entries in the different classes. Mr. Teasdale and Mr. Garbutt both showed excellent horses, well worthy of special notice.

Mr. Addison, of the county of Peel, had two very fine entire colts, one year old, and sired by Mr. Addison's imported horse, Hard Fortune. One of these colts is the recipient of several prizes at township and county exhibitions.

Mr. McLatt, Reach, showed a very good, strong three year old filly, but badly blemished from an injury she received last fall.

The Judges commenced their awards on Wednesday. In the class for aged Stallions, Taster received the first prize. In the three year old class, only one horse was exhibited, viz: Mr. Jas. White's colt Terror, by Prince, out of Montana. Montana is by Flatcather, out of Our Nell, by Nutworth. Our Nell was imported from England by Sheriff Grange, of Guelph. Terror is a very fine horse, and the Judges awarded him the diploma for the best blood horse of any age. Mr. White also exhibited as brood mares, the well known "Augusta" and "Liberty." Mr. White has a large and very fine lot of thoroughbred horses.

In the class for aged stallions of the heavy draught breed, Mr. Fisher's horse, England's Glory carried off the first prize. For three year olds, Scottish Chief was deservedly awarded the first prize, and Mr. Laurie's horse received the second.

For two year olds, Mr. Mason gained the first prize with his imported colt sired by the same horse as England's Glory.

Mr. Fisher's horse also gained the diploma for the best horse of any age.

Carriage horses, matched pairs, thirty-three entries; several of the teams were very fine and very well matched, with good action. Mr. Nicols, St. Mary's, got the first prize, and Mr. Battersly, Simcoe, second with a pair of blacks, Mr. Cootes had a pair of bays, very fine goers. Mr. Cootes was awarded the third prize. In our opinion Mr. Cootes' horses were the best on the ground. It was the general opinion of on-lookers that either of Mr. Cootes' pairs was worth double the money of either the first or second prize teams.

In the class for single carriage horses, there were over seventy entries. Mr. Hendrick, of Hamilton showed two very fine horses, one of them has taken prizes at previous Provincial Exhibitions. Mr. Hendrick's horses gained the first and second prizes.

#### CATTLE

SHORT-HORNS—Major Gray, of Beachville, showed a two year old roan bull, Lord of the Hills, also a yearling, white bull, of Booth blood, Captain Graham, lately purchased from M. H. Cameron. Colonel Taylor, of London, had on exhibition his bull calf Proud Duke, which seems a remarkably fine little fellow of high lineage. He is the only bull in Canada of nearly pure Duchess blood. He is of a rich roan colour, and his hair is of that peculiar curly kind so much thought of in England. His skin is soft and

handles nicely. H. Jeffrey, Whitby, showed a light roan two year old bull, Mayfield Lad. John Snell, of Edmonton, showed ten head of short horns. His Kentucky importation, Loudon Duke, was shown in the three year old class and will be hard to beat. Prince Imperial was shown in the yearling class, and Loudon Tom in the bull calf class, as also was Telegram. In females he showed a four year old cow, Alma, two year old heifer Clara Barton, yearling heifer Rosamond, heifer calves Merilla, Fairy Gem and Daisy Barton. Taken all through, Mr. Snell's were a fine lot of animals. James Fisher, of Hyde Park farm, near London, showed a really fine cow in aged class, Dolly Dutton, red, with some white, as also a red and white cow, Kitty, yearling heifer, Sallie, and bull calf, Generalbrook. Samuel Barber, of Guelph, showed a bull calf, Prince Albert, a very nice looking animal, got by Grand Duke of Moreton, from Ella F. W. Stone, of Moreton Lodge, showed nine head of all ages, including some fine animals.

**HEREFORDS.**—F. W. Stone, Moreton Lodge, Guelph, showed 20 head of fine Herefords as one can wish to see, and seemed to have nearly the whole field to himself. This breed though not as large as the Short-horns are very fine cattle, handling well and maturing early.

**DEVONS** as usual were a class of which it would be difficult to decide on the merits of the animals shown, so nearly alike are they and so closely do they breed to a point.

H. H. Spencer, Brooklin, had eight head of Devons. His two year old bull "Prince of Wales," is a fine animal.

Mr. J. J. Peters, London, showed eight head of Devons. Ridd, Guelph, had six head, which included some of the best in this class. His animals are mostly North Devons, with the characteristic fine form, soft skin and long thin horns, of this tribe. Peter Scott, Aldboro', showed a three year old bull, Jno. Pincombe, Westminster, showed 19 head, also North Devons. Richard Foley, Bowmanville, showed two head.

**AYRSHIRES** were not numerous, nor did we remark any particular excellence about them. James Lawrie, of Scarborough, had two very fine cows and some young stock, fourteen altogether. William Wheeler, of Scarborough, showed fifteen head, and among them some very fine young bulls and heifers, also the cow of which a cut was given lately in the CANADA FARMER, the bull then given having been sold.

**GALLOWAYS** do not seem to be gaining in favour to the extent we at one time expected, and there was a falling off in the numbers shown in this class, though to see them one would think a stock so hardy, easily kept, and of early maturity and good size, would be gaining favour. But they do not cross well on our native stock, like the Shorthorn or Ayrshire, which is a serious drawback. Thomas McCrue, of Guelph, showed 7 head; Jim Hood, of Guelph, 10 head of very fine animals; Arthur McNeil, Vaughan, 10 head, also good. In fact, all were good. John Kerr, Westminster, showed 8 head.

**GRADE AND FAT CATTLE** as a class, were both numerous and good, nearly all the animals shown being crosses from Shorthorn on native stock, and some of them seemed, for size, appearance, and quality, to be about as good stock as can be desired by the ordinary farmer, either for the dairy, or turning into beef. Jno. Kerr, of Westminster, showed a cow of great size and fine form. Mr. H. Young, of Guelph, showed a tip top cow, and remarkable for size and fatness. She was both large and handsome, and her weight is 2,518 lbs. He had seven other cows and heifers besides, all good animals.

J. Fisher, Hyde Park, showed two fine grade cows. Mr. Watt, of Nichol, showed a short-horn cow Clara, in the fat cow class, the finest looking though not the largest in this class. She is a pure-bred short-horn, and shows off to great advantage the fine points of this breed as a beef animal and gets 1st prize.

The following notes, taken in the show rings on Wednesday, September 22nd, during the examination of the judges, give in brief the results of the inspection:—

About 2 30 p. m. yesterday the judges in the Cattle classes commenced their duties. The chief attraction seemed to be the Short-horn ring, about which a large crowd had gathered.

**SHORT-HORNS**—Judges.—James Craig, Cornwall; Col. Mitchell, Port Credit; Geo. Sproat, Tuckermith; James Vine, St. Catharines.

**AGED BULLS.**—There were but 3 brought in. Mr. Stone's Grand Duke of Moreton not appearing, though entered. They are but an indifferent lot, except Mr. George Wood's red bull Nelson, which gets 1st prize at once. Peveril taking 2nd and Lord Palmerston 3rd.

**THREE YEAR OLD BULLS.**—Eight came in. Taking this section all through, they are a fair lot, and the Judges have some hesitation about deciding 2nd and 3rd prizes, but the 1st prize is at once awarded to Mr. John Snell's Loudon Duke, which seems to be decidedly the best bull on the ground, and afterwards takes the sweepstakes prize. Jas. Moffatt, Galt, takes 2nd with Bleuheim Star, and W. B. Barker, Paris, 3rd with Bellet Will 5th.

**TWO YEAR OLDS.**—A fair lot though but four go in. J. Miller's Oxford Mazurka takes 1st; Wm. Jeffrey's Mayfield Lad 2nd; Jas. Nimmo's Grand Trunk, 3rd.

**ONE YEAR OLDS**—Seven entered. A very nice lot of young bulls indeed, including some recently imported Fawsley Chief gets 1st; Canadian Prince, 2nd; and Prince Imperial 3rd. This morning, however, another judge is added to the four at work yesterday, and on a review the prizes are changed: Canadian Prince being put 1st; Fairy Duke 2nd; Prince Imperial 3rd, leaving Fawsley Chief, Mr. Miller's last importation and an animal bred by Mr. Torr, of Aylesbury Manor, out in the cold.

**BULL CALVES**—No less than 15 enter the ring in this class, and there are some fine ones among them, while at the same time we remark some that had better have been left at home. The judges after going round among them could not decide yesterday, so this morning another judge is added and the awards brought out again. After a good deal of talk the 1st prize goes to Mr. Snell's Telegram; 2nd to Mr. Snell's Loudon Tom; 3rd to Mr. A. Carmichael's Highland Chief.

**AGED COWS**—This is a good class. Mr. Miller's Gola and Lorena, two red cows from Illinois, easily take 1st and 2nd prizes respectively. They are small but highly bred, showing to advantage blood vs. beef. Duchess 5th, a large rich roan cow in high condition, owned by J. S. Thomson, Whitby, takes 3rd prize.

**THREE YEAR OLD COWS.**—Six entries. Mr. J. Miller's two red cows Nelly Bly and Isabella, at once got 1st and 2nd prizes, respectively; the third is not given.

**TWO YEAR OLDS.**—Five enter. J. Snell takes 1st with Clara Barton, a roan cow from Baron Solway; 2nd prize goes to Queen of the May owned by J. S. Thomson, Whitby; 3rd is taken by Miss Margaret 4th, belonging to Mr. Stone's herd.

**ONE YEAR OLD.**—Eleven are entered, but only four come into the ring, and Mr. J.

Miller's highly bred and handsome roan heifer, Ruberta, bred by Messrs. Garne & Son, of Gloucestershire, England, one of the famous Moss Rose tribe, got by Masterpiece out of Rose of Clitheroe, is at once told to stand aside, and the 1st prize ticket handed to her. Mr. Stone takes 2nd with a nice red heifer Cambridge 10th; and Mr. Snell 3rd with Rosamond, a heifer that took 1st last year as a calf.

**HEIFER CALVES** (under one year).—9 enter the ring; there are so many good animals in this lot that the judges find it no easy matter to decide upon their respective merits, and after a long consultation, and even calling in extra advice, award Mr. Snell's Daisy Barton 1st prize, Mr. Stone's Miss Margaret (5th) 2nd prize, Mr. Snell's Fairy Gem 3rd, and highly commend a fine red heifer, Loudon Queen, owned by Mr. C. Walker.

**HERO PRIZE**—Two very fine herds enter for this, and as there are now another set of judges they go through the animals with much care. Mr. J. Miller enters bull Oxford Mazurka; cows and heifers Gola, Lorena, Isabella, Nelly Bly, Ruberta. Mr. Snell enters bull Loudon Duke; cows and heifers Alma, Clara Barton, Rosamond, Daisy Barton, Fairy Gem. The prize, finally, is awarded to Jno. Snell, of Edmonton.

**HEREFORDS**—As there are but few entries in this class, the judges, Messrs. Joseph Kirby, Esqueving, and A. Hager, do not take long to get through. The animals are all good, being principally, if not all, bred by Mr. Stone, of Guelph, who sweeps the prize list.

**DEVONS**—Take them all through, they are a first-rate class, and the judges take a good deal of time, and had not got through when we left the grounds; but the prize list will show who were successful.

**AYRSHIRES**—There are not animals enough in this class to take all the prizes; but in the male animals Mr. Wheeler, of Scarborough, carries all before him, while in the cow classes Mr. Jas. Lawrie, of Malvern, takes several prizes with animals just brought out from Scotland, and five ones they are. Mr. Wheeler finally takes the herd prize in this class, which is highly commended by the judges.

**GALLOWAYS**—A. McNeil, of Vaughan, takes 9 first prizes and also the herd prize in this class, which comprises many fine animals, though but few of them in comparison with former years.

**GRADES**—In this class, though the prizes are but for females, the number of entries is very great for the amount of the prizes. Some really good animals are shown; at the same time, there are many poor ones.

**AGED COWS**—28 enter. Jno. Miller, of Broughan, a noted breeder of short-horns, gets 1st prize; H. Young, of Guelph, 2nd, with an animal that ought to go in the fat class. J. S. Thomson's 3rd prize cow is a good one.

**THREE YEAR OLD COWS**—12 enter. The 1st and 2nd prize cows are roan; the 3rd is a very handsome red, which ought to get 1st.

**TWO YEAR OLD HEIFERS**—Only 8 come in. A red and white and a rich roan, shown by J. S. Thomson, are beautiful animals, nearly pure short-horn, and deservedly get 1st and 2nd prizes without hesitation; the 3rd prize is a fair one.

**ONE YEAR OLD**—J. Miller and J. S. Thomson's 1st and 2nd prize animals are scarcely to be told from pure Short-horns.

**HEIFER CALVES**—A nice little lot of 8. All good.

## SHEEP.

The classes were all very well filled, and the stock good. James Smith, of Fairfield Plains, Burford, showed several pens of Merinos. Jno. Snell, of Edmonton, showed 5 pens of Cotswolds and 5 of Leicesters. John Miller, of Pickering, showed 20 head of very fine Cotswolds and 2 Leicesters. H. B. Spencer, of Brooklin, showed Hampshire and Shropshire Downs, and also South Downs. F. W. Stone, of Guelph, showed in Cotswolds and South Downs. John Long, London, had several pens of Leicesters, as has Hugh Love, of Hills Green; James Fisher of Hyde Park; Adam Oliver, of Avonbank; Geo. Douglas, Hlderton; W. Jeffrey, Whitby; Richard Tooley, London; C. Walker, London; B. Charlton and R. White, Telfer.

Our notes of the inspection and awards are as follows:—

**COTSWOLDS.**—Mr. Snell did not bring out his imported ram, considering him too valuable to be risked on the journey, but the shearlings and lambs, both male and female, took high honours in this class. He was beaten for first place by some recently imported animals belonging to J. Miller, of Pickering, that have come from some of the best flocks in England.

**LEICESTERS.**—This class as a whole was so good that there was much difficulty in coming to a decision on the merits of the different animals; but Mr. Snell took some first and second prizes.

**SOUTH DOWNS AND SHROPSHIRE DOWNS** were both good classes, though not well filled. The Southdowns were the handsomest sheep on the grounds. The Shropshires seem to be a sort of cross of Southdowns on a coarser woolled animal, giving larger carcass, coarser wool, with the dark faces of the Southern breed.

## SWINE.

The whole of the swine classes were not only well filled, but the animals shown were of first rate quality. W. Garbutt, Oxford Centre, had some Yorkshires, as had Wm. Wood, Exeter, and Brodie & Son, Rural Hill, N. Y. These last were very fine animals. A. Hebblethwaite, London, Berkshires; J. John, Thamesford, Suffolks; Geo. Roach of Hamilton, showed several pens of very choice imported stock in Suffolks, Essex and Berkshires; they were the finest swine at the show, and cannot be excelled anywhere. The Berkshires are the same that were imported in the *Dacia* last spring, and have now grown to a good size, and represent the breed to perfection. W. O. Telfer, of Telfer; John Cochrane, London; James Fisher, Hyde Park; R. Nichol, London; O. P. Maybee, Tilsonburgh; J. Lamb, London; J. W. Robson, Telfer; Geo. Bullen, Strathroy; A. Hetherington, Deerfield; John Long, Avon, showed Berkshires.

## POULTRY.

Judging by the number of entries in this class, 400, a larger number than at any previous exhibition, it was to be expected that the London show of this year would throw all others into the shade; but some disappointment was unavoidably experienced at the large proportion of empty pens, the lower tier being more than half vacant, and frequent gaps occurring in the others. As accommodation is provided in proportion to the number of entries, and the arrangements for the different classes are also made in accordance with them, it is extremely vexatious to those who have the management of these affairs when expected birds do not arrive. Intending exhibitors should more scrupulously fill their part of the engagement, and it would be only just if a forfeit were exacted from all

defaulters in this respect. The exhibition also suffered from the season at which it was held; old birds at this time are generally moulting and show to least advantage, while few chickens are sufficiently advanced to make an affective appearance. These causes somewhat diminished the *eclat* of the London poultry show, while the removal by their owners of some of the birds for the night, just before the visit of the judges, under the impression that the judging would not take place till the following day, may have affected the prize lists. Notwithstanding these drawbacks the show was altogether good, and in some sections particularly so.

Cochins were numerically very poorly represented; one splendid pair ofuffs belonging to Mr. Peters being all of the coloured variety that was to be seen in the adult class at the time of our visit. These were remarkably fine birds. Of the white variety Mr. Lamb showed two good pairs.

The light Brahmas were also a small class, and the specimens not first rate. Mr. H. M. Thomas, of Brooklin, showed a magnificent pair of dark Brahmas.

The grey Dorkings were a very excellent class, Messrs. Peters, Lamb and Bogue showing very fine birds. There were but few white Dorkings; but those of Mr. Bogue were remarkably good specimens in figure and purity of plumage. Mr. Hebblethwaite and Mr. Lamb had also some good birds of the same variety.

The created Polands were a motley class, some good birds and some very inferior.

The Spanish fowl were perhaps the best class in this department. There were a number of specimens, some particularly good presenting altogether a very fine display. Mr. Van Ingen's birds were remarkably good, and other exhibitors deserved distinction for the excellence of their specimens. Messrs. Rykert, Peters, Lamb and Bogue, all contributed to the meritorious character of this class.

Game fowl were also in considerable force, black-breasted reds largely predominating.

Mr. Vine and Mr. Rykert, both of St. Catharines, and Mr. Lamb, showed fine specimens.

Of the Duckwing variety Mr. J. Plummer, jr., had a remarkably good bird, which showed to no disadvantage by the side of another fine specimen imported by W. H. Bailey.

Of Hamburgs there was a small collection, which, however, contained some beautiful specimens, the golden spangled birds of Mr. Peters being pre-eminently so, as well as the silver pencilled by the same exhibitor. Mr. Cousins showed also a beautiful pair of the latter variety.

The French breeds were represented by a pair of Creve Coeurs, shown by Mr. Lamb, and Houdans by Mr. Van Ingen.

There was a considerable and rather miscellaneous display of Bantams. Mr. Peters showed a beautiful pair of Sebrights, which had no equal in the exhibition. Those shown under that name by Mr. Bogue, being as large as Hamburgs, should never have been entered as Bantams.

Turkeys, a class seldom largely represented in point of numbers, were in this instance no exception to the rule. Mr. Peters and Mr. Cousins both entered birds as wild, which were as usual lacking the distinctive marks of the wild species, though certainly gorgeous birds. Messrs. Lamb and Bogue had four specimens of tame birds.

Geese were shown in larger numbers than at any previous show, and made a very creditable display. Mr. Hebblethwaite's

white were specially beautiful and large. Mr. Havens, of Homer, and Mr. Bogue, also showed very fine white birds; and Mr. Lamb had a pair of magnificent grey geese. Mr. Peters showed a fine pair of the wild Canadian species.

In ducks, the Rouen and miscellaneous classes were most numerous, and of these there was a fine display. Good Aylesburgs were shown by Mr. Peters and Mr. Barnes, of St. Thomas.

The show of chickens and ducklings was, though not very large, remarkably good. Nearly all the varieties were represented. The white Cochins of Mr. Lamb; a pair of dark Brahmas, shown by Colonel Hassard, which gave promise of making magnificent birds; the grey Dorking of Mr. Peters, and Plumner's game, deserve special notice.

Pigeons were exhibited by W. J. Bailey, H. B. Alley, and C. A. Stone, of London, and among the collection were some good specimens.

There was, in addition, a tolerably large display of rabbits; a magnificent pair of lop ears, shown by Mr. Lamb, and a curiosity in two specimens of Egyptian rabbits, by Mr. Bailey, being the most noticeable.

## AGRICULTURAL PRODUCTIONS.

**GRAIN.**—For the Canada Company's prize there were fewer entries than we have ever before seen, and much to the credit of the judges the first or Canada Company's prize was this year awarded to a sample of Diehl wheat grown by Mr. James E. Hay, of Waterdown, Wentworth county. The sample was a very fine one of this variety, which, though perhaps not so white and thin skinned as the Soules, is in every respect just the kind that is needed for the wants of the country, and its dissemination by the Association will be of great benefit to many counties. The 2nd prize of \$40 given by the Association also went to a sample of Diehl grown by J. T. Blagden, of Carlisle, Wentworth county. 3rd prize to J. Smith, of Fairfield Plains, Brant county. The samples of two bushel entries were very fair; but taking the whole grain class through there was nothing remarkable about it except the absence of anything remarkably good.

**VEGETABLES.**—Never since the Provincial Exhibition started has there been a finer show of vegetables of all kinds. The field potatoes were especially numerous and fine. 15 samples of Early Rose were shown, of which the finest lot belonged to Lewis Springer of Hamilton. Several new varieties of potatoes were shown of which we noticed Patterson's Regent, Prince of Wales, Shaker Fancy, Colebrook Seedling, White Prolific, Malta, Albert's Own, Cote, Bishop's Seedling. There were 195 samples of potatoes altogether. The turnips, especially the Swedes, were remarkably fine, smooth, and well grown, as were also the field carrots and the Globe Mangels. Several very fine samples of Kohl Rabi, a root that might be grown more extensively with advantage, were shown. Of Pumpkins and Squashes there were fewer than usual, and those were not remarkably good; probably the cool weather has been unfavorable for them.

## DAIRY.

The implements of the dairy were on the whole in less force than usual, and from some mismanagement were very much scattered in different parts of the ground, and in the building. Alone in its glory, near the carriage house, might be seen L. F. Bungay's magnificent cheese vat, and other vats being shown in the building by William Dyson, of London, while in another part of the grounds the presses and churns separated the cultivators from the horse rakes. Presses of vari-

ous sizes and finish were on the ground. The churns and churn powers were of every variety. A brisk demand seemed to be excited for some of them, and J. H. Harris, of Kerwood, the proprietor of a very good one, received several orders on the ground, while we were looking on. W. Anderson, of Arva, had an ingenious though rather cumbersome looking dog-power, the force of which was communicated to cog wheels and rod, by the revolution of a broad inclined wheel, on which the patient quadruped monotonously nudged. A sheep might be trained to take the place and relieve the labours of "poor dog Tray." C. Briggs, of Hamilton, exhibited within the building a very good milk can and cooler combined, the lid of which is hollow, and double to hold ice, and slides down on the contents, so as to prevent the agitation of the fluid in travelling. It seemed very well adapted either for conveying milk to the factory, or for the purposes of a city delivery. Mr Harris, of Ingersoll, showed a milk agitator and cans for carrying milk.

Of dairy products there was a good display in the Agricultural Hall, under the same roof with the fruit and vegetables. There was a large number of factory cheeses, and the general quality was good. That which obtained the first prize, however, was to our taste by no means the best, being strong and off flavour, concave, and too soft. J. Collins, of Mount Elgin, showed some of much better quality, and E. Brenton, of Cannitton, near Belleville, had some that would be hard to beat; G. Hamilton, of Hilton, also showed an excellent cheese. The dairy cheeses were fewer, but of good quality, R. Manning, of Exeter, — Walker, of Ingersoll, and J. Frank, obtaining the prizes. Parsons, Fisher, and Collins, showed Stilton cheeses. Butter, in firkins and crocks, made a very creditable show, and mostly of good quality; but a mere looker-on cannot form a correct opinion of the quality of such commodities, which of course only the judges are allowed to probe and taste.

#### IMPLEMENTS.

As the importance of machinery in agriculture is yearly becoming more felt, it is to be expected that the implement department of our Provincial exhibitions should indicate an increased attention on the part of manufacturers to this branch of mechanics. There have been this year a larger number of entries in this department than even last year, which was distinguished by the excellence and variety of the implement show. All sorts of appliances for saving labour on the farms were to be seen on the fair ground, and some of the classes especially were remarkably well filled. In giving a somewhat detailed account of the various articles exhibited, it is convenient to follow the order of inspection, according to the arrangements on the ground rather than the order of the prize list. The most striking objects from their size and the space they occupied were the threshing machines, of which there was quite an imposing array. The Haggert Brothers, of Brampton, were on the ground with a thresher similar to that exhibited by them last year at Hamilton, among the chief excellencies of which are the admirable contrivances for guarding against accidents among the attendants. With this view the rods connecting the power with the thresher are coupled with the safety coupling ring, which exposes only a smooth revolving surface; a loose wooden sheath enclosing the tumbling-rod, and the wheels of the gearing working outwards instead of inwards as usual, preclude the possibility of drawing in garments or fingers that accidentally may come in contact with this part of the machine. Some improvements have been

added since last year. Among these the shoe is worked, not by gearing from the fanning-mill as heretofore, but by a crank and rock-shaft connected with the canvas rake-shaft. A more uniform and quieter motion is thus secured and power economised. A saving of labour is also effected by a sort of windlass and rope attached to the machine by which the straw carrier can be conveniently raised. The grain deliverer is well sheltered from chaff and dust.

McPherson, Glasgow & Co., of Fingal, also showed a thresher and separator, which is distinguished by the novelty of having a second cylinder, to the action of which the straw and what is left of the grain is immediately subjected after passing through the first, thereby securing a complete separation of all the grain from the straw, and preventing the waste which occurs more or less in most machines from unthreshed grain passing over into the straw stack.

Quite a number of other large machines, most of them by well-known makers, were ranged in a line with these. Among the exhibitors in this class were Maxwell & Whitelaw, of Paris; Hyslop & Roland, of Cuatham; Eastwood & Marr, Ingersoll; E. Leonard, London. A small and modest-looking machine was also exhibited by Joseph Sharman, of Stratford, which would, no doubt, be found very serviceable on many farms. It is capable of being worked by only four horses, and is said, by all who have used it, to do excellent work. It takes up comparatively little room, and is within the means of most well-to-do farmers, who, by possessing one of these machines, could do their threshing at their own convenience and without extra help. The threshing machine of John Watson of Ayr, which, among other specialities, has a double motion, back and forth, as well as from side to side, to the shoe, and a good arrangement for raising the straw carrier, deserves notice. The same enterprising maker had also on exhibition a horse-power, reaper and mower, grain drill, four chaff cutters, for hand or horse power, two root cutters, a pea-cleaner, seed-sower, three cultivators, scufflers, and a potato digger. Among the threshers—Daniel's pea thresher made in London, should also be mentioned.

Next in order were the mowers and reapers, of which there was a larger collection than has ever before been presented at any Provincial Show. Most of them were constructed on the principle either of Ball's Ohio, Ohio and Buckeye combined, or Wood's Patent; and there was a large preponderance of Dodge's Self Rakers conspicuous among the assemblage; some of the machines, however, had Johnson's Patent Rakes attached, and some were constructed for hand-raking only, or for either hand or self-raking. A. Massey, of Newcastle, was on the ground with one of his beautiful machines, that have been so successful in former Provincial Shows. He showed a reaper and mower. The former, it will be remembered, (Wood's Patent), won the prize at the Paris Exposition. A very simple lever contrivance worked with the greatest ease by the driver, is attached, for raising and lowering the table and cutter bar. The driver, with his foot, can also regulate the delivery of the sheaves, and the seat is furnished with the luxury of a spring, which must be a great comfort in rough ground. The workmanship and finish, both of the iron and wood work, were of a very superior quality, which gave the machines on exhibition an attractive appearance, in addition to their intrinsic excellencies. The demand for these implements has been so great during the past season, that although the Newcastle

Works have turned out 600 machines, they have not been able to fill more than three-fourths of the orders they have received.

Haggert & Brothers, of Brampton, showed three machines in this class, two combined machines, No. 1, and No. 2, and a mower. The former has a separate table for reaping and the latter has the table attached to the mowing bar. There is a patent drawbracket for raising and lowering the table, keeping the rakes always at the same inclination to the table. There is also close to the hand of the driver a contrivance for stopping the rakes when the machine is not cutting, besides an arrangement for regulating the delivery of the sheaves so that they can be thrown off either at the will of the driver, or at every fourth sweep of the arms of the rake, which in even and ordinary grain would make the sheaves of convenient size. The steel cutter bar is tapered so as to be strongest where there is the greatest strain. The arrangements for regulating the elevation of the cutter-bar are also very convenient. Their mower, which is constructed on the same principles as the reaper, has, like it, a reel attached. They also make malleable heels rivetted on to the knives, so that when worn they can be easily replaced.

Paxton, Tate & Co., of Port Perry, exhibited their Marsh harvester, a machine which, amidst much strange prejudice, is steadily gaining ground in Canada. This implement, it is now pretty generally known carries the binders along, saving all the labour of walking and stooping, diminishes the number of binders required, for in the heaviest crop two binders can attend to all the grain, and effectually prevents the waste which more or less attends binding in the ordinary way. The makers have recently made some improvement in the manner of attaching the cutter-bar so that it now cuts much closer to the ground, and will work in this respect as well as a mower.

Harris & Son, of Beamsville, showed two combined machines. John Jackson, of Luccau, a combined machine, in which the inside wheel is made wider than the outside, to obviate the tendency to sink, which it has in consequence of bearing the chief weight of the table and the cutting apparatus. The knives are moreover plain instead of being sickle-edged, and, in consequence, are said to be less liable to choke than those of ordinary make. Conway, of Whitchy, exhibited a reaper of somewhat peculiar construction, and which, it is said, has worked well. It is a self-raker, with less machinery than most implements of the same class, and consequently less liable to get out of repair; it is single-gear, with only two cog wheels, the driving wheel being 33 inches in diameter, with 7 inches face, a width of bearing which is advantageous on soft ground. It is said to be of light draught. Lawrence & Sons; Watson, of Ayr; Stewart & Bruce, London; Forsyth, Dundas; James Elliott, of London; Gale & Co., St Catharines; W. & F. Haggert, of St Mary's; and Noxon & Brothers, of Ingersoll, were among the exhibitors in this exceedingly well represented class.

Two strongly made drain tile ditching machines were on exhibition. One which has been long in use was shown by Gilmor & Burkholder, of Lowesville; the other has been brought more recently into notice, and has received lately several important improvements. This was Carter's patent, and is manufactured by Eyro & Bros., of Richmond Hill. It has been shown and favourably noticed at several of the Agricultural Exhibitions in the United States. Visitors to the London Exhibition had an opportunity of seeing it in operation outside the fair-ground on Wednesday morning, when it

worked very satisfactorily, cutting out a clear trench, several inches deep, and throwing the dirt well out of the way on one side; returning, the trench was cut deeper, and the dirt thrown out on the other side. By repeating the operation the ditch was deepened to the requisite extent. The ground on which the experiment was made was sandy and free from stones; but those who have seen it at work in less favourable soil, say that it is not clogged or impeded by ordinarily stony land. The trial in this instance was very satisfactory.

H. Sells, of Vienna, who has been favourably known to the public as the manufacturer of the best cider mills in the Province, exhibited an implement altogether novel in its character, and which attracted much notice. This was a combined hay rake and elevator, and is designed to be attached to the waggon, to rake the hay, and at the same time to lift it by an apparatus like a straw carrier on the waggon, loading it as fast as it is gathered.

Several sawing machines were exhibited, Stewart, Bruce & Co., and E. Leonard, of London, showing machines adapted for cutting cord wood, and Mitchel a larger one for saw logs. Three screw stump machines, very similar in principle and construction were shown by Gilmor and Brockholder, of Lonsville, Douglas of East Elgin, and J. Scott of Seneca.

There was quite a large display of horse pitchforks of various device, some constructed on the harpoon principle, one acting as a calliper, and others like the grappling fork. Derricks were put up for testing their working merit, that the judges and spectators might have a better opportunity of estimating their capabilities. Among the exhibitors in this class were H. Carter, S. Raymond, of Ringwood, Barnes and Kidley, D. McConnel, of St. Mary's, and several others. James Angur showed an ingenious Elevator adapted for lifting the whole load, either on to the stack or on to the mow within the barn. A contrivance for the same purpose was also shown by John Dennis, of Newmarket. This exhibitor had on the ground a model of the whole affair. The barn which he constructs is put together in a peculiar manner, a comparatively small number of posts being required and the building secured from the centre. The whole frame is jointed together without mortises, their place being supplied by dowels. The inventor claims that lumber and labour are thus saved, and that a barn 150x60 feet can be put up with less timber and with less work than one of 30x60 feet of ordinary construction. Within the miniature barn was shown the model of a very ingenious elevator by which the waggon rack with its load can be easily raised, is then transferred to a truck which runs on inclined rails, and can be tilted over so as to pitch the load on to any part of the mow. If the affair works as well on the scale of the farm as the model, it would seem to be as economical of labour as it certainly is ingenious.

A tile making machine was shown by D. McIntosh, of London, which is said to be capable of making 2,700 tiles per hour. A number of iron and wooden rollers were exhibited by H. McIntosh, A. Kennedy and others; the greatest novelty amongst them being Wilcox's triple roller, which has three rollers, two in front and one behind, thus completely covering the ground, and as each has a separate motion, stones and other impediments and irregularities of the ground are more easily surmounted, and the draught is lightened. It has every appearance of being an efficient implement.

The transition to waggons may not seem exactly in order, but articles are mentioned as they came under notice from their juxtaposition on the ground. There was but a limited display of these farm vehicles. A very good one, very well built, and supplied with a convenient self-acting brake and an adjustable seat, was shown by Edgecomb & Boston, of Iona. John Plummer, of London, also exhibited some plain, serviceable, and well constructed waggons and carts.

Quite a number of chaff cutters were on view. Besides those of J. Watson, already referred to, were the well known and excellent machines manufactured by Maxwell & Whitelaw, of Paris. This firm also exhibited a pea thresher and some root cutters. A very ingenious straw cutter, constructed on novel principles, was shown by E. Price, of Vienna. Amongst the miscellaneous machines, in the same part of the ground, was a contrivance for digging postholes with an auger, which is fitted with a frame, and by the aid of cog wheels is worked in suitable ground with great facility. Another native inventor, W. Thomas, of London, showed a three wheeled velocipede, which looked decidedly more comfortable and manageable than the bicycle which has achieved so short-lived a popularity.

H. J. Lennox, of Lynden, showed a potato-digger, which works with revolving teeth, that throw out the tubers. A much simpler implement, for the same purpose, however, was shown by J. Watson, of Ayr. It is a kind of plough, with a cow-catcher attachment in front, and very much resembles a potato digger manufactured by Allen, of New York, and figured recently in the agricultural department of THE GLOBE and CANADA FARMER.

Conveniently situated on the edge of the sheet of water which adorns one portion of the ground, there was a good display of pumps. J. M. Cousins, of London, had a good assortment, all being well cased in round the insertion of the handle, and provided with a cast iron cylinder for the sucker to work in. George Harding, of Toronto, showed his double action telescope pumps. Reynolds also had a variety on exhibition, some of which would throw out an astonishing quantity of water, one of them filling a pail of the capacity of three ordinary buckets at a single stroke. All were placed in shallow tanks of water; in deeper water a considerable power would be necessary to operate with them. In those of Mr. Reynolds's make the working part is put in the bottom of the tank or well. Rows and Sanderson, of Sebringville, showed both lift and force pumps; and J. D. Cleveland, one of the latter kind. A specimen of the tube well was on the ground. These are either driven into the ground, one end being pointed, or a small hole is first made with an auger and the tube afterwards inserted. These contrivances, where the soil is suitable, are very quickly and economically put in operation without any digging or building of a well. The specimen at the exhibition was shown by J. D. Lancaster, of London. Close to the plot of ground assigned to the pumps, a number of gates and varieties of fence were to be seen. One of the simplest snow gates for farm use was shown by William James of Springford. This lifted easily by a lever. I. Calcott, of St. Thomas; Washburn, of St. George; C. Jones, of London; R. Beatie, of Iona; Lewis and others, were competitors in the class. Washburn had also several panels of his picket fence set up. An ingenious portable fence, called a web fence, in which the horizontal bars crossed the uprights on alternate sides, after the manner of basket work, was shown by

Wisner of Roseville. E. W. Cooper was the only exhibitor of iron fencing. A very ingenious contrivance for carrying water, by a peculiar kind of bucket travelling on wires, from a well or spring to the house, was shown by George Murdock, of Ancaster, which was also illustrated by a small model and attracted considerable attention.

Of Horse Rakes there were several varieties—James Soutar & Co., of Chatham, showing an excellent one, with spring steel teeth, a seat for the driver, and well arranged lever power for lifting the rake, and otherwise controlling the machine. W. Craig, of Nilestown, showed one, in which the driver walks; and Huttman, Wright & Clow exhibited a machine for harvesting peas in connection with a horse rake.

Of cultivators there was a very excellent display, as well as of horse hoes and scufflers, both of wood and iron. The chief exhibitor of two-horse iron cultivators was T. Clarke, Hampton; and of wooden implements of the same class, A. Anderson, G. Gray, James & Walker, Stewart, Bruce & Co. of London, J. Lawrie of Sarnia, and Farewell & Co. of Hamilton. Single horse hoes or cultivators were shown also in considerable number and variety by the same makers, and by G. Gray, G. Murray, Geo. White, D. Davis, all of London; and by Watson & Co., of Ayr; P. Thompson, Arva; and J. Lawrie, of Sarnia.

Several gang ploughs, of strong manufacture and serviceable appearance, were on the ground. R. Lucan, Stratford; H. A. Massey, of Newcastle; Geo. Gray, and Stewart, Bruce & Co., were the exhibitors. H. Collard, of Gananoque, showed a double mould plough, besides his cultivator and horse hoe.

There was considerable competition in harrows, of which there was about an equal number of wood and of iron. H. Collard showed his section harrows, in two, three, four and five sections, and others of various device were exhibited by W. Stewart, Devises; T. Stacey, St. Thomas; H. Howard, London; B. G. Battram, Shakespeare. A novelty in harrows, at least in Canada, was shown by J. Fraser, of Teeswater, namely, a chain harrow, composed of square links, with a couple of rods to keep them stretched. This implement is a favourite in some parts of Scotland, and is useful in covering and working tough, soddy lands.

A larger collection of ploughs was brought together at this London exhibition than was ever seen at any previous Provincial show. They formed an imposing array, the wooden ones in the front rank, and those of iron in the rear. To award the prizes from their appearance on the ground, without the test of actual trial on the field, could not be an easy or enviable task. We give the names of the exhibitors, a list of which may be useful to those who want to purchase. Wooden ploughs were shown by W. Holton, Chatham; H. Kirkbride, Goderich; P. Lear, Stratford; J. Humphrey, Stratford; N. O. McClary, London; J. Lawrie, Sarnia; C. Thair, Guelph; J. Walker, Westminster; B. G. Battram, Shakespeare; J. Morley, Thorold; J. W. Needs, Bowmanville; G. Gray, London; G. Fair, Millbrook. Iron ploughs were exhibited by G. Gray; J. Morley; B. G. Battram; J. McSherry, Ingersoll, (a thoroughly good implement); Read & Yendell, Stratford; D. McFaviah, Clinton; J. Walker; McClary; Edmund Land, London; J. Humphrey, Stratford; J. Chisholm, Paris, A. Kirkbride, Goderich, and George Williamson, Seaford. A very efficient double-shear plough was shown by J. W. Needs; and double mould ploughs by J. Morley; Thair, Guelph, and Gray, of London. J. Morley also ex-

hibited a subsoil plough; McNerry, of Ingersoll, a wrought iron beam plough, and Gray a three-horse, double-furrow plough. Besides the foregoing implements, there were many others of a miscellaneous character, some of them entered in the Extra Class. Among these, two useful machines were shown by Mr. G. Huntingdon, of Brantford, one for banding wheel tires in circular form, and the other for shortening them. F. Roberts, of Brantford, showed two machines, the chief objects of each being to cut down stubble at the same time that they cultivated or scarified the ground. A corn-planter of novel and ingenious construction was shown by D. McCulloch, of Kempville. The seed is deposited in a hopper, the opening of which can be regulated to sow more or less at pleasure, is dropped by the action of a spring into a tube surrounding the wheel below, and deposited and covered at regular distances in the ground. Switze, of Norwich, exhibited a model of a good combined machine for sowing seed, rolling, and spreading plaster. Grain drills were not so numerously represented as last year at Hamilton. There were, however, some very good machines, among them two shown by Maxwell and Whiteland, differing chiefly in the feeders, but both well adapted for either small grain or corn. Watson, of Ayr, also exhibited a good drill, which obtained a prize at the recent New York State Fair, as well as that of 1868, held in Rochester. Forsyth, L. D. Sawyer, A. J. Smith, of Bondhead, and Adams, Wisner & Co., were also competitors in this class. There were besides the usual array of washing-machines and other articles, too numerous even to mention. Taking it altogether, there was a good competition in nearly every class. In some there was an unprecedented display, and the total number of entries and general excellence of this department of the exhibition has made it the best that has yet been held.

#### THE HORTICULTURAL DEPARTMENT.

##### FRUIT

This department of the Exhibition was filled to overflowing with samples of fruit of surpassing excellence, and the display was truly magnificent. The prize of fifty dollars for the best collection of fruit, brought out some spirited competition. The Hamilton Horticultural Society exhibited one hundred and fifteen varieties of apple, two hundred and eighty-nine varieties of pear, twenty-four varieties of plums, twenty-five varieties of peaches, twelve varieties of crab-apples, thirty-two sorts of out-door grapes, twenty-three varieties of hot-house grapes, and three of quince; and, as our readers will expect, carried off the prize. The collection was certainly very fine in every respect, and the samples of superior quality. The nurserymen were out in full force, and made a display that was in every respect highly creditable.

In Apples, the first prize for the best thirty varieties was awarded to D. W. Beadle, St. Catharines, and the second to Geo. Leslie & Son, Toronto—both very fine collections, and the judges must indeed have been gifted with very acute perceptions to be able to decide between them.

The first prize for the best 20 varieties of Apples was awarded also to D. W. Beadle, of St. Catharines, and the second prize to J. A. Bruce & Co. of Hamilton. D. W. Beadle carried off the first prize for the best six varieties of winter table apples, with Golden Russet of Western New York, Roxbury Russet, Baldwin, Swazie Pomme Grise, old American Golden Russet, and Emerson's Black. J. A. Bruce & Co., of Hamilton, won the second with Spitzenburg, Swazie, Ribston Pippin,

Pomme Grise, Bonrreata, and American Golden Russet.

The first prize for the best six varieties of fall table apples was taken by J. A. Bruce & Co., of Hamilton, with Autumn Strawberry, Gravenstein, Johnston's Sweet, Snow-apple, St. Lawrence, and Maiden's Blush; and the second by Geo. Leslie & Son, of Toronto, with Keawick Codlin, Ribston Pippin, Irish Peach-apple, Gravenstein, Snow-apple, and St. Lawrence.

In Fall Cooking Apples, the first prize for the six best was won by J. A. Bruce & Co., with Alexander, Fall Pippin, Yellow Bell-flower, Colvert, Blenheim Pippin, and Fall Janetling; and the second by D. W. Beadle, with Maiden's Blush, Hubbardston Nonsuch, Vermont Nonpareil, Cayuga Red-streak, Duchess of Oldenburg, and Alexander.

J. A. Bruce & Co., of Hamilton, carried off the first prize for the best six varieties of Winter Cooking Apples, with Pennock, Cayuga Red-streak, Northern Spy, Baldwin, King of Tompkins County, and R. I. Greening; and the second prize was given to R. Kittlewell, of London, who exhibited Northern Spy, Baldwin, King of Tompkins, Cayuga, Redstreak, and Alexander.

The first prize for the best collection of Pears, seventy-five varieties, was carried off by J. A. Bruce & Co. of Hamilton; and the second by James Dougall of Windsor, 54 varieties. The first prize for the best six varieties of pear was given to D. W. Beadle, for Beurre d'Anjou, Beurre Bosc, Belle Lucrative, Bartlett, Beurre Clairgeau, Flemish Beauty; and the second to J. A. Bruce & Co., for Louise Bonne de Jersey, Bartlett, Beurre Diel, Seckel, Howell, and Flemish Beauty.

Geo. Leslie & Son took the first prize for the best collection of Plums.

The best three varieties of Plums were shown by Geo. Leslie & Son, Toronto; they were Yellow Egg, Imperial Gage, and Duane's Purple; D. W. Beadle, of St. Catharines, received the second prize for Washington, Imperial Gage, and Lombard.

Mr. James Dougall of Windsor, exhibited twenty-six varieties of Peaches, and received the first prize for the best collection; the second was awarded to D. W. Beadle. Mr. Dougall's collection was very fine, and made a most tempting display. J. C. Kilborn, of Beamsville, carried off the prize for the best three varieties of peaches with the Crawford's Early, Royal George, and Honest John; the second prize was given to D. W. Beadle for Yellow Alberge, late Crawford, and early Crawford.

In Open Air Grapes the first prize was awarded to D. W. Beadle, of St. Catharines, for Israella, Concord, Delaware, Iona, Sherman, Adirondac, Hartford Prolific, Rogers' Number 33, Rogers' Number 4, Ontario, Creveling and Salem. The second prize to J. C. Kilborn, Beamsville, with Delaware, Union Village, Creveling, Diana, Canada Wine Grape, Ontario, Clinton, Isabella, Rogers' Number 15, Iona, Logan and Concord. The best three black varieties, shown by D. W. Beadle, were Sherman, Adirondac and Creveling. The second best were Concord, Clinton and Isabella, exhibited by Jas. Dougall, Windsor. The three best varieties of light colored grapes were Diana, Delaware and Logan, shown by James Dougall.

The open air grapes were not so abundantly shown as in other years, nor were the samples exhibited as well ripened. The cold and wet of this season has been very unfavourable to a display of fine out-door grapes.

On the other hand, the display of grapes grown under glass was very large, and gener-

ally very finely grown. The first prize for the best twelve varieties was carried off by J. A. Bruce & Co., Hamilton, with Black St. Peters, Bowood Muscat, Black Hamburg, White Nice, Royal Muscadine, Lady Downs, White Chasselas, Wilmot's Black Hamburg, Muscat of Alexandria, Chasselas Musque, Rose Chasselas, and Muscat Hamburg. J. A. Bruce & Co. also received the first prize for the three best black, with Black Hamburg, Lady Downs and Muscat Hamburg; and for the three best white, with Buckland's Sweet Water, Muscat of Alexandria and White Nice; and won the laurels for the best and heaviest branch of Black Hamburg, which weighed nearly two pounds.

Messrs. George Leslie & Son exhibited the Zinfundal, which received the first prize as the heaviest bunch of black grapes, other than Black Hamburg. The second prize was given to a very fine bunch of Muscat Hamburg, shown by J. A. Bruce & Co.

The first prize for the best display of fruit was won by Mr. James Dougall, of Windsor, who exhibited 125 varieties of pear, 49 of apples, and 26 of peaches; three of crab apples, six of grape, and four of plum. The second prize was taken by George Leslie & Son, Toronto, who had in his display 110 varieties of apple, 55 of pear, four of peach, five of crab apple, two of currants, two of raspberry, two of blackberry, twelve of hot-house grapes, fourteen of plum, three of melons, and fruit of the berry, highbush cranberry and hazel nuts.

The first prize for the best collection of crab apples was awarded to D. W. Beadle, of St. Catharines, who exhibited red Siberian, yellow Siberian, Montreal Waxen Beauty, Transparent Crab, Golden Beauty, Black Crab, and Transcendent Crab.

The collection of domestic wines was not large, neither in the professional nor general list. In the general list, Mr. James Taylor, of St. Catharines, received the first prize in all the sections, namely, for dry, sweet and sparkling wines, made from Diana and Catawba grapes, and his wines were very far in advance of any of the other samples shown in this class.

Mr. J. Brown, of Toronto, received the first prize for sweet and dry wines in the professional class. The dry wine was a very fine article, resembling a sherry in flavour and strength, and will suit the palates of those who admire this class of wines.

In the general list, from which professional nurserymen are excluded, the exhibition of fruit was exceedingly fine, and in perfection of development, size and beauty of the specimens shown, was decidedly superior to the display made by the nurserymen.

The first prize for the best twenty varieties of apple was awarded to H. J. Brown, of Niagara, for Roxbury Russet, Snow apple, Swazie Pomme Grise, R. I. Greening, Fall Pippin, Cabasha, Golden Russet of Western New York, Red Astracan, Pomme Grise, Ribston Pippin, Northern Spy, Cayuga Redstreak, Gravenstein, Baldwin, Canada Reinette, Spitzenberg, Blue Pearmain, Bourassa, Duchess of Oldenburg, and Red Detroit; and for the best ten varieties to S. J. Brown, of Niagara, for Baldwin, Porter, Snow apple, Pomme Grise, Golden Russet of Western New York, Duchess of Oldenburg, Swazie Pomme Grise, Red Astracan, Rhode Island Greening, and Roxbury Russet.

The first prize for the best four varieties of dessert apple was given to the Pomme Grise, Ribston Pippin, Snow apple, and American Golden Russet; and for the best four varieties of cooking apple to the King of Tompkins County, Fall Janetling, Baldwin, and Rhode

Island Greening. The first prize for the best fall dessert was given to the same apple, and the second to the St Lawrence. For the best fall cooking apple to the Cayuga Redstreak; second to the Duchesse of Oldenburg, and third to Maiden's Blush.

The apple that took the first prize as the best winter dessert was the Montreal Pomme Grise; the second was given to the Swayzie Pomme Grise, and third to the Spitzenberg. In winter cooking the R. I. Greening was adjudged the best, and Baldwin second.

In pears the display was very rich, showing a marked advance in the cultivation of this fruit. To the Flemish Beauty, Bartlett, Seckel, Grey Doyenne, Beurre Clairgeau, and Belle Lucrative, as shown by L. Springer, of Hamilton, was awarded the first prize as the best six varieties; the second prize was given to a collection composed of the Bartlett, Flemish Beauty, Beurre d'Anjou, Louise Bonne of Jersey, Duchesse d'Angouleme, and Easter Beurre; and the third to Bartlett, Belle Lucrative, Beurre Clairgeau, Flemish Beauty, Sheldon and Duchesse d'Angouleme.

The three best varieties were Bartlett, Flemish Beauty, and Belle Lucrative, as shown by Gage Miller, of Virgil, the second prize for three varieties was given to Flemish Beauty, Beurre Clairgeau and Duchesse d'Angouleme; and the third to Flemish Beauty, Beurre Boac and Beurre d'Anjou.

The first prize for the best Fall Pear was given to Flemish Beauty, second to Bartlett, and third to the Jeckel. We most heartily approve of the decision of the judges in this case. It has long been the fashion to place the Jeckel first on the list of pears, but though of the highest quality, it is not as generally valuable in this Province as either of the two other sorts.

For the best Winter Pear the first prize was awarded to the Vicar of Winkfield, second to the Glout Mercean, and the third to the Winter Nelis.

Some very fine Seedling Winter Apples were shown by H. J. and S. J. Brown, of Niagara, to which a first and second prize were awarded, with a recommendation that they be submitted, when fully ripe, to the President of the Fruit Growers' Association for further examination and enquiry.

The display of Plums was not very large, but the samples shown were of the first quality. The first prize for the best dessert plum was given to Martin's Seedling, the second to Haling's Superb, and third to Jefferson. The cooking plum that received the first was Coe's Golden Drop, second Duane's Purple, third Pond's Seedling.

The display of Peaches in this class was small. The Sweet Water received the first and second prizes in white peaches, and Royal Kensington the third; in yellow peaches the first and second prizes were given to the Early Crawford, third to the Orange peach.

The collection of six varieties of open air Grapes which carried off the first prize was not named; the varieties which composed the collection that received the second prize were Concord, Hartford Prolific, Creveling Rogers No. 19, Delaware and Alien's Hybrid. These were shown by Mr. A. J. Ross, of Goderich, and were very fine, particularly the Creveling.

The first prize for the best variety was given to the Delaware, second to the Rose Chasselas, and the third to the Concord.

The grapes grown under glass were truly splendid, the Black Hamburgs most beautifully ripened, indeed, the best we remember ever to have seen.

In looking over this display of fruit, we are sure every Canadian has just cause to

feel proud of the soil and cultivation that will produce such splendid specimens, and that he may safely challenge the world to competition in the fruits of the temperate zone.

#### GARDEN VEGETABLES.

In this class there was a very fine display, and many of the samples of superior excellence. The cauliflowers were very good, though not just as perfect as a whole as we have seen on other occasions. Summer cabbages were of extra fine quality; winter sorts were very large and solid, and the red very good. We never saw finer samples of long red carrots, and the intermediate were of unusual excellence. Parsnips were also extremely well grown, and the celery, both red and white, was extra fine. The cucumbers were of monstrous size. In tomatoes there was a most rich and beautiful display, and we were much pleased to note that the prizes had been awarded to specimens of a medium size, but of great solidity, smooth and even form. There is evidently a tendency in exhibitors to show overgrown and monstrous specimens, and judges have been in the habit of awarding prizes to the largest samples of garden vegetables, forgetting that these overgrown samples are usually coarse in grain, insipid in flavour, and wholly worthless for the table. The true standard of excellence is the value of the samples shown for culinary use, and this may be found in the highest degree in the smallest specimen on exhibition. The Judges also did themselves great credit in their award of the first prize to D. Allan, of Guelph, for the best long blood beets, which though by no means as large in size as many of those shown, were evidently of the finest quality for the table. In white onions, the only very good sample was that shown by W. A. Taylor of Hamilton, and which received the first prize, while in yellow and red onions the whole collection of entries was extra fine. The turnips were all coarse and poor; indeed the best turnip was a sample of the Yellow Globe shown in a collection of six varieties as an extra entry. The sweet corn was very good indeed, and delicately tender. We noticed among the garden potatoes some of the new varieties which are so extensively advertised now-a-days, and prominent among them the Early Rose. Here also exhibitors committed the error to which we have already alluded, showing samples that were really too large to be of the highest excellence. The display made by D. Anderson, of London, who received the first prize for the best and greatest variety of vegetables, was exceedingly rich and varied, and reflects great credit upon his good taste and skill as a cultivator.

#### APIARY DEPARTMENT.

There was more than the usual amount of competition in this department, and each competitor seemed determined to win laurels at all hazards. Of bee hives there were seven exhibitors. The first we came to was Mr. A. C. Attwood, of Duncreef, who exhibited the Thomas hive, as improved by himself.

A little further along we found Mr. Mitchell, of St. Marys, who also had hives and bees on exhibition. His hive is constructed upon the movable comb principle; is a large hive, apparently well made, but we fancy it must be quite inconvenient to handle, and will occupy much room in storing away for winter.

Mr. Reekie, of Wilfrid, also exhibited a hive similar to the well known Thomas hive. It may be called a hive within a hive, and is designed, like Mitchell's, for wintering out of doors.

A hive was also exhibited by Messrs. Miniey & Co. of Warwick. It is a modification

of the Gordon hive, having triangular frames. It is claimed the bees cannot glue the frames in the hive, but this is a mistake.

Another new hive was exhibited, called the New Dominion hive, by B. Stone, of Bondhead; but we discovered no novel feature in this hive. It was a movable comb hive. Messrs. Wray and Foe, of Strathroy, exhibited a hive which, on account of its novelty, must attract some attention. It is round like a barrel-churn, it has only four frames. We must say of this hive that it is worthless. Last we came to J. H. Thomas, of Brooklin, who, as usual, had a number of hives, stocks, bees, Italian queens and bee furniture, of every description. Mr. Thomas has this season made some improvements in his hive in connection with the entrance and ventilation. We consider this hive well worthy of the reputation it sustains.

#### HONEY.

There were several exhibitors of honey, and much of it was very fine considering that it is acknowledged to have been a very unfavourable season. There were five exhibitors of honey in boxes:

George Walker, Ingersoll; A. Hetherington, Denfield; G. Bennett, Cobourg; H. M. Thomas, Brooklin; J. H. Thomas, Brooklin. Of clear honey there were nine exhibitors: Hugh Kennedy; G. Walker, Ingersoll; A. Hetherington, Denfield; H. M. Thomas, Brooklin; R. Scott, Telfer; O. C. Attwood, Duncreef; J. H. Thomas, Brooklin.

We consider it a very difficult task for the judges to determine who is entitled to the first prize, especially in clear honey.

A very fine specimen of bees-wax was also exhibited by J. H. Thomas, Brooklin.

On the whole we consider this department of the Fair exceedingly well represented, showing a growing interest in bee culture, speaking well for the bee-keepers of Ontario.

#### NATURAL HISTORY DEPARTMENT.

In few departments of the Exhibition was there a more noticeable improvement than in that of Natural History, especially in the show of insects, which, this year, embraced the finest collection of butterflies, moths and beetles ever brought together in the Dominion of Canada. This improvement was entirely due to the exertions of the resident members of the London Branch of the Entomological Society of Canada, who, at the cost of considerable time and labour, had prepared their private collections for exhibition to the public. The whole number consisted of sixty-three cases, embracing probably two thousand different species, and five or six thousand specimens. They were all neatly arranged in their proper scientific order, and were also labelled in a general way with reference to their beneficial or noxious qualities. The principal collection is the property of Mr. Wm. Saunders, of London, a gentleman who has attained a high reputation among scientific men as a thorough entomologist. It includes twenty-two cases of Canadian insects, and four of foreign species. It is undoubtedly the best private collection in the Dominion, and would be worthy of consideration anywhere. Next to this was a collection of English butterflies and moths, the property of the Entomological Society. The case of butterflies included a representative of every British species. The moths were not so complete. These are interesting as objects of comparison with the allied species of this country. Mr. Edmund Baynes Reed, the Local Secretary of the Society, exhibited his private collection of sixteen cases of beetles, butterflies, moths, dragon-flies,

&c. Among these are some magnificent specimens. We especially noticed a case of Underwing moths (*Catocalpa*), which includes some very beautiful species. The Rev. G. M. Innes, of London, showed seven cases of Canadian butterflies and moths, and an interesting case of specimens of various orders from Labrador, a portion of our country whose natural history has not yet been much investigated.

Mr. J. M. Danton, also of London, exhibited nine cases of native insects, some of English butterflies, all in very nice order, and including many fine specimens.

Turning to the birds we find a very fair show contributed by W. Poole, of Ingersoll, and S. Mummery, of London. The former exhibited four interesting cases, one containing a number of long legged cranes, bitterns, snipe, plover, and ducks; the next embraced a good collection of native wild ducks; then came a case of small birds of various kinds, while the fourth was devoted to owls and hawks.

Mr. Mummery's collection was very nice, but included a number of specimens that do not belong to this country. The next case contained a brace of grey plover, the next a fine specimen of Bewick's whistling swan, then a gosander, a heron, a grey strike, a pair of ptarmigan from below Quebec, a large snowy owl, a splendid group of snipe, the admiration of every sportsman, a beautiful pair of passenger pigeons, and others too numerous to mention. He also exhibited some of the four-legged animals, for instance, a lynx, some grey squirrels, and—the only one of its class—a grey mullet, which certainly looked like "fish out of water" in more senses than one. Of foreign birds Mr. Mummery exhibited three glass cases, containing a bird of Paradise, humming-birds from South America, &c. Mr. Poole, of Ingersoll, showed a fine case of Canadian animals, including the redoubted skunk, a porcupine, weasel, racoon, lynx, squirrels, &c.; all well mounted and in natural attitudes.

Mr. F. Turton, of Petrolia, had on view a good case of squirrels of various kinds, well put up. In botanical specimens not much was to be seen, there being only two exhibitors.

Mr. H. Crate, of Ingersoll, showed a small collection of the common wild plants, and Mr. Thomas Waterhouse, of London, about a dozen sheets of the more conspicuous native flowers, but not arranged in any scientific order.

We noticed with much interest a fine series of Canadian fish, contributed by Mr. Wilmot, of Newcastle, who is noted for his praiseworthy efforts in pisciculture. It contained a brood of young whitefish raised by artificial process, some salmon in various stages, salmon trout, pickerel, black bass, &c.

### Annual Meeting of the Agricultural and Arts Association.

The annual meeting of the Association was held as usual during the exhibition week, on the evening of the 28th September, the President, E. Mallory, Esq., in the chair. Mr. Mallory read an eloquent address, which has been printed in full in *THE GLOBE*, but is too long for republication here, and to give isolated portions or an abstract, would fail to do it justice. A cordial vote of thanks was tendered for the address.

A. M. Thornton, Northumberland; Geo. H. Marston, Guilph; James Keefe, Strathroy, were appointed auditors for the ensuing year.

An animated discussion then ensued regarding to the place for holding the next Exhibition, a considerable proportion of the Directors present being in favour of Ottawa; but finally the majority elected Toronto as the place of Exhibition for 1870.

### Fruit Growers' Association.

The annual meeting of the Fruit Growers' Association of Ontario was held in the City Hall, London, on Wednesday night, Mr. W. H. Mills, President of the Association occupied the chair.

The Directors' Report was submitted as follows:—

#### DIRECTORS' REPORT

The Directors of the Fruit Growers Association, in presenting their Annual Report, have much pleasure in stating that during the past year the society has held three successful meetings for the exhibition of fruit, and the discussion of questions relating to the varieties best adapted to our climate, and the best soils and mode of culture. The October meeting was held at St. Catharines, at which there was a very large display of grapes and other fruits; the winter meeting was held in the City of Hamilton, and was well attended, and the summer meeting was held at Galt, at which there was a fine display of strawberries, and some of most extraordinary size.

There has been some increase in the number of members during this year, as will be seen by the Treasurer's Report, he having received one hundred and seventy-six dollars for fees of members this year, against one hundred and fifty-seven dollars from the same source last year. A complete list of the members of the Association is appended to this report.

The discussions at the several meetings have elicited much valuable information. These discussions have been very fully and carefully preserved, and will be embodied in the printed report which will be given to the members. The report of last year was, by arrangement with the Commissioner of Agriculture, printed by the Department of Agriculture and sent out from thence to the members of this Association, thereby securing to them the entire Agricultural Report in addition to their own. Some very considerable number of typographical errors found their way into that Report, which very much marred its appearance, and in some degrees its usefulness, occasioned by the pressure of public printing at the close of the Season. The blemishes, it is believed, can be obviated hereafter.

The Commissioner of Agriculture has very kindly issued a series of questions prepared by your Directors, relating to the different fruits and their culture, and required the different Agricultural and Horticultural Societies to return answers thereto. These replies will be collected and a full report prepared therefrom which it is believed will be of great value, a copy of which, when printed, will be given to every member.

In addition to the prizes offered by the Association by resolution passed at the meeting of Feb 4th 1869, the Directors at a meeting of the Board held on that day offered a prize of \$50 for the best essay on the cultivation of the Raspberry, Blackberry, Strawberry and Currant and a further prize of \$15 for the second best essay. The time limited for the reception of these essays, 1st September, 1869 having passed, and only two essays having been received your Directors have extended the time to 1st February, 1870, with leave to the writers of the essays received to withdraw them, and substitute others if they wish.

At a meeting of Directors held at Galt on the 6th of July, a prize of twenty-five dollars was offered for the best collection of insects, injurious or beneficial to the various kinds of fruits, provided always that the prize should be awarded only to a really meritorious collection.

At the same time your Directors, feeling that it was highly important that this Society should be represented at the meeting of the American Pomological Society, held in Philadelphia on the 15th of this month, (September, 1869), appointed Mr. Charles Arnold a delegate to attend the same. His report will be published, and form a part of the annual report.

Your Directors cannot close this report without intimating to members that if they would each take a little pains to call the attention of their neighbours to the work of this Association, and show the importance of sustaining it, the number of its members might easily be doubled in the course of the next year, and this Society enter upon a course of prosperity and usefulness of incalculable benefit to the country.

The Directors also desire to intimate to the Association that if gentlemen leave their homes and devote their time to the interests of the Association, in attendance upon the meetings of the Board of Directors, it is but right that their reasonable and necessary expenses incurred in attendance upon such meetings should be paid by the Association. We believe the state of our finances, and the manifest justice of the case, will fully warrant such an appropriation of our funds, and we therefore advise that a further by-law be enacted by the Association authorizing the Treasurer to pay such expenses.

All of which is respectfully submitted.

21st September, 1869

The report was adopted.

The Treasurer's Report was next submitted, showing the receipts for the year to be \$326, and the expenditure \$315 20. A balance of \$455 remained from the previous year, which leaves \$666 on hand. The report was adopted.

The President then delivered the following

#### ADDRESS.

GENTLEMEN, At the last annual meeting, held in the city of Hamilton, I was unable, through illness, to thank you for the proud position you then honoured me with. This duty, however, was performed by my friend, the Rev. H. Burick, who always regards with care his absent friends. Through your kindness, then I am permitted this opportunity, and I may add the extreme pleasure, of addressing you upon the subject of Horticulture—of all others the dearest to me because I feel the objects we have in view, and the pursuit we are engaged in, trying to build up a public taste for fine fruits by persuading all throughout the land to bring within their own reach and culture these healthful and delicious products, is, without exception, one of the most elevated and Christianizing occupations we, as a body, can possibly pursue, inasmuch as it affords the proper kind of food to those who are desirous to learn their Author's mandates in the evolution of matter.

Besides, it multiplies our social joys, and minister to the comfort of the human race, draws us away from the sordid motives of selfishness, soothes us with benign influence in the hour of sickness, and thus we, over arch the vale of earthly vanity, and feel, as we journey onward, the silent shadows from the trees we love.

By this pursuit, also, we learn some of the laws of Creative power, and Omnipotent force displayed in every germ of life.

He that enters with his whole heart bent on the culture of fruits and flowers for the inward happiness and pleasure they afford him, gives evidence of high moral aims. We may safely confide in the integrity and kindness deeply graven in his character. In this way it comes to be acknowledged that an organization of fruit growers is regarded as an association of high rank, and to be considered a useful and worthy member thereof is a guaranty of purity of purpose.

It is, therefore, a source of great pleasure to me to be able to realize that our pleasant and profitable discussions are the means of establishing a taste in this direction, and a harmony of sentiment, as marked in its character as in the good that must, of necessity, result to our country in morals and health.

As it is one of the pleasant duties of the President to give an annual address on some subject relating to the objects of the Association, I may premise that the difficulty is not the scarcity of subjects from which to mould a discourse suitable for such an occasion, for they exist "in the heavens above and on the earth beneath." The difficulty arises from an ignorance on my part of how best to select and adjust the material to promote the object in view, at the same time a courteous foresight that this is not an occasion on which I should wear your attention with any long discourse or dry accumulation of facts to prove such theory as I may advance. I shall therefore only offer a few remarks in a rambling way, under the head of "FACTS," by drawing your attention to a few important facts, first, that the planting of native forest trees in belts around cultivated farms maintains the conditions of climate by governing to a great extent the degree of temperature, and rainfall, that the health and length of years, and the sanitary condition of the country, depend on the influences these noble forest trees exert upon them. They stand, if I may so express it, as gigantic capillary ducts, for the daily attraction and repulsion of fluids, set in motion by the force of the sun, which raises these fluids gently from, and again return them to the bosom of the earth, and in this way they are made the instruments in regulating and graduating the permanency of rainfall. While inhaling carbonic acid vapours, and condensing them in the shape of woody fibre as so much stored up heat for our future use, they daily accumulate and emit that pure oxygen element without which human life could not exist.

These then are some of the good effects we shall secure by making an artificial planting of forest trees, and affording them the necessary protection until they become established so intimately connected and dependent are we upon the forces of nature which surround us, that no great depth of comprehension is required to see that God has made it a matter of necessity that man should study these forces to enable him to secure his health and happiness, which should be the principal aim and end of his sojourn here. To know these laws, enables him to benefit and appreciate the unbounded munificence of the "Author," and it necessitates a sequence that those peoples of the earth who take the higher degrees in this branch of science are the "elect."

Sir John Herschell says that "there is evidently something distinct from mere local situation, which determines the element of climate. It is chiefly in



man's clearance and allowance of arborescent vegetation, and in the artificial drainage of the soil that his influence on these relations is perceptible." But, after all, nature gives us the finest example on so grand a scale that our attention is arrested and made to draw the comparison between the evil effect produced by the deadly sirocco which sweeps the barren deserts of Lybia, and the benign effect of those life-giving winds which sustain millions of animal life through the deep primeval forests. Thus looking upon the general effects of a desert as death, I am led to conclude that the individual effects which go to make up a general result, must lead toward, or in the line of such result, otherwise it would never happen. These inferences, then, lead to the conclusion that a time must be brought about in this, as in any country, by individual efforts in clearing away the original woods, when the same shall become so far uninhabitable as to be destructive to the advancement of civilization. But the evil effects produced by this depletion of the woods in the temperate zone, would differ essentially from those of the tropics. They would show themselves in various forms from time to time by endemic scourges.

Statistics kept in England for some years back, conclusively prove that the average deaths are much greater in sections where the land has been quite stripped of its woods, as compared with those where they have been retained. I am necessitated to mention these facts to show the bearing they have upon every product brought under man's protection, for they are all inter-related. I can well recollect the time, when round about Hamilton, before the great destruction of the forest took place, fine peach trees were grown, but for several years back this fruit too has been neglected, owing to the uncertainty of the crop. This present season, however, has been an exceptional one, having the conditions renewed that once produced it in such abundance, so that where this tree's life has been preserved, we see it this season in bearing.

Under the the head of Arboriculture, in the *Scottish Farmer*, for July 21st, 1869, a sensible article appears, on improving the climate of Great Britain by the planting of trees. Probably nowhere else has science been brought to bear on Agriculture, with so much effect, as there; and it is there coming to be understood, that the planting of forest trees must precede, ere agriculture and fruit production can succeed.

The State laws of Illinois and Iowa provide for the encouraging of the growth of trees and hedges; and for the protection of fruits. Exemption from taxation to a certain extent is the reward for planting forest trees, either by the acre, or along the high-ways in cultivated sections of the country. The arguments brought to bear on this subject, in securing these laws, are forcibly set forth in the *Scottish Farmer*. I cannot do more at this time than draw your attention to this important subject, leaving such evidence as may be brought to bear on it, to the search and investigation of those among you who feel interested.

My advice is to plant forest trees and continue to do so from year to year, without waiting for any action of the Legislature in offering a bonus. We shall indeed have a compensation without this as the work progresses. But to anticipate the reply any inconsiderate person may make to this advice, by saying that we have more forest trees than is good for us, which require removal before agricultural pursuits can be carried on, let me answer, I would not have it understood that I condemn clearing away the forests, for this is the first step to Agriculture and Horticulture, but I would urge each to take a hint from nature, and not fall back on her methods altogether, for is she not the parent of marshes, and in many cases of noxious gases, which produce fever and other diseases. We should respect nature's laws; but not follow her in all things. It should be borne in mind that in proportion as the forest is removed, there is a decrease in rain-fall, and streams dry up. To such an extent may this go on, that in course of time it will become a serious question for our descendants to deal with; and this unfortunate state of things may be brought about irrespective of artificial under-drainage, which should never be charged with producing drouths, or the evil effects arising therefrom. I consider it one of the most efficient levers to successful agriculture and fruit growing—the most extensive can do no harm; by drainage with a proper distribution of trees, the finest results will be accomplished.

By observations recently made in England, two facts have been clearly established, namely, that the general regularity of rain-fall, and local irregularities, are governed by local influences, in respect particularly to the area of surface occupied by trees. Although man may not be able to create the material of light, heat and moisture, he can certainly modify, adjust and combine these to serve his purposes. Now, in this important matter of tree-planting, with which these materials are so intimately related, it behoves us to take warning from the suffering of other countries, and bring into play not only individual effort, but a legislative or national action, to counteract the evil of over-clearing, which cannot be remedied in a quarter of a century or

more. Nor can it strictly be considered an individual nation's interest. The planting and preservation of trees of one country concerns that of another; for the disturbances in the one must affect the other. Climate concerns the whole community, and protection from its injurious effects is one of the duties of Government, and is one of the many reciprocal relations each owes to the other. To my mind, it seems clear that these natural influences continually impel to the belief that there must be a unity of interest, and whatever action is taken to keep in harmony with these laws, it will be found with those who comprehend the relations and correlations of matter and mind.

I may say that artificial planting of forest trees should be secured, progressively, in a certain ratio, compared with the destruction of the forests, for by this means will be kept up those essential conditions of regularity in rain-fall and temperature without which all human effort toward successful Fruit Growing will be unavailing. For it is the reliable permanency in Nature's forces which secure to us such vast advantages.

Again, let me thank you, gentlemen, on retiring from the Presidential chair, for the honour conferred upon its occupant, and in making this farewell I must say, at the risk of appearing egotistical, that there is pleasure in store for me when thought shall revert to this period of my life, and with it there will always come a glow of honest pride in having been connected with this Association, and in the belief that my humble ability had rendered some little toward establishing a taste for fruit culture among the people of Ontario.

A cordial vote of thanks was tendered the President for his Address, and he was re-nominated by Mr. Saunders for the same office, but declined.

The election of officers for the ensuing year followed the reading of the address, and resulted in the following appointments:—President, Rev. R. Burnett; Vice-President J. C. Rykert, M. P. P.; Secretary and Treasurer, D. W. Beadle; Directors, W. W. Mills, Hamilton; George Leslie, jr., Toronto; R. N. Bell, Guelph; A. B. Bennett, Brantford; A. Morse, Smithville; James Dougall, Windsor; William Saunders, London; Rev. Aaron Idatt, Waterford, and A. P. Farrall, Cayuga. Messrs. W. J. McCall and W. L. Copeland were elected auditors. It was ordered that the reasonable and necessary travelling expenses of the Directors be paid. The meeting then adjourned.

### Bee Keepers' Convention.

This Convention met according to notice on Tuesday, September 21, but adjourned in favour of the Fruit Growers' meeting held at the same time.

On the following evening, the second session of the Ontario Bee-Keepers' Association took place in the Hall of the Sons of Temperance, Richmond Street, London. The Committee on the Constitution and By-Laws then reported as follows:—

The Committee appointed to draft a Constitution and By-Laws, and recommend officers for a permanent Bee-Keepers' Association, beg to report as follows:—

#### CONSTITUTION.

1. That this organization be called the "Ontario Bee-Keepers' Association."
2. That the object of this Association shall be to promote the interests of scientific and practical bee culture.
3. That gentlemen paying 50 cents yearly shall be considered members of this Association—ladies to be admitted to membership free of charge.
4. That the officers of this Association shall consist of President, vice-President, Secretary, Treasurer, and a committee of five, three to form a quorum—who shall be appointed annually.
5. That this Association shall meet annually at the time and place of the Provincial Fair, or oftener, at the option of the

BY LAWS

1. The order of procedure at the annual or public meeting of the Association shall be, first, the transaction of business, and then the discussion of questions pertaining to the science and practice of bee keeping.

2. Any member of the Association shall be entitled to send notice to the secretary of a question or questions for discussion at an approaching annual or other public meeting.

3. Questions previously prepared, and of which public notice has been given, shall take precedence of other subjects of discussion at the meetings of the Association.

4. Any person proposing a question shall, if present, be expected to introduce the subject.

5. No person shall be allowed to speak longer than ten minutes at one time on any question.

6. The Association shall have the power to change or add to the Constitution or By-laws at any annual meeting, notice of such change or addition having been given at least 24 hours beforehand.

It was then moved and carried, that the above constitution and by-laws be adopted.

It was then moved, seconded and carried, That the Rev. W. F. Clarke be president of this Association; Mr. J. H. Thomas, vice-president; Mr. A. C. Atwood, secretary-treasurer, and Messrs. Mitchell, St. Mary's; Bennett, Cobourg; G. W. Lawrence, Stratford; D. M. Reekie, and H. M. Thomas, Brooklyn, directors. Eighteen persons then enrolled their names.

The discussion of questions was then resumed. After a lengthy and pleasant discussion of the question, "What is the best method of artificial swarming?" it was moved and carried that it be laid upon the table.

The question "Has foul brood ever been discovered in Canada?" was next submitted. As several members answered in the affirmative, it was then resolved, that cases of undoubted foul brood having been reported, this Association would strongly urge the total destruction by fire of all stocks and hives affected by this dread scourge of bee-keeping, so as to prevent its spread.

The question of the best size of hives for Canada was then discussed at considerable length, when it was moved and carried, That a hive containing about 200 cubic inches is the best for Canada.

#### THIRD SESSION.

Pursuant to adjournment the Ontario Bee-keepers' Association met on Wednesday evening at 7:30 o'clock, when the minutes of last meeting were read and approved. Several items of business being disposed of, the question "Do bees consume less and come out better wintered in a uniform cool or in a warm temperature?" was discussed. After a brief discussion it was resolved that bees winter best in a uniform cool temperature. The question "What kind of plants will honey the best in excessively wet weather?" was next considered. After a short discussion it was resolved that in the opinion of this Association the locust, currant, raspberries, and berry plants in general, sweet clover and American bee-plant, are the best plants for producing honey in wet weather. The question "What is the best method of securing the most surplus honey after having doubled your swarms?" was taken up. After a spirited discussion it was resolved that the best method of obtaining surplus honey is by using large boxes on new hives, and taking honey from old hives by the honey extractor. The question "Is the centrifugal comb-emptying machine as useful as has been represented?" was then considered. After several replies in the affirmative, it was resolved—That we regard the Honey Extractor favourably, and recommend its favourable use. The last question brought before the Association was—"Is a plain hive the best for successful bee-keeping in Canada?" After an exceedingly interesting discussion a resolution was passed with one dissentient, That a movable comb hive, and not a plain hive, is best for successful bee-keeping.

After having enjoyed three very interesting and profitable sessions, with an average of sixty intelligent bee keepers thirty five of whom enrolled themselves as members, the meeting adjourned to meet again at the time and place of the next Provincial fair.

## New York State Fair.

ELMIRA, Sept. 15.

A lovely day this, with a nice breeze, just sufficient to cool the air without incommoding any one. The fair is now fairly under way, and in some departments the judges have by noon finished their work and attached the prize tickets. \$7,500 have been taken at the gate to-day.

**Horses.**—There is a very nice display—much better than we have before seen at this fair. They have a more plump and substantial look. The Society have wisely ruled out all animals in this class that the Superintendent may consider unworthy, together with a forfeiture of their entrance money; so that where formerly numbers were entered so as to obtain feed and stable-room at the expense of the Society, in order that their owners might drive about the grounds, now none are allowed, and the lean, lank, fast-trotting equines of old times are seen no more. The horse-ring is, however, still so well patronized, and so much trotting is going on, that it is enveloped in a cloud of dust; and it is impossible to find out any particulars about the horses, except by very close attention at the time the judges are inspecting them. There are 209 entries in this class, of which Lewis G. Morris, of Mt. Fordham, New York, enters 18. J. M. Davis, Richmond Hill, Ont., shows a pair of dark brown mares in the carriage-driving class. The prizes in this class will not be through with till to-morrow.

**CATTLE.**—There are 248 entries of cattle—43 short-horns, 45 Devons, 53 Ayrshires, and 43 Jerseys. The Short-horn class would have been a miserable one, indeed, but for the presence of some choice animals from the herd of Ezra Cornell, of Ithaca, who takes all the prizes with a very few exceptions. His yearling bull, Locomotive (red), and bull calf, Baron Booth (roan), are nice animals, and both get first prizes. His four-year old cow, Kirkleavington, 12th, roan, is a magnificent animal, and deservedly gets first prize. His Lucia, a light roan cow, of Oxford blood, is second only to the other, and takes the 2nd prize. His two-year old heifer, Lucy Curd, red and white, taking the 1st prize, is a fine one; while Lucy Conklin, roan, takes the 2nd prize; both of them are by Kirkleavington, 5,860. He shows Fidget, 5th, and Kirkleavington, 13th, as yearling heifers, and gets prizes with both. He also takes the herd prize—a large gold medal. Devons are a very fine class, as might be expected when the greater portion of them are from the herd of Walter Cole, of Batavia, who takes nearly all the prizes, and also the herd prize.

Ayrshires are a much better class than usually seen, and many very superior animals are shown by Walcot & Campbell, of New York Mills, and S. D. Hungerford, of Adams, the former taking most of the prizes, as well as the herd prize in this class. The Jerseys just equal the Short-horns in number, and are a very good class. They are small, tender-looking animals, adapted to the gentleman's park, or for use near large cities by those who can afford to indulge in the luxury of keeping a cow, and want a good one. They give a large quantity of very rich milk, and are particularly gentle and quiet—a sort of pony among the cattle tribe.

**SHEEP.**—Consist mostly of Merinoes and their grades. There are 139 entries in the various classes. W. Chamberlain and Carl Heyne, of Red Hook; Benson & Mariner, of

East Bloomfield, take most of the prizes in the fine wool classes.

E. Cornell, Ithaca, and John Lynch, West Brighton, show some Southdowns. Walcot and Campbell show four imported Lincoln rams and six ewes. They also show several pens of Leicesters which are really fine animals, and of course carry off all the prizes. Several other pens of Leicesters are shown, but none of them worth much in Canadian eyes. Of Cotswolds there were many pens of really fine animals from the celebrated "Maple Shade," flock of John D. Wing, who takes all the 1st and several 2nd prizes. His ram "Champion of England," bred by Mr. Hewer, of Northleach, Gloucestershire, and brought out last winter is a noble specimen of the breed.

**SWINE.**—There are 73 entries only of these animals, the majority being in the large breed class. Messrs. Clark and McLean of Jefferson Co. show thirteen pens of improved Cheshires. These are a lot of beautiful white pigs, by far the handsomest on the ground, and a new breed, so to speak; they are rather medium in size than large, but are remarkable for early maturity. Mr. Clark claims to have originated this breed some twelve years ago by a judicious crossing of the old Cheshire with a smaller and earlier maturing breed. Joseph Harris, of Rochester, shows four pens of really good Essex swine. Only three pens of Suffolk and two of Berkshires are to be seen. Brodie & Son, Rural Hill, show some very fine Yorkshires, while the once highly thought of Chester Whites must be but five pens, and shown beside the Essex and Yorkshires, they must suffer in public estimation as being a large, coarse-boned, hairy breed, better, perhaps, than common hogs, but not high bred enough to cross with.

**POULTRY.**—263 entries.—In this department a remarkable improvement on former years has taken place, and one can judge that if our American cousins have not taken the hen fever again, they have at least come to consider the raising of profitable poultry a matter of some importance. The collection is not only large, but embraces many very fine birds, including some of the high priced importations from the yard of Mr. Cooper, of Ireland. Mr. Gavit, the Secy. of N. Y. Poultry Association, has quite a number of birds, and takes many prizes; the birds he purchased at our Ontario Poultry Show last spring taking high honours here. G. H. Warner, of New York Mills, E. A. Wendell, Albany, J. Y. Bicknell, Westmoreland, Jno. Salisbury, Jr. Nyack, show large assortments of birds and carry off several prizes. Two trials of imported Light Brahmas, shown by G. H. Warner, are very fine birds, and take 1st and 2nd prizes.

**GRAIN, DAIRY, & VEGETABLES.**—Of wheat we saw but two samples of white winter, several of red, some good winter barley and oats. No spring barley or wheat was shown. Mr. Newton, of Henrietta, shows a new variety of white oats, called Probsteter, that weighs 39 lbs. per bushel, and which, he says, gave 93 bushels per acre on 6 acres. They are the best oats shown, and decidedly superior to either the Norway or Surprise, both of which are shown. One sample of peas, and a few of corn and white beans complete the grain show.

There is a good show of factory cheese and some fine cheddars and good butter. The vegetables do not amount to much, about equal to what one of our township shows could produce; even of potatoes there are but few samples of poor quality.

**FIELD AGRICULTURAL IMPLEMENTS.**—There is a splendid assortment of labour saving implements for the farm, among which the most noticeable as novelties are a threshing

machine and separator, of new and simple construction. A new style of windmill to use in pumping water at railway water tanks, and in the field, it is in operation and seems to work well. Several patterns of hay-tedders are shown, they have teeth made of flexible annealed wire that will give way rather than break upon a stone or other obstruction. One has the teeth fixed on movable springs. Sulky horse rakes are abundant, of various patterns, as well as reapers and mowers without number. Also, a new style of plough with revolving mould board, and one of Pries' double furrow ploughs imported from England.

ELMIRA, Sept. 16.

Two Canadians were on the fair grounds yesterday—Hon. D. Christie and Prof. Buckland. The former is a judge in Short-horn class.

Last evening the court-house was crowded with people, mostly well-to-do farmers, to hear the discussion relating to agriculture. The subject discussed was "In what way can farmers best invest more capital on their farms." Joseph Harris advocated underdraining, raising more grass, making a better quality of hay, and paying more attention to the breeding of good stock, by keeping only thoroughbred bulls, and also improving the breed of horses so as to get animals that could do more work without costing more to keep. A farmer present told how a farm near him had been skinned and run down till it would produce nothing, and had been then bought by an Englishman, just out, who had by draining, deep ploughing, and good culture made it produce good crops in a year after he took hold of it. Solon Robinson wants the Agricultural Societies to let the farmers buy and sell at their fairs.

## MECHANICS' HALL

contains an immense assortment of all the more recent patents in the way of hand-labor saving machines and portable implements of every sort. Palmer's Emery grinder is in operation and seems to be a simple contrivance for grinding reaper knives, table knives, scissors, &c., without water, or leaving any dirt or grit on them; price \$10. Horse hay forks of several patterns are shown. Two styles of milk coolers are shown; that made by Gardner of Watertown seems simple and cheap. Some one from Nashua, N. H., shows a machine for shearing sheep. It is worked by a boy turning a wheel while the shearer holds the revolving scissors close to the skin of the animal. It costs \$100, and will never be in demand at that price. There is a patent egg carrier, cheap and simple, that will hold 108 dozen eggs to be carried any distance over railways without possibility of breaking one, and then can be returned at small cost to fill again. No less than 12 patterns of washing machines are shown, also a thing called a lime-catcher to put in boilers of steam-engines or furnaces. It is said to draw all the lime held in water to it, so preventing incrustation of the boiler.

## DOMESTIC HALL,

264 entries—contains a miscellaneous assortment of ladies' work, manufactured articles, musical instruments, sewing machines, pictures, &c., &c. and is the great centre of attraction to those of the fair sex on the ground, and is crowded to an extent that makes it next to impossible to get a fair look at any article in it. Some good samples of the native wines are shown by the Pleasant Valley Wine Co., and Urbana Wine Co., of Hammondsport, which, to judge by tasting samples, were most excellent wines. Stoves, both cooking and parlour, are very numerous, and many of them in full blast with fire.

burning and cooking being done Nearly all are coal stoves. The Americans show great ingenuity in the way of inventing stove patterns; and in the way of saving fuel and beauty of appearance, their stoves are ahead of ours.

#### FLORAL HALL

Contains a most magnificent display of lowers, contributed by James Vick, of Rochester, and Mrs. J. T. Vannance, Pittstown, and Ellwanger & Barry. Of fruits the show was rather deficient, in many classes there being fewer entries than prizes. Ellwanger & Barry show 40 varieties of apples, and 20 of pears, which each got first prizes. Some good grapes are shown by the Pleasant Valley Wine Co., and J. W. Clark, of Ontario county, the latter taking the first prize. His grapes are fine and well-grown, but some are not yet ripe. A new grape, called *Lunelan* took the first prize for best single bunch. It is a black grape of good size, quite ripe, sweet, rather pulpy, with a thick skin, but enough of juice to make a fair eating grape. Having seen all that we could manage to see, and being disappointed that neither Sheldon or Thorne had shown any of their famous herds, we leave early in order to pay a flying visit to the former at Geneva, on our way home. Everything passes off well, and with such bright, warm weather the fair cannot but be a success, though I must say that in stock they are a long way behind us Canadians in our Provincial fairs. They have the animals, but the prizes are too small to tempt first-class breeders, and, in fact, most of the prizes are about equal to those given at our county shows.

The whole number of entries foot up to 2,086, or about half what we usually have at our Provincial fairs; but many of the entries cover a number of articles in one class by one exhibitor. Everybody is pleasant and polite, and there is none of that disagreeable rough crushing and crowding so often seen with us, nor does any one seem to care to drink anything stronger than lager beer, which is now the almost universal beverage in the States, so that we did not meet with a single case even approaching to drunkenness. A catalogue of all the entries, comprising about 147 pages of an 8vo. size, is published by the Society, and sold to all at 25 cents per copy. A number have been specially prepared for presentation to members of the press attending, and these have a blank fly leaf of good paper next each page for them to write their notes, &c., on.

#### Michigan State Fair.

The Michigan State Fair was held at Jackson on the same days as our Provincial Exhibition, and in consequence the writer did not reach the fair grounds till the third day, after a night journey from London. Owing to the first two days having been wet, the rain pouring down in torrents, the grounds were in a muddy state, and no work was done till the third day, entries being taken up to noon of that day. None of the viewing committees—which is their name for judges—got to work till one p. m. of the third day, nor had they got through when we left the grounds the fourth day, it having been determined to continue the Fair a day longer to make up for the loss of the first two days. The grounds are well laid out, and contain some good halls and stook pens; but, truth to tell, the whole success of the Fair seemed to hang on the horse ring, and in fact the grounds were nothing but a well made race course, with grand stands, &c., and from morning till night there were trials of speed going on, the premiums in the horse classes,

being large and dependant on speed rather than quality of form or appearance. The entries altogether numbered 2,500, and the attendance was large, 30,000 being on the grounds the third day.

**HORSES.**—There were a great many horses catered, but we notice that they are mainly, all either thoroughbreds, half-breeds, or light roadsters and trotters. Michigan is famous for her fast horses; but one looks in vain here for any of that useful class of agricultural or draught horses adapted to the wants of the farmer. We saw but two that could be called heavy horses on the grounds, and both of them had been bred in Canada.

**CATTLE.** (Short-horns.)—There were some fair specimens on the ground, though not many altogether. Col. Brownell showed a roan bull, "Sheldon Duke," by 7th Duke of Airdrie from Paulina, with cows and heifers, Lady Washington, Michigan Beauty, and Michigan Rose. J. Mygrants, a good red bull, Prince; A. S. Berry, bull Duke of Arles; James Farrell, white bull, Prince of the Blood, recently purchased from Hon. D. Christie, of Paris, Ont.; Mr. A. T. Wood had red bull Hilldale, Surprise, a cow got by Apricot's Gloster, and her calves, Surprise second and third, also a red cow, Bella, got by Apricot's Gloster from Brighteyes 6th; the State Agricultural College showed bull Capt Shaftoe; H. Walker, a red and white bull, Marcus, by Oxford Lad, from Mary Grey; Mr. McNaughton showed several head in poor condition; W. W. Crapo, a fine roan cow, "Lucerne," and bull "Lucifer." He also showed the only Herefords on the ground in bull Velvet Jacket, that seemed a remarkably fine one, with the peculiarity of being nearly black in colour, and cow "Gentle," 7th, with bull calf "Willie."

DEVONS as a class were good and pretty numerous. Messrs. Allen, Butterfield and Phelps, being the principal exhibitors. But two Galloways were to be seen, while of Ayrshires there was just one.

GRADES formed a large class, but there was nothing extra about them; there were crosses of Short-horns, Devons and Ayrshires among them. Some very large and fine grades of short-horns were shown in the fat cattle class by Todd and Bowen, of Adrian.

**SHEEP** were a very numerous class, and we noticed that the Leicesters have nearly, if not quite, outnumbered the Merinoes, owing mainly to the fact that many Canadians have brought over animals to exhibit for sale. S. Toms, of Oshawa, Ont., showed 16 pens of Leicesters and Southdowns, J. King and Wm. Lovering, of Ontario, (but of what place the cards do not tell) showed 14 pens of Leicesters; E. Mott, of Parkhill, Ont., 6 pens do; B. W. Robbins, Brighton, Mass., 6 pens do; O. A. Peck, Ypsilanti, 12 or 14 pens do. The Michigan Agricultural College showed pens of nearly every variety of sheep, including some Black-faces, from the heather mountains of Scotland.

**SWINE.**—There were a good many pens of excellent animals, mostly Chester Whites. S. Toms, of Oshawa, had several pens of Suffolk and Essex, as had also Col. Wood, Mr. Sibbie, and the Michigan Agricultural College; a very few Yorkshires, and two or three Berkshires were seen.

**POULTRY.**—There was but a small show, and we could not see a really good bird in the whole lot.

**GRAIN AND VEGETABLES.**—But for the Agricultural College the show for these departments would not equal that of a Township show here. The Agricultural College students showed a splendidly put up collection of seed grain, embracing over 100 varieties, and a collection of vegetables that for

fineness of quality would be hard to beat; in it were no less than 58 varieties of potatoes. The Agricultural College is evidently doing a good work for the State, and to see the interest the students on the ground take in telling all about their work and their experiments, &c., one can but wish we could also have a good Agricultural College, with a staff of working professors that can put something better than theory into the student's head.

**FRUIT.**—There was a whole building given to the fruit, but it was scarcely more than half filled. Here we saw the finest collection of foreign grapes we have yet seen—some magnificent bunches of Syrian, White Nice, Hamburgs, Chasselas, &c., were shown. The samples of out-door grapes were numerous, but very badly ripened. A great many apples, and some good pears were seen, especially a collection of 17 varieties of pears grown by Mr. L. Cooley, of Jackson, that were of fine form and colour and correctly named.

**IMPLEMENT.**—The inside show did not amount to much, but the field implements were both numerous and good. A rotatory harrow was shown, also a new style of iron frame harrow in sections that seems just the thing for new settlers, as it will rise or fall over stump roots or other inequalities without catching on them. It is made by J. E. Bates, of Charleston, Illinois. Several styles of potato diggers were shown, all light and portable, and seeming to be nearly after the pattern of the one in the *Canada Farmer* of September. There was a great show of stoves, and also a fine assortment of farmers hardware, from the manufactory of Withington, Cooley & Co., Jackson, Michigan.

Manufacturers' Hall contained much that was really good, noticeably some splendid flannels and tweeds from the Clinton Woolen Factory. A complete set of furniture in willow ware, and some beautiful sets of furniture in walnut and crimson satin, handsomely carved, made at the State Prison.

Floral Hall, which also included the ladies' work of Fine Arts, was a magnificent affair, and the best got up we have yet seen. In the centre was a fountain, round which were set the cut flowers embedded in wet moss, and they certainly looked bright, beautiful and fresh.

#### The New England Fair.

The annual agricultural fair of the New England States was held at Portland during the second week in September, and so far as the exhibition was concerned was a great success. The tornado which committed such havoc at the east occurred during the fair, tore down many of the buildings, and did much damage. The show of cattle at this fair was reported by the press as being very good, and especially so as regards Ayrshire and Jersey cattle. A gentleman who had gone to Scotland to purchase the best herd of Ayrshires he could find, purchased his whole herd of cows, and did not purchase any bulls, because he did not see one that was superior to those he could find now at home. Mr. Cochrane, of Compton, Quebec, showed some of his magnificent Short-horns, which elicited the greatest admiration. The Devons were not present in such numbers as the Short-horns and the Ayrshires, while the Herefords were represented by but two entries. Mr. Chenery, the im-

porter of the Dutch or Holstein cattle, made a very imposing exhibition of his herd, the only one in the country. One exhibitor showed a few specimens of the diminutive Kerry cattle. Among the vegetables, the Early Rose potato occupied a prominent position.

### The Ohio State Fair.

The Ohio State Fair was this year held in Toledo on the four days from the 13th to the 17th of September inclusive. It was well attended, and passed off successfully in spite of somewhat unfavourable weather during a portion of the time. The fair grounds are very pleasantly situated in a beautiful grove on a sandy rise of ground; the buildings are all of a temporary nature, but commodious, and kept clean by a good sprinkling of saw-dust under foot. The total number of entries was over 4,000, and the number of visitors would average about 25,000 each day. There was a good display of live stock, including 227 entries of horses, 215 of cattle, 297 of sheep, and 112 of hogs; but the strength of the exhibition was in the implement department, which was well filled and extremely creditable. The collection of fruit was unusually fine, especially of apples, pears and peaches. The show of roots and vegetables was extremely meagre, with the exception of potatoes, which were exhibited in large quantity. Specimens of the Early Rose were among the best exhibited. In the dairy department there were some fine cheeses, varying in weight from small conical cheeses of five pounds each, to giants of 400 pounds.

The show of grains was quite inferior to that of our Provincial Fair. Several samples of grain—wheat, peas, and clover seed, were exhibited by H. M. Thomas, of Brooklin Ontario, which attracted much attention. On the whole the exhibition was in many respects ahead of its predecessors, and creditable to the State.

### Hamilton Horticultural Society Exhibition.

The autumn exhibition of this enterprising society was held on Wednesday, the fifteenth of September.

The display of fruit was very fine, especially in apples and pears. The coldness of the season had its effect upon the display of outdoor grapes, very few being sufficiently coloured to be in a condition to exhibit.

Melons, too, were not as numerous as usual. But in pears there was a marked improvement, both in the quantity exhibited and the quality. We noticed forty-six varieties in one collection, and that the growth of an amateur.

The vegetable department was most abundantly filled with fine samples of every description, most of them of great beauty and excellence.

The collections of greenhouse plants were not large, but the specimens were very fine.

The display of cut flowers was small. We had expected to find something grand in the way of Dahlias, Phloxes and Asters; but the collections in these flowers were small, too small for such a city as Hamilton, and such a society as the Hamilton Horticultural.

The amateurs made a most creditable display in all the departments, and we are glad to see this branch of the exhibition rapidly growing in beauty and importance.

These exhibitions contribute much to the enjoyment and instruction of the people, and go far in stimulating a generous rivalry and creating a just standard of excellence. For some years there has been a marked advance in the displays at Hamilton, and we sincerely trust that no effort will be wanting to increase the interest and excellence of these exhibitions.

YORK AND TORONTO UNION EXHIBITION.—The united exhibition of the West Riding of York, Toronto Electoral Division, and York Township Agricultural Societies, was held in the Queen's Park, Toronto, on the 29th and 30th September. The weather was magnificent, and the general character of the display and attendance of visitors concurred to make the experiment of amalgamation successful, though the show in some departments was not worthy of the occasion. The collection of fruit and flowers was, as usual, coming from some of the best professional and amateur horticulturists in the Province, first class in quality, and very beautiful. The field products were good in roots, particularly mangolds, and ridiculously limited as to grain, though good samples were shown of each kind. Of live stock there was a considerable number of entries, and some good animals, among which were Mr. George Miller's short-horns, but no suitable accommodation was provided for them. The cattle wandered promiscuously, as in a pasture. The pigs were not unloaded, but remained boxed up in the waggons that brought them to the ground. The sheep alone, of which there were some fine lots, were provided with pens. There were some good horses. Among the farm implements (very few in number) were Eyre's drain-tile ditcher, a sod-presser (exhibited at Hamilton in 1867), by Atkinson & Bros, Etobicoke, a plough with mouldboard hardened by a special process, shown by B. Plowman, Weston, and Wilcox's triple roller. There was much in the Exhibition to interest and instruct, and we commend the plan of uniting several societies for one good show; but to ensure proper accommodation and arrangements, it is necessary that all entries should be made by an early and fixed date, prior to the show, and not allowed on the very day of exhibition, and up to the last moment of the judges making their examination.

The Mammoth Cluster Raspberry is the largest and latest of the black caps.

The San Francisco *Bulletin* says the California wheat crop is larger this year than last, on account of the larger area sown, and that it is coming forward more rapidly.

There is more timber in Southern Minnesota than there was ten years ago. The prairie fires are stopped by the roads and fields. Timber is too valuable to be wasted, and people guard it with a jealous eye.

The Diehl wheat has fully maintained its high character in Michigan this year, producing a larger number of bushels per acre than Treadwell or Soules, and commanding a higher price than these varieties.

Mr. Griswold, of Vermont, paid \$3,000 for the Shorthorn bull 14th Duke of Thorndale, when a calf. He recently sold him to Mr. G. M. Bedford, of Kentucky, for nearly \$6,000.

Mr. William Kinners, of Osprey, counted the number of grains in a single head of oats taken from a very fine crop grown on his farm, and found no less than 318 plump kernels in one head.

Exports of Short-Horns from Great Britain are noticed during June—seven to the United States, one to Australia, eight to Germany, three to Hanover, one to Holland, three to Prussia, two to Russia and four to New Zealand.

A correspondent of the London Times, who is travelling in Russia, says that in Tamboff and other great grain-growing provinces, the wheat is only half an average crop, owing to drought, and the year's export to England will be seriously affected.

A shipment has recently been made from Constantinople of 800 Angora goats of the finest race, as a breeding stock to the Cape of Good Hope, a previous experimental shipment to that colony having, it is stated, been attended with great success.

At the Department of Agriculture of the University of Wisconsin, the course of instruction directly pertaining to Agriculture is so arranged that the instruction in the classroom can be completed in a single year by students already well acquainted with the physical sciences.

CROPS IN QUEBEC.—We learn from a correspondent in Quebec, that in the neighbourhood of the city at least, farmers have excellent barley and oats; the wheat, though but little sown, is of very good quality. Hay is 50 per cent. above an average—not very well saved. Potatoes have proved a failure on all soils. Since the snow went, they have not been ten days without rain.

The International Congress of the Societies for Protection to Animals, which lately met at Zurich, voted considerable sums for the purpose of publishing popular treatises recommending the preservation of small birds, and a more humane treatment of horses. The assembly also denounced as barbarous the practice of battues, so much in fashion, amongst the higher classes.

## Apiary.

### A Novel Bee-Hive.

To the Editor.

Sir,—In accordance with my promise I will now give you as plain, but yet as brief a description as I can, of my plan for a new bee-hive. In doing so I will commence at the bottom, for in this way the hive's chief peculiarity, which consists in its legs, will at once become apparent. There are four in number, are made of strips of inch board, two inches wide, and are nailed to the sides of the hive at its four corners: while the two fore legs, however, extend but two inches below the bottom-board, the two hind ones are eight inches longer. The whole hive is thus tilted forwards, the bottom-board and the board composing the roof inclining downwards from the rear to the front at an angle of nearly thirty degrees. By this arrangement three advantages are gained; the slope of the bottom-board assists in the removal of foreign and waste materials from the hive; the inclination of the upper bars of the movable comb frames is an additional security against the bees building their combs across the hive from one frame to another: while the slant of the roof sheds the rain, and by its pitch forwards shelters any bees that may be clustered about the entrance. We come now to the bottom-board, which is of inch stuff, and is not made fast to the hive, but slides upon strips, which are nailed, one on each side, to the legs, so that it may be drawn out either before or behind. When in place, it projects far enough beyond the entrance to afford the bees plenty of room for alighting. Across the bottom of the hive, and behind, a strip of suitable wire gauze, four inches wide, is tacked on, its rear edge being fast to the lower edge of the back of the hive, and its forward edge, being free, is doubled around a stiff piece of wire, so as to keep it straight and in close apposition to the bottom-board. This serves the purpose of a ventilator, which may be opened to any desirable extent by simply pushing the bottom-board forwards, without giving exit to the bees or entrance to millers. The main compartment of the hive, to which we have now ascended, is thirteen inches wide, twelve inches high, and seventeen inches deep, inside measurement, and exclusive of a straw lining half an inch in depth, all around. It is made of two inch plank, the joints at the corners being rabbeted, and the grain of the wood running around the hive, in order that the opening of the seams by the alternate expansion and contraction of the wood by moisture and drought may be prevented, and greater warmth in winter, and coolness in summer thus be secured. The passage for entrance, which is cut in the lower edge of the front end, is three-quarters of an inch high and four inches wide at the outside, flared out from that, however, to the full width of the hive on the inside, so

that each bee on his entrance may proceed to whatever comb he wishes. The height of the entrance is regulated by a zinc gate, which is arranged so as to slide vertically between the heads of two screws, its upper edge being bent outwards so as to afford a hold for the fingers. As an additional protection against the variations of the external temperature, the inside of this compartment is lined with half an inch of rye straw (or rushes). This I manage by nailing strips half an inch square with shingle nails all around the inside at the top and bottom, except at each end, where I nail the upper strips three-quarters of an inch below the top; between these strips I arrange the straw, cut to the proper length, so as nicely to fill the space between the upper and the lower one, and then secure it to its place by soft wire wound, after the manner of a bed-cord, around the heads of the shingle nails, which are placed at suitable intervals, and left projecting slightly for this purpose, but are now driven home. Two miniature staples, made by doubling a stiff piece of wire three inches long, are now driven in along the length of each bridge of wire, so as to draw it down in the centre level with the ends. The comb frames, eight in number, are made in the usual manner, and are supported at each end on strips of zinc with suitable square notches cut in their upper edges, half an inch apart and three-quarters of an inch from each end, which can readily be done with a chisel and mallet. These strips of zinc are tacked to the half-inch strip nailed three-quarters of an inch below the top of each end, on the inside, in such a way that there may be a space of a quarter of an inch between the top bars of the frames and the honey-board, and so that there may also be a space of a quarter of an inch between the surface ends of the top bars of the frames and the upper surface of the half inch strips. So that, in a word, the comb frames may not come within a quarter of an inch of any other part of the hive except where they touch the zinc, and at the extreme ends of their top bars which come against the ends of the hive. The comb frames being the same depth before and behind, may be reversed, thus affording additional facility in fitting a full frame, removed from one hive into another into which it may be desired to introduce it. The space between the upper and lower bars of the frames being only nine and a half inches, there is much less danger of the comb giving way by its own weight on a hot day; or when being moved with a large cluster of bees hanging from it; accidents which I have known to happen in the case of higher hives. The honey-board is made in three pieces of half inch stuff; the largest piece, fifteen and a half inches long and fourteen inches wide, is prevented from warping in the usual manner, and is placed across the centre of the top of the main compartment. The other two pieces are fifteen and a half inches long and five inches wide, and are so arranged, one before and the other behind, that they may act as slides. Closed up against the central piece,

they completely cover in the central compartment, and project an inch beyond the outer surface of the hive. Withdrawn two inches, openings to that extent, the full width of the hive, are created for the bees to ascend into the honey boxes, and at the same time, two alighting boards are provided for the bees, who may commence to carry honey into the boxes; for an independent and direct entrance from without into each honey box is made by cutting two grooves, a quarter of an inch deep and one-half or three-quarters of an inch wide, in the upper surface of each slide, three and a half inches from each end and three inches in length from its inner border. To facilitate their entrance still further, the upper surface of these slides for half an inch from their inner borders may be cut away a quarter of an inch in depth. The same strips which form the legs are extended seven inches above the honey board, and serve as posts on which rests the roof, composed of a single broad board with two cleets nailed to its under surface, one before and one behind, just wide enough apart to receive the posts between them. The space between the roof and the honey board is enclosed by four half-inch boards with bevelled ends; these are not fastened together, being prevented from falling inwards by their bevelled ends, and outwards by the four posts, and a little strip nailed to each rear post behind, and to each fore post in front. The honey boxes, four in number, may be made 6 x 10 x 6, or 6 x 8 x 6, with four inch holes bored in the under surface of each at one end. With a strip of sheet iron tacked on behind so as to shed the rain beyond the rear slide when withdrawn, the hive will now be complete. Some of the real, or fancied, advantages have already been indicated. There are others, which I will only allude to, such as—facility in cleaning the hive by removing the bottom board; in restoring the bottom board to its place without crushing any of the bees; in ventilating the hive during the winter by withdrawing the rear slide, covering the opening so made with wire gauze, removing the roof and filling the upper compartment with chaff or wood shavings, closing the entrance, and if thought necessary, admitting a little air through the lower ventilator behind; in putting in place or removing the honey boxes, the slides being closed or opened as required; non-interference between the hatching and nursing of the brood and the storing of the honey; the small size and convenient shape of the honey boxes, the larger boxes being less saleable, and in a poor season not so likely to be completely filled, when only one or two of the smaller boxes need be put on, and sealed over fit for removal; and lastly, the fact that it is not covered by any Canadian patent.

The hive is, of course, a little objectionable on account of its weight, but this may be obviated to a great extent by nailing a strip of inch board, two inches wide and long enough to project six inches at each side, across the

front immediately under the projection of the slide, and a similar strip across the back in the same position. By rounding off the six inches of the projecting ends of these strips you have four handles by which the hive may be moved about with less inconvenience than many less weighty and bulky hives. It will of course be understood that some only of the arrangements of the hive are original with me; that of the zinc strip belongs to Mr. Grose, a townsman and neighbour.

Yours truly,  
W. O. EASTWOOD, M. D.

### Bees Gumming Frames

(To the Editor.)

SIR.—I read in one of your recent issues the communication of A. H. Wallace, and having had some experience with bees, and some little trouble with gummied frames, which present one of the worst features in a frame hive and not unfrequently lead to the rejection of them altogether by the novice in bee-keeping, I beg to offer a few remarks on the subject.

A frame hive looks very well when empty and without bees, and can be handled with satisfaction by anyone; but let it be filled with bees and it is quite another thing.

It appears that Mr. Wallace has made a discovery and got over the trouble, and wishes for all interested to go and examine for themselves, which would be a good walk for some of us who live more than one hundred miles off.

And Mr. Thomas, in a recent article, thinks it cannot be done, while Mr. Wallace gives us no hint how it can be done. Failing other methods, let me tell you how I have succeeded. I have adopted a plan which has worked with me to my entire satisfaction, and have never had a frame gummied for two seasons, which I think affords a satisfactory test of the efficacy of my contrivance.

I do not use the Thomas or any other patent hive. Now here is my plan. Take pieces of wire about the thickness of a stout darning needle, and cut them about an inch long. If you have wooden bearings in your hive, cut them down three-eighths of an inch, drive in one of your wires in the centre, where each frame hangs, or you can put two under each frame, if you like, although I never use more than one myself.

When you put in your frames, press them gently down on the wires, and all will be right, as they cannot move. Drive your wires down in the wooden bearing to within three-eighths of an inch for the frames to rest on, and it gives the bees room to crawl under and all around the end of the frames.

THOMAS LEE.

Londesboro, P. O., Ont.  
Sept. 6, 1869.

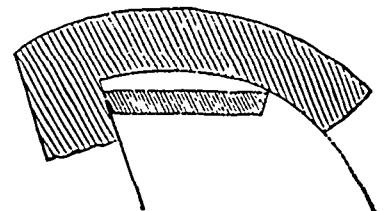
## Miscellaneous.

### Cisterns, and How to Make Them.

The great advantages of soft water for domestic and other purposes are scarcely sufficiently appreciated, or we should not see so many farm houses totally destitute of all appliances for securing a supply. In many large country houses, there is either no provision at all for this purpose, or only a small barrel or rude trough, which is soon empty in summer, and frozen solid in winter. All suffer from this improvidence, and women chiefly, while at small cost, and with comparatively little trouble, an abundance of soft water might be secured at all seasons of the year. A bountiful Providence generally supplies us with plenty, and our own industry and care ought to prompt us to save it when it comes. To do this a soft water cistern is absolutely requisite, and to make it is the best, and often the only chance, with a great many farmers, of obtaining one. The want of knowledge how to do this is generally the bar to its accomplishment; but no farmer ought to be without the ordinary tools requisite, and, if he has no regular tool house and workshop, he should have some outside shelter, at least, in which to put up a plank for a bench, and where he can employ wet days and odd hours of idleness. If he is provided with these tools, and, above all things, keeps them in good order, he will find little difficulty in picking up a knowledge of carpentering sufficient for all ordinary purposes. We will assume that he has these, and that he also has the determination to try his skill at making a cistern, in order to promote the domestic economy and convenience of the household.

We will suppose the cistern to be eight feet in diameter and six feet long. This will require about six planks, fourteen feet long, for the bottom, and about 160 feet of plank for the staves. The most convenient width is six inches or thereabouts, and as twelve feet boards are usually easiest to obtain, they must be cut in the middle, to make staves of equal length. Now first chop off from one side of each stave a tapering slip, not more than one inch at its widest end. This makes the tapering shape requisite, as the small ends of all the staves are placed upwards. Next, to form the bottom, carefully jointing, lay down your plank in some level place; take a piece of strip and drive a nail through one end, and another at four feet distance from it through the other, both nails to project about half an inch at the point. This is to form a trammel to draw the circle of the bottom. When you insert one nail into the middle of the bottom, you sweep the other round the circle, thus laying out the circle from which to work. Of course, you previously cut the planks, as to length, to suit the dimensions

of the circle to be drawn. You have struck or planed the edges straight and true, and running your gauge about the centre of the edge of each plank, insert half-inch dowels at about twelve inches apart—that is, small oak half inch pins, such as are ordinarily used in any barrel head, but somewhat stouter. The pins project about an inch, and are rather smaller at one end than the other, to facilitate parting the bottom, after putting it together. You now place six feet apart something like saw benches or trestles, and on these put two scantling or plank, so that they are level and true. Lay the cistern bottom on this support, upside down—that is, the outside of the bottom upward—run the plane across the ends of the plank, and so on all round the outside, planing a ring round the bottom, level and true, about four inches from the outside. Then reverse the bottom, turning it upside down again. Set your gauge to an inch and a half, and draw it carefully all round the edge of the bottom. This will leave in an ordinary two-inch plank bottom about three-eighths of an inch to remove, and will, when the plane has again been used, as on the other side, and the bottom trimmed and bevelled to the line drawn by the gauge, leave a bevelled sloping edge adapted to the "croze," as it is technically called, which is to be cut in the lower end of the staves. But first the edges of the staves are to be carefully planed and straightened, and must be bevelled somewhat. Now, this bevel is thus obtained: Suppose each stave to be about six inches wide. Take your trammel and set it again on your bench or on a board, draw a line along it on the board with a pencil, and strike again a similar circle, but only about a few inches of the segment. Then take a piece of thin board, about twelve inches long and four wide, and cut out on the edge of it the exact *fac simile* of the straight line drawn and the portion of the segment of the circle. This will of course form a bevel in the angle, and a portion of the circle in the arm of the gauge. Now make another parallel circle to the first, and you have your bevel gauge complete. Pare away with your knife just to all the lines. The accompanying diagram will



show how the gauge is made, and its form when complete. You now place your gauge on the plank to be used for a stave, and bevel the edge on both sides just alike, and each exactly like the gauge. Your gauge will be a circle or portion of one, and your plank will be flat, but the edge of the plank will fit into the throat of the gauge, and all the staves being worked with this bevel

gauge, will of course assume the same circle as the bottom of the cistern, and when placed side by side will naturally form just the same circle. Now strike a chalk line down the centre lengthwise of each stave, and then with your square strike a line at right angles across the staves, at three inches from the lower end, and by using the chalk line as a base, and reversing the square, you can draw a line across the stave at right angles to the long chalk line. This forms the lower line of the groove to be cut out. Now draw another line, one and a half inches from that already drawn, across the stave, and set your carpenter's gauge to  $\frac{3}{4}$  inch, and gauge each edge of the stave, so as to cut the edge equally deep on both sides. Take a fine saw, well sharpened, and saw into the gauge mark, and with an inch chisel cut out the piece and hollow the channel so formed, so as to fit the back or rounding side of the gauge which was formerly directed to be made. Do this in succession to all the staves, and your work is almost done.

Now to put up the cistern. Support the bottom, when the dowels are well driven together so that the joints are pretty close, on some piece of scantling or plank about four inches from the ground. Thus you have room to drive on round the edge of the bottom all the staves which (if well and carefully cut and measured, and the bottom carefully end and gauged exactly to the line) will just jam or drive on tight and will all stand up round the tub. Now comes the hooping.  $2\frac{1}{2}$  inch hoop iron will do, and half inch rivets are large enough. To enable any one to rivet a hoop readily requires, of course, some kind of anvil; but a lead stone will do, if placed on some projecting log, so as to allow the hoop to be placed partly under it, whilst the two ends to be joined are placed together on the top of the anvil or stone. To obtain the exact length of the hoop, any ordinary rope will answer. Some two or three inches must be allowed for the joints in the tub being open, and of course the hoop must be made so much shorter on that account. Two rivets to each joint must be used, and the holes can readily be punched on the endway grain of a piece of hard wood. The punch used must be  $\frac{1}{2}$  inch in diameter at the point, and ground off square at the end. It then cuts a clean, smooth hole out of the hoop iron, whilst the work done by a pointed punch is not at all adapted to rivet well, and makes an unsightly burr instead of a smooth round hole. All that is required in driving the hoop is a piece of any kind of iron for a driver, and a heavy sledge, or if that be not at hand, even a wooden maul will answer well. As the hoops are driven, hammer the staves level all round.

To fit a cover and support it does not require much mechanical skill. The joints must be placed inside, and not rest on the edge of the cistern, and must be supported by

pieces of inch board nailed upright against the side of the tub, and bearing firmly on the bottom. Double inch board (the upper ply crossing the lower) firmly nailed to the edge of the cistern, and on the surface of the joists, with a man-hole and cover to keep out children—who have an insane fancy for getting into all such places—completes the affair. And I will venture to assert that no woman will refuse to economise for a month, or two or three, to pay for what must unavoidably be purchased in the making of such a cistern; and the result is that, for many years plenty of soft water will be the rule, not the exception.

Before putting in the cistern, three pieces of scantling, about  $\frac{1}{4}$  by  $\frac{1}{4}$  inch, must be firmly spiked to the outside of the bottom, crossing the joints. This prevents any collapsing of the bottom, when water from soakage or otherwise is higher on the outside than the in. Do not be discouraged by any difficulties that may arise. Persevere and work carefully. Cut only just to the line in all cases, and have your tools in good order, and you will many a time be glad that you tried amateur coopering.

C.

## Markets.

### Toronto Markets.

"CANADA FARMER" Office, Oct. 9th, 1869.

#### FLOUR AND MEAL.

The produce market generally has been dull for the last week or two. Very little has been doing in Flour and Meal, and the prices are almost normal at the following rates:—

Flour, No. 1 Super, \$1 40; Oat Meal \$5 20 to \$5 50. Corn Meal, \$4 50 to \$4 75.

#### GRAIN.

The only grain in which the market has shown any activity has been Barley, and in this for the past few days there has been considerable decline, owing to large arrivals and accumulations at Oswego. In other grains there has been but little doing. We give the current prices:—

Wheat, Fall, \$1. Spring, 90c to 95c; Barley, 65c to 70c; Oats, 35c to 37c; Peas, 70c to 75c; Rye, 70c.

#### HAY AND STRAW.

Hay is in good supply, and brings from \$9 to \$13. Straw sells at \$7 to \$9.

#### PROVISIONS.

The following are the quotations:—Hams, 15c to 16c; Bacon, 12c to 13c; Cheese, 11c to 12c; Butter, in kegs, 17c to 18c, in rolls, 25c; Lard, 15c to 16c; Potatoes, 25c to 30c.

#### CATTLE MARKET.

There has not been much doing during the past week, and trade has been confined to supplying the wants of the local butchers. There has been a fair supply of cattle however, offering, and prices are as follows:—

Cattle—First class cattle bring from \$5 50 to \$6 50, second class \$5, and third class \$4 to \$4 50.

Sheep are in good supply, especially the lower grades, and meet with ready sale. First class sheep sell at \$5, second class at \$4, and third at from \$3 to \$3 50.

Lambs sell, first class, at \$3, second class \$2 25 to \$2 50, and third class \$2.

Calves, in limited supply, bring \$7 to \$8.

#### HIDES AND SKINS.

Hides are in fair supply, with an active demand. Green No. 1 inspected sell at 7c, and No. 2 at 6c, cured and inspected 7c to 8c. There is nothing doing in calfskins. Prices are almost nominal. Sheepskins are in very good supply and sell freely at from 15c to 75c.

#### PROVINCIAL MARKETS.

Montreal Markets.—Flour—Extra, \$5 20 to \$5 50, Fancy, \$4 50 to \$4 90; Welland Canal Superfine, \$4 65, Superfine No. 1 Canada wheat, \$4 62 to \$4 75, No. 1 Western, \$4 65 to \$4 70. No. 2 Western, \$4 50 to

\$4 40. Bay Flour, 100 lbs, \$2 25 to \$2 35. Wheat, Canada Fall, \$1. Spring, \$1 07 1/2. Western, \$1. Oats, per 32 lbs, 32c. Barley, per 48 lbs., 65c to 70c. Butter, dairy, 18c. to 19c.; store-packed, 17c. to 18c. Ashes, Pots, \$5 50 to \$5 55; pearls, \$5 05 to \$5 70. Pork, Mess, \$28 50. Peas, 55c to 57c.

London.—The *Prototype* of the 6th says:—The arrivals at the market during the past week have been light, and prices in all kinds of grain display a downward tendency. Produce sold readily, buyers exhibiting a good deal of caution in their operations. Hops are brought forward, a good sample, but there is scarcely any demand, and a definite price cannot be quoted. In live stock no change. Butter and dairy produce is in good request. As high as 2 1/2c per lb was given yesterday for one pound rolls extra choice, but 2 1/2c is the general price. Apples vary from 50c to \$1; a good cooking apple may be had for the former price. Potatoes are in good supply, at 35c per bushel, and tomatoes at 20c per bushel. The following is our correct price list:—Fall Wheat, red, per bush., 81c to 85c; Do, white, per bush., 90c to 95c; spring wheat, old, per bush., \$1 to \$1 03; Do, new, per bush., 75c to \$1; Barley, 60c to 75c; Oats, 50c to 52c; Peas, 60c to 65c; Hay, per ton, new, \$3 to \$10; Straw, per load, \$2 to \$3; Butter, fresh, per lb, 20c to 24c; keg do, 17c to 18c; Lard, fresh, 13c to 15c; Cheese, per lb, 10c to 11c; Eggs, per dozen, 12c to 15c.

Barric, Oct. 6.—Fall Wheat, 80c, to 90c. Spring Wheat, 75c, to 90c. Barley, 60c, to 70c. Peas, 40c, to 50c. Oats, 25c, to 30c. Potatoes, 25c, to 30c. Pork per 100 lbs, \$5 50 to \$6. Beef per 100 lbs., \$4 50 to \$5. Butter per lb., 18c, to 20c. Eggs per dozen, 10c, to 12c. Hides per 100 lbs., \$5 to \$5 50. Hay per ton, \$7 to \$8.

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 OFFER FOR THE PRESENT SEASON A COMPLETE ASSORTMENT OF  
**Fruit and Ornamental Trees & Shrubs,**  
 ROSES, EVERGREENS, SMALL FRUITS,  
 NATIVE AND FOREIGN GRAPE VINES,  
 HEDGE PLANTS, SEEDLINGS, AND BULBS  
 GREEN HOUSE AND BEDDING PLANTS IN THEIR SEASON. NEW DESCRIPTIVE AND ILLUSTRATED CATALOGUE OF FRUIT AND ORNAMENTALS SENT ON RECEIPT OF TEN CENTS EACH.  
 v1-9-21.  
 \*If solicited correspondence and a personal examination of our Stock.

**LARGE SALE**  
 —OF—  
**SHORT-HORN CATTLE.**  
 WE will sell at PUBLIC AUCTION, without reserve, on WEDNESDAY, OCTOBER 27, 1869, at GROVE PARK FARM, Beita, Sangamon County, Illinois, on Toledo, Watash, and Western Railroad, (27) Twenty-seven head of Thorough-bred Short-Horn Cows and Heifers, eleven head of Young Bulls; four head (4) Grade Cattle (one Cow and (3) three heifers); also (15) fifteen head of South-Down Sheep bred from importation of 1857.  
 TERMS OF SALE.—Under \$25—cash in hand; above that amount a credit of six months will be given with approved security; if not paid at maturity to bear 10 per cent. interest from date. Five per cent. discount will be given to those wishing to pay cash.  
 Catalogues furnished on application. Conveyances will be furnished at the Depot and at from the Farm.  
**JAMES N. BROWN'S SONS,**  
 Berlin, Sangamon Co., Ill. 1-10-11.

THE SUBSCRIBER HAS JUST RECEIVED, IN excellent condition, a large and well selected importation of hardy  
**DUTCH FLOWER BULBS,**  
 FOR AUTUMN PLANTING, CONSISTING OF  
**HYACINTHS, TULIPS,**  
**GROCUS, SNOWDROPS,**  
**POLYANTHUS, NARCISSUS,**  
**LILLIES, &c.,**  
 Which he offers at as moderate prices as usual.  
**DESCRIPTIVE CATALOGUES,**  
 Containing full directions for their cultivation, sent gratis to intending purchasers.  
**J. A. SIMMERS,**  
 SEEDSMAN AND FLOWERIST,  
 West Market Place, Toronto. 1-9-21.

**DUTCH FLOWER ROOTS.**  
**JOHN A. BRUCE & CO.,**  
 SEED MERCHANTS & NURSERYMEN,  
 HAMILTON, ONTARIO.  
 BEG TO INTIMATE that they have received their ANNUAL SUPPLY OF BULBOUS ROOTS FROM HOLLAND, and are pleased to say that they are in excellent condition.  
 Priced Descriptive Catalogue Post Free on application.  
 October and November are the best months for planting. Early orders are kindly solicited. (1-10-11.)

**SEED POTATOES.**  
**EARLY ROSE**—The earliest, best, and most prolific Early Potato, delivered free at Railroad Stations or Express Offices for \$3 per bushel, or \$7 per barrel.  
**EARLY GOODRICH**—Early and prolific, \$3 per barrel.  
**HARRISON**—The best and most prolific late Potato, \$3 per barrel. All warranted pure.  
**JOHN FORSYTH,**  
 Box 1135, Toronto Post Office.  
 Toronto, 7th Oct., 1869. 1-10-11

**GRAPE VINES.**  
**STRONG**, well grown, one year old vines of *Allan's Hybrid, Ina, Isabella, Rogers' Hybrids, Nos. 15 and 19, Ives' Seedling, Alvey, Delaware, Concord, and Miles,* 25c. each, \$2.50 per dozen, \$20 per hundred. *Salem*, the best of Rogers' Hybrids, 50c. each, \$5 per dozen. *Isabella and Clinton*, three years old, 20 cents each, \$2 per dozen.  
**JOHN FORSYTH,**  
 Box 1135, Toronto Post Office. 1-10-11.

**FARMERS SHOULD USE MILLER'S TICK DESTROYER FOR SHEEP.**



IT DESTROYS the Ticks, promotes the growth of the wool, and improves the condition of the animal. Every day brings additional testimony of its thorough effectiveness. No stockmaster should be without it.  
 Sold everywhere in boxes at 35c., 70c., and \$1. A 35c. box will clean 20 Sheep or 35 Lambs.  
**HUGH MILLER & CO.,**  
 Chemists, Toronto. 1-10-21.

**FEATHERS! FEATHERS! FEATHERS.**

THE Subscribers will pay FIFTY CENTS per pound for **GOOD LIVE GEESE FEATHERS** delivered at their warehouses, Toronto.  
 1-9-21. **JACQUES & HAY.**

**VINEGAR,** HOW MADE FROM CIDER, WINE, Molasses or Sorghum in 10 hours, without using drugs. For circulars, address F. I. SAGE, Vinegar Maker, Cromwell, Conn., U.S. 1-9-21.

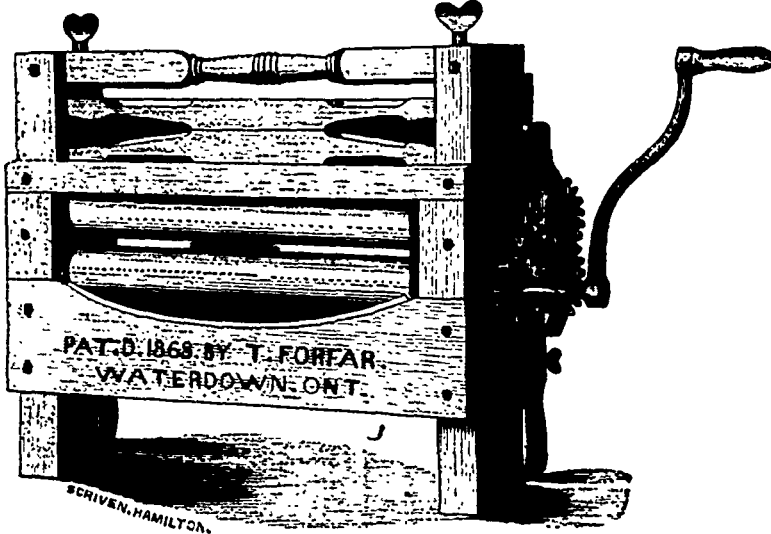


## HOUSEHOLD.

## LABOUR - SAVING MACHINERY IN - DOORS.

IN "THE WEEKLY GLOBE" of May 28th, an article appears under the above heading, complaining that men of inventive genius seem to have devoted their whole time and attention to the construction of machines for the purpose of lightening the labour of men, never having given it a thought that women, who are physically not as strong as men, and have equally as hard if not harder work to perform, in proportion to their strength, require from the hands of these men of invention and discovery, useful machines - for we have enough that are otherwise that will lessen the work within doors, and cause the old dretch to be so changed as to read thus:

"Man's work is from sun to sun,  
And woman's work is easy done."



The above cut will show the construction of the machine.

Now I claim that Mr. Forfar has invented a machine which all the women who have used, and those who may hereafter use, will agree with me after having given it a trial, that it is one step in the right direction, &c., in the lessening of women's work. The machine is known as

## THE ONTARIO DOUBLE-GEARED CLOTHES WRINGER,

and was exhibited at London during the late Provincial Exhibition. I believe there is no prize offered for such a machine; the reason, however, can be easily explained,—there are no Lady Directors. I hope the ladies took advantage of the opportunity offered, and examined the Machine thoroughly for themselves. I now purpose to show why this Machine should be used, and its superiority over those of other manufacture. There are several reasons why more clothes wringers are not in use; one is that there are many persons who do not know the value of them, and another, that they are too expensive to perform the labour of women. If it was a hay-fork or something to lighten men's work, supposing it was not used three times a year, money would be quickly found to purchase it; but as it is to help in-doors, the case is quite different. A wringer is useful every week; without it women have to tug and twist with all the strength that they can muster, to the injury of both the clothes and themselves, the latter often receiving injuries which they carry with them throughout the remainder of life, and all for the want of a proper Machine to do the work for them. Many of these are comparatively useless, such as have no gearing on them; they will not work well nor last long; they will slip on the clothes when crowded, and soon tear off the rubber or get loose on the shaft; and they are thrown into the corner in a worthless state. The strain is too great on the lower roller. Doubtless many can bear testimony to these facts. They injure the sale of good ones, and all for the want of proper gearing to turn the upper roller. THE ONTARIO DOUBLE-GEARED MACHINE is just the thing to supply this want. It will rise up to allow the largest quilt to pass through and not go out of gear, this is what other geared machines will not do; they have to be pinned down, or they will fly out of gear. The Universal Wringer is considered the best heretofore in use, but it has to be pinned down with what is called a patent stop on the gear side, or it will fly out of gear, and thus destroy the use of the spring, and is apt to strain the machine. Some are made on this principle, with short and small rollers, so that they can be sold a little cheaper, they will work very well with small things, but fail when they come to large ones, where they are most needed.

Let mechanics examine them, and say which is the best; let women try them and they will soon know. Do not buy cheap machines because they appear cheap, for remember, you will find by experience that they are dearest in the end. It can be seen by the advertisement, that the Proprietor will deliver them at any Railroad Station in Ontario free of expense, on receipt of the retail price, \$8.50. The annexed certificates from reliable men will show that the machine is no humbug.

WATERDOWNS, August 27th, 1869.—Mr. Forfar,—We have used your Double-Geared Clothes Wringer for some time, and have no hesitation in recommending it as a very efficient labour-saving machine, working perfectly to the satisfaction of our family. Yours respectfully, THOMAS STOCK, Ex-President Ag. Association.

Mr. T. FORFAR.—Dear Sir,—We have had one of your Double-Gear Wringing Machines in use for several months, and consider them a first-class machine and would recommend all in need of a really good machine to purchase one of the Double-Gear Wringers. Yours respectfully, H. RAW, Printer, Lister's Block, James Street, Hamilton.

Mr. T. FORFAR, Dear Sir, We have used your Ontario Double-Geared Wringer for some months, and consider it valuable as a labour-saving machine, and the very best now in use. It is particularly adapted for large articles, such as Quilts, Sheets, &c. W. WILLOUGHBY, Wesleyan Minister.

Mr. T. FORFAR.—Sir,—We have used your Improved Wringer, and believe, of all Clothes Wringers, it is the best. Method. N. C. Minister.

Waterdown, August 27, 1869.

This is to certify that T. Forfar changed my Wringer from the Universal Gear to the Ontario, and the wringer now works complete, and gives full satisfaction. S. S. EATON.

## THE ONTARIO DOUBLE-GEARED WRINGER.

The Proprietor is now prepared to furnish parties with the above Wringer. They will be sent free to any Railway Station in Ontario on receipt of the retail price, \$8.50. Liberal discount to the trade.

THOMAS FORFAR,  
WATERDOWN, ONTARIO.

## Contents of this Number.

	PAGE.
<b>THE FIELD:</b>	
On the "Teh-moi Z-m," or Black Earth of Russia.....	361
Experiments in Deep Sub-soil Cultivation.....	362
Uses of Lime as manure, Culture of the Early Horn Carrot; Hemp.....	363
Experiments with Nitrate of soda and Salt on Fall Wheat, Farm Carpenters' Tools.....	364
Economy in Manure; Early Rose Potato.....	365
<b>THE DAIRY:</b>	
Cream and Butter; The Cheese Fly.....	366
Report on Abortion in Cows.....	367
<b>STOCK DEPARTMENT:</b>	
Mr J. O. Sheldon's Short-horns.....	367
Brown Salway (with Illustration); Sales of Stock Dark Stables; Items.....	369
<b>VETERINARY DEPARTMENT:</b>	
Liver Diseases in the Horse.....	369
The Oter-crowding of Horses; A Horse with Four Pounds of Nails, &c. in his Stomach; Cow Fox Sores.....	370
<b>POULTRY YARD:</b>	
Hen Talk.....	370
Poultry Exhibition—Absent Birds and Empty Pens; Rearing and Management of Geese.....	371
<b>RURAL ARCHITECTURE:</b>	
Design for a Country Church (with Illustrations)	372
<b>HORTICULTURE:</b>	
On the Cultivation of the Pear.....	373
Fruit Growers' Association—Meeting of Directors; The Canada Balsam; Report of the Fruit Crop of Lincoln.....	375
Garden Work; History of the English National Rose Shows.....	376
Fine Flower Shows; Catalogues Received.....	377
<b>ENTOMOLOGY:</b>	
Poisonous Worms Again.....	378
Curculio Notes; Larva Infesting the Parsnip... The Potato Flea Beetle; Garden Enemies.....	379
<b>CORRESPONDENCE:</b>	
Norway Oats, Gorse and Broom.....	381
<b>EDITORIAL:</b>	
The Provincial Exhibition.....	381
The Stapleton Salt Works; Crops in Great Britain Crops in Western Ontario, Notes on the Weather; Editorial Notes.....	382
<b>AGRICULTURAL INTELLIGENCE:</b>	
Report of the Provincial Exhibition.....	384-391
Annual Meeting of the Provincial Association, Fruit Growers' Association—Annual Meeting	391
Bee-Keepers' Convention.....	392
New York State Fair.....	393
Michigan State Fair, New England Fair.....	394
The Ohio State Fair; Hamilton Horticultural Exhibition, York and Toronto Union Exhibition; Items.....	395
<b>APIARY:</b>	
A Novel Bee Hive.....	396
Bees Gunning France.....	397
<b>MISCELLANEOUS:</b>	
Cisterns, and How to Make Them.....	397
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GEORGE BROWN, Managing Director.	