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THE CANADA FARMER

Vol. II. No. 11.

TORONTO, CANADA, NOVEMBER 15, 1870.

NEW SERIES.

The Field.

Early Winter Work.

By the beginning of December the farmer, if he is thrifty and industrious, will have completed most of his work, and gathered in all his crops safely under cover. Most that now remains to be done is the thrashing, cleaning, and marketing of his grain crops. There is an evident tendency on the part of many farmers to somewhat neglect the matter of properly cleaning their grain before taking it to market. So much has this been the case this fall that our barley, which usually ranks No. 1 and commands the top price from United States maltsters and brewers, has been brought to market in such a dirty state, and so full of foul seeds and failings, that the bulk of it has only ranked No. 2, and dealers on the other side will scarcely buy the cargoes sent over, unless at a considerable reduction below the price of western barley. This might easily be avoided by a more free use of the fanning mill, an implement that does not seem to be as much used and appreciated as it should be. A bushel or two of tailings or chaff left in a wagon load of grain, can, it is true, be passed off, but the entire sample will be rated at a price that will reduce the value of the whole much more than the loss incurred by leaving out the tailings would amount to. So far there is nothing to complain of in regard to prices, which are comparatively higher than last year, with a larger crop to sell; and really first-class samples are eagerly purchased at an advance on average values, while unclean and poor samples are neglected or can only be sold at a reduction.

IMPLEMENTS.—Now that the field work is over, every implement that has been in use should be brought in, cleaned, dried, and oiled or painted, and put away safely under cover, where no rain or snow can reach it. Let there be a place for every thing and every thing in its place before winter sets in.

Every farmer should have a building set apart specially for the purpose of storing away his implements of husbandry when not in use. All that are broken or damaged should now be thoroughly repaired or replaced, and this done, there will be no time lost in spring when the season for work again comes on.

FENCING.—With the return of cold weather and a frost-bound soil, the farmer should endeavour to cut and split such rail timber as may be required for renewing or repairing of fences. This work is more easily done when there is little or no snow in the woods, than after the heavy winter storms come on. With the woods nearly clear of snow, it is much easier to see where to lay out the rails and pile them in places that are easily accessible when the sleighing becomes good enough to draw them to the clearings. Pathways for the team to get at them should be cleared out, while the nature of the ground can be seen, so that holes and bogs can be avoided. So also with the supply of firewood for next season, which may, however, be cut later, though usually some portion of each tree can be made into rail-cuts, while others may be cut into cord-wood. By a proper method of arranging this matter much valuable timber may be saved to a better use than burning, and much time and trouble saved to those who have to do the work of hauling out the rails and firewood to the yard and fields. If the work of looking over and repairing standing fences that do not require re-laying has not been done, no time should now be lost in attending to the matter.

STOCK.—All the animals on the farm should now be under shelter, and no longer allowed to roam over the fields even though they may still obtain a bit of frozen grass, which at best is scarcely equal to good clean straw. Those who have valuable stock will of course see to their being well housed and kept warm and comfortable as possible, with abundance of food and water. Animals intended to go to the butcher in spring or early summer should be put up to fatten before they lose their summer flesh. They need not be highly

fed at first, but care should be taken to give them a sufficient supply to keep them in thrifty and improving condition, till the time comes for pushing them rapidly forward. Those who have saved their corn-stalks or sowed corn for fodder, will find it the best plan to begin by giving out this feed at the commencement, and if the stalks are cut and steamed along with some roots or crushed grain, they will need little or no hay so long as this fodder lasts. Pea straw that has been well saved and is perfectly free from damp or mouldiness, makes excellent food when cut and steamed, and has considerably more nutriment in it than the straw of cereal grain crops. Sheep will often thrive well through the winter on pea straw with the addition of some roots. Cows that are giving milk need extra feeding at this time, to enable them to keep up the supply and give any return in butter, for without good and rich food, such as the best of clover hay and a little coarse-ground pea or barley meal, the cream that comes from the milk will contain but little butter and be difficult to churn.

The store pigs must not be neglected, for upon their being kept thrifty and in a constantly growing state will depend the success of the farmer in turning out profitable pork. They should get warm quarters and plenty of food. Cut clover hay mixed in with steamed or boiled roots, ruta bagas especially, and given warm with a little pea meal added, is capital winter food for store pigs and breeding sows. Keep their sties dry and well littered with straw and sheltered from storms or snow drifts. Nothing can be more unsightly and liable to create disease among pigs than the filthy state in which too many farmers allow their sties to remain during cold weather.

SALTING DOWN PORK.—To have good pickled pork the meat must be from pigs not exceeding 150 lbs. dressed. Cut out the hams, and cut the rest of the carcass up into medium-sized pieces of from 5 lb. to 7 lb. each. Rub each piece with fine salt, and set by for two or three days to draw out the blood.

Have a nice, but not very strong, well-boiled pickle, made from Goderich salt; lay the pieces in the tub or pickle barrel and pour enough of the brine on when quite cold, to cover the pork entirely. In about a month the pork will be fit to use, and may be kept for any length of time in the pickle, so long as it is fresh and good. If it begins to get the least bad taste, the brine must be re-boiled, or new pickle made, and the pork taken out and put in fresh tubs or barrels, and again covered with the brine.

Bacon and hams are best cured by first well rubbing in dry salt mixed with about one part in 400 of fine saltpetre, and afterwards covering with dry salt till they have become well salted, which generally takes three weeks, after which the meat is to be hung up in the kitchen to dry, or smoked, as soon as salted enough.

DITCHING AND DRAINING.—Much work of this kind can be done even after the ground is frozen or snow falls. It may be requisite to use the pickaxe to break the frozen crust, but that done, the soil underneath will be easily dug out. If the lines of the drains have been marked out, and the surface soil loosened by the plough, it will greatly facilitate the work. Tiles may be drawn on the land during sleighing, and everything got ready for an early commencement of laying the drains as soon as spring opens and the snow is gone, before the land is dry enough to be put under crop. The value of drainage to the soil is as yet little understood by our farmers, still there is always something being done towards the improvement of the soil, and good well-made under drains soon show profitable returns in the increase of the crops and the doubling of the value of the land.

MANURE.—Every effort should be made to increase the amount of manure made on the farm. Every dollar's worth of manure judiciously added to the soil gives a return of five dollars in the increased yield of succeeding crops for years afterwards. The manure heap is the farmer's savings bank, and pays cent. per cent. per annum for every dollar's worth of material and labour put into it. Everything in the way of vegetable matter, swamp muck, and scrapings of the roads and yard lanes that can be procured, should be hauled to the compost heap; and the droppings of the stock that are confined to stables and byres are better added to the heap than lost among the litter of the straw yard, which should rather be made the absorbent of the liquids, and get decomposed in the course of time. Too much of the manure is wasted by being scattered about in the straw, where it can not become of nearly so much value as if carried to one side and properly manipulated in the compost heap.

Of Peruvian guano, the total export last year was over 500,000 tons, of which Belgium took 82,000; England, 196,000; and North America, 25,000 tons.

Beet Root Sugar.

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NO. VI.
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Having now gone fully into the reasons why it is the interest of the farmers of Canada to engage in the growth of beet root of the sugar varieties, in the place of mangel wurtzel, and as an assistant to the turnip crop, I will proceed to the best-known methods of manufacturing the sugar, at the same time offering such suggestions for the purpose of simplifying the processes, as a considerable practice in general manufacturing, and good knowledge of mechanics and the practical chemistry of the industrial arts, may suggest. I make this as broad as possible, my object being to put on record the several methods of proceeding, so as to prevent persons patenting any of the processes, and thus delaying the introduction of the manufacture of beet-root sugar into Canada.

WASHING THE ROOT

This is the first process. The washing must take place in a rolling cage, in a trough partly filled with water, the cage being slightly depressed at one end, partly open at both ends, and the lower segment of the circle—the full length of the cage—being immersed in the water; the trough turns by machinery, with hand, horse, or steam power, and the roots are thrown in at the upper end; they gradually work along the cage, as it turns in the water, and are discharged at the lower end in a clean state. A stream of water should enter at the lower end of the trough, and flow through it, and out at the upper end, thus carrying the dirty water off, and leaving the clean end of the cage constantly supplied with clean water, whereby the roots are rinsed as clean as water will make them, with the least expenditure of water. The trough should in large concerns be fitted with a rolling cloth or frame of wooden slats closely joined together, which receives most of the dirt and sand, and carries it away. The water (where it is scarce) should flow off into a long trough or ditch, and be made to traverse as great a distance as possible, during which time it will deposit the dirt and sand, and may be used again from the farthest end of the ditch, and thus a great economy of water may be secured.

GRINDING.

This is done in several ways. In small concerns, or where better cannot be had, a sheet iron grater, punched like a nutmeg-grater, but of course much coarser, and made to revolve, will cut the roots into pulp at a considerable rate, but it should never be used where better can be had.

The next cheapest rasp, and one perhaps as efficient as any, may be made of a cylindrical wooden roller, with turned iron axles and journals, all, of course, fastened in a proper frame, and of strength sufficient to

do the work without chance of breakage. From end to end of the cylinder channels are cut, into which are inserted lengthwise saw blades, similar to the blades of the common bucksaw, but thicker; these are held in their places by double wedges in the grooves, or pins into the body of the wood, and project a little more than the depth of the teeth. As many as eight or ten of these saw-blades may be inserted at intervals round the cylinder—they, of course, project equally. The saw-blades are made movable; the teeth of one should be opposite the vacancies of the next; they can be taken out and sharpened as occasion requires. They are filed in the ordinary way. The blades, where wedged into the wood, should be covered with a good varnish, or be well painted to prevent rusting. This cylinder is made to revolve rapidly, and the roots are presented to it in any convenient manner, and are thus reduced to pulp, which is received below.

A similar cylinder may be made with thick steel blades, inserted in the same manner, and ground to a thick edge, which is sharpened as occasion may require, by the removal and grinding of the blades.

Another form of cylinder is made by a number of circular saws punched out of iron plates (teeth and all are punched at one motion); there is a central hole with a key slot. A number of these are put on a turned iron axle, with intermediate smooth plates of iron of a less size, so as to allow of the teeth being set broadways like a saw, and this, though an expensive, is a very efficient tool, particularly if the saws are made of steel of the best quality. All the saws and plates are held firm on the centre by a key, or by two keys, wedge-shaped, going from end to end, along a flat place made in the spindle.

Another plan is the insertion of a series of flat cutters, like plane irons, round the circumference of a wheel, and which are set so as to shave or scrape the roots when presented to them, endwise, into the thinnest possible shavings.

Any of these plans, well carried out, will produce a pulp which can be pressed at once. The roots are presented to the grater (let it be in what form it may) by either hand power or machinery. The grater or rasp should revolve with great rapidity, and the resulting pulp be like soft wet snow, the finer the better.

PRESSING.

The pulp, when ground, may be pressed in any of the following ways:—

1st. In cloth or linen bags, with a powerful screw press. In this case the bags or cloths have only a small quantity of the pulp put in each. Cloths are best; they are put in frames to be filled, and the ends of the cloths folded in. Each parcel of pulp thus made, which should not be more than two inches thick, is then put on a board, or

iron plate, and gradually piled up one on the other, under the press, until the limit of the screw is reached; the pressure of the screw is then brought to bear evenly through the medium of a thick cap-piece, made by crossing strong two-inch oak plank, well screwed together. The pile of tiled cloths stands in a tray under the screw to receive the juice, which is then carried off to the boilers.

A second method of pressing is similar to the above, but the press, instead of a screw, or series of screws, is made of the ordinary hydraulic press, and is, of course, more efficient, although very expensive.

Many other presses of this description will naturally suggest themselves to the mechanical mind, and will be used where necessity, or limited pecuniary means, prevent the use of more expensive methods.

DEFECATING THE JUICE.

This has been partly described in a former article, but as other processes are mentioned more at length, it is believed that a repetition will be beneficial, and sure to fix the matter in the mind of the reader.

When the juice is obtained from the press, it runs, as quickly as possible, into the boilers, being strained from all traces of root and pulp. Hydrate of lime (hereafter described) is added to a greater or less amount, according to the process to be used, and the liquor in the boiler is brought to from 165° to 168° of heat (Fahrenheit's scale). A thick scum then rises, and when it has risen sufficiently, the liquor is brought so nearly to a boil as not to break the head of scum, which is then removed, and the liquor, now clear, and but slightly coloured, is boiled until sufficiently evaporated, when it is ready for the

SUBSEQUENT PROCESSES.

These are several in number, according to the product required. For the farmer or small manufacturer, who has not the necessary skill for the refining process, it should be merely evaporated until it is of sufficient density not to ferment—just such as ordinary treacle or molasses—and this is then fit to barrel up and take off to the refinery, where it will bear a price in accordance with the care with which the roots have been grown, and the subsequent processes conducted. The most important point to guard against is burning or browning the liquor, and for this purpose, where it can be had, and the work is to be constructed on a manufacturing scale, a boiler specially constructed is required.

THE BOILER.

This should be made thus: The bottom should be conical, made double, of boiler iron, well stayed and strengthened so as to bear a heavy pressure of steam between the two skins, to do the best possible work. Steam is the only heat which should be used. There must be an inlet for the steam, and an outlet back into the steam boiler for the

condensed water to flow back into the boiler. The iron part must be made by a boiler-maker, and be calculated to bear the full pressure of ordinary high pressure steam. The top, or upper portion of the boiler, may be made of wood; an ordinary hooped wooden curb will be sufficient, and is perhaps better than if made of iron. There must be what is called open steam attached to the boiler for special occasions; this is merely an iron pipe of an inch in diameter, connected with the steam boiler, and going to or near the lower part of the conical bottom. The steam is shut off and let on by a tap at the upper end of the wooden curb, and within reach of the workman's hand. There should be a pipe and tap fitted to the point of the conical bottom of the double part, to enable the operator to draw off sediment and to empty the boiler as required. There must be proper receivers under the boiler suitable to hold the several kinds of substances which may be withdrawn from it.

In addition to the open steam, the refiner or large manufacturer will require a special coil of pipes connected with the carbonic acid arrangement which will be described further on.

THE FARMER'S BOILER

This need not be an elaborate affair. The same boiler and evaporators which he uses for maple sugar would be quite sufficient to bring the sap down to the syrup which is proposed to form the staple of his manufacture. The Americans have many plans for boilers adapted to the purpose of reducing the juice of the sorghum and maple sap. These all do well, and are so extensively advertised in American publications that any person wanting such can obtain them ready-made without difficulty. In a former number of the CANADA FARMER, under the head of "Maple Sugar Making," this subject has been fully treated, and to those articles (Vol. 1, p. 39, also Vol. 4, p. 49,) the reader is referred. The great object to be attained is evaporation without colour or burning. Any means which will give this end is what is required.

In future numbers, the consideration of this important subject will be resumed. New works have lately been published, giving the latest discoveries of the continental manufacturers, and the information which those works contain will in due time be transferred to the columns of the CANADA FARMER.

No. VII.

PROFITS OF BEET ROOT GROWING.

On this subject there will doubtless be endless disputes and cavillings. Some of the best agriculturists in the Province maintain that turnips cannot be grown to profit

as a crop, on account of the labour necessary, and that were it not for the destruction of weeds, the rotation and manure which that crop gives, the farmer would be better without it.

Others, particularly our friends round Guelph, rely altogether on their turnip crop as the means of fattening cattle, and it thus becomes the *cash crop*, and takes the place of fall wheat, which is now a failure in that district. Now as the usual mode of reckoning of the farmers in the County of Wellington is, that besides the turnips required for stock sheep and growing stock through the winter, they can fatten one good beast (ox or cow) for each acre of turnips grown, and as no man need expect to make more than from 30 to 35 dollars on the animal over and above the original cost (or worth of it), when put in stall, we may safely reckon the produce of an acre of the best turnips, cost what it may to grow, to be from \$30 to \$35, and that it can never produce more than \$40 per acre gross,—out of which the cost of labour in growing and attendance on the cattle has to be deducted.

An acre of beets will cost no more to produce than an acre of turnips, the culture is the same, and also the manure and labour of sowing, hoeing, and harvesting the crop; the singling the beets may be a little more troublesome, but the advantages in not suffering from fly and the quick growth of the plant to smother weeds, far more than make up for that difference. Beets may be sown later and harvested sooner than turnips.

If ten tons of properly selected sugar beets can be raised on an acre, they are worth, delivered at the factory (say within three miles), four dollars per ton, or \$40 per acre.

An acre of turnips as above produces from \$30 to \$40 per acre in cattle feeding.

An acre of fall wheat at 30 bushels per acre (and who would not be glad to be sure of that amount of crop), at \$1 25 per bushel will produce \$37 50.

An acre of barley, at 40 bushels per acre, and at 80 cents, will produce \$32 00.

So that an acre of sugar beets, taking every contingency into account, is worth as much, to say the least, as an ordinary crop of any other farm produce in Canada. And in addition, if the farmer works the crop up into syrup, he may be certain of realizing fully as much more, or \$80 per acre, exclusive of the wear and tear of sugar utensils, fuel, and labour. The refuse is supposed to be fed on the farm, and this worked into manure, and the value of it is not taken into account in either case.

Now it appears from the returns of the Patent Office at Washington ("Report of the Commissioners of Agriculture, 1868"), that the average production of a crop of cotton in the United States, is only equivalent to \$56 25-100; the proceeds from an acre of tobacco to \$60; and on both these crops the labour is immense, and, as they say, never ending.

Those amounts are given in American currency at a time when fully one-third, if not more, must be deducted to bring them down to a gold standard, exclusive too of extra taxation, and these deductions leave an acre of sugar beets (at \$40) quite equal to a crop of the great staples of the South, and if worked up by the farmer into concentrated syrup, of greater value than either.

But the advantages of the beet root crop, if raised as proposed and turned into syrup, must not be reckoned merely as an *assistant*, a supplementary crop; it can be pushed to any reasonable extent, and will really nearly if not quite double the cash proceeds of the farm by its returns, exclusive of the increase which will take place in the wheat and other grain crops from the manure afforded, and the improved tillage which is sure to result from increase of means and returns to the farmer on his average year's work. I reckon in the foregoing that the beet root crop will take as many hoeings as the turnip crop, but if managed with judgment there are strong reasons to hope that at least half the hoeing may be dispensed with.

To raise beets to the best advantage for sugar they must not be sown till well on to the middle of June, and they will be ready for the manufactory by the middle of September, and may be begun within the first week of that month; so that if the ground is properly prepared by early spring ploughing, and then by several harrowings and rollings, sufficient to keep down and kill the weeds, all the surface weeds having vegetated, the beets run ahead of those that survive, and from the short time they occupy the ground, the weeds have not time to go to seed. This is putting out of sight all the advantages of horse-hoeing, which are considered to be equal, whether in the turnip or beet crop.

A miss crop of turnips, from fly or drought, is a common occurrence; indeed, what with missed spaces and general troubles from this cause, turnips are always a precarious crop. Beets, if the seed is good, never miss; the seed does not perish either from wet or drought, and the root has been called "the root of scarcity," because when all else failed the beet succeeded; hence, whatever little extra trouble there is in the growth of it, when compared with turnips, it is amply made up by its unfailing certainty.

Then again, when it is once a plant of general growth, the cash return of forty dollars per acre can be had from the manufactory, long before the turnip crop can be realized on, so that the advantages of the beet over the turnip crop are too manifest to be disputed.

In all this, too, we must not forget the thorough manuring the ground gets from the leaves, which are always cut off in the fields, and ploughed under before winter, thus leaving the land in the best possible condition for either barley, or spring wheat, or oats.

These assertions are not speculative, or given without ample experience. In countries where beet sugar is grown, as the growth of beet increases, the number of cattle increases; the manure from the cattle is more than can be obtained in any ordinary farming, without the growth of that root, unless expensive artificial manures are used. So the grain crops increase, and the general fertility of the land is maintained and added to, whilst from the greater amount of hoed crops and partial fallowing, by harrowings, and cultivatings, the weeds diminish year after year, until the land becomes clean, instead of, as most of our Canadian farms now are, a mass of foul weeds only to be kept down by the entire loss of crop one year out of four by naked fallows, the result of which, however necessary since the failure of our wheat crop, has been poverty to the farmer, and a gradual yet surely increasing want of fertility in the farm.

The beet root cake is better food for cattle than the original root. It can be stored for future use, and it is the best possible food for milk cows, never flavouring or injuring the butter.

Those who live to see it, will marvel at the regeneration which the cultivation of the sugar beet will produce in Canadian farming. Come it must and will.

VECTIS.

A Backwoods Farm.

SOWING SPRING WHEAT.

Our sub-contractor failed in his contract to have the whole one hundred acres ready for spring wheat the following year, and although most of it was legged and partially burnt, yet the fencing was incomplete. Some disagreement among themselves caused this, and we only had about sixty acres of spring wheat sowed by the 20th May following. We sowed one bushel and one peck an acre, and it would have been plenty, but from the time it was sowed, after one heavy rain, we had not one shower until the first week in July, and about that time we had a few showers, just enough to save the wheat from destruction. I think we had one slight shower about the middle or end of June, but very little. The wheat that lay on or near the surface did not vegetate until this shower fell, and consequently that portion of the seed that had been better buried was up quite high. The effect of this was that at harvest, which was delayed until September 20th, we were obliged to cut the unripe wheat to save the dead ripe portion from being lost by shelling out. This was a great drawback, as part of each field would be quite ready to haul, whilst other portions would be quite green and damp. About this time also, as is usually the case, some heavy showers fell, and as the equinox approached, wet and cold wea-

ther set in, and our land being cradle-knolly, and the water lying in the hollows, the waggon wheels cut so deeply into the sod that it seemed utterly impossible to haul off the wheat to the barn. The load rolled and rocked about like a ship in a gale of wind, but ultimately all was secured and hauled home to the barn.

BOARD ROOFS.

Here more trouble arose. When we built the barn, we, of course, calculated to cover it with shingles, but no shingles could be obtained, and as lumber was plentiful from a neighbouring saw-mill, we concluded to use boards instead. This would have been sufficiently tight to save the crop, but the lumber was cut, as almost all lumber now is, with a large circular saw, and one not in the best of order, and consequently it was covered with circular marks made by the saw where some one or more of the teeth projected beyond its fellows. These marks or channels, as they ran in a circular direction early across the boards, afforded a perfect succession of little drains to convey the water from the centre to the outside of each board, and consequently under the batton that covered the joint between each two boards, and so directly through the track thus formed on to the wheat below. Our wheat was badly injured by this, and we had at once to procure shingles at any cost, pull off the boards, and lay the shingles as quickly as possible—and not until this was done was our crop safe.

We would have threshed it out, but it was too damp and wet from the unripe straw that was mixed with it. This trouble somewhat daunted us, but we were made of stuff too enduring to "lie down and die" under any difficulty that could be surmounted.

BUILDING THE BARN.

This was rather a serious undertaking, but it had to be done. We contracted with a framer to do the carpenter work—we only undertaking to get out the timber in the woods and haul it, find hands to raise the frame, and also haul the lumber wanted, and find nails. I mentioned a neighbouring sawmill as being conveniently situated. The preceding sleighing months had been taken advantage of to haul 1,000 logs to the mill to furnish the lumber requisite for the barn and stables. We got it sawn on shares, that is, every log that was cut and yielded say two hundred feet of lumber, was divided, and one hundred was for us, and one hundred for the mill owner. This worked well, and to our advantage. In clearing the land, we had to remove the timber at any rate, and we had more labour to spare during the winter than money. We thus got plenty of lumber on easy terms.

About the 1st of August, when our first

and greatest hurry was over, we had the timber all framed, and a raising day was appointed. I was very averse to "bees, but always made a comparative exception in favour of raisings. Here individual labour cannot get along; united strength is requisite to get the heavy timbers up, and as we had to go to our neighbours' raisings on the same principle, and from the same cause, we determined to have a "bee" ourselves. All was prepared and a day appointed, but before we could get the frame together we had to build a foundation, and set in the cedar posts. I would have had the posts at least six feet high, so that a cattle stable could have been formed underneath, but the framer exclaimed that such a barn was never seen, and that it must surely fall down broadside. It "might," he said, be well enough to build a barn on a stone foundation so high, or perhaps higher, or against a side hill, but to raise a barn so large as 100 feet long by 40 wide, and 20 feet high to the plates, built on level land, to be "goggled" up on cedar posts six feet above the earth, was just folly, as it would surely fall down. I was utterly unconvinced by these statements, but at length yielded, and the barn was raised on foundation posts, four feet above the earth—I would not give in to any lower—and this was pronounced very bad policy by many who were consulted. Many reasons were given, but I did not believe one in ten to be good, and I am only sorry I did not insist against all comers, and raise the barn on six feet posts, under the sills. The advantages are so many. We will suppose you do *not* make a cattle-shed or stable underneath the whole barn, as it would, of course, entail the necessity of the floors in the mows being strong enough to support the barn full of grain, but you can use the large cavity under the barn floors; and our barn had two floors. And when the team is delivering a load of wheat sheaves it is very much easier to pitch those sheaves off the load down six feet into the mow below the barn floor, than it would be to pitch them six feet above it; and your barn, moreover, is one-third larger with each mow six feet below the level, and you can load through the floor in a waggon backed in underneath so easily. Then the sills never rot, as the manure never accumulates against them. Rats and mice cannot so well do mischief, and when unloading hay with a horse fork you have an infinite advantage in pitching down hill. There is literally no disadvantage about it, with one exception, and that is the hauling up an inclined plane to reach the floor, and here again the difficulty is small, as I have seen several large byres at Messrs. Gooderham & Worts' cattle feeding establishment in Toronto, where all the hay is hauled from choice up an inclined plane, and into the immense building above the cattle, so as to avoid as much as possible all pitching up-

ward. Here the waggons absolutely pass over the cattle stalls. And where people are feeding a thousand head of cattle, as is the case in the byres above mentioned, saving of labour of men at the slight cost of constructing the inclined plane, and an additional pull for the team when hauling in the grass and hay, is a great advantage.

Farmers do not readily alter their ancient course. As others about them do and have done, so they do and continue to do. But the progress of the world is forward, and every one's mind should be readily open to conviction and trial, and an attempt to adapt other people's increasing experience to their own wants and case, rather than condemn wholesale what persons more ingenious than themselves have used. If manufacturers were to plump themselves down as farmers usually do, and say certain things will not answer because they have not been in the habit of using them, they would soon be left far behind in the race of life.

RAISING THE BARN.

In the course of getting ready for raising, my mind was still firmly bent on dispensing with a bee. I had procured a large and strong rope, and made three or four heavy pulley blocks, the use of which I was thoroughly acquainted with. I determined to try and pull up the heavy bents and timber by mechanical force, in preference to human aid. But I found such an active opposition to my plan from the carpenter and others interested, who knew nothing about the use of such means, that I abandoned as useless the contending any more about it, and the bee was accordingly summoned, and an excellent attendance of smart young men was obtained. There were forty asked; thirty-five attended. The frame was unusually heavy and large, the barn being 100 by 40 feet, with 20 feet posts, and consequently the bents were very heavy.

The first thing done was to choose two captains, one for each side. This was soon done, and they proceeded to select each a man from the mass for his own side, turn and turn about. As each name was called, the owner ran to join his party, and when those not chosen were left, they naturally were made to feel the small value set on them. Finally, all were selected but one Dutch lad, and much fun and merriment was held over him, as each party insisted on having him. So they tossed up a cent, head to win, and he fell to my party by lot.

Never having been at a raising before, I was much pleased at the wonderful activity of the second generation of Canadians. All nations were represented—English, Irish, Scotch, French, Dutch, Germans, and Prussians—and it would be invidious to state which were the best or more active, when all were running about like cats on the building, driving in pious, where no-

thing but twelve inches of lumber was to stand on; standing on the plates when only balanced on the points of the tenons, vying with each other in the determination of each side to outdo the other in feats of daring activity on the building, as also in those of heavy lifts and carrying the ends of large pieces of timber.

Our bee of about 35 hands raised the building entirely in two and a half hours, during which time had our stolid Englishmen, who have been accustomed to move as if a hundred pounds were tied to their feet, seen the "second growth" Canadians at their work, they would have fully appreciated the activity and power of the young natives. Young Canadians from the agricultural districts are, physically speaking, as fine a race of men as are to be found—tall, spare, active and wiry. They will make their mark hand to hand with any nation on the face of the globe.

All hands then adjourned to wash, and to supper, after which all sorts of curious games completed the evening's amusement. If I could remember the German, French and Prussian it would be amusing, but I cannot. During the raising a large gathering of young women had taken place, and all were determined to give the hater of bees (myself) some idea of how an evening, after work was done, should be spent. It was about twelve o'clock before the dancing and games broke up, and nothing stronger than tea and coffee was produced to drink; all passed off pleasantly enough. The great bane of bees is whisky—avoid that, and they no doubt are very serviceable to some people occasionally, but I never liked them as a rule, when it was possible to avoid having them.

YIELD OF THE CROP OF WHEAT.

I had almost forgotten to mention the entomological fact that this year the wheat ears were covered with thousands on thousands of the blue aphid. Some of the ears were entirely hidden. The insects nearly resembled lice. We were quite alarmed for our crop. Our outlay had been large—nearly sixty acres of wheat sowing—and if this failed, we were in a bad position. However, all was not lost, as after threshing we had about 16 bushels to the acre; and had we had an entire absence of these insects, I am convinced we should have harvested more than 32 bushels per acre. The sample was excellent, and we ultimately sold all for seed at about \$1 per bushel. In those days wheat was 65 cents per bushel for milling purposes.

HARVESTING TURNIPS.

We had an excellent crop of purple-top Swede turnips this year, and as the early part of November found us with the turnips yet in the ground, as a matter of course, occasional frosts and some slight falls of snow made pulling them a very uncomfortable sort of work. We had a man

working for us who offered to contract for the lot by the job—to take up the turnips, cut off the greens, and cart to the barn—we agreeing to find the necessary tools. In accordance with this arrangement, we provided a sharp steel hoe or two, and a sort of prong grapnel, shaped like a pitchfork, but having the tines of the fork about three inches apart, and bent close to the ferule, at an angle of 90 degrees to the handle—or rather inside this, say something within a right angle. With this machine he and his boy went to the field. He himself, with the sharp hoe, sheared off all the green close to the turnip smooth and clean, sometimes, indeed, rather too close. The boy followed, and by pecking the bent fork under each turnip, and pulling slightly backward, he pulled up the turnips with great rapidity. His father, however, beat him in cutting off the green tops.

When pecking out the turnips, the son first went lengthwise of the piece, and pecked up about one yard wide all through, leaving about three feet on one side untouched. On reaching the end he turned broadside, facing the piece left, and as each turnip was pulled up, he pitched it on towards the piece he had previously done. When he reached the end, he again picked up and jerked in towards the row thus formed, about three feet on the other side. This, when repeated, left the turnips in rows about nine feet from centre to centre. When they came to hauling, they drove the waggon down close to the row thus formed, and, with ordinary steel forks, loaded the waggon, generally with two turnips each time on the fork, and a most rapid and excellent plan it proved.

MAKING POTASH.

Our next care was to protect and collect the ashes out of which to manufacture potash.

After our great burn, of nearly 150 acres, there were of course vast quantities of ashes, exposed to the weather; and as soon as the heat of the burning brush had subsided all hands turned to, and raked the ashes into small conical heaps, usually containing about two bushels each.

This must be very carefully done, and also attended to before the ashes are cold, for unless they are raked before the heat is extinguished it is quite impossible to avoid drawing together some earthy and vegetable matter with them, which greatly injures the quality.

The weather looked unsettled; we therefore hurried our operations as much as possible, and all the ashes were raked together before any rain fell, and the heat of the unextinguished coals consumed the remains of any unburnt wood or charcoal.

We had at that time no place to store the ashes, and therefore had to construct an ash shanty, that is, to build a square log house

about 15 feet square, with a floor of logs to prevent the ashes being injured by the damp from the earth, and also a roof of a temporary kind, to prevent any very heavy rains from leaching the ashes from the top, thereby spoiling them. Our two teams, well attended to, soon hauled 700 bushels of ashes, and we were now ready to commence potash making.

We had previously received five potash kettles from Toronto; four were set in an arch, and one was used as a reservoir for lye. We built our leaches in the ordinary way, but took the precaution of so constructing the bottom that a complete filter of lime and straw caused the lye to be as free from impurities as possible, and as fine as wine, it was so perfectly clear. Unless this is done the quality of the potash will be inferior.

Having taken the precaution of ascertaining the fact that plenty of water was to be had on the spot selected, before locating our potash works, a pump was speedily made, and a well dug. Everything worked well, and we soon had two barrels of black salts, that is, crude uncalcined potash; and now came the melting off.

This is the climax of potash making. If the work up to this time has not been well done, the potash will not melt, and seconds or thirds in quality are the certain result. If, on the contrary, all has been carefully done, and all extraneous matter carefully kept out of the lye, nine times out of ten the melt will be easy. I have often seen people, who have neglected these points, fire away for hours to effect a melt, and actually honeycomb their kettle in their endeavours to accomplish this; and after all, when the potash was dipped out and cooled, it was only seconds or thirds. And all this extra trouble, and often the loss of a kettle, was caused by the presence of extraneous matter amongst the lye or ashes. Before we finally gave up potash making we had constructed a filter of lime through which all the lye was passed on its way to the kettle, and thus all difficulty of a good melt was avoided.

“Potash boiling,” as it must be conducted nearly all night as well as day, is quite a jubilee time. In fine nights the brilliant fire attracts all the neighbours round, and songs and stories are plentiful and amusing. Many a good story I could tell that was related to me whilst boiling potash; but I must not trespass on the space devoted to agricultural matter by such narratives. I may perhaps be allowed to describe one or two adventures in which I was personally engaged.

COON HUNTING.

We had planted about four acres of corn, and the locality happened to be near the potash works. Raccoons were very plentiful and committed great ravages amongst our best roasting ears. Night after night we hunted them without dogs, fearing the mischief the dogs would do, but although we saw by the destruction in the morning that

there must be several coons engaged, we could not catch one, they all seemed to make for one spot, and there we lost them. We procured good coon dogs and put them on the scent, but we still lost the game about one locality. One morning after the last unsuccessful hunt, I carefully examined the ground and all the old stumps about there, and was certain signs of “Coon” having ascended one large old elm tree, partly dead. I at once sent for some axes, and in half an hour the giant of the forest was laid low. It proved quite hollow near the butt, with a slight hollow all the way to the first large branches. I had a thorough-bred English bull-terrier dog, and I told him to jump on the stump and from thence into the hollow below, and of all the fusses you ever heard, that which issued from the stump's interior was the greatest. I pulled out the dog by the tail, and with him a fine large raccoon, and as he was splendid pluck and his blood was well up, next time I pulled him out with a coon in his jaws; he again jumped in, until we had eleven large and small raccoons. They fought hard, and my dog was considerably defaced in countenance, but no amount of punishment would daunt him. He never refused, if allowed again to go in, or gave bark until he had fastened on a raccoon, when we twitched him out by the everwhisking tail, coon and all. Of course a blow finished each of the poor wretches the moment they appeared in the dog's mouth. Our corn was safe from further molestation for that season.

BEAR HUNTING.

I recollect a desperate fright one of our men got about that time from a bear. Bruin thought corn good for him also. We had previously noticed some marks of a bear visiting the field. We were going our rounds one fine evening, and heard a rail fall off the fence. Of course we were instantly aware that some animal, tame or wild, had leaped into the corn field, and we at once suspected that we had arrived just in time to catch the bear in the act. I determined to go home for a rifle, and as we always carried a gun when prowling round the clearings at evening, anticipating some small game, I gave it to my man to hold, bidding him stay where he was and watch whilst I went for the rifle. He told me he had dropped a ball into one barrel, when loading the other with small shot before leaving the house; but as we had no more ammunition with us, I preferred getting another gun and some more powder and ball.

My man was impatient in my absence, and consequently crept along the fence, until he judged he was about opposite the place where we heard the rail fall. Not a sound was heard, and he concluded to jump over the fence where the fallen rail lay and see; possibly we were both mistaken, and no animal whatever was there. He cocked both bar-

rels, and carefully got on the fence. On the top he stopped and looked round, but could see nothing, save a large butt log of hemlock a few yards within the corn. He jumped fearlessly down, and the next moment up rose from behind the log, a monstrous bear, within ten feet of him. The bear rose on his hind legs with both fore paws hanging down, and for one moment looked stupidly at the man. He, poor fellow, who had only been a month in Canada, was terribly frightened, and yet the old poaching instinct prevailed. He was a capital shot, and instinctively raising the gun, he poured the contents of both barrels into the breast of the bear. In the smoke, not being able to see the effect of the shot, he threw down the gun and ran at a fearful pace towards the house. We met, and I was almost upset in endeavouring to stop him, and in fact did tear his jacket half off in holding on to him. His story was soon told, and when I had reassured him somewhat, we carefully and noiselessly returned to the seat of war, to find the largest bear I ever saw stone dead, with the contents of both barrels in his heart. This bear weighed nearly 600 lbs., and his hide was as large as a small cow's—a monstrous brute. But my man could never again be persuaded to go bear hunting.

Our potash paid well that season. The price was high and quality good, and before fall we boiled 22 barrels of No. 1, and two barrels of No. 2. Our gross return from this source alone was nearly \$700. C.

Manure.—Lime.

All matters which, when applied to our soils, increase their fertility either by mechanical action, or by the supplying of certain elements of plant food, may fairly be considered under the head of "manures." Lime may, then, be termed a "calcareous manure," and is often of great benefit to our soils. By the discoveries of science, and the experience of practical men in the application of those discoveries, we have learned the great usefulness of lime as a manure.

Lime may be used in one of two states—*quick* or *slaked*. After limestones have been subjected for some time to the action of intense heat, they burn into a substance very caustic, and having an immense effect in causing the rapid decomposition of vegetable and animal bodies. This substance is *quick lime*. If water be applied to this quick lime, or if it be simply exposed to the air, it loses with more or less rapidity, according to which process be adopted, much of its caustic or burning power, and becomes "*slaked*" or "*effete*."

Now, the difference between quick and slaked lime is simply in rapidity of action upon substances with which they may be brought in contact—the former hastening decomposition much more rapidly than the latter. When the object of an application of this manure is to destroy and hasten the

rotting of vegetable or animal matters, the quick lime has the best effect.

The action of lime is almost entirely mechanical. I say, almost entirely mechanical, for the fact that it does directly impart a certain element of food to plants is proved by chemical analyses, in that calcareous earth is found in the ashes of all vegetables, and in large quantities in those of wheat or clover. In 100 parts of wheat straw there are found 5 parts, and in wheat 3.35 parts of phosphate of lime. On the other hand, seeds planted in a pot of carbonate of lime will grow very feebly—in clear lime will die. Partly fill with garden mould and cover over with lime, and the plant will put down its roots through the lime to the mould, without throwing out branch rootlets until it arrive at the mould.

Great care must be used in the application of this manure, for it has different effects upon different soils and under different conditions. These conditions are so contrary, that while in many cases lime has been shown to have a most beneficial effect, in others its application has been fatal to all vegetable growth.

Lime has a strong affinity for acids. Its application to land, therefore, is beneficial in the following ways: It either renders harmless or converts into usefulness substances lodged in the soil, which, by their acidity, or, as named by farmers generally, "coldness," may be injurious to the growing crops, and thus prepares the land for the reception of seeds; it also greatly increases the rapidity of decomposition of putrescent manures, thus making them more easily available for the nourishment of vegetable life.

Lime has a great effect upon decayed and decaying vegetable matter, or, as we know it, "mould." There is no doubt that its application is of great benefit on "sour clays," for it corrects their acidity, and warms that sour mould which has been useless hitherto to plants, because it has required a quickening power to stimulate its further decomposition; also to land which has been at some time previous well dressed with "dung," without any addition of calcareous matter, by hastening decomposition: and rendering every particle of the rotting or putrescent manure available to the growing plant.

Now, in all arable lands, however much such may have been "run out," there still remains a large proportion of mould. Lime applied upon such land will quicken all that plant food which is lying dormant, and will greatly benefit the ensuing crop.

Let it be borne carefully in mind that lime has the effect of drawing out and placing within reach of the crop all the strength of the land, and it becomes evident that if its application be not followed by more manure, it will have the effect of rapidly exhausting the land.

It is useless and indeed injurious to lime too often, for if our land become surcharged with lime, having no putrescent matter to act upon, it will act too directly upon the crop itself, and greatly injure it.

Many farmers have, by advice, used lime on certain lands, and found that they have thus increased the yield of the ensuing crop. From this result they have deduced the truth that it is a grand manure, and have again and again applied it without further barnyard or green manure, to the utter exhaustion of the soil and the certain failure of future crops. Lime is a stimulant, correcting acidity and quickening the action of vegetable and animal manures, and like all stimulants, is good when used in moderation, but fatally exhaustive when taken in excess.

Low lands are immensely benefited by a free use of lime. Our low lands are generally rich with a deep black mould, but owing to their coldness, crops are not as heavy as the richness of the soil would lead us to hope. These soils contain in themselves all the component parts of the best soils, and are rich in decayed and decaying vegetable substances, but the manurial qualities in these lands are sluggish and inert, and will not freely give of their richness to the growing plant until stimulated by a free use of lime.

Heavy clays are often deficient in calcareous earths. In such lime is needed, and has often, too, the purely mechanical effect of making the soil more friable, and less subject to run together after rain.

Upon sandy land, which seldom contains much vegetable matter, lime has a contrary but good effect, attracting moisture from the atmosphere and giving more consistency to the sand, even as sand and lime become mortar.

"But if the soil consist of clay and sand," says Finlayson in his practical essays on agriculture, "containing animal or vegetable matter in a torpid state of decay, then lime would be preferable to dung. The state of the soil should therefore be minutely enquired into before lime is employed, and it should only be used to give effect to the inert substances with which it may be conjoined."

I cannot but think that a very free and liberal application of lime, ploughed in with our new lands when broken up, would increase their fertility wonderfully, for such lands are rich in vegetable matter, but are cold, inert in action, and acid. On such land I should use quick lime, as its effects are the more rapid, and it will destroy weeds and injurious plants.

The authority quoted above also says:—"There is this difference between the actions of lime and barnyard manure upon land: The former, being more stimulant and corrective, helps the farmer to an abundant crop at the expense of the land alone while the latter furnishes the land at once with fertilizing fluids, and will insure a good

crop on a place perfectly barren before and after the application of lime."

Lime is of great value to pasture land. So great an affinity has it for acids that it will greatly sweeten the herb. Indeed, if lime be spread upon a tuft of grass that has been refused by cattle, it will be found that they will soon detect the greater sweetness, and will eat it close down. When used for this purpose it must be slaked, for quick lime would be apt to burn the grass if used in any but very small quantities.

In the "General Report of Scotland" it is remarked that, "In the best cultivated counties, lime is now generally laid on finely pulverized land, while under a fallow or immediately after being sown with turnips. In the latter case the lime is uniformly mild—in the former quick lime, as pernicious (in a certain extent) to vegetation, may be beneficial in destroying weeds, and some experiments have been recorded, showing it to have a very powerful effect upon the fly. Sometimes mild lime is applied in the spring to land, and harrowed in with grass seeds, instead of being covered with a plough; and under this management a minute quantity has produced a striking and permanent improvement in some of the hill pastures of the south-eastern counties. Its effects are yet perceptible, after the lapse of nearly half a century. In some places lime is spread on grass land a year or more before it is brought under the plough by which the pasture in the first instance, and the cultivated crops subsequently, are found to be greatly benefited. But in whatever manner this powerful stimulant is applied, the soil should never be afterwards exhausted by a succession of grain-bearing crops—a justly exploded practice which has reduced some naturally fertile tracts to a state of almost irredeemable sterility."

It is impossible to lay down any established rule for the regulation of the quantity of lime to be applied to land, for this must greatly vary according as the land is naturally calcareous or not, and also in proportion to the strength of the lime. It may suffice to say that in Great Britain the application, as made by her most eminent agriculturists, varies from thirty bushels to one hundred bushels per acre of slaked lime. Indeed, on some soils, as much as 400 bushels have been used per acre with great advantage.

Lime may be, and often is, used as a top-dressing on wheat, and the results of this proceeding have been various. I consider, however, that the lime will have a better effect, if applied to the land before it is shallow-ploughed the last time, or sown broadcast, and harrowed in with the wheat.

In conclusion, D. G. F. Macdonald says in his excellent "Hints on Farming—

"Lime, it would appear, may be always used with good effect under the following circumstances: 1. Directly upon mossy land, upon slaked fallows, and in the spring,

when preparing for turnips. 2. In composts in which the whole of the soluble salts of lime will have a tendency to be converted into gypsum by the action of the air; and consequently the benefits which result from a large application of the same, will be obtained by laying such composts upon the land. 3. It may be safely mixed at once with barnyard or other animal manures, though not in too large quantities. It may also prove a valuable admixture with guano, on which its action would ultimately be to fix, rather than expel, the ammonia. 4. Strawn sparingly over the young turnip plants, it is stated that it prevents the attack of the turnip-fly; and harrowed in when the ground is naked, if the quantity be considerable, slugs and wire-worms disappear from its effects."

Many Canadian agriculturists have experimented with lime. Some have given us results in the CANADA FARMER. Let us have more experiences, and thus ventilate the subject, and give us the bounds within which we may steer, in order that we may improve the fertility of our lands, without exhausting our soil or ruining our crops.

T. E. W.

Ancaster.

Draining Wet Lands

It is to be hoped that our farmers will be brought more and more each year to see for themselves that the proper drainage of their lands, wherever there is a field that retains water on its surface for any length of time, is one of the surest means of adding to the prosperity of the farmer.

We sometimes see a large meadow or field marred by a slash of wet soil through it, caused either by springs in that particular portion, or by the running down upon it and retention of water from springs higher up. This can often be easily remedied by making a good drain through this portion that will lead off the water to some lower level without the necessity of first percolating through and permeating with superabundant moisture, a large portion of the soil near the surface. Draining in this case ought to be resorted to, not so much for the sake of the land affected, as for the convenience of working the entire field, at all times when required, and so improving the entire farm.

There are sometimes to be found portions of land in the farm that are of good strong soil, but flat and cold, even when high up, retaining wet long after other portions of the field are ready for the seed. If such portions could be readily drained they would often prove as productive portions as any others in the field.

There are three modes of draining which may be employed, according to circumstances; namely, subsoiling, furrow draining, and ditch or underdraining.

When a soil is underlaid by a compact im-

permeable subsoil, all rainfall and melting snows will be retained near the surface until in process of time it can become evaporated. This compact subsoil acts like a water-tight floor. By subsoil ploughing we can work through and break up this undercrust, thus giving free egress downwards to the moisture that was previously retained near the surface, to the injury of the land and the plants growing on it. It will also help to prevent the injurious effects of drought in summer, as the breaking up of the hardpan enables the roots of the plants to draw up moisture from below, even when the surface is quite dry.

There is, however, a limit to the amount of usefulness of subsoiling. It has been ascertained in England that when a soil contains forty-three per cent. or more of alumina (clay) subsoil ploughing becomes useless, because, with so large a proportion of clay in the soil, it soon runs together again, and becomes as impervious as ever. In such a case, in the absence of underdraining, furrow draining must be resorted to. This is done by throwing the soil into high narrow ridges, ploughing back furrows, leaving the land so that surface water may readily run off into the furrows on either side before it can be absorbed into the soil. By leading these furrows into a ditch or underdrain, much of the surface water can be carried off the land, and the soil rendered much more workable and more amenable to the influence of the sun and the atmosphere.

Underdraining is, without doubt, the most certain and profitable method of improving all soils that are at all compact; but as few can afford the expense at the present high price of tiles and sufficiently skilled labour to accomplish the work satisfactorily, it is well to use other expedients, even if temporary, rather than continue to neglect the land.

Manure—Night Soil.

"The neglect of enlightened systems of agriculture precedes the decline and fall of empires. If the substances extracted from the land are not returned to it in the form of manure, the consequences must ultimately be disastrous to those guilty of such neglect. The sewers of ancient Rome have been highly spoken of, but at the same time it must be remembered that the *cloaca maxima* engulfed for centuries matters that would have greatly conduced to the prosperity of the Roman peasant, could he have obtained them. The Tiber became silted up, and when the exhausted fields of Italy failed to produce sufficient quantities of corn for the enormous population of Rome, and of other cities, recourse was had to Sardinia, Sicily and Africa, which also in the course of time became impoverished. The inundations of the Nile keep up the fertility of Egypt. The inhabitants of China and

Japan have contrived to maintain the fertility of their soil for thousands of years, mainly owing to the careful manner in which they collect and apply human excreta and other offal, which are justly regarded by them as valuable manures."

Chemical analysis shows us that all the elements which are necessary to the growth and life of plants are found in more or less abundance, not only in the various formations which are seen in a human body, but in great abundance in those substances which, after performing their necessary duties in strengthening and holding together the organization of man, are cast forth.

These substances expelled from the body are looked upon as base and loathsome, and are banished from all future use. Not only is thus wasted the most fertilizing agent that can be applied for the benefit of plant life, but the receptacles in which such are allowed to accumulate become noisome cess-pools, from which emanate rank smells and poisoned air, and by which are bred disease and pestilence.

The quantity of valuable manure that the farmer may obtain from night-soil is not inconsiderable. The liquid and solid excrements of one man amount to 1½ pounds daily. This tells up to a large quantity in one year, and as this is the richest and strongest of manures, it has been computed that one man will, in a year, make sufficient, when mixed with other matter, to thoroughly enrich an acre of land, or to grow sufficient wheat for his own use.

Professor Laeug says in his Chemistry of Agriculture:—

"In respect to the quantity of nitrogen contained in excrements, 100 parts of the urine of a healthy man are equal to 1,300 parts of the fresh dung of a horse, and to 600 parts of that of a cow. Hence it is evident that it would be of much importance to agriculture if none of the human urine were lost. The powerful effect of urine as a manure is well known in Flanders, but human excrements are considered invaluable by the Chinese, who are the oldest agricultural people we know. Indeed, so much value is attached to the influence of human excrements by this people, that the laws of the State forbid that any of them should be thrown away, and reserves are placed in every house, in which they are collected with the greatest care. No other kind of manure is used for their cornfields."

The Chinese are, without doubt, the most admirable gardeners in the world. They use but very few horses in their agriculture, nearly all their work, owing to the density of the population, being done by hand. They place but little value on bestial manures, for they almost entirely enrich their cornfields with night soil. Of such value do they consider this latter, that the work of collecting and removing it employs an immense number of persons at all times and in all seasons.

The following tabular statements, the one of an analysis of human excrement by Berzelius, the other an analysis of guano by Voelcker, placed side by side, will give your readers some idea of the relative values of the two as manures:—

ANALYSIS OF HUMAN EX-CREMENT, BY BERZELIUS.		ANALYSIS OF GUANO, BY VOELCKER.	
Carbonate of soda....	3.5	Oxalate of lime....	7.0
Muriate of soda....	4.0	Phosphate of lime..	14.3
Sulphate of soda....	2.0	Clay and sand....	4.7
Phosphate of magne-sia	2.0	Animal matter with small quantity of salts and water...	£2.3
Phosphate of lime....	4.0	Sulphate of potash..	5.5
URINE, 1,000 PARTS.			
Water.....	933.00	Sulphate of soda....	3.3
Urea.....	30.10	Phosphate of ammo-nia.....	6.0
Salts of ammonia with some animal matter	1.46	" of magnesia..	2.8
Sulphate of potash	3.71	Oxalate of ammonia	10.6
Sulphate of soda ..	3.16	Urea ..	5.0
Phosphate of soda	2.04	Muriate ..	4.2
" ammonia	1.65	Earthly matter, lime and silica..	1.63
Muriate of soda, (common salt)..	4.45		100.0
Muriate of ammo-nia.....	5.50		
Earthly matter, lime and silica..	1.63		
	1,000.00		

How nearly then do guano and night soil resemble one another, each containing in great quantity those essential constituents of plant life which are most liable to be absent from our soils.

Of what glaring inconsistency are we then guilty! We throw away that which costs us nothing, and is yet so valuable, and at the same time incur an immense expense in the importation of guano from countries some thousands of miles distant.

The question now arises, how are we to collect and apply this valuable manure?

The best practical solution of this problem is furnished by the "dry earth system," which has repeatedly been explained and advocated in these columns. There is no mystery nor difficulty in carrying out the plan. The ordinary appliances of the farm are sufficient. All that is required is a store of finely sifted dry earth, to be kept under cover. A small supply of this material should be at hand in the privy. The receptacle for the evacuations should have a layer of the same at the bottom, and after each time of using, a pint or so of the dry earth should be thrown in to cover the fresh deposit. This will absorb the moisture, deodorize the ordure, and form a mass of the richest manure that can be obtained.

The same system may be carried out in the sick room, and will be found of great benefit to invalids, so perfect is the deodorizing power of the earth, and so simple is the working of the plan. For the general use of the house, commodes are now built, which combine simplicity of structure with a handsome finish, and are thus made to suit the closet in which the apparatus is permanently placed.

Whilst in England lately, I visited several earth closets, amongst which was one used by fourteen persons daily, and can bear my testimony to the perfect freedom from all disagreeable odours in each case. In every case the owners spoke in the highest terms of the satisfaction which had been afforded them by the adoption of "the earth closet system."

C. E. W.

Ancaster.
Spring Wheat after Winter-killed Fall Wheat.

Some time since, while travelling in the West, I met with a most intelligent gentleman, from whom I had previously received many useful practical lessons and hints on various branches of manufacture and agriculture. Amongst others, he related his experience of the exhaustive effects of young winter wheat. He had found that, generally speaking, land on which winter wheat had been grown, and done well in the fall, but been badly winter-killed, failed to produce a good crop of spring wheat in the following spring; and his theory was that the wheat required a peculiar kind of nourishment when young, which it had found in the fall and duly appropriated to its use, in accordance with the ordinarily received opinion on the subject; that the young spring wheat grown on the same land the following spring required a precisely similar quantity and quality of nutriment, which, as a previous demand had been made in the fall, the land failed to supply; and hence the usual failure to grow spring wheat after winter-killed fall wheat, as such a course was equivalent to growing two crops in one year.

But, if barley had been sown in the spring instead of spring wheat, a bountiful crop has almost always followed. Many people can vouch for this fact, but very few, probably, thought out the cause, as my intelligent friend had done.

It certainly is a point worth consideration, and the opinion here given of the process and result appear reasonable, especially when we consider that an exactly similar consequence arises when wheat has been destroyed by the midge. In this latter case, the land has, we will suppose, produced a bountiful crop of Soules wheat, as has thousands of times been the case—say to the extent of thirty or forty bushels per acre. Just as the wheat is in flower, the midge in countless numbers strikes the whole, and the crop is not worth threshing, nor even the cost of harvesting. Now, all the constituents that ever had been taken from the ground to form this crop had been returned to it, as nothing has been removed; and we will say the straw is at once ploughed under, as I have often seen it done, by means of a chain and weight dragging down the standing crop into the furrow—

the chain and weight holding it down until the furrow slice covered it almost entirely under.

When green wheat is ploughed under in this manner, rapid decay takes place, and the whole of the previous wheat crop is returned to the soil again; and we will suppose a second crop of wheat sown the same year, thus virtually sowing wheat after wheat without cessation. We all know there would be no second crop of thirty or forty bushels per acre, even if no midge took it; we all feel quite sure of that, and the same train of reasoning as my friend carried out may explain the result, namely, the wheat was grown, and had abstracted the nutriment required to produce a crop. The midge destroyed it, and hence no more could be again grown until the balance was restored by a rotation of other crops or manure.

So it is with spring wheat following winter killed wheat. The balance of fertility has been disturbed, and a crop has been grown, a young one it is true, but still such a one as required for its support what the land was capable of finding, but which it could not find for both fall and spring wheat, even where fall wheat had been ploughed under.

C.

As only one item in the cost of a war, it is calculated that the farming classes in France have already lost £170,000,000.

M. Marix has taken, in France, a patent for the application of fluosilicic acid for the purifying of beetroot and other saccharine juices. The saccharine juices are first diluted with a sufficient quantity of water to take away the viscosity of these fluids; sufficient fluosilicic acid is then added to precipitate all the potassium salts present; and next, chalk is added to saturate any excess of the acid. The fluid is then filtered in order to obtain a clear liquid, and thus is afterwards treated in the usual manner.

SALTING WHEAT GROUND.—In answer to a question about applying salt on wheat ground, Prof. Whitney says:—"No reliance can be placed beforehand on the action of salt in any given case, or for any given crop, for the reason that its operation may depend upon any of a dozen different causes. If there is a deficiency of soda in the soil, salt may supply it; the decomposition of the salt may, by liberating one of its components, chlorine, hasten the germination of the seed, this element being believed to have this effect specifically, or the salt dissolving the soil may, as is known to be frequently the case, help the solution of insoluble phosphates. The ash of wheat kernels contains nearly 4 per cent. of soda, the ash of the straw nearly 2½ per cent., and that of the chaff more than 1½ per cent. It is likely, therefore, that salt will prove beneficial to wheat, but this can only be found by actually applying it to a piece of ground and watching the result."

Stock Department.

Improving our Horses.

Notwithstanding all that has been done of late years by enterprising individuals towards inducing our farmers to use a heavier and better class of stallions as breeders, by importing Clydesdales and Suffolks at great expense, there are still too many light, weak, worthless colts to be found growing up throughout the country. Too many of our farmers totally neglect or overlook the fact that there is a principle involved in breeding every kind of stock, and that is, that any deficiency of points on the side of the dam must be corrected in her offspring by using the sire that is full in those points, and has character and blood, acquired through a long descent, sufficient to stamp his good qualities upon the offspring of his get. To obtain really valuable horses for farm work, we must have and use only sires of a recognized breed or strains of blood, and generally of a heavier style than our farmers have hitherto been accustomed to, for as our mechanical appliances for performing farm operations improve, a heavier and faster class of horses is needed to enable them to be properly worked, the aim being to get the work done more rapidly under an improved system of labour. It was satisfactorily demonstrated as a fact at the recent trials of implements held at Utica, N. Y., that an increase in the rate of speed at which the machines were worked did not increase the amount of draught to the team to any extent. This was found to be especially the case with ploughs, it being shown that a fast walking team would do double more work in a day than a slow team, without increasing their labour, or the draught of the plough more than one tenth. This shows that, in order to double the amount of capacity for accomplishing work rapidly, we need only to add one tenth to the weight and muscular energy of our horses, while doubling their rate of walking.

For this purpose there is nothing better than the use of the Suffolk and Percheron as a graft upon our ordinary stock of farm horses. The Clydesdale is better adapted for drawing heavy loads at a moderate pace on good roads, than for farm work. It is slow in movement, costly to keep, and of uncertain temper, fit only to be entrusted in the hands of strong men. The Suffolk or Percheron is quite heavy and muscular enough, while, at the same time, they have a quick walking gait, easy docility of temper, and will work hard and keep up their condition on less feed than the Clydesdale. The Percheron stallion, wherever it has been introduced in America, has proved the best adapted to get stock suitable to the wants of our farmers of any breed known.

There is another matter in connection with breeding horses that is generally sadly neg-

lected or overlooked, and that is the proper feeding and attending to the colts both before and after they are weaned. The mare is usually turned out to grass and left to herself without any attempt being made to increase the quantity and richness of her milk by feeding grain. She should have at least four quarts of oats per day, and so placed that her colt can get into the way of eating a share of it. In this way the colt will get accustomed to dry food before it is weaned, and if the grain is kept regularly supplied in increasing quantity, as the animal grows older, it will acquire a much greater amount of muscular development and power than if it had been left to grow up under the usual system of hard fare and many knocks amongst the cattle in the straw yard. It is a poor policy to let a young growing animal get stunted and stunted at the very outset, and lose all it has gained on summer pasturage, by neglect to properly feed and care for it during the autumn and winter. It is surely worth while for a farmer to double the value of the colts he may raise and bring them earlier to maturity, by a little extra expenditure of food and care upon them while young. Two quarts of oats a day to a colt for three years would come to 68½ bushels, worth say \$27 00, while the colt's value would probably be at least \$50 higher than if he had gone without the oats.

Early Maturity.

Prof. Miles, of the Michigan State Agricultural College, asserts, says the *National Live Stock Journal*, as one fact established by his recent carefully conducted experiments in feeding animals, that the importance of early maturity in animals raised for the production of meat is clearly shown in this series of experiments. In the manufacture of pork, the best return for the feed consumed, will undoubtedly be obtained by liberal feeding during the early stages of growth, and we cannot reasonably avoid the conclusion that the same rule is applicable to all animals raised for the purposes of the butcher. As animals are employed to convert the vegetable products of the farm into animal products of greater value, the greatest profit in fattening may reasonably be expected from liberal feeding during the period of growth, in which the organs of nutrition are capable of converting the largest amount of materials into animal tissues in a given time.—The results of experiments in pig feeding, show conclusively that animals when properly fed, give a much better return for the feed consumed, during the first few months of their lives, than they do after they reach maturity.

Foot and mouth disease is still seriously prevalent in Great Britain.

The Smithfield Club Cattle Show is to be held in London on the 5th to the 9th of December

Weaning Colts.

We often, when travelling through the country in the fall, see colts with a rough, staring coat; eyes nearly closed, and a watery matter exuding therefrom, with a body shaped like a squash seed, which, but a few weeks before, while running with the mare, were possessed of a sleek, shining coat, eyes bright, and body as round as a barrel. Now the question arises, what is the cause of this? I answer, in nine cases out of ten, it is improper weaning. Nearly every colt in a farming community is allowed to run with its mother until about four or five months old, when, to suit the convenience of the owner, it is turned into some distant field out of sight, and if possible, out of hearing of its mother, there to run and whinney and worry, until it brings upon itself a fever, which weakens the constitution, closes the pores of its skin, and in brief, the whole organs of digestion become more or less diseased. All of this can be avoided by a little care in weaning.

My way of weaning is this—When my colt is four and a half months old, I put a strong leather halter upon him and place him in a stall, and put his mother in an adjoining stall, with a partition between, so arranged that they can see each other, and if possible get their heads together. The first day I let the colt nurse twice—the next day once. I feed the mare upon dry hay and dry feed, and about half milk her two or three times a day until dry. The colt I feed upon new-mown grass or fine clover hay, and give him a pint of oats twice per day, and in about two weeks I have my colt weaned and my mare dry, with my colt looking as well as ever. When he is one year old, he has as much growth and development of muscle, as one two years old weaned in the first described manner. When the mare becomes dry, colt and mare may be turned out together again in pasture.—*Cor. Rural New Yorker.*

Cross-breeds and Grades.

The distinction between cross-bred animals and grades is so seldom insisted upon that we are inclined to define the terms when used in connection. "Grades" among neat stock, sheep, and swine, are animals which have thoroughbred sires, with more or less, or altogether common blood on the side of the dam, while a cross-bred animal has both sire and dam thoroughbred, but of different breeds. Thus, if a common cow has a heifer calf by a Short-horn bull, the calf is a half-grade Short-horn, and her calf, by a bull of the same pure breed, would be a three-quarter grade Short-horn. The next grade would be seven-eighths, the next fifteen sixteenths, &c. Any pure-blood cow, crossed with a pure blood of another breed, produces a cross-breed, which, crossed with a full-

blood or another cross-breed, would represent no gradation of blood, but be a cross-breed still, combining and exhibiting with considerable distinctness the characters of its different parent breeds, or the predominating ones.

In the case of grade animals, the common or native characteristics are often almost lost in the half or three-quarter grades, except perhaps some long-cultivated points, like the milking qualities of good, old, native cows, which are often intensified in their grade offspring. This is supposed to show the vital power of the breed, which has, as it were, accumulated through many generations. By the use, then, of thoroughbred sires, we are enabled to reproduce their valuable characteristics in their grade stock with great certainty. Inferior specimens always occur among herds of pure stock. These must be sold at low prices, or sent to the shambles. They may, however, if females, be used to great advantage often in breeding cross-breeds. As a rule, none but excellent animals should be used as sires of either thoroughbreds, grades or cross-breeds.—*American Agriculturist.*

The sale of thorough-bred stock at Bow Park on the 20th October, went off successfully. A great crowd of persons attended the sale, and all the animals on the catalogue were disposed of at good prices, with the exception of a few lots of sheep that were not reached when night approached.

Three valuable horses imported by Mr. Teasel, of Belleville, were lost on the *Atlas* in her recent voyage from England by sickness caused by bad weather. One animal was insured for £400 sterling, but from the reading of the policy it is doubtful if the loss can be recovered, notwithstanding all due care was used during the voyage by those who had charge.

Over 600 head of cattle were on the grounds of the Arkona cattle fair on the 12th inst. Three hundred had changed hands at prices ranging from thirty to forty dollars for steers; one hundred to one hundred and twenty dollars a yoke for oxen; and twenty-five to forty dollars for milch cows. Altogether, the fair was one of the best held in that section.

Considerable alarm has been excited in England by reports of the appearance of rinderpest near Berlin. The exigencies of the war, it is supposed, have caused some relaxation of the stringent regulations respecting the admission of cattle from Russia into Germany, and hence this fatal disease has once more passed from the Russian steppes, where it is mostly confined, into Western and Southern Europe.

J. H. Wallace gives the *Country Gentleman* some interesting facts as to the results of breeding from stallions at various ages. These show that some celebrated horses have been raised by stallions from 20 to 27 years old, and again that equally good ones have been raised by stallions of only two, three, or four years. He concludes that the question of age is not so important as that of condition.

Veterinary Department.

Chronic Nephritis.

Inflammation of the kidneys in the chronic form is more frequently met with than the acute disorder in the lower animals, and aged horses are frequently found affected with this disease, especially such as are exposed to sudden changes of temperature and other debilitating influences, and that have been often dosed with large quantities of medicines possessing diuretic properties. The symptoms resulting from chronic nephritis are a gradual loss of flesh, pain in the region of the loins, and impaired action of the hind extremities. The urine is also occasionally very high coloured.

In treating this affection, the horse should be allowed perfect rest, and have a generous diet of easily digested food; also plenty of mucilaginous drinks. The loins may be rubbed every third or fourth day with mustard; and one drachm of tartar-emetic given every night. This medicine can be conveniently administered mixed with the food.

Enlargement or hypertrophy of the kidney also occurs, and cases have been met with where the kidney was enormously enlarged, and found to weigh upwards of fifty pounds. In cases of hypertrophy of the kidney very little can be done to afford relief.

Urinary Calculi.

A frequent cause of irritation in the urinary organs, either of the horse or ox, is calculi, which are found throughout the whole of the organs, and are classified according to their situation. When found in the kidneys, they are known as renal calculi; in the ureters, as uretral; whilst in the bladder, they are designated cystic or vesical.

In certain diseased conditions of the kidneys they are frequently found in great numbers. The general symptoms of urinary calculi, are a difficulty in urinating, and the urine presents a difference in its colour, sometimes being very light, in other cases very dark, and apparently mixed with blood. The patient occasionally shows colicky pains, by lying down and rolling, and gradually falls off in condition. When the calcareous deposits are situated within the bladder, they frequently attain considerable size, and cases are noticed where the calculus has weighed several ounces. Vesical calculi are also found to differ in their character; some specimens are very hard, whilst others are of a soft pasty nature. In all cases they are found to be composed largely of some of the combinations of lime, and particularly the carbonate. It has also been noticed that these concretions are oftenest met with in horses pasturing on limestone districts, or when the drinking water contains lime in large quantities. Cystic calculi can gener-

ally be readily detected. The urine is very high coloured and tinged with blood, and passed often. When the stone passes towards the neck of the bladder, it produces retention of urine, which is speedily followed by acute pain, and the horse throws himself about, straining violently and looking towards his flanks. In other cases he walks with a stiff straddling action. When the above symptoms are presented, an examination should be made *per rectum*, which will tend to reveal the nature of the disease.

In the treatment of urinal calculi, the mineral acids have been found beneficial, as one drachm of hydrochloric acid daily, which must be largely diluted with water, and its use continued for some time.

Sweany.

A correspondent writes for information respecting the nature and treatment of "Sweany."

The injury of the muscles situated on the outer part of the shoulder is a very common occurrence, and is usually known among the farming community as "sweany." Professionally speaking, it is generally designated "shoulder-slip." In young horses, the muscles are frequently injured from over-exertion or from going in an awkward manner when first put into harness, or from badly-fitting collars, causing an uneven bearing upon the shoulder. The process of nutrition is partially arrested, and the muscles waste, producing a hollow extending from the upper to the lower parts of the shoulder. In severe cases, the horse, when walking, has a peculiar rotatory motion of the limb, that is sometimes mistaken for dislocation of the shoulder joint. The outward motion is the result of the muscles on the inner part having no counterbalancing power. Cases of shoulder slip are usually treated successfully. The horse should be kept quiet, and the shoulder rubbed once a day with a mild stimulating liniment, and in some cases a sweating blister has a good effect. When the process of reproduction begins, moderate walking exercise is attended with benefit, as is also a run at pasture. Where the muscles are greatly atrophied, it usually takes two or three months before the animal is perfectly sound.

The term "sweany" is also applied to a slight wasting of the muscles, the result of injury to the lower part of the limb. In prolonged cases of foot lameness, as in navicular disease, the muscles become shrunk from the impaired action of the limb.

VESSICLES ON THE UDDER A "Northern subscriber" wants advice respecting his cow, which he says is "affected with matter blotches, that break on being pressed in milking." Without more precise information we can only guess at the nature of the ailment, which is probably "cow pox." If so, no particular treatment will be required.

The Dairy.

Injuries and Obstructions in the Teats.

The teats of the cow are liable to various affections, which more or less impede the flow of milk, or stop it altogether, and often form the basis of an inflamed state of the udder. One of the chief causes of these obstructions are small tumors about the size of a pea, which may be felt on compressing the teat between the finger and thumb, and can be often moved up and down the teat. Sometimes these entirely stop the flow of milk, and at others a small stream can be got by much pressure. These small substances are either what are called lacteal calculi (*milk stones*), or tumors attached to the lining of the teat. In these cases, a silver probe, or a knitting needle, must be passed up the teat, and the obstruction either broken down, or passed into the udder, where they often remain without inconvenience. It is not often possible to extract them from the end of the teat, nor should this be tried, as from the irritation caused, inflammation is frequently set up and the quarter is lost.

Strictures often exist in the passage of the teat, diminishing the flow of milk. In these cases a probe, or knitting-needle as large as the stricture will bear, and gradually increasing in size, should be frequently passed, so as to distend and keep the passage open.

Warts at the end of the teats are occasionally found, and are a great annoyance, not only obstructing the milk, but, from their soreness, causing the cow to become fidgety and uneasy while milked. In these cases the wart must be removed, either by the knife or by a ligature of fine silk tied around it; the latter is the preferable mode, as warts, when *sloughed off*, are not so liable to return as when excised with the knife.

Sore and chapped teats are best treated by the application of ointment of turpentine, (Venice turpentine, two ounces; hog's lard, four ounces; dissolved with a gentle heat and mixed,) or an ointment of Verdigris, (Verdigris in fine powder, one part; common turpentine, one part; hog's lard, twelve parts. Melt the two latter ingredients first, and then add the verdigris, stirring till cold). *Prairie Farmer*.

About Milking

Five per cent., and perhaps ten, can be added to the amount of milk obtained from the cows of this country, if the following rules are inexorably followed:—

1. Never hurry cows, in driving to and from the pasture.
2. Milk as nearly at equal intervals as possible. Half-past five in the morning and six at night are good hours.
3. Be especially tender of the cow at milking times.

4. When seated, draw the milk as rapidly as possible, being certain always to get it all.

5. Never talk or think of anything beside what you are doing when milking.

6. Offer some caress and always a soothing word when you approach a cow and when you leave her. The better she loves you, the more free and complete will be her *abandon* as you sit at her side.

We append the not uncommon practice:—

1. Let some boy turn the cows away and get him who is fond of throwing stones and switching the hind ones every chance he gets.

2. Milk early in the morning and late at night, dividing the day into two portions, one of fifteen hours and the other nine.

3. Whack the cow over the back with the stool, or speak sharply to her if she does not "so," or "hoist."

4. Milk slowly and carelessly, and stop at the first slacking of the fluid.

5. Talk and laugh, and perhaps squirt milk at companion milkers, when seated at the cow.

6. Keep the animal in a tremble all the time you are milking, and when done give her a vigorous kick.—*Ec.*

Cows Winter Themselves.

Many farmers are accustomed to dry off their cows early, milking them only about eight months. We think it improves the milking qualities for the cows to milk them ten months, but they should be well fed. We have a neighbour who, ten years ago, found himself short of hay in the fall, and lamenting that he should have to pay out nearly all the product of his cows through the summer, to purchase hay at high prices, to winter them.

He had a moderate amount of straw, and we suggested that the product of his cows from the first day of December, if well fed, would pay for all the corn and meal, middlings, etc., necessary to winter his cows in fine condition. He tried this, keeping account of purchase of feed and sales of butter, and found that the butter came out ten dollars ahead in the spring. This greatly surprised him, as by feeding meal and middlings his cows so increased in milk, that he made \$15 worth of butter per cow after the first of December; and he is wont to say that a farmer may have the product of his own cows through the cheese season, and then make them winter themselves. His cows came out in better condition than usual, and he found them much improved the following season. This has been our experience on many trials, and we believe that generous feeding and ten months milking to be the best system for the dairyman.

But the best system of economizing fodder and working up all the qualities of food raised on the farm, so that nothing goes to waste, everything producing the best result in growth, and beef, milk and wool, is cooking or steaming the food of all our animals. *Live Stock Journal*.

Amount of Butter from a Given Quantity of Milk.

With the view of learning the amount of butter to be obtained from a given quantity of milk, I have recently tried the following experiment at my creamery in Onondaga County, N. Y., where I receive milk from three hundred cows.

The milk delivered at the factory on Saturday evening, July 30th, and Sunday morning, July 31st, amounting to 5,729 pounds, as soon as received, was run into deep cooler pails, and these were set into the tank of spring water. The temperature of this water is maintained uniform at about 53 degrees, by the introduction of an inch stream of water from the spring.

In this vat the pails remained for about 30 hours, when they were removed, in order that by a free exposure to the atmosphere the milk might be soured. It might have produced a better result, if the pails had been allowed to remain immersed in the water until the milk became loppered, but we feared that so long an exposure of the milk and cream to such a degree of cold would cause a bitterness of flavour to the cream and the butter made therefrom.

When about forty-eight hours old, the milk having soured and thickened, the cream was removed and kept until the next day. On Wednesday churning was done in large dash churns, operated by steam power. From this 5,729 pounds of milk, there was produced 232 pounds of butter. This shows an average of 24 69-100 pounds of milk as being required for a pound of butter, very closely meeting the opinion generally held, that two and a half times as much milk is used in making a pound of butter as in producing a pound of cheese. At the season of the year above named a yield of one pound of cured cheese from ten pounds of milk is very satisfactory. This would have produced 573 pounds of cured cheese, from the milk used in this experiment, which gave me 232 pounds of butter.

Cheese at that time was worth 14 cents a pound. Butter, to pay as well as cheese at this price, would need to sell at fully 35 cents a pound, allowing that the material used in making and packing butter cost one half cent per pound more than those required for cheese.

From this loppered milk, which in my case went to the pigs, there is sometimes made a kind of cheese used mainly by the German Jews. The curd is heated to a high temperature, is not salted, but is placed in small bags holding about one-half a pound, and subjected to moderate and long-continued pressure. When removed from this pressure, the cheese is cone shaped, two sides being flattened, salt is rubbed upon the outside and the curing is made in a cool damp place, as is the case with Limburg cheese. There is small demand for this kind

of cheese, and if there was a large demand, the prejudice of the Jews will allow them to eat only that which Jewish hands have made.

GARDNER B. WEEKS.

Syracuse, N. Y.

Keeping Up Dairy Stock.

Although the demand for dairy cows becomes greater every year, but little attention is paid to breeding them. As a rule, the patrons of cheese factories, and the farmers who send their milk to town to be sold, and who are supposed to have the best milking stock, never raise a calf. In truth, gestation is only allowed for the purpose of enabling the cow to renew her supply of milk. Her progeny is suckled by her only so long as her milk is unsuitable as an article of human food. In some few instances its life is spared till its rennet is in a condition to use for curd. Thus years go by, and a dairy of fifty cows selected for their milking qualities have raised no calves. When these cows become too old to produce a good supply of milk, they are sold or fattened for beef, and their places are supplied by cows raised by neighbouring farmers. In the Eastern States dairies are supplied with fresh stock by animals taken from droves from the West.

Thus it would seem that the best dairy stock of the country is in course of gradual extinction. What extra milkers are produced are the result of accident or sport, since very few are taking any pains to raise stock from those animals in which the hereditary milking qualities are strong. Among grade cattle, size and symmetry are the only two points for which animals are selected to breed from. Even in those breeds of cattle that are famous as milkers, as the Ayrshires and Alderneys, little pains are taken ordinarily, to keep unimpaired the milking qualities of the race. In order to do this it would seem to be necessary to let the calves suckle a long time, and thus protract the season of giving milk. This practice, however, would interfere with keeping the cows in the flesh that is desired in order to exhibit them at fairs, or to have them in good condition to sell.

It is certainly to be regretted that more care is not taken to improve the milking qualities of our stock. Extra milkers should be kept to breed from, their milk not taken so long or in such quantities that they abort their calves, neither should their progeny be killed at such an early age that it is thrown on the dung-hill in order that all the milk of the dam may go to the market or the cheese factory.

It is quite as necessary to raise the calves of good milkers in order to have another race of good milkers as it is to raise the colts of fine trotters in order to have fast horses. Extra dairy stock would bring fancy prices in the market if their milking qualities could be vouched for.—*Prairie Farmer.*

Winter Dairying.

The general impression among farmers who are engaged in the dairy business seems to be that when cold weather sets in, there is no longer any profit in dairying; that the extra feed required to produce the milk, and the greater care necessary to make butter and cheese at this season of the year, render it impossible to follow it with profit. Therefore, many commence to dry up their cows as soon as frost kills the grass, and the stalks and pumpkins are used up. They regard the dairy season as over, and send their cows into winter quarters, which too often means close quarters and a bare living allowance of dry fodder.

Now no dairyman who has had experience in making winter butter needs to be told that it can be made profitably, and that those who allow their cows to shrink in their milk early in the season, or who dry them up on the first appearance of cold weather, fail to realize a large proportion of the profits that it is possible to make.

It is true that extra feed and care are required for the cows; that with the usual stable conveniences the labour of milking in cold weather is very unpleasant; and that without special preparation and extra care, but a proportionately small quantity of butter, of an inferior quality, will be obtained from the milk. Yet there is no doubt but that, with the proper conveniences for the management of the milk and the requisite experience and knowledge on the part of the dairywoman, as much butter can be made from a given quantity of milk as in the summer, and of a good quality, and that the extra price which such butter will command at that season will more than compensate for the extra food and corn required on the part of the cows. When the farmer fully realizes the importance of furnishing the cows with comfortable stables, and liberal supplies of food, in order to prepare them for the service of the coming season, he will find but little extra food and care necessary to secure a flow of milk up to within two months or six weeks of the time of coming in.

It is urged against winter milking that it overtasks and weakens the cows. This objection is surely a valid one, where the principle followed in wintering is the least possible care and the smallest amount of food that will bring them through in tolerable condition; but where the cows are fed an abundance of good nourishing food, so that the milk makes no drain on the amount needed to maintain bodily heat and animal vitality, the constitution of the cow will not be impaired.

Where an excess of food is furnished over and above what is needed to meet the wants of the animal, and of a proper quality, the milk will make little, if any, draft upon the strength or constitution of the cow. On the other hand, when thus fed and comfortably

housed, even though milked up to a short time before calving again, the cow will usually be in a far better condition for the opening of the coming season than when she has been dried up and wintered in the usual manner.—*Western Farmer*.

Slow Churning Preferable.

The *Scott's Farmer* is unwilling to concede any merit to the newly invented churns that claim to produce butter so quickly, and argues strongly in favour of the patient, careful mode of churning. It says:

And here we would state that we do not believe in quick or rapid churning. We have, of late, been accustomed to the advertisements of churns, the great merit of which is stated to be that they produce the butter in a very short time. This quickness is very delusive; it conveys the idea that something is gained; but the point is not, is time gained? but is the butter in the condition in which it should be? To do work quickly is not always to do it well; on the contrary, we are inclined to say that, as a rule, good work almost always includes the outlay of patient labour. But this notion of quick churning as the right thing to aim at proceeds from an ignorance of what the points involved in butter making really are. Quickly made butter may be good enough if it is to be used at once, but it will not keep well. The reason is simply this—that all the buttery particles of the cream or milk are encased with thin pellicles of casein or the cheesy particles of the milk; if these are allowed to be in too great a proportion, the butter has that cheesy flavour we all so much dislike, and this will be the case if the churning is done so quickly as to fail to break up or separate the casein pellicles from the oily or buttery particles; this perfect separation can only be effected by slow churning. Of course, there is a medium; but we should be inclined to place the minimum time in which the churning operation is to be kept up at thirty minutes; between this and forty-five or sixty minutes, if the butter "comes," then the quality, other things being equal, will be good.

How to Raise Cows for the Dairy.

"Cattle Breeder," in the *Rural American*, says that a heifer that is designed for the dairy should be brought up with great care, and in a manner that will tend to make her grow, and bring out all her good qualities.

We will suppose that a heifer has been brought up in such a way to the age of 15 months, that she is in a thrifty condition, and has every indication of becoming a good cow. We should recommend that she should now be mated with the bull, as by beginning thus early, we can control in a great measure her future development. As the ensuing 12 or six years will bring out

whatever of dairy quality she may possess, we cannot be too careful at first in our training. And first we should be careful about feeding too high, as heifers kept in high condition are liable to have inflammatory action set up in the udder towards the close of their term, which often destroys the usefulness of a portion of the organ, and tends to hinder the secretion of milk, thereby injuring the future reputation of the cow as a milker.

As there is always more or less of inflammation during the first stages of lactation, the young heifer should be milked as clean as possible at least three times a day, and her food should be light, with sufficient water until the feverishness is gone, when it will be safe to adopt a more liberal policy.

In the early stages of lactation, cows have a tendency to dispose of their surplus nutrition through the milk secreting organs, consequently they should have a liberal supply of good food at this period, so that not only nature's demands may be met, but that their milk-producing qualities may be stimulated beyond this. In order to accomplish this, we should feed not only all the moist food the cow will bear and assimilate, but whatever of rich food that will have a tendency to produce the largest and best results, always keeping in mind never to impair her digestive powers, nor promote a secretion of fat. The cow that does not respond to such treatment as this should not be kept for dairy purposes, as those cows only are profitable whose milk-producing organs are capable of being improved by judicious feeding.

Hard-Milking Cows

A correspondent of the *Western Rural* gives the following directions for the cure of a troublesome defect in some cows. He says: "Any one troubled with a hard-milking cow, can remedy it by going to the hen-coop, taking a small feather, and just clipping off the tip end; it will then be handsomely rounded; cut the feather end off, and you have a milking-tube. Get three of them. If you are careful, you can insert these, and old Brin won't know it! Milk the fourth teat; the rest will take care of themselves. If your cow does not milk easy enough, get larger quills. Any cow can be made to discharge her milk by continuing this practice, and she will never know how it was done."

The factory system of cheese-making seems to be gaining ground in England. Its advantages are repeatedly discussed, and in several districts it is being practically tested.

Mrs. Wm. Fowler, of Tuckersmith, has during the season, just ended, with the assistance of her three daughters, made, from twenty eight cows, \$1,075 worth of cheese, besides having supplied a household of fourteen persons with butter, and selling between \$75 and \$100 worth.

Poultry Yard.

Poultry as Farming Stock.

How many farmers might obtain lots of new accommodation for poultry by simply making use of the buildings they possess already; and how many farmers consider fowls unworthy of consideration, because of some supposed difficulty or expense in erecting suitable houses? And worse than this, how many farmers try to make poultry pay, without any result beyond continual vexations, merely from lack of ingenuity in bringing ordinary appliances into play? "Why bother, they ask, about raising chickens in cow-sheds and outbuildings, when you can set out as many coops as you like on the grass of a paddock, the gravel of a stable-yard, or upon the scattered rickyard straw?" Because, generally speaking, half your chickens die under the farmyard treatment. They get wet feet, and die of cramp; they drink rain water out of cart ruts, or drink the high-coloured soak-water of manure heaps, of strawyard drainings and other filthy slops, and consequently sicken and die by dozens. We have a troop of adult breeding fowls loose in the farmyard; they pick up a large part of their living there. But they do not thrive so well or keep so healthy as other troops of breeding stock which we have stationed at houses purposely erected in grass fields, far from the homestead. For a very small sum you may knock up a square boarded house, tarred outside, lime-washed inside, and covered with asphalted felt. Each of the four sides is in a separate piece, the roof (if of gable form) in two pieces, all hooked together at the corners by staples and pins. So a house (say six feet or seven feet cube) can be popped into a cart, and temporarily set up in a pasture, on a stubble, or wherever there may be a good picking for the fowls. A couple of perches, a few nests and a drinking pan form the furniture; while the ground covered in by the house (for there is no wooden floor) is spread over with loose earth, ashes and mortar. Such is the home for one cock and eight or ten hens and pullets during the breeding season, or the home of double this number of half-grown chickens. The house should be placed against a hedge, or in a corner where two hedges meet, so that a few poles and posts may protect it against cattle.

There can be no good reason against grazing fowls as well as other "animals;" and the farmer who tries it for the first time will be surprised at the amount of "grub" (literally, perhaps,) which the active scratchers and peckers find in a grass field, in and under the droppings of sheep and cattle, among hedge-roots, upon ditch sides, and so on; only a small supply of grain being necessary twice a day. We wish that many farmers may take our advice—procure what

hardly sort you most fancy, Cochins or Brahmans that endure close quarters, game that are strong old English birds, Dorkings that like dry chalk and gravel countries; or, if you are in a low or wet neighbourhood, on a tenacious soil, put a Cochin cock to Dorking females (no cross breeds allowed for parents, mind; but get good blood of pure breeds), and you will have hardihood in your chicks as well as weight and quality in your couples for market."

These suggestions are eminently practical. Small portable poultry houses of the kind recommended, however, are no new feature. In Lord Holmesdale's park at Linton, numbers of these may be seen scattered about the domain, and in one respect they are superior to those suggested by the above extract. Each house is raised about two inches from the ground, resting on the axles of two wooden rollers, so that every few days it can be moved, by the aid of a lever, on to fresh soil, thus avoiding the destruction of the grass underneath, and preserving the air of the roosting house in a constant condition of purity.

In reference to the last suggestion as to rearing hardy table fowl, our experience is much in favour of the converse of the above recommendation, and putting a short-legged Dorking cock to Cochin, or, still better, to dark-pencilled Brahma hens. Size always comes from the female side, and Brahma hens are heavy, hardy and very prolific, to say nothing of their being good sitters and admirable mothers.—*London Field.*

The New York poultry show is announced for December 14th to 22nd. The prize list will be sent to any applicant, by addressing the N. Y. Poultry Society, P. O. box 316, N. Y. City. Entries close on December 3rd.

BUFFETING INTO FRIENDSHIP.—All sorts of expedients are adopted to prevent fighting when a fresh cock is turned down in a yard. We can suggest a very simple plan, which has the prime merit of being very successful. Tie an empty bag to the end of a long stick, and when the birds are intent on their encounter, buffet them with the bag one after the other. If they are watched for a short time, and this is done whenever they attempt to fight, they will give up their pugilism really from "fear of the sack."—*Canadian Poultry Chronicle*

FOWLS KEPT IN CONFINED SPACE should have soft food at least once a day, say first feed in the morning, and plenty of green food; lettuce during the season is excellent, also cabbages; the heads should be thrown whole to the fowls, not chopped, it will afford them employment. Meat should also be supplied, else they may eat each other's feathers. A skewer run through a bullock's liver and then fastened to the ground in the centre of the yard is a capital plan, it enables the birds to pick off the meat in mouthfuls without its being drawn all over their yard. A change of food occasionally is always desirable.—*Canadian Poultry Chronicle.*

Horticulture.

EDITOR—D. W. BEADLE,

CORRESPONDING MEMBER OF THE ROYAL HORTICULTURAL SOCIETY, ENGLAND.

Vine Culture.

To the Editor.

SIR,—Having noticed two or three articles in former numbers upon the science of grape culture, I beg leave to make a few remarks upon the same. Now I differ somewhat from Mr. G., as he advises people to grow wild vines in preference to what he calls foreign varieties. Everyone knows that, whatever fruit is planted in its wild state, it will remain so for ever; and be sure the grape is no exception to the rule. Why go to the trouble of grafting, inarching, or budding the wild sorts of fruits with superior sorts, if merely planting a few cuttings will improve them, so as to be better for new beginners than imported and improved varieties? If our friend had advised grafting or inarching some of the hardiest of our imported varieties on the wild stock, I think he would have been nearer the mark. But the proper way to get grapes suitable for the climate is from seed sown from good hardy grapes crossed with some high flavoured variety. This requires both care and knowledge, which I will explain in another number.

Then again Mr. G. says that cuttings, as he describes, are much better than vines grown from eyes. There I must differ from him, as I am sure every good grape grower does. Vines grown from eyes properly managed make the very best you can possibly get.

I have made the vine my study for years, in fact I have been amongst them nearly all my life, and there is no way of propagating the vine that I have not practised; consequently, I know which is the best way to manage them for profit. I have trained them in every way that a vine could be trained, and I know our friend G.'s style has the advantage of wanting no trellis; but if they were very heavily laden with fruit, and had to encounter a storm with a heavy wind, they would all be broken to pieces, and vines and fruit all spoiled together. My name is well known as a grape grower in Covent Garden Market, London, England, for I have taken tons upon tons there, which have frequently brought ten and twelve shillings per pound, the earliest of them; and I never sold a pound under 2s. 6d. per pound, when all the grapes of the continent of Europe were coming into market by ship loads. I am convinced that vines grown from eyes are the very best that it is possible to get. I will explain the whole process of propagation in another paper, because it is of great conse-

quence to the planter, for he can be getting his vines strong while he is getting his vineyard ready to receive them, and if they are well managed it will make two seasons difference to him in fruiting of them, which is of great consequence to his pocket. I also think that Mr. G. is inclined to be too cheap with ploughing and trench-ploughing the vineyard, etc.

I am convinced from my own observation and experience that excellent grapes can be grown in Canada, but it is not every one that will succeed with them. The land is not all suited to the vine, neither does every one know sufficient about them; and they will not find out all the little secrets from reading articles in the newspapers; it requires practice as well. I am certain it will pay a higher percentage to those who succeed than any other crop that can be grown; but I think our friend painted it in too glowing colours. A seven-year old vineyard is put down at three pounds for ploughing, harrowing, hoeing, pruning and so forth. Now as many of our readers don't know the work that is required, I will name some of the items requisite to produce good fruit. Firstly, the autumn pruning, then spring cleaning up with the plough or otherwise. I have omitted the fall cleaning, but that is quite as requisite as the spring. As soon as the vines are fairly broken they want disbudding, that is, all the superfluous shoots broken off, so that nothing but good sound bearing shoots are left to carry the crop. Then as soon as the bunches show themselves, there is the stopping process, that is, pinching the fruit-bearing shoots in to one or two leaves beyond the fruit; then the laterals all want stopping. All these operations require going over several times, as it will not do to be too severe on them all at once—besides, the shoots will not show themselves all at once. Then when the vines have blossomed and the fruit is set and beginning to grow, say the size of No. 4 shot or very small peas, take your scissors and thin the grapes out—begin early enough, for you cannot well thin them too much—for the more room they have the finer they will be, and you will have more weight than you would by letting them stop without thinning. Besides, the fruit will be so much better in quality, that it will fetch more than double the price that those will that are left to themselves.

You shall hear from me again soon, with the editor's permission. I should like to correspond with some vine dresser on the subject. I have just arrived from England.

GEO. HENRY COLLOP.

Richmond Road, Ottawa.

NOTE BY EDITOR.—These views of our correspondent need some modification for the profitable culture of the grape in the open air in this climate, as he will discover before he has brought ten acres into full bearing and sold them in the Ottawa Market.

The Grape Crop of 1870.

From what we have seen and heard during the past few weeks, at the various agricultural fairs held this fall, the year 1870 seems to have proved one of the best and most favourable to grape growing we have ever had in Canada. The unusual excess of heat and sunshine during August and September caused the grape to commence colouring some two weeks earlier than usual, and the absence of frost till late in October enabled every grower to gather his crop of grapes in a fully ripened condition. At the Clair House vineyard, near Cooksville, the early crop of grapes, 20 acres, not only ripened well, but the yield of must was large and the quality much superior to the average of seasons. Even the Catawba, a grape that rarely gets ripe there, is this year fully ripened.

That grapes can be grown and wine made from them in Canada has been fully demonstrated at Clair House, and with the large outlay incurred and appliances put up, we may expect that an article of first-rate excellence will be produced there. An experiment made of stripping the grapes from the stalks previous to being pressed, showed that a much finer, richer, and more highly coloured must could be obtained than under the usual process of pressing grapes and stalks together. As only the best and cleanest grapes are used for wine making, the must from the others being distilled into brandy, there ought to be wines of the highest quality of excellence obtained. The Clinton grape is the one most grown, with some Concord, Delaware, Isabellas and Catawbas, but other kinds are being used as fast as the vines come into bearing, and another year or two will test the merits of some of the new sorts for wine making.

J. M.

Raspberries.

The editor of the *Small Fruit Recorder* calls the readers of that interesting and instructive paper that at South Bend, Indiana, the following results are noted in the different varieties named below:

Semra Black Cap.—The finest distinct black sort. Wonderfully productive, and this season kept in bearing the latest of all. Very superior quality; sells quick. Perfectly hardy and reliable.

Philadelphia.—Hardy; enormously prolific. One of the most reliable.

Clark.—Very hardy and vigorous. Firmer than the last, and better colour, netting nearly as much money from the crop, although not so prolific. Very sweet and delicious.

Mammoth Cluster.—"Ahead of the heap." Immensely productive. The bunches bent to the ground with the load of largest-sized fruit. Pulpy and delicious. In great demand on account of its very sweet and delicious flavour.

Naomi.—Proves hardy, while the *Francia* kills down by its side, thus showing them to be distinct varieties. Very large, delicious and productive.

Golden Thornless.—Can't be too highly extolled for productiveness, hardness and beauty of fruit. A great favourite.

The reader will remember that the soil on which these plants grow is very light sand.

A writer in the same paper, speaking of raspberries at Palmyra, N. Y., says:

Among our standard reliable sorts, I would name Davidson's Thornless, Seneca, and Mammoth Cluster, as taking the lead for profit and table use of the black kind; and of the red, Clark, Philadelphia and Kirtland. The Seneca sold for the highest prices on account of its fine uniform size and coal black colour, besides yielding a week after other kinds were gone. It certainly keeps in bearing longer than any other, whilst its first pickings were made nearly as soon as the Doolittle. The Mammoth Cluster has no equal for productiveness and large size of fruit, and very sweet, delicious flavour. Another important point in its favour is that it bears just as well on four-year old bushes as those younger. This is of great importance.

The Davidson Thornless should be in every garden. It is deliciously sweet and juicy. Very productive and very early.

The Clark is a magnificent red raspberry, very hardy, never having been hurt by the winter. Fruit large size, and sufficiently fine (if picked as soon as it turns) to carry two to three hundred miles. Its high scarlet colour and most delicious flavour give it a good sale. For home use nothing excels it.

Philadelphia and Kirtland we have often given our opinion of. Suffice it to say that our faith in them is not abated in the least.

The Naomi is a magnificent red variety. Very firm, exceedingly productive, beautiful shape, uniformly large size, high colour, delicious, and bush perfectly hardy. It is certainly a different berry from the *Francia*.

The Golden Thornless has astonished all who have seen it. Bushes loaded to the ground with wonderful large and beautiful dark golden fruit. If gathered as soon as they turn they are very good, but if allowed to remain on until "dead" ripe, they lose their flavour, and have a dirty, unnatural appearance. We are confident they will become one of the most profitable for drying.

The Lum's fall bearing, or "ever-bearing," and Catawissa are very valuable as fall bearers—especially in sections where peaches cannot be grown. To have them yield large crops the tops should all be cut off just as winter sets in, and a large lot of coarse manure thrown right over the crown. Leave this on in the spring, and allow the new growth to come right up through, and when this gets not to exceed two feet high, nip off the tip ends, so that they will branch out freely, for let it be remembered, that those

varieties yield the bulk of their crop on about six or eight inches of the top of each cane. So that the more tips they have the greater the crop. Moisture is what they delight in, hence the necessity of heavy mulch.

The Black Raspberry—General Directions for its Cultivation.

Since the several varieties of the improved Black Raspberries have become so deservedly popular, not for domestic use alone but for the general market also, it occurs to me that perhaps some specific directions for their cultivation would be received with favour by many of the numerous readers of the horticultural department of your excellent journal. Having made its cultivation and development a specialty for the space of nine years last past, I will submit the following summary:—

It will require 1,500 to 2,000 plants to set a single acre of land. Any good soil adapted to the production of corn or potatoes may be used. A position shielded from the range of heavy winds would be preferable. A partial shade, as a young orchard, is no impediment.

In the fall or early spring prepare your ground as for corn or potatoes, then proceed to strike furrows in the direction you wish the rows to run, seven feet apart, three inches deep, leaving the bottom of the furrow broad and level. Cross-mark with corn-marker three and a half feet apart, and in planting place a plant at each crossing, carefully spreading the small fibres out in the furrow, with the sprout or germ upward, then with the hoe carefully cover all the roots with fine soil two inches deep. After this, with cultivator and hoe, see that neither grass nor weeds are allowed to grow. A crop of early corn, potatoes, beans, or what is more profitable, strawberries, may be grown between the rows the first season without detriment.

They will need no pruning the first summer. Let the whole growth trail on the ground, and during the latter half of August, and through September, attention should be directed to layering the tips for the purpose of producing a valuable crop of plants. When the tips of the trailing vines seem swollen, and become naked or free from leaves, of a reddish colour, and semi-transparent, they are ready for laying, the proper mode of doing which is, with the corner of a hoe excavate the soil under the tip, letting it fall into the cavity, and replacing the soil, pressing all lightly with the foot or hoe. This causes the germ of the future plant to form from, or grow out of the extreme tip or point of the young cane or brier.

And this is the only true process of propagating black raspberry plants, but when thus treated, each plant will multiply itself from ten to thirty fold the first season after

setting, the value of which exceeds that of a crop of fruit.

The following spring, after the young plants are all removed from the ground, cut off the ends of the previous season's growth, to within one and a half to two feet of the root—it may seem wasteful, but is necessary to be done thereby, the size of the fruit is increased, and the labour of harvesting is greatly diminished.

There will now spring up large upright canes for the next season's fruiting; these, when one and a half to two feet high, in the latter half of June, should be cut or pinched off at the tips. This causes numerous side branches to start, and the main canes to grow more stocky, which prevents their being blown down by the wind, and also the necessity for staking and tying up to support the next crop of fruit. The following winter or early spring these side branches also should be cut off, at least one-third to half their length, and then such shallow cultivation as is sufficient to keep the weeds and grass subdued, is all that is needed till after the fruit is gathered, when all the old bushes may be cut away, and the ground thoroughly cultivated, or ploughed, not too deeply, turning the furrows toward the rows. And after this, in each year, the same course of treatment is advisable.

No pinching nor cutting back of the young canes after the first of July

In gathering berries for market, see that all are fully ripe—partially ripened fruit becomes soft and sour in much less time than it does when well ripened before being packed. Ventilated quart or pint boxes, not more than three inches deep, square in form, with bottoms elevated, so as to pack one upon the other, without shelves or drawers, are preferable for packing. The ordinary yield of the improved varieties of black raspberries is about 2,000 quarts per acre. But with labour and skill bestowed to that end, more than double that amount is not unfrequently gathered from a single acre in one season. A good picker often gathers 75 to 85 quarts in one day, but 50 quarts would be considered a good day's work in good picking, and 35 quarts would be a fair average during the ordinary season for berries.

In conclusion, in commendation of the improved varieties of the black raspberries as adapted to profitable cultivation, I am free to affirm that they have indeed most valuable qualities; they need no covering nor winter protection, do not fill the ground with suckers, are great bearers, and the fruit is so firm that it can be shipped to our most distant markets in good condition, and invariably finds a ready sale at highly remunerative prices.—*Utica Herald*.

KEEPING PLUMS.—"H. G." asks, "Can you inform me of the best plan to keep plums fresh for a length of time, after being ripe?" Will some one who knows how please reply to this inquiry?

The Work Done by a Leaf.

Now, what does it do? It pumps water from the ground through the thousands of tubes in the stem of the tree (the tubes which itself has made) and sends it into the atmosphere in the form of unseen mist, to be condensed and fall in showers—the very water that, were it not for the leaf, would sink in the earth, and find its way perchance through subterranean channels to the sea. And thus it is that we see it works to give us the "early and the latter rain." It works to send the rills and streams, like lines of silver, adown the mountain and across the plain. It works to pour down the larger brooks which turn the wheel that energises machinery which gives employment to millions. And thus a thousand wants are supplied, commerce stimulated, wealth accumulated, and intelligence disseminated through the agency of this wealth. The leaf does it all.

It has been demonstrated that every square inch of leaf lifts 3-500th of an ounce every twenty-four hours. Now, a large forest tree has about five acres of foliage, or 6,272,640 square inches. This being multiplied by 3-500th (the amount pumped by every inch) gives us the result—2,352 ounces or 1,176 quarts, or 294 gallons, or 8 barrels, a medium-sized forest tree about 5 barrels. The trees on an acre give 800 barrels in 24 hours. An acre of grass, or clover, or grain would yield about the same result.

The leaf is a worker, too, in another field of labour, where we seldom look, where it exhibits its unselfishness—where it works for the good of man in a most wonderful manner. It carries immense quantities of electricity from the earth to the clouds, and from the clouds to the earth. Rather dangerous business, transporting lightning. I think it would be considered contraband by the "U.S.," or "Merchants' Union," or any common carriers, but it is particularly fitted for this work. Did you ever see a leaf entire as to its edges? It is always pointed, and these points, whether they be large or small, are just fitted to handle this dangerous agent. These tiny fingers seize upon and carry it away with ease and wonderful despatch. There must be no delay; it is "time freight." True, sometimes it gathers up more than the trunk can carry; and in the attempt to crowd and pack the baggage the trunk gets terribly shattered, and we say that lightning struck the tree. But it had been struck a thousand times before. This time it was overworked.

As we rub a stick of sealing-wax or a glass tube with a warm silk handkerchief, so the air is always rubbing over the face of the earth with more or less rapidity. And what a huge electrical machine. But be not afraid—the leaf will see that it is taken care of. As we guard our roofs from the destructive action of lightning—dashing to

the earth, crashing, rending, burning on its way—by erecting the lightning rod, whose bristling points quietly drain the clouds, or failing to do this, receive the charge and bear it harmless to the earth—so God has made a living conductor in every pointed leaf, in every blade of grass. It is said that a common blade of grass, pointed by Nature's exquisite workmanship, is three times as effectual as the finest cambric needle, and a single twig of leaves is far more efficient than the metallic points of the best constructed rod. What, then, must be the agency of a single forest in disarming the forces of the storm of their terror?

Nature furnishes the lightning, and it furnishes the lightning rods. Take a hint, then, and plant trees. *The American Entomologist and Botanist*.

Wide Planting and Long Pruning the Grape.

As so much failure has resulted in planting vines so close to each other, and from the practice of cutting away the wood to from two to four canes if long pruning is practised, or to spurs if spur pruning is the system adopted, let new beginners in planting a vineyard set their grapes from eight to twelve feet apart in the rows, having regard to the richness of the soil and the character of the vine as a rank or moderate grower; let the trellises be six and a half or seven feet in height, with five wires. When the vines have fully covered the trellises, and are impatient of restraint, let the vigneron take out alternate vines, leaving the others from sixteen to twenty-four feet distant from each other in the rows.

Perform the first pruning in the fall or winter, cutting away some of the tangled mass of the wood, but leaving three times as much as would seem to be required. Do nothing more with the vines till the early days of summer. In the meantime the buds burst, and shoots push out, the leaves develop and the fruit clusters appear; and as not a few but very many buds are left to receive the life-giving currents proceeding from a large and strong root, vegetation proceeds in its normal course, and there will be strength and vigour, and not weakness and decay, in the progress it will have made. It is during the critical period of the starting of vegetation that nature should encounter nothing to disturb the performance of her functions, and this period having passed, when the clusters have appeared, the time comes when the real work of pruning may be done.

Surveying the trellises, the cultivator will no doubt see fruit clusters in excess; whereas, in case of deficiency, he would have no remedy. Have the courage to cut when cutting is attended with no danger, even though scores and scores of clusters of incipient fruit are thereby made to come to naught. The planter may remove entire canes, then

entire shoots, until he is satisfied that they may have no more fruit than they will have leaves to ripen. This completed, the canes, and from time to time, the shoots, are brought up, and secured to the trellis wires. No summer pruning or punching is to be resorted to, and nature proceeds with the work of maturing the fruit.

Many grapes treated in this way have been found free from disease; whilst others planted in the same kind of soil, but which have been pruned in accordance with the ordinary method, have been badly stricken with mildew.—*Journal of Horticulture*.

NOTE BY THE HORT EDITOR. We heartily endorse so much of the above article as relates to wide planting, and long pruning, without summer pruning; but we fail to be able to appreciate the necessity of fall or winter pruning, and believe that it can only be advocated on the ground of convenience, the spring being so short that it is a great gain to do all that can be done before the rush of spring work comes on. However, if fall or winter pruning is to be done, we would most heartily commend the course above suggested, for it is not safe in this climate to prune close in the fall. But we see no reason why the whole pruning can not be done in the early spring, in March in some places and seasons, in April in others. The idea that the vine can not be safely pruned at that time is giving way before the test of experience; and the fine-sounding expressions about "the critical period of the starting of vegetation," etc., etc., are to be considered merely as rhetorical flourishes.

Vine Culture and Garden Talk.

Some time since, when giving a description of our wire fences for vines, and application of manure to them, I promised to state results, as well as part of the process, in some future communication. Our vines are Hartford Prolific, Delaware, Black Cluster, Concord and Isabella, several of each kind.

Our course of training has hitherto been to nail the vine to a board fence having a southern aspect. This fence blew down last spring, and we substituted heavy wires, strained from post to post, the posts nicely planed and pitched at bottom to prevent decay, and placed about twelve feet apart. We consider, after this summer's trial, that the wire does not answer so well for the fruit as the board fence, but the appearance is very pleasing. The fruit sets better against the boards, and is somewhat earlier, but our manure is peculiar and our stronghold, and consists of nightsoil pumped direct from the vault, and poured all around the vines, on earth previously loosened with the fork, to the extent in surface of about six feet square, and in quantities of about six pailsful to each vine. This is the third year we have used this manure in this manner, and our success is most complete, notwith-

standing the absence of the fence on which to train the vines. We have had a most excellent crop, and the quality has been pronounced by good judges as quite equal to hothouse grapes; indeed some preferred the fine fresh flavour of those grown in the open air with us to that of the hothouse production.

We attribute the quality as well as quantity, entirely to the manure, and the shoots for another year are really prodigious, many of them being twenty feet long, and some as thick as the forefinger of the hand—and I have rather a large heavy one, having of late years done a good deal of work with it. We are now fully convinced that the plan we have adopted is good, and works to perfection. We have a large puncheon sunk in the earth, and therefore quite tight, from which we pump every fall, about November, 70 to 80 pailsful of soil, and distribute as before described. I am sure we have gathered at least 250 pounds of grapes off our vines, 12 in number, and extending 170 feet in length. At 15c. a pound wholesale, the produce would have been worth nearly \$40 to purchase. But it has always been a maxim of ours that any luxury that we can produce may be used *ad libitum*. We are economical enough in all we cannot raise, but we consider, where a little extra care or attention, combined with industry, can furnish luxuries in abundance, we have a full right to enjoy the result without stint.

This principle works well in any family, and is a source of much contentment under some deprivation in things we cannot raise, and of great enjoyment in others that we can. There is to us great satisfaction in seeing our friends feast on such home productions, and we heartily advise our brother farmers to cultivate the same feeling, and at the same time add to their store of enjoyment any luxuries that may be within their reach on these terms. These little matters make home what home should be to every family—a place to look back upon in after life as one of sunshine and comfort; and when hereafter, our children are singing some of the old and beautiful songs that men of taste and refinement have written and will yet write on home and its surroundings, what if it does bring the water into a strong man's eyes at the retrospective thought?—there are few men, and no woman, young or old, but would readily forgive and appreciate it.

Whilst on the subject of the garden, I may mention the large size of our apples. We have two trees that produce many barrels, and numbers of these apples measure 13 inches in circumference, and some weigh 1½ pounds. Of course, this great weight is not attained by many,

Our young trees, planted out only four clear years, bore pretty well last year and this also, but the dry spring caused bushels of little apples, the size of nuts and walnuts,

to fall off before coming to maturity. Three or four of our best young standard and dwarf pear trees have died down to the root without any apparent reason. The leaves turned quite black a month since, and the trees seem sure to die.

If any of your correspondents can give some advice for the prevention or explain the cause of this, they would certainly merit and receive our best thanks, as I fear the same disorder will extend to the rest of our orchard, and I am getting too old to afford time to plant young trees much longer for me to hope to see them bear fruit; but my children may, and one of the comforts of a farm and garden is that hereafter your children will look back on the plantation as the work of their father's hand, and no doubt the recollection will be as pleasant to them as the prospect is to the father. So we will plant away as long as we live; some one will be here to enjoy it, and our children may thus be induced never to part with the homestead, on which we have spent so much personal exertion for them. C.

Twitcheil's Acidometer.

The able editor of the *Grape Culturist*, published at St. Louis, Mo., states in the September number that he has submitted one of these instruments to a thorough trial on some eight varieties of wines, and after this test of its usefulness confidently recommends it as the only safe and practical instrument of the kind he has seen, and which any person of common intelligence can use with perfect safety. The action of this instrument is based upon the well-established fact that where an excess of carbonate is added to a liquid containing an acid, there will be given off carbonic acid gas in exact proportion to the amount of acid there was in the liquid. This instrument is so made that the exact amount of acid in the liquid can be read off from a graduated scale, without any calculations or corrections. It fills a much felt want, and should be in the hands of every careful wine maker, and we notice it now so that those who are interested in this matter can supply themselves in season for the present vintage.

Blackberries.

The experience of another season seems to be in favour of the Kittatinny, on account of its ability to endure the climate, and the large crop of handsome fruit. It is a most vigorous grower, and throws up numerous suckers, which require to be kept under. The canes should be kept pinched back to a height of four feet, and have plenty of room to branch out, and the branches be also pinched in at three feet. The canes are armed with fearful thorns, but this is true of all, and we must put up with them until some person introduces a really valuable blackberry without thorns.

Keeping Grapes Fresh for Winter Use.

If you desire delicious, fresh grapes in winter, or even up to the next spring, they can be had by a very little expense. Pick the bunches only on a dry, warm day, and place them in a cool, shady place for at least three days; then commence to pack them in paper boxes that will hold about ten pounds. Between each layer of grapes place a single thickness of newspaper; the boxes should not contain more than three layers in thickness. Then place in a cool, dry room—not in a cellar, for the natural dampness there will cause mould and decay. In this way the past very damp season we kept Concord, Delaware, Hartford and Diana, the last being in good condition in March.—*Rural World*.

A Word for the Toad.

During the past week the Striped Potato-bug (*Lytta vittata*) came into my potato-patch, and in two days defoliated about a thousand hills, when four of us set to work gathering them. In one hour we gathered a full gallon. Where did such a quantity of these bugs come from in so short a time? But the most curious part is to come? A black boy who was helping me said he did not like to gather the bugs, because wherever they were numerous he found a lot of toads, and he was afraid of toads. This attracted my attention, as I had seen a number of toads myself, and, to my surprise, I found that they were eating the bugs. One fellow ate twelve bugs, at the rate of four per minute. He would not eat any faster, although we ran the bugs all around and over him. Has any one else noticed this? It is certainly new to me, for I did not think anything would eat these Blister Beetles. The Ladybird is shy of them, and so far as I have observed, none of the common cannibal beetles will attack them.—S. F. T., Hannibal, Mo., in *Am. Entomologist*.

Horticultural Notes.

To the Editor.

SIR,—I have noticed through the summer many complaints about mice girdling apple trees. I have never lost a tree from this cause, since I adopted, some sixteen years ago, the very simple plan of putting strips of cedar bark, or bits of shingles, round the trunk, which I do every autumn and remove them in spring. I just put them up round the trunk, touching the ground, and tie the strips with a string. Any little boy or girl could cover an orchard in a day, and the same strips will do for years. I have only some two dozen of trees, and do the job myself.

This has been the most extraordinary season for vermin I ever remember. Squirrels and chipmunks ate all my strawberries, and a third of my gooseberries. Field mice tried

everything; they destroyed a great many dwarf peas, and carrots, turnips, beet root, and savoy cabbage. There was a great crop of plums, but they rotted in bunches. I examined the rot closely, and it was evidently a very rapid decay, no insect being visible. Our apples, too, rotted, and there are some kinds with worm holes in almost every apple. I never noticed either plum or apple rot till last year; the worms are old acquaintances. I caught a good many of the vermin in rat traps. There is one very valuable vegetable, namely rhubarb, which no animal ever injures, and it is in my opinion about the most useful and I believe most wholesome plant in the garden, and this year it was good till September, having been first pulled the last week of April.

I noticed the doings of the curculio, but all the damage they did was very small. I think some of the birds pierce the fallen plums for the purpose of eating the curculio, as I noticed many of them with big holes in them and the worm gone. I have always lots of birds, and I do not grudge them all they steal, as their music and the good service they do in eating insects, and their pretty cheerful ways, far more than compensate for any mischief they do.

One family of squirrels was brought up about the house somewhere, as one morning five little fellows were descried sitting in the tin pipe at the eaves of the roof, and three of them were murdered before they got fairly launched in the world. It was cruel, I daresay, but they are awful little thieves. I had a nice row of crocuses, and the little villains carried off every one just when they were about ready to remove for the summer. They did not meddle with the tulips just in the same place. I found the hellebore most effectual on the currant and gooseberry trees, but I think I had to administer one or two doses every fortnight during the whole summer. Still I saved my fruit, and half an hour or so in a summer morning will suffice for the purpose.

I didn't mean to spin so long a yarn when I began, and I hope you will excuse it. F.

Fergus, 25th October. 1870.

Fall Bearing Raspberries.

Mr. U. H. Davies has sent us some ripe raspberries, gathered on the 12th of October, and which he found growing near the G. W. Railway track in the vicinity of Woodstock, and says that he has lived in Canada forty-four years and never before met with such a phenomenon.

There are many varieties of fall bearing raspberries, some of which are cultivated in our gardens, but they are none of them of much value when grapes are abundant. We are satisfied with raspberries in their regular season, and do not care to return to them when pears, grapes and apples have become abundant.

Protection against Mice.

To the Editor.

SIR,—The annual loss sustained by the ravages of mice among fruit trees all over the country, during the winter months, makes it a question of considerable importance, how we may cheaply and effectually protect them from being girdled. The importance of this subject will be deemed a sufficient apology for laying before your readers my plan for accomplishing this desirable object.

I use well-burnt round tiles, such as are used in under-draining, four inches in diameter by fourteen inches long, divided lengthwise in two equal parts. Clearing away the dirt two inches deep from each tree, these pieces are brought together around each tree, fastening their tops with a piece of wire and drawing the dirt around against them, and pressing with the foot, the work is done. If they are properly burnt these tiles will stand many years.

Two boys will thus protect several hundred trees in a day, costing in all two and a quarter cents a tree. The above-sized tiles were bought from Mr. Campbell, of Hamilton, for twenty dollars per thousand, that is, two thousand pieces. May I request that if you are aware of a more effectual plan you will publish it.

W. H. MILLS.

Orchard not Bearing.

To the Editor.

SIR,—You would confer a favour by giving me information on the following subject, either by letter or through the columns of your valuable journal. Eight years ago I set out some standard apple trees pretty late in the spring, since which time they have grown steadily each season, so that now they spread out from ten to twenty feet in diameter, and yet they bear no fruit, at least, not till this season, when there were a few apples on some of them. They all appear to run to wood in growth. What I want to know is, how can I check this rapid growth and cause them to bear, without injuring the trees? Last year I pruned them well, but still the growth seems as rapid as ever, without yielding fruit.

By replying to the above you will greatly oblige an old subscriber.

Lucan.

S. CLATTERHAM.

REPLY.—Seed down the orchard for a few years, and the growth of wood will be checked and fruit buds will form.

MILDEW ON ROSES.—A correspondent of the *Cottage Gardener* gives the following cure for mildew on roses: Rub down in a gallon of soft water one pound of soft soap; with the solution syringe the upper and under surface of the foliage, and the mildew will disappear as if by magic.

THE CARPET CHAMOMILE.—This plant will make a good turf, as it spreads fast, and grows freely on all soils, even the poorest, while it is not affected by the hottest sun or the most severe drought.

A correspondent of the *New England Farmer* says that last year he saved his onions from the maggot by removing the earth from the bulbs with his fingers, being careful not to disturb the roots while weeding them. A pound of copperas dissolved in a pailful of soft soap, and, when thinned with water, applied to the onions, is good to keep off the maggot, and to promote the growth of the onions.

Tilton's Journal of Horticulture for November has been received, and is fully up to its usual standard of excellence. The illustrations and descriptions of new things are alone worth the subscription, and as the price is to be reduced from \$3 00 to \$1 50 after this year, every one can afford to take it. Publishers offer very liberal inducements for making clubs. J. E. Tilton & Co., Boston, will send to any address a sample copy and premium list.

THE TROPHY TOMATO.—It is without exception the best and most perfect tomato we have ever seen. "As heavy as a stone," is the expression of those who have examined it on our grounds. Certainly we never saw its equal in size, beauty, uniformity, solidity and goodness. In cutting it one is reminded of an old cheese. There are no open cavities in it. The slices, when cut and laid upon a dish, are as perfect as the slice of a potato. The flavour is deliciously sweet. The average weight, 1 lb.; many weigh from 1½ to 1¾ lbs.—*The Small Fruit Recorder*.

SPLIT TREES.—W. A. Gordon, of Wardsville, writes:—"About twelve months since you advised me respecting the bolting of split trees with iron bolts. I have tried on two; one of them is a perfect success, the other has half of it dead. As to the cause of death I have two opinions; first, it had been rent a long time; second, I bolted it right through the heart. In the other tree the bolt is about an inch from the centre of the stock, which I believe is a good plan."

DISEASED PEAR-TREE.—H. Thompson sends a sprig of a pear tree, with an enquiry as to the cause and proper treatment of the diseased condition. The leaves have been attacked by a fungus, a small parasitic plant, growing on the under side of the leaves. Flour of sulphur is destructive to most microscopic fungi, and if it should appear on the leaves next year, a quantity of sulphur may be sprinkled on the surface of the ground as far as the branches extend, and dusted through the leaves. This should be done as soon as the first appearance of anything can be detected on the leaves, else it will be too late.

SOWING LAWN GRASS SEED.—"Essa" is informed that the best time for sowing lawn grass seed in this climate is the spring.

Correspondence.

Sugar Beet Seed.

Mr. H. L. Smith, of Parry Sound, asks where he can obtain genuine Silesian Sugar Beet Seed, and how many pounds it takes to an acre, to sow in drills 2½ feet apart?

There are several kinds of sugar beet seed. Many prefer the white Silesian, but in some factories on the Continent several other sorts are as much thought of, and used. Much depends on the sort of land on which the seed is to be sown. An application to any of the first-class seedsmen of the principal cities in Canada will ensure a genuine article. As Mr. Smith writes from Parry Sound, we suppose his nearest point of supply will be Toronto. Messrs. C. Dawbarn, Simmers, or Fleming, wholesale seedsmen of this city, can furnish reliable qualities and in any quantity that may be required, provided the order reach them early enough to get the supply from home, before the spring opens. We should advise an early application to one of these firms, desiring them to furnish a quantity of each kind that has been found to answer by their correspondents in Europe. Our enquirer will then have an opportunity of testing three or four varieties as adapted to his soil and climate. About 6 lbs. will sow an acre, and be sure of a sufficiently thick plant, allowing for some to be imperfect seed. Of course, one-half this quantity will suffice, provided it all grows; but all the mangel tribe are very liable to miss growing, and thus leave large gaps in the rows. About the beginning of June is the best time to sow; this has been proved, by many experiments, to produce the best roots with most sugar per ton.

Pedigrees of Exhibition Animals.

Several enquiries have been addressed to us in reference to this subject. One correspondent asks whether he complied with the resolution of his Agricultural Society that "Exhibitors of thorough-bred stock hand in pedigrees of the same to the President on the morning of the show," by handing in a certificate of the record in the Herd Book. With regard to this enquiry we should answer that literally he did not, but in effect he did, as the certificate of record and the Herd Book would supply the necessary information.

Another correspondent complains that the judges refused to accept or look at a copy of pedigree, and wishes to know whether a judge should "understand, examine, and be influenced by pedigrees?" We think there can be no question but that the pedigree should be taken into account in awarding prizes. It is not customary, nor is it always necessary for

the judge to examine pedigrees. That is generally done, if required, when the entry is made; and the judge may take it for granted, if an animal is admitted to competition in a thoroughbred class, that the pedigree is satisfactory. But where two animals approximate very nearly in merit, as to points of excellence, the consideration of their respective pedigrees should certainly be allowed due influence in coming to a decision. It is an element of primary importance.

Natural History Query.

E. C., Cobourg, writes, "Can you or any of your readers inform me whether there is any book published exclusively on Canadian birds; if there is, where I can get one? And can you tell me the name and species of a bird which lays its egg in other birds' nests? The colour of the egg is white with blackish brown spots; the nests in which the eggs were laid belonged to small birds, and the eggs were much smaller. I have found five or six of them, but never more than one egg in each nest."

There is no book of the kind published in English, but a work in French on the subject was published some time ago. The bird whose cuckoo-habits are referred to is the Cow bird (*Molothrus pectoratus*), one of the family of starlings, of which the oriole, bob-o-link, and meadow lark are also members.

Coal Tar and Crude Petroleum for Roofing.

"W. H." inquires the best mode of applying coal or gas tar to roofs. The only effectual mode of using it is to heat it to the boiling point, and apply it with a brush, taking care to allow the heat to subside until it will not burn a feather, or the brush will be spoiled. The outside coating of tar will all come off in a year or two, as such is the effect of light and exposure to the air and elements; but as it penetrates into the pores of the wood of the shingles, when applied boiling hot, the portion so absorbed will never wear away, and the shingles will be preserved to a great degree from decay. The price by the barrel at the Gas Works is about ten cents per gallon, exclusive of the barrel.

As to the value of crude petroleum as a coating to shingles, there cannot be two opinions as to its increasing their durability; and the outside when exposed to the elements will not be affected in the same manner, or to any such extent, as if coal tar be used. But its extreme inflammability renders its value very doubtful when all the disadvantages are taken into account. Rain-water could not be used for many months from a roof so covered, on account of the strong effluvia arising therefrom.

Scheele's Green.

To the Editor.

SIR,—A word as to the employment of this poison as a beetle destroyer.

Without going deeply into the chemistry of the matter, I may allude to the fallacy of supposing that, because offensive and poisonous vegetable substances are neutralized and utilized in the processes of vegetation, therefore mineral poisons can be so neutralized.

The fact is that many of these vegetable substances consist of perfectly harmless chemical elements, owing their virus to their mode of combination, which virus is destroyed by the changes which they undergo during the growth of a crop. But mineral poisons frequently enter unchanged from the soil into the plant, and thence into the animal which eats it. And it is worth trying by actual experiment whether arsenic (which essentially cumulative poison enters into Scheele's Green in combination with the corrosive poison of copper) does or does not pass from the soil into the tissues of plants. As a case in point, and recorded in the transactions of the Royal Dublin Society, I may mention that my cousin, Mr. John G. Rathbone, found that some sheep on a farm of Lis, four miles from Dublin, were diseased from eating turnips, which had been manured with superphosphate of lime. Analysis showed that a mineral poison (which I am almost certain was arsenic) had made its way from the superphosphate to the turnips, and thence to the sheep. It may be worth while stopping the dreaded beetle even at the hazard of a partial poisoning of frontier farms; but still it is worth determining by actual experiment whether either of the two poisonous elements in Scheele's Green can pass into the tissues of a plant.

Any one having a green-house or hot-house could transplant some rooted plants into a box manured with Scheele's Green, and then in the spring analyze the leaves and roots of the plants. The presence of arsenic, even in very small quantities, would show itself by the usual delicate tests.

W. E. HAMILTON,
Marbleton, Eastern Townships.

OSAGE ORANGE.—A "Subscriber" sends a sprig of a shrub grown by him from seed, and wishes to know the name of the plant. It is the Osage Orange, used as a hedge plant in the western United States, but too tender for Canada.

EDUCATION.—In reply to the enquiry of G. H., we refer him to Mr. A. Smith, V.S., Temperance Street, Toronto, who will be able to give him all necessary information respecting the Veterinary College.

LEACHED ASHES may be applied with advantage to any land, but probably with more effect on sandy soils deficient in potash.

As a top dressing to meadows the effect is permanent and immediate. If used on wheat crops it has been found to cause a tendency to rust on account of the rank growth produced; but the best use to which the ashes can be applied is probably to sprinkle a thin coating over the potato sets, after dropping in the hill or furrow. In the western part of Canada there are great quantities used for this purpose.

WORMS IN HORSES.—"Bridgewater" is informed, in reference to the case he mentions, that a convenient and useful remedy for the removal of worms in horses is one ounce of oil of turpentine, mixed with four ounces of linseed oil, to be given for two mornings in succession.

TEETH A TEST OF AGE.—"Subscriber" asks, "Is it uncommon for Merino shearling ewes to have four broad teeth? or, in other words, do cases occur in which Merino (or other sheep) have four broad teeth when only one shear?" The number and development of the teeth are among the surest and most constant marks of the age of any animal, but like all other signs, are liable to variation. Some animals grow faster and mature much earlier than the average of the same species, and all writers on the subject refer to exceptional instances in regard to the appearance of the teeth. Randall says, "There is sometimes a variation of a number of months or even a year in the development of the teeth. High kept and rapidly grown sheep acquire their second teeth much earlier."

The Canada Farmer.

TORONTO, CANADA, NOV. 15, 1870.

The Harvest of 1870.

The crop reports for the present year of the districts through which the Grand Trunk railway passes have, as usual, been published, and although these accounts cannot be taken as complete, or positively accurate, yet they furnish data from which to judge of the character of the harvest in those districts, and give at least the general impression of farmers in the respective neighbourhoods in regard to the crops. It is very desirable that some reliable information on this important subject could be annually obtained and given to the public. The threshing machine is, after all, the best test of the actual yield of grain, and perhaps, the most feasible plan of collecting accurate statistics respecting the yield of cereal products would be to obtain from each man who owns a threshing machine a return of the average production of the locality in which he has carried on his operations during the season. A pretty close estimate could thus be gathered very soon after har-

vesting was over, not, indeed, of the total amount of grain raised, which could only be known at the end of the season, when threshing was completed, but of the average amount in proportion to the acreage sown. Such a return would often be very wide of the calculations made, in the usual manner, from the appearance of the standing crops, or the bulk of the straw. In the absence, however, of more certain means of forming a judgment, we must be thankful for such aids as are furnished by the reports which the railway companies are able to give.

These returns are, on the whole, somewhat less bright than we anticipated at an earlier period of the year, and seem to show a considerable falling off, at least in the staple grain. The report is divided into three sections, referring to the several portions of the line of railway, namely, the Goderich district, extending from Goderich to Fort Erie; the Western District, from Detroit to Toronto; and the Central (which so far as Ontario is concerned may be called the Eastern District), from Toronto to Montreal. The annexed table gives a summary of the reports from the various stations, showing what crops are reported in each as having been average, or under, or over the average yield:—

GODERICH DISTRICT.			
	Average.	Under Average.	Over Average.
Wheat, Fall . . .	3	12	0
" Spring . . .	3	22	0
Barley	10	4	1
Oats	4	6	11
Peas	11	2	0
Hay	1	2	6
Roots	2	1	11
Potatoes	2	1	12

WESTERN DISTRICT.			
	Average.	Under Average.	Over Average.
Wheat, Fall . . .	17	11	0
" Spring . . .	13	11	2
Barley	17	2	5
Oats	5	2	21
Peas	10	5	1
Hay	3	2	5
Roots	2	7	16
Potatoes	5	4	14

CENTRAL DISTRICT.			
	Average.	Under Average.	Over Average.
Wheat, Fall . . .	11	14	0
" Spring . . .	12	22	0
Barley	19	16	1
Oats	14	10	9
Peas	18	6	3
Hay	7	20	0
Roots	7	14	9
Potatoes	12	6	12

From the above statement, it will be seen that the condition of the wheat crop has been most unfavourable in the Goderich district—a large proportion of the stations reporting the yield of both fall and spring wheat as under the average; while in the Western District the greater numbers report an average; and the Eastern stations again give a larger proportion of returns under the average. Barley is reported almost uni-

formly as an average crop, and the same may be said of peas. With nearly equal uniformity, the yield of oats is reported as having been very large. The chief exceptions to this are in the Eastern Districts, where in some cases the crop appears to have been slight. In the same sections of country, also, hay has been a poor crop, while in the Western and Georgian Districts, the returns, where this crop is mentioned at all, are almost very favourable. The Eastern country is also the only one that gives an unfavourable view of the root crops, which in other parts of the Province appear to be unusually abundant. But while the general yield of potatoes is large, the appearance of rot in some places may considerably diminish the available amount of this crop. The prevailing wet weather, in the Western country more particularly, has interfered with the curing and harvesting of hay, and much of it has been housed in a damaged condition. While rust has been somewhat complained of, the injury inflicted by insects has been much less than in former years. Indian corn, where it has been grown, has yielded an almost unprecedented return, and the experience of the past season will, no doubt, encourage the growth of this valuable crop to a greater extent than heretofore.

Altogether, though in some kinds of field produce there has been partial failure, yet there has been a compensatory productiveness in others, and farmers have great cause for thankfulness in view of the general result of the year's operations.

Canadian Phosphate of Lime.

We learn from the *Chemical News* that at a recent meeting of the Glasgow Philosophical Society, Mr. W. R. Hutton read a very interesting paper on "Canadian Phosphate of Lime, and some other Mineral Phosphates now used in making Superphosphate of Lime." The following is a concise summary of the more salient points of the paper:

The author mentioned that many mineral compounds, having different characteristics and results when operated upon, are now used in the manufacture of artificial manures; and referred to the fact that agriculturists are annually making greater demands upon the manufacturers of phosphate of lime. He stated that, in general terms, the value of a mineral phosphate depends upon the percentage of phosphoric acid contained in it; but if there is any marked quantity of carbonate of lime present, the value of the phosphoric acid is much reduced, owing chiefly to the large quantity of sulphuric acid required to decompose the carbonate of lime before the phosphates can be reduced. The same remark holds true with reference to phosphatic minerals containing iron compounds in combination; the iron takes up its own equivalent of sulphuric acid, and as it is per-oxidised a compound is formed which

is positively injurious to plant life. Fluoride of calcium is also invariably found in phosphatic minerals, and it, too, requires sulphuric acid, thus increasing the cost of superphosphate formed, while the gaseous fluorine compounds set free are a source of annoyance. No mineral phosphate has been so extensively employed as coprolites, and none is so little understood and valued by agriculturists.

After referring to the origin and nature of coprolites, and the extent of the deposits in Lancashire, Bedfordshire, and Suffolk, from which upwards of 200,000 tons are annually raised, the author proceeds to speak of the necessity for additional sources of mineral phosphates being resorted to, and new deposits being brought within the reach of manufacturers of manures, even if brought from other countries. He spoke of the German and Spanish phosphates as being very extensively had recourse to, although not so valuable as the English coprolites. Reference was made to a large and valuable deposit which occurs in South Carolina, and which has recently been brought into notice. Mr. Hutton mentioned that he was supplied some months since with specimens of phosphate of lime from Canada, obtained from the face of the material nearly fifteen feet in width, and presenting, so far as yet examined, an excellent supply of raw material. The samples differ very much from those phosphatic minerals which are now in use, and seem to indicate that if a sufficiency can be obtained, the Canadian mineral will be welcomed by manure manufacturers. Some of the specimens sent were distinct six-sided prismatic crystals, while the other pieces were in masses; but both crystals and masses had a vitreous lustre, the colour on some parts being green and bluish-green, and in other places red.

It is not stated from what part of Canada the specimens of phosphate of lime came that were subjected to analysis, but it is well known that the mineral is to be found in different localities, and in great purity and abundance in the counties of Leeds and Lanark, in the province of Ontario. In a physical point of view it is said that this Canadian phosphate differs from all others in being crystalline and not granular; while it differs chemically in containing more phosphate of lime and less carbonate of lime and sand. It is much to be desired that these resources of Canada should receive the attention which their importance demands, and be turned, as soon as possible, to a practical account.

SHORT-HORN SALE.—As will be seen by the announcement in our advertising columns, Col. Taylor will sell by auction some of his choice short-horn cattle, on the 22nd of the present month. The lot offered comprises the beautiful yearling bull "Proud Duke," bred by J. O. Sheldon, of Geneva, six cows, in calf to "Proud Duke," and three heifers.

Notes on the Weather.

The fall season, especially during the past month of October, has been unusually pleasant and favourable for such garden and farm operations as remain to be performed. Grapes, apples, and other later fruits have fully ripened, and ample opportunity has been afforded for securing them without a touch of frost; while field roots have been equally favoured in the season. He must be an incorrigibly procrastinating farmer who suffers himself to be caught this year, as many were last fall, by the occurrence of frost, before his potatoes and turnips are all safely gathered, and pitted or housed under cover. It is not often that a fall season so genial and prolonged as the present is experienced in Canada. The farmer has cause to add this to the many grounds for thankfulness which have "crowned the year."

The speciality of the weather, the character of which has been pretty uniform throughout the Province, has been its unusual warmth. We learn from the records of the Toronto Observatory that the average temperature of the month of October has been 50°, which is 4° 36' higher than the average for the month during the last thirty years, and 7° 71' warmer than October of 1863. The highest temperature, 68° 5, occurred on the 1st, which was also the warmest day, with a mean temperature of 60° 4. The lowest temperature was 30° 2, on the 19th, the only occasion on which the thermometer fell to the freezing point. The lowest mean temperature for any day was 38° 8 on the 26th.

The amount of rain-fall has been slightly above the average; rain having fallen on fifteen days to the extent of 2.690 in. The amount of cloudiness has closely approximated to the average. There were fifteen days clouded, eleven partially so, and five clear.

Westerly winds have prevailed, though there has been considerable variation in this respect, and the month has been marked by the occurrence of more than one violent storm, which caused serious disasters on the lakes, and some damage on land. The most severe of these was on the night of the 30th.

The most exceptional and extraordinary occurrence of the month was the earthquake, which affected a large portion of Canada, as well as the United States, on the 20th. The aurora borealis has been frequent and brilliant. Altogether the month of October has been in many respects a remarkable one.

PROVINCIAL EXHIBITION PRIZE LIST.—We publish in another part of this issue a list of the award of prizes at the late Provincial Exhibition. The list has been carefully revised and corrected under official authority, and will be found a reliable record for future reference.

Entomology.

Entomological Gleanings.

BY W. SAUNDERS, LONDON, ONT.

With a fruit farm in the country frequently visited, and a fruit garden in town, my opportunities for observing the times and doings of insect foes and friends are sufficiently ample to satisfy the desires of the most active and enthusiastic "bug-hunter" that ever carried a net. Now a swarm of caterpillars disfigures the form and mars the beauty of a handsome tree, by consuming a considerable part of its foliage; again a host of aphides, by their constant sucking of the juices of the leaves, will cause them to shrivel, curl up, and often change colour, and the enormous rate at which these creatures increase adds much to the difficulty of their extermination; or some unwelcome "little Turk" sits down uninvited to feast on our finest fruits, and, not satisfied with appeasing its own appetite, leaves its progeny behind to complete the work of destruction; or it may be some rascally borer insidiously undermines one's fondest hopes by girdling and thus destroying trees or shrubs whose growth has cost years of toil and watching. With the desire of helping fellow fruit-growers and others to a better acquaintance with these expensive insect guests, I propose in this, and probably some subsequent papers, to record observations made from time to time as the season advances.

On the 6th of May the first foe was met. A lot of dwarf pear trees arrested attention from the backwardness of some as compared with others, the unequal way in which the leaves were expanding, and the dark colour, almost black, of some of the buds and younger leaves. No caterpillars were to be seen, but on jarring the trees down came the enemy to the ground in considerable numbers, partly falling, partly flying. It proved to be a small bug, belonging to the true bug family, *Hemiptera*, and a species named *Phytocoris (Capsus) linearis*. I never remember having seen this creature doing damage before, so a careful examination of its work was made. Our foe "linearis" is not a "big bug;" it does not measure more than one-fifth of an inch. It is rather variable in colour, from dull dark brown to greenish brown, or sometimes dirty yellowish brown. The males are usually darker than the females. The head is yellowish, and has three narrow reddish stripes. The beak or sucker is about one-third the length of the body, and when not in use is folded under the breast. The thorax has a yellow margin and several yellowish lines running lengthwise. Behind the thorax is a yellow V-like mark, sometimes more or less imperfect, but usually sufficiently clear to help one to a ready recognition of the species. The wings

are a dusky brown, and the legs of a dull, dirty yellow.

This enemy ensconces himself within the young leaves of the just opening buds, puncturing them about their base and along the edges, and extracting their juices with its beak. The result was to disfigure and sometimes entirely destroy the young leaves, causing them to blacken and shrivel up. They were also somewhat partial to the unopened buds, piercing them from the outside and sucking them nearly dry, when they also withered and blackened. Sometimes a whole branch would be thus affected, becoming first stunted, then withered, next dead. Dr. Harris, in his "Insects Injurious to Vegetation," mentions this bug as occurring in Vermont in large numbers in 1851, attacking almost every green thing and doing a great amount of mischief throughout the summer. In our own case they disappeared in about a fortnight, but left the trees in a very dilapidated state. Press of other work prevented any remedies being used. Probably a solution of soft soap or dry unslacked lime would have lessened their numbers.

On the 10th of May I was astonished to see the young larva of the gooseberry sawfly, *Neomatus ventricosus*, commencing its depredations on the freshly expanded leaves. This was nearly a month earlier than its usual time of appearing, the leaves having expanded about three weeks earlier than usual. On examining the under side of the leaves rows of white eggs were found in abundance in different stages of development. Those newly deposited were very much smaller than the others, and appeared to be but *slightly* attached to the surface, not let into a slit made in the leaf by the female, as is commonly supposed; at least I could find no traces of such an operation, although I examined them carefully with a microscope. The gooseberries were now in full bloom. In the second volume of the "Canadian Entomologist," p. 16, and also p. 48, an opinion is expressed that a cocoon of this insect found freshly made on the 29th of May was the work of larva which had wintered over. The observations made this spring do not in any way upset this idea, for the earliness of the season will account for the apparent discrepancy. They will certainly prove very troublesome this season, they are so very abundant, and now, at the last of the month, when many of the full-grown larvæ have gone into chrysalis, freshly laid eggs or larvæ just hatched may be found on almost every bush. Remedy—patience and plenty of hellebore, an ounce or two to the pailful, and shower lightly on the bushes with the watering pot.

There is a small caterpillar, a leaf-roller or case-maker, which is very troublesome. It probably passes the winter in the caterpillar state, for almost as soon as the buds begin to burst it begins its mischievous operations, and when first observed is not usually

more than half grown. It is a very small thing even when full grown, being then half an inch in length, with a small shining black head and a dirty brown-coloured body, with a few small brown dots and fine hairs scattered over its surface. Its tenement consists of a dried-up, blackened leaf, portions of which are drawn together so as to make a rude case, the centre part of which, when his highness resides, is lined with silk. It is very fond of going just where you do not want it. It is partial to the blossoms and newly-formed fruit. If you have a new pear or apple fruiting, with a single bunch of blossom on it, which you are anxiously watching, by-and-by you find that several of the blossoms have set, and while you are flattering yourself that they are doing well, along comes this mischief-maker, pitches his tent alongside this very spot, and drawing the young fruit together with silken threads holds high carnival among them and frustrates your hopes. Another of its tricks is to gnaw a hole into the top of the branch from which your bunch of blossom issues, and, tunnelling it down, cause the whole thing to wither and die. Often it contents itself with damaging the leaves only, and this one does not mind so much, drawing one after another around its small inside case, until it forms quite a little belt of withered and blackened leaves.

Hand picking is the only remedy suggested for these, unless you can employ small birds, such as sparrows, in hunting them up for you.

The moth which this caterpillar produces is rather a pretty little thing. Its name we are not yet able to give. It measures, when its wings are expanded, about half an inch. Its fore wings are greyish brown, with a shining white, almost silvery band across the middle, widest on the front margin. The hind wings are plain pale blue, and both are prettily fringed with fine brown hairs, those on the hind wings longest. It appears on the wing from the middle of June until the early part of July. It probably lays its eggs on the leaves, and when the young worms appear, which is most likely early in the fall, they make their small inner silken case, and, attaching themselves to some part of the tree, remain unobserved, and in this condition probably winter, awakening to new life and energy with the opening spring.

CATERPILLAR ON APPLE TREES.—Miss J. S. K., Cookstown, Ont.—We regret very much that the specimen you sent us some little time ago has disappeared without affording us an opportunity of examining it carefully. It was sent at a time when the editor of this department was in the midst of the operation of moving from his former residence to Port Hope. No doubt it escaped or was lost in the confusion and disarrangement that unavoidably take place at such times. We beg that our correspondent will accept our apologies for the mishap.

The Potato Sphinx.

Mr. James Howett, of Uxbridge, has sent us a specimen of the chrysalis of the Potato Sphinx (*S. quinquemaculata*, Haw.) which he recently found when digging potatoes. "It was about three inches under the surface in a piece of apparently solid clay, with a hole inside about twice as large as itself; another was found in a different part of the field, but was accidentally cut in two by the hoe." This chrysalis is so very remarkable in shape that it may well excite the curiosity of those who meet with it. It is about two and a half inches long by half an inch in thickness, of a chestnut-brown colour, and round in shape, tapering towards both ends; from one end, which is the head, the speci-

its body is the same length as the chrysalis; it is furnished with an enormously long tube or tongue, through which it imbibes the nectar of flowers, and which, when not in use, is coiled up into a very small compass under the head, like a watch-spring.

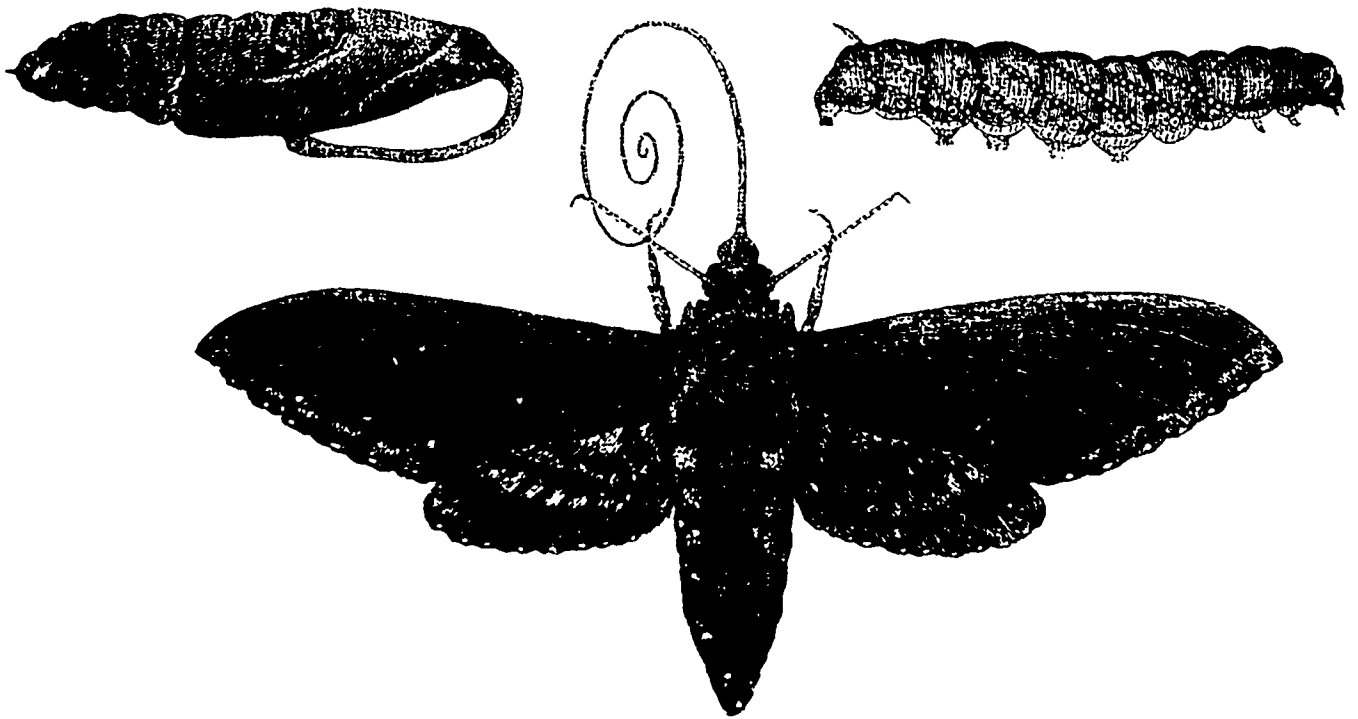
The accompanying illustrations represent the insect in its three stages of caterpillar, chrysalis, and moth, and will afford the reader a better idea of its appearance than any length of written description.

The Slug on Pear and Cherry Trees.

"The insect generally called the pear or cherry tree slug (*Selandria cerasi*, Peck) has in our grounds been so few and so little injurious this season that we had

either by hasty observation or by the unreliable testimony of others.

Though not very troublesome in the West, this insect often does much damage in the more eastern States, and it has this year absolutely stripped many orchards of every vestige of green along the line of the Michigan Central Railroad, leaving nothing but the sere and yellow leaf robbed of its parenchyma. We found that the popular remedy was sand, there being an abundance of this commodity along the lakes; but, as our friend Mr. Wm. Saunders, of London, Ontario, has abundantly demonstrated, and as we have ourselves proved, simple sand does not kill. It sticks to Mr. Slug, so that he frequently falls to the ground, and thus it appears to kill him,



men, there proceeds a long curved proboscis, like the handle of a jug; the other end is divided into broad rings, and terminates in a point. The caterpillar which has turned into this creature is no less than the terrible "Tomato worm," about which one hears so many marvellous stories, and in whose supposed poisonous properties we have not the slightest faith. It is usually of a dull green colour, with yellowish-white oblique stripes on each side of its body, and a sharp thorn-like tail; sometimes, however, its colour is bright sea-green with flesh-coloured stripes; and sometimes dark brown, or even black, with yellow stripes. It feeds upon the tomato and potato, devouring a large quantity of leaves, but seldom being numerous enough to inflict any appreciable damage upon such rank-growing vegetables. This chrysalis, if it meets with no misfortune, will turn next summer into a large handsome greyish moth, with five bright yellow spots on each side of its body; its wings expand five inches, and

almost forgotten to notice it, until, passing the orchard of one of our neighbours a few days since, we saw his pear trees almost entirely denuded of their foliage by reason of the slug. It is a little singular that any cultivator can neglect to guard against such results, when merely dusting the foliage with lime, plaster, or even the ordinary dry soil, will at once destroy the insect. The first brood is now about over, but a second one may be looked for from the fifteenth to the last of August, and they should be carefully watched for and destroyed by all who wish health or vigour to their young pear or cherry trees."

The above is from a correspondent of the *Journal of Agriculture*, who writes over the signature of "Addi," and whose articles abound in common sense, and are usually very correct; but in stating that the Pear and Cherry Slug can at once be destroyed by ordinary road dust he has made a very pardonable error, and has been deluded

but he very soon manages to divest himself of his sand-covered coat. In fact, he naturally sheds this coat several times during his growth, and if the sand is applied at the proper time it proves a positive advantage to him, by stiffening his old and useless skin, and enabling him the better to crawl out of it. If it be applied a day or two before the proper time to moult has come, then, like a good philosopher, determined to make the best of the circumstances, he concludes with some reluctance to let the soiled habit go before it is quite worn out. Common road dust is equally harmless, and even plaster will prove ineffectual, unless applied before the last moult takes place, for after this moult the slug bids adieu to his slimy coat,

Moral—Never use sand or road dust for the Cherry Slug, but rely on lime, which will burn through the skin to the flesh, or on white hellebore water, which will poison.—*American Entomologist and Botanist.*

The Dutch Doctor's Insect Remedy.

Fifteen years ago, at a horticultural meeting, when the curculio question came up, I asserted in broken English that the curculio was a devil (a plum devil,) and will eat fruit. First the plum, then the apricot, nectarine, peach, and the apple, and I will add that since then I have observed that they work on the pear and cherry. My recommendation as a remedy was then, and is now, the German Sparling or Spatz, a small bird that builds its nest on houses, barns, and in willow trees, near the road sides. Often and again I have spoken about the importation of these birds; but my advice was not heeded. If I was a female preacher, a travelling temperance medium or an office seeker, my good advice would have been noticed, and we should now have less to suffer from the pest of curculios. The importation of these birds would not cost much. A good way to introduce them would be for the State Agricultural Society to appropriate five hundred dollars, and each county society fifty dollars, to be used for the importation of these birds. Then we could secure hundreds of them, to be set at liberty in each county of the state. Simple structures which would afford shelter, erected on poles, or nesting places could be axed under the eaves of the barn or out-buildings; these places would be accepted by the birds.

Those birds should be given most to the German farmers at first, as I believe the birds would feel most at home where they could hear the Dutch language talked, and see more the way of German living. I am of the opinion that when American birds can hear music and song they will become better singers—observation has taught me this. Now these Sparlings are house birds, and stay only where man lives, and on that account would always be near our orchards. They are used to insect food, but will eat fruit as well. One thing must be kept in mind: these birds, used to animal food to satisfy their appetites, seek for insects in the winter in their hiding places, and eat the eggs deposited found on the limbs and on the fallen leaves, and such as is hidden under bark, or glued to the limbs, and by this means prevent the great increase which would follow from permitting the insects to escape, or the eggs to hatch.

My hints, made many years ago, are, by many correct thinking men, both at the east and west, being adopted, and the birds are being introduced into several states, and many are about to continue the good work. But, my friends, do not wait or stop after you have read these lines, but go to work at once, immediately give this article a spread all over our happy large country, for every paper may copy this, and thereby become a public benefactor. Talk to benevolent men, to all your societies, particularly to all horticultural and agricultural lecturers who speak at fairs. Collect money this fall and send a

good man to Germany to get a large number of these good, God-blessed birds. During the summer they hatch every few weeks, five young at a time; and in a short time would become so increased as to give our children good sound fruit and a plenty of it.

My word for it, if you do not import these birds, the curculio, the caterpillar, the bark louse and other insects will so increase as to destroy, not only your fruits but your nurseries and your trees. Already our nurseries are full of insects, and if not checked, in a few years more it will be hard to find a sound tree in the great west.

All our curculio catchers and remedies are of no great benefit, if my neighbours use all these destroyers and I lie on my back and do nothing; as in that case I should raise the insects, and they might catch until doomsday, and I and others who do nothing would keep them supplied. To make a law to force me to destroy my insects would be oppressive, and will never be done. But my birds may be your birds, the country's birds, the protectors and angels over all our fruits. Will you hear more? From your friend,

DR. H. SHRODER.

Bloomington, Ill.

It is, we think, a conceded point that a man who originates an idea is best qualified to carry out and perfect it. Hence we hope Dr. Shroder will introduce his favourite birds, watch them carefully, and report the first one he detects catching a plum curculio. —*Prairie Farmer*.

Entomological Queries and Replies.

INSECT SPECIMENS.—The insect enclosed in a letter sent by a subscriber from Esqueping was not to be found when the letter reached us. All such specimens for identification should be sent in a pasteboard box or some such receptacle, and not loose in a letter.

WALKING-STICK INSECT.—J. Wyllie, Ayr, Ont. The curious insect you sent us, resembling a thin stick with slender legs, is a specimen of the Walking-stick Insect (*Diaperomera femorata*). We have received quite a number of these creatures this year, and have already given several notices of them in our columns.

PEA-WEEVIL (*Bruchus pisi*, Linn.)—An enquirer in Toronto has sent us some peas hollowed out by an insect, and desires to know "what the insect is, and how it got there." The creature is the notorious Pea-weevil (*Bruchus pisi*, Linn.) It got into the pea by the simple process of eating into it when it was a tiny newly-hatched grub, and when the pea was young and tender. It made a very minute hole in order to get in, which very soon closed with the growth of the pea, and kept the worm snugly enclosed and hidden from view. Here it grew with the growth of the plant, eating away the mealy

part of the pea, until at length it assumed a pupa state, and finally, when the pea was ripe, turned into a beetle, as in the specimens before us. In this state it would remain all winter if left undisturbed, and next spring would set about its work of propagating its kind by laying eggs in the fresh pea-blossoms. Our correspondent will find a further account of this curious insect, and illustrations of its different stages, in the CANADA FARMER for April, 1870, p. 137.

SPECIMENS FOR IDENTIFICATION.—D. M., Mimosa, Ont. - No. 1. The larva found on a shrub in a marsh, with a large number of parasitic cocoons attached to it, is a Sphynx caterpillar, not the larva of an Emperor Moth. Being dead, we cannot determine its exact species. We have never before seen a larva with so enormous a number of cocoons attached to it, though there are generally a surprising number for the size of their prey. No. 2 is the chrysalis of the American Vapourer Moth (*Orpippa leucostigma*, Smith and Abbott) covered with two or three hundred eggs, from which would come out next spring, if not interfered with, a corresponding number of very pretty caterpillars. They are, when full grown, over an inch long, of a bright yellow colour, with thin yellow hairs along the sides of the body. The head is bright coral red; the next segment has two long pencils of black hairs projecting forwards, and the last segment but one a single similar pencil pointing backwards; on the fourth and three following segments there are some short brush-like tufts of yellowish hairs; and on the ninth and tenth two little coral-red knobs or warts. These caterpillars feed singly on the leaves of the apple and many other trees, and sometimes they are so numerous as to occasion a considerable amount of damage. The male moth has broad ashy-grey wings, which expand about an inch and a quarter; the front pair are marked by a whitish crescent-shaped spot at the lower corner; the female is remarkable for possessing the merest rudiments of wings, and looking like anything but a moth; she always lays her eggs on the outside of her cocoon, as in the specimen you sent us. No. 3. The beautiful metallic coloured beetle that you picked off the road is a specimen of the Divaricated Buprestis (*Divarra divaricata*, Say). Its larva is a white flattened worm, with a broad, almost square, flat head; it bores into the wood of beech, cherry, and other trees, resembling in its habits and appearance the notorious apple-tree Buprestis Borer. No. 4 is an extraordinarily shaped beetle that is quite abundant in old fungus, at the bases of trees and on decayed logs. It is called the Horned Fungus cater (*Bolitophagus cornutus*), the former name from its mode of life, the latter from its adornment with a pair of strangely-shaped horns that project over the head. It is certainly, as you say, an ugly customer, though perhaps more curious than really ugly.

Apiary.

Bee-Hives.

To the Editor.

SIR,—On perusing THE CANADA FARMER for October, I find some remarks on bee-hives exhibited at the late Provincial Exhibition, and I think it no more than just to make a few explanations on different points.

The wire screen in the bottom of my hive is *not* a drawer for catching the moth dirt. I have not been troubled with moth of any account. "Cleanliness and no moth-traps" is my motto. The wire screen in my hive is for keeping the bees in when the hive is ventilated, and keeping the moth out; it also allows all clippings and moth eggs to pass through, lodging on the bottom board, which can be drawn without in any way disturbing or interfering with the bees. The screen is to be drawn in the winter, and placed over the honey-boards, making perfect ventilation, all dead bees and drip can be removed from time to time from the bottom-board.

The "New Dominion" bee-hive is on a different principle from other hives now in use; it is a hollow-walled hive without the expense of double boarding. The frames form the inner wall, resting on sills, and folding back and forth. They can be removed and replaced without killing any bees. A thorough examination of the hive will satisfy the most skilful bee-keeper of this fact.

B. LOSEE.

Cobourg, Ont., November.

NOTE BY EDITOR.—Our correspondent says his wire screen in the bottom of the hive is to "keep the moth out; and also that it allows clippings (of comb?) and moth eggs to pass through, lodging on the bottom-board, which can be drawn without disturbing the bees. We fail to see that the reporter was far astray in calling this a moth-trap, or drawer for catching the moth dirt, etc. Clippings are "dirt," eggs make "moths," and the bottom-board draws out, evidently for the purpose of cleaning it of clippings and moth eggs, and may very properly be called a drawer. The principle of a hollow wall formed by the frames forming the inner wall of the hive is not new, as Mr. Losee thinks, but has been in use for many years, and is in use now in the United States by a few, though rejected as inconvenient by most bee-keepers. A hive so constructed was exhibited some four years ago at the Michigan State Fair.

If colonies are moved in the line of their flight, and a short distance only at a time, no loss of bees will be incurred.—Lang-troth.

After-swarms usually build the most regular worker combs; and if they lay up sufficient stores for the winter, they generally make the best stock colonies.

Agricultural Intelligence.

Agricultural Shows in West Northumberland.

WEST NORTHUMBERLAND.

This county society held their show at Cobourg on Tuesday and Wednesday, the 18th and 19th Oct. The weather was favourable, though the severe storm of the night of the 17th doubtless prevented some from being present. The indoor departments of the show were held as usual in Victoria Hall, while the cattle and implements were shown in a field adjoining the Drill Shed.

Horses.—There was a good show in this class: mares and foals, young horses, farm teams, carriage horses, etc.; the principal exhibitors being Williams, Mulholland, Winters, Westington, Isaacs, Beatty and others. The show of Durham cattle was good, some very promising young stock being shown. Messrs. Isaacs, Wade, Westington, Defoe, and Beatty were the chief exhibitors. The show of Ayrshire cattle was also very good. The prizes in this class went to Messrs. Pratt, Newton, Wright, and Wade. The show of Devons and Galloways was small. In the former class Messrs. Mason, Lucy, and Pratt divided the spoils, and in the latter Messrs. George and William Roddick. The show of Grade cattle was good, some very fine milk cows being shown. In this class most of the premiums were awarded to Cullis, McEvers, and Smith; in working oxen to Blizard, McDonald, and Winters.

There was a good display of long-wooled sheep, the flocks of Lean, Cullis, Pratt, Westington, Reynolds, Harper, Craig, and others being fully represented. There was about the usual show of fine-wooled sheep. In Merinos the specimens shown were from the flocks of Hinman and Spears; in South-downs, from those of Bourn and Eagleson, and in Cheviot, from those of Elliott and Carruthers. In Pigs and Poultry the show was about as usual, not very remarkable either for numbers or quality.

The display of Implements was rather larger than usual. The show of Grain was good, though scarcely as large as it was some former years. The fall and spring wheat was of very fine quality. Barley and peas were also very good; oats were hardly of as good quality as last year. The present seems to have been a favourable season for corn, as some particularly fine samples were shown. The first prize was awarded to an eight-rowed yellow, and the second to an eight-rowed white corn, the ears in both cases being remarkably long. The root department was well filled, and the quality in almost every case all that could be desired. The potatoes, turnips, carrots, mangles, etc., shown would have been hard to beat anywhere. There was a large and fine show of butter, both in kits and rolls. Two lots of Factory cheeses, and several lots of home-made, all good.

The show of fruit was much smaller than usual, which is rather remarkable seeing the season has been favourable for fruit, and the crop of apples is plentiful and of fine quality, in the country this year. Perhaps every person thought every other person would be there with good fruit, and concluded that he would bring none.

In Domestic manufactures and ladies' departments, the show was about as usual, the articles being all good and "too numerous to mention."

The total number of entries exceeded 1,100.

HAMILTON.

The annual fall exhibition of the Township of Hamilton Agricultural Society was held at Cobourg on Tuesday, the 11th Oct. The morning was very wet, which doubtless prevented many from being present. The show of horses was on the whole good; some good mares and foals and young stock, with some fine spans of carriage horses and single buggy horses were on the ground.

In cattle, there was a good show of Durhams, Ayrshires, and Grades. No Galloways and few Devons were shown. There were upwards of a hundred head of cattle on the ground. In Sheep, the long-wools made a fine display. In the aged ewe class eleven pairs were shown, all worthy of a prize. There was about the usual number of pigs and poultry shown, of fair quality. The grain, roots, ladies' department, etc., were shown in Victoria Hall. In Grain and Roots the show was uncommonly good, the quality in some cases far surpassing that of the same articles in the late Provincial Exhibition. The dairy department was also very good. There was a considerable falling off in fruit, and also in the ladies' department. What was shown was good, but there was not so much of them as usual. The show of implements, though not extensive, was somewhat larger than usual.

TOWNSHIP OF HALDIMAND.

The Haldimand Township Agricultural Society held their annual exhibition at Grafton on Wednesday, the 12th October. The forenoon of the day was very fine, but a few showers in the afternoon made the show not quite so pleasant. This society has one of the best show-grounds in the country. On the north of the village on a fine knoll, well fenced in, with the drill shed near the middle, with suitable sheep and pig pens and a horse track and ring for judging the cattle. The drill shed amply accommodates the grain, roots, ladies' department, etc., while all the stock is on the ground around. The show was on the whole good, though not quite equal to some former ones. In the Horse classes there were some good mares and foals shown, also some very promising young horses. The teams shown for farm work were very good, the carriage and buggy horses middling, and in regard to those

shown for saddle horses,—well, the less said the better.

The most noticeable feature in the Cattle department was some fine young Durham cattle, imported this season by Mr. George Isaacs of this township, from Aberdeenshire, Scotland. They promise to be a great acquisition to the live stock in this section. There was a fair show of sheep and pigs. The show of grain and roots was good, so far as it went, but there was not near the quantity of them that this township ought to, and can show, if the farmers choose. In dairy products, articles of domestic manufacture, and ladies department, the show though not very large, was good. The show of fruit was both large and good.

The close of the show was somewhat diversified by the presentation by the members of the society of a beautiful silver inkstand and gold pen to their worthy secretary and treasurer, Josias Gillard, Esq., who for the last twenty-one years has discharged the rather onerous duties of these offices to the satisfaction of the society. A well deserved present, alike honourable to them and him.

Halton County Fair.

This fair, held at Milton Oct. 10th and 11th, proved very successful so far as entries of stock and attendance went. Fully five thousand of the yeomanry of the county, with their wives and families, were on the grounds on the 11th, the opening day of the fair. In horses the show was an improvement on former years, both in numbers and quality. There seems to be an advance towards using a heavier class of stallions, more suited to getting stock adapted to work the strong heavy soils of this county. The farmers' teams shown were fine heavy horses. Of cattle there was a fair show in Short-horns and grades, but nothing else. Some good animals were to be seen, but the decisions of the judges in awarding the prizes were evidently based upon a want of knowledge, or showed partiality, as some of the prize animals were much inferior to others that were passed over. The sheep classes were well filled, and some fine ones shown in the Leicester and Cotswold classes, though none of them can be considered full bred. They were larger than usual, and as there was a class for cross-bred sheep, many who had taken prizes, as in the other classes, showed animals in this from the same flocks, and got a double recognition of merit. The pigs were quite up to the mark, the large breeds seeming to preponderate, though in reality many of them were cross-bred. Of grain there were forty samples, and all of them first class. A good show of butter and cheese was made, but as the judges never tasted a sample, we should like to know on what principle they acted in awarding the prizes. The show of roots and vegetables was inferior, but that of fruit was large and fine.

Galt Sheep Fair.

The Galt Sheep Fair was held Oct. 11, in the grounds belonging to the Queen's Hotel, and a large crowd of people were present. About 300 sheep, of which 200 were rams and ram lambs, were brought in to the fair, but owing mainly to the lateness of the season, and it being a first attempt at inaugurating annual sales of this description, and consequently not yet known much outside of the neighbourhood, the competition for animals was mainly confined to the local buyers, there being only two or three from the United States present. The animals brought in were chiefly of the Leicester breed, with a few Southdowns, and taking them in all, we have never seen a finer lot of sheep brought together in Canada. The auctioneer commenced at 1 p.m. with a lot of Leicester ram lambs from the flock of Peter Marshall, South Dumfries. These went off briskly at from \$10 to \$30 each. Some ewes sold at \$12 to \$20 per pair. Several lots from other breeders went for low prices, till those of Alex. McPhail, North Dumfries, came in. They brought fair prices—averaging about \$12 each for ram lambs, and \$14 to \$20 per pair for ewes. Next came a splendid lot of pure-bred and very fine Leicesters, from the flock of James Cowan, of Waterloo. A few of these were sold at prices ranging from \$10 to \$40 each. The best being withdrawn, and the time for the train to leave having arrived, we left at 3 p.m., without waiting for any further results of sales, although there were still a large number to be sold. It is intended to have this fair some weeks earlier in future, when a larger attendance of American buyers may be expected, as they prefer using rams at a much earlier date than our breeders are accustomed to.

The *New Zealand Gazette*, published on Wednesday, July 13, states that the total number of acres under crop in 1870 was 900,504, as against 687,015 in 1869, thus showing an increase of 213,489.

The Smithfield quarterly cattle fair, held on the 10th inst., was well attended and animated. Buyers snapped at all cattle any way approaching beef: prices ranged from five to six dollars per 100 pounds.

The Alameda Beet Sugar Company, in California, has from 300 to 400 acres in beets. The machinery for the factory cost \$120,000—the factory \$20,000. The superintendent is A. D. Bonesteel, lately of the factory at Fond du Lac, Wis.

The owner of a threshing machine, who has done a good deal of thrashing for several years past, informs the *Guelph Advertiser* that the wheat this year yields on the average about fifteen bushels to the acre; the sample though better on the whole than last year, is not first-class, such as produced in former years.

Stringent measures have been taken to guard against the introduction of rinderpest from the Continent into Great Britain. Among other preventive measures, all cattle from the Continent are to be slaughtered immediately on their arrival at any English port.

The last monthly report of the United States Department of Agriculture states that the corn has been injured in some localities, but not enough to threaten a material reduction of the anticipated aggregate. There are complaints in regard to the cotton crop, but the general prospect is not discouraging.

The French Agricultural Societies have put off all their meetings, as the whole force of the country is required for its defence. The Paris Society of Carpenters has decided that the sum of 1000fr., destined for its annual *fete*, shall be applied in aid of the families of agricultural labourers of the neighbourhood serving in the army. It is the same all over the country.

ALBION AGRICULTURAL SOCIETY.—The fall show of this society, held in the village of Bolton, on the 13th of October, was the most successful exhibition yet held under their auspices. Both in the number of entries and in the quality of the stock, as well as in the general excellence of other departments, there was a marked improvement over former exhibitions.

FOOT AND MOUTH DISEASE.—We have again, says the *Veterinarian*, to report an increase in the spread of the foot and mouth disease. The malady prevails in forty-five counties of England and Wales, and ten in Scotland. The largest number of infected places are reported from Cheshire, Cumberland, Dorsetshire, Lancashire, Somersetshire, Staffordshire, and Yorkshire; the total number of centres of infection being nearly 4000. In Ireland also the disease is spreading, more especially in those districts where opposition is offered to the enforcement of the provisions of the law.

SALE OF SHORTHORNS.—On Tuesday, Oct. 25th, an auction sale of shorthorn cattle took place on the farm of Mr. William Thomson, Markham township. The list of animals sold was made up by drafts from Mr. Thomson's own herd, to which some from those of J. S. Thomson, Whithy, and Robert and William Miller, Pickering, were added. The stock was in fine condition and sold well. Eight bull calves were offered, of which five were sold, bringing \$520, or an average of \$104 each. Fourteen cows and heifers were offered, and all sold, the sum realized being \$2603, or an average of about \$185 each. The best prices realized were \$305 for "Liz-zie," a light roan, from Camollia by Prince Alfred [553]; \$280 for a five-months old red heifer "Oxford Maid," by Highland Chief from Mayflower; \$250 for "Loretta," by Ashdale [30] from Blossom, a handsome dark roan three-year old. Hon. George Brown was the largest purchaser.

Award of Prizes at the Provincial Exhibition, 1870.

HORSES.

CLASS 1—BLOOD HORSES—26 ENTRIES.

JUDGES—George Anderson, Reinersville; John Peters, London; and Wm. Carrick, Oba

- Best thorough-bred stallion, four years old and upwards, Dr. Morton, Bradford: "Extra," imported 1870. \$108
2nd do, Charles Payne, Reach, "Jack the Barber" 26
Best 2 years old stallion, James Lawrence, Bradford 15
Best yearling colt, John Shedden, Toronto 10
2nd do, Nelson Yates, Scarborough, "Bill Fagan" 7
Best thorough-bred stallion of any age, Dr. Morton, Bradford, "Extra" Diploma
Best mare, and foal, or satisfactory evidence that a foal has been raised this season, John Shedden, Toronto, "Julia Adams" 21
2nd do, Geo. D. Morton, Bradford, "Rose of Ailandale" 14
3rd do, Nelson Yates, Scarborough, "Rosebud" 7

NOTE BY JUDGES.—We regret to remark that the animals in this class were badly represented in numbers, but that the few exhibited were of superior quality.

CLASS 2—ROAD OR CARRIAGE HORSES—219 ENTRIES.

JUDGES—James Silver, Queensville; Charles Rowe, Prescott; J. H. Crawford, Drummoundville; and Charles Girvin, Nile.

- Best roadster or carriage stallion, 4 years old and upwards, E. W. Orr, Georgetown 336
2nd do, Robert Thorburn, Oneida 26
3rd do, Trench and Ellis, Drummondville 21
Best do, 3 years old, M. Keenan, Oneida 16
2nd do, Simon Beattie, Markham 14
3rd do, J. S. Lawson, Gore of Toronto 7
Best do, 2 years old, George Richardson, Vaughan 15
2nd do, James Gode, Reach 10
3rd do, James Barbour, Vaughan 5
Best yearling colt, Simon Shunk, Vaughan 10
2nd do, Isaac Carruthers, Etobicoke 7
3rd do, M. Jarrett, Vaughan 4
Best stallion of any age, E. W. Orr, Georgetown Diploma
Best French Canadian stallion, Richard Wells, Aurora 30
2nd do, Adam Bowman, Nelson 20
3rd do, Richard Sylvester, Scarborough 10
Best 3 years old roadster or carriage filly, Wm. Dryden, Galt 18
2nd do, D. Campbell, Bradford 11
3rd do, James Laurie, Scarborough 7
Best 2 years old filly, D. Campbell, Bradford 14
2nd do, W. B. Telfer, Pilkington 9
3rd do, Thomas Armstrong, Vaughan 5
Best yearling filly, M. Harrison, Cooksville 8
2nd do, Wm. Wilson, Etobicoke 6
Best brood mare, and foal, or evidence of having raised a foal, James S. Preston, Esquewaug 22
2nd do, Thomas Armstrong, Vaughan 14
3rd do, Birrell and Johnstone, Pickering 6
Best pair of matched carriage horses (geldings or mares), 16 hands and over, J. B. Carpenter, Pickering 20
2nd do, K. D. Morton, Barrie 15
3rd do, Joseph Grand, Toronto 10
Best pair matched driving or roadster horses (geldings or mares), under 16 hands, W. Jinkins, Bradors 20
2nd do, J. Filman, Barton 15
3rd do, G. J. Baker, Oakville 10
Best single carriage horse (gelding or mare), in harness, H. C. Marr, Markham 10
2nd do, A. Smith, V. S., Toronto 6
3rd do, R. H. Howard, Toronto 6
Best saddle horse (gelding or mare), Andrew Smith, V. S., Toronto 10
2nd do, M. Porter, Bowmanville 8
3rd do, Dr. Morton, Bradford 6
EXTRAS—Patrick Derham, 1st prize, \$3 00; G. A. Arthur, 2nd prize, \$2 00.

CLASS 3—AGRICULTURAL HORSES—137 ENTRIES

JUDGES—Henry Snider, Bloomingdale; Thos. Rutley, Chatham; John McNaughton, Lancaster; and Alex. McLennan, River Raisin.

- Best stallion for agricultural purposes, 4 years old and upwards, James Coulter, Brampton 336
2nd do, John Dixon, Weston 28
3rd do, Joseph Lehman, Markham 18
Best 3 years old stallion, James McDonagh, Colborne 21
2nd do, Matthew Hall, Oneida 17
3rd do, J. R. Hunter, Pilkington 14
Best 2 years old stallion, Snider and Edmondson, Bradford 15
2nd do, Wm. Blanshard, Toronto Township 10
3rd do, Joseph Smith, Etobicoke 8

- Best yearling colt, Horace Moulton, Clarke 10
2nd do, Birrell and Johnstone, Pickering 7
3rd do, Duncan McConnachie, Clarke 4
Best stallion, any age, James Coulter, Brampton Diploma
Best 3 years old filly, Wm. Guiliat, Etobicoke 18
2nd do, G. S. Shaw, Darlington 11
3rd do, Michael Brown, Vaughan 7
Best 2 years old filly, Robert Myles, Euphrasia 14
2nd do, John Reading, Guelph 9
3rd do, Robert Armstrong, Markham 8
Best yearling filly, James McDonagh, Colborne 5
2nd do, W. A. Forfar, Scarborough 4
3rd do, Silas Inch, Whitby 6
Best brood mare, and foal, or evidence that a foal has been raised, Simon Shunk, Vaughan 21
2nd do, Henry Mason, Scarborough 17
3rd do, Neal Taylor, Bowmanville 14
Best span matched farm team (geldings or mares, in harness), Chas. Lamb, Walpole 20
2nd do, Simon Shunk, Vaughan 16
3rd do, Hugh Clarke, Scarborough 10

CLASS 4—HEAVY DRAUGHT HORSES—89 ENTRIES.

JUDGES—John Hunter, Goderich; David Lawrence, Brampton; Robert Currie, Niagara.

- Best heavy draught stallion, 4 years old and upwards, John Kemp, Weston 336
2nd do, Charles J. Buck and, Guelph 26
3rd do, Robert Ferris, Richmond Hill 16
Best 3 years old stallion, Charles Mason, Tuckersmith 21
2nd do, James Laurie, Scarborough 17
3rd do, do do 7
Best 2 years old stallion, Robert Ferris, Richmond Hill imported 1870 45
2nd do, Simon Beattie, Compton 10
3rd do, James Beith, Clarke 5
Best yearling colt, Wm. Long, Todmorden, imported 1870 30
2nd do, John Cox, Markham 7
3rd do, Robert Cheyne, Brampton 4
Best draught stallion, any age, Robert Ferris, Richmond Hill Diploma
Best 3 years old filly, Charles Pilkey, Pickering 18
2nd do, Joseph Moffatt, Reach 11
3rd do, John Grey Downie 6
Best 2 years old filly, J. J. Davidson, Pickering 14
2nd do, Robert Beith, Darlington 9
3rd do, Neal Taylor, Bowmanville 5
Best yearling filly, Wm. Jeffery, Whitby 8
2nd do, James Gage, Ravenshoe 6
Best brood mare, and foal, or evidence that a foal has been raised, J. J. Davidson, Pickering 21
2nd do, Duncan McConnachie, Clarke 14
3rd do, Walter Hutchinson, Toronto Gore 7
Best span of draught horses (geldings or mares), Simon Beattie, Markham 20
2nd do, George Miller, Markham 15
3rd do, Hendrie & Co., Toronto 10

CATTLE.

CLASS 5—DURHAMS.—188 ENTRIES.

JUDGES—James Archibald, Ivanhoe; Jas. Miller, Spencerville; Gen. Hyde, Shakespear; Matthew Jones, Bowmanville; John Dew, Yorkville; and James Vine, St. Catharines.

- Best bull, 4 years old and upwards, John Miller, Pickering, "Oxford Mazurka" 336
2nd do, John Snell, Edmonton, "Louden Duke" 28
3rd do, J. & W. Thompson, Nepean, "Ontario John" 16
Best 3 years old bull, John Bellwood, Newcastle, "Oxford Chief" 36
2nd do, John Porter, Vaughan, "Sir Colin Campbell" 16
3rd do, Richard Brown, Clarke, "Darling Duke" 16
Best 2 years old bull, John Miller, Pickering, "Fawley's Chief" 36
2nd do, Birrell & Johnstone, Pickering, "Bell Duke of Markham" 26
3rd do, F. W. Stone, Guelph, "Grand Duke of Cambridge" 16
Best one year old bull, John Miller, Pickering, "Kosciusko," imported 1870 60
2nd do, Richard Common, North Dumfries, "President Grant" 15
3rd do, John Miller, Pickering, "Orion" 10
Best bull calf (under one year), F. W. Stone, Guelph, "8th Grand Duke of Moreton" 15
2nd do, J. & R. Hunter, Pilkington, "Sir Henry 2nd" 10
3rd do, John Snell, Edmonton, "Joe Johnson" 5
Best bull of any age, John Miller, Pickering, "Fawley's Chief" Diploma
Best cow, John Miller, Pickering, "Cherry Bloom," imported 1870 48
2nd do, John Miller, Pickering, "Rose of Strathallan" 18
3rd do, John Miller, Pickering, "Gola" 12

- Best 3 years old cow, John Snell, Edmonton, "Clara Barton" 29
2nd do, F. W. Stone, Guelph, "Miss Margaret 4th" 18
3rd do, J. & R. Hunter, Pilkington, "Dominion Belle" 10
Best 2 years old heifer, J. S. Thomson, Whitby, "Minnie Annadale," imported 1870 32
2nd do, John Snell, Edmonton, "Rosamond" 12
3rd do, F. W. Stone, Guelph, "Cambridge 10th" 8
Best one year old heifer, J. S. Thomson, Whitby, "Red Rose," imported 1870 24
2nd do, J. S. Thomson, Whitby, "Loretto" 9
3rd do, John M. Bell, Pickering, "Empress" 6
Best heifer calf under one year, J. & R. Hunter, Pilkington, "Princess" 10
2nd do, John Snell, Edmonton, "Rosa Bonheur" 6
3rd do, John M. Bell, Pickering, "Lady Belle" 4
Best herd of Durham Cattle, consisting of one bull and five females of any ages, John Miller, Brougham 30

NOTE BY JUDGES.—We, the undersigned Judges on Durham cattle, cannot refrain from expressing the gratification we experienced at the high standard of excellence and general good qualities of the animals exhibited we being of opinion that they were superior, taken as a whole, to what we have seen at any former Exhibition.

CLASS 6—DEVONS—71 ENTRIES.

Judges—Edward Jones, Stamford; Thos. Donald, Mandamin; and Jacob Young, York.

- Best bull, 4 years old and upwards, Geo. Rudd, Puslinch, "Wilnot" 330
2nd do, John Moore, Etobicoke, "Duke of Dorset" 20
3rd do, Peter Rowe, Collingwood, "Havelock" 10
Best 3 years old bull, Richard Foley, Darlington, "Heartland" 30
2nd do, W. and L. Courtice, Darlington, "General Grant" 20
3rd do, Nathan Choate, Hope, "Prince Arthur" 10
Best 2 years old bull, R. C. McCollum, Campbell's Cross, "Captain Jinks" 24
2nd do, R. D. Foley, Darlington, "Theodore" 16
Best bull calf (under one year) Richard Foley, Darlington, "Sir Gilbert" 15
2nd do, Nathan Choate, Hope, "Splendor" 10
3rd do, do do, "Bruce" 5
Best bull of any age, Richard Foley, Darlington, "Heartland" Diploma
Best cow, Geo. G. Mann, Bowmanville, "Lady Bird" 29
2nd do, Geo. Rudd, Puslinch, "Lady Ann" 16
3rd do, W. and L. Courtice, Darlington, "Queen of Cleverdon" 10
Best 3 years old cow, Geo. G. Mann, Bowmanville, "Tulip" 20
2nd do, H. H. Spencer, Whitby, "Princess" 15
3rd do, Thos. Guy, Oshawa, "Helena" 10
Best 2 years old heifer, Geo. Rudd, Puslinch, "Crimrose" 16
2nd do, H. H. Spencer, Whitby, "Rose" 12
3rd do, Nathan Choate, Hope, "Maud" 8
Best one year old heifer, Geo. G. Mann, Bowmanville, "Princess Royal" 12
2nd do, Richard Foley, Darlington, "Fairly Belle" 9
3rd do, Geo. Rudd, Puslinch, "Lady Pink" 6
Best heifer calf (under one year), Richard Foley, Darlington, "Bell" 10
2nd do, W. and L. Courtice, Darlington, "Ida May 2nd" 6
3rd do, Geo. Rudd, Puslinch, "Dairy Maid" 4
Best herd of Devons, consisting of one bull and five females of any age or ages, N. Choate, Hope 20

CLASS 7—HEREFORDS—27 ENTRIES.

JUDGES—Sandford Howard, Lansing Mich.; Joseph Garner, Pelham; and James Laidlaw, Guelph.

- Best 3 years old bull, F. W. Stone, Guelph, "Sir Charles" 330
Best 2 years old bull, F. W. Stone, Guelph, "Commander-in-Chief" 24
Best bull calf (under one year), George Hood, Guelph, "Robin Hood 2nd" 15
2nd do, F. W. Stone, Guelph, "The Guelph Baronet" 10
3rd do, do do, "The Wellington Chief" 5
Best Hereford bull, any age, F. W. Stone, Guelph, "Sir Charles" Diploma
Best cow, F. W. Stone, Guelph, "Vesta 2nd," imported; previously exhibited 40
2nd do, do do, "Graceful 2nd" 15
3rd do, do do, "Bonny Lass" 10
Best 3 years old cow, F. W. Stone, Guelph, "Vesta 4th" 20
Best 2 years old heifer, F. W. Stone, Guelph, "Graceful 4th" 18
Best one year old heifer, F. W. Stone, "Baroness 7th" 12
Best heifer calf, (under one year), F. W. Stone, Guelph, "Graceful 5th" 10

Best herd of Hereford cattle, consisting of one bull and five females, of any age, or ages, F. W. Stone, Guelph..... 20

NOTE BY JUDGES—The Judges consider the entire class of Herefords of superior excellence, and worthy of special commendation. They would also remark that the bull "Sir Charles" is an animal of great merit, combining large size with fine symmetry and first-rate quality. The animals brought to our notice were, in many instances, so nearly equal in merit, that it was by no means easy to discriminate between them.

CLASS 8—AYRSHIRES 127 ENTRIES.

JUDGES—Wm Young, Carlow; John Adams, Edw. Wardsburgh, W. May, Maryboro, and Donald Fraser, Oshawa

Best bull, 4 years old and upwards, Jas Laurie, Scarborough, "Avondale"..... \$30

Best 3 years old bull, Thomas Guy, Oshawa, "Lily"..... 30

2nd do, J. P. Wheeler, Scarborough, "Prince Albert"..... 29

3rd do, W. H. Wallbridge, Belleville, "Domination"..... 10

Best 2 years old bull, Thos. Thompson, Williamsburg, "Crown Prince, Imported 1870"..... 72

2nd do, J. P. Wheeler, Scarborough, "Sir George"..... 16

3rd do, Thos. Patterson, Scarborough, "Saint Andrew"..... 5

Best one year old bull, Thomas Thompson, Williamsburg, "Tam o' Shanter," imported 1870..... 63

2nd do, do, do, "Prince of Wales"..... 11

3rd do, Thos. Guy, Oshawa..... 7

Best calf (under one year), James Laurie, Scarborough, "Malvern"..... 15

2nd do, W. H. Wallbridge, Belleville, "Manitoba"..... 16

3rd do, Thos. Guy, Oshawa, "Byron"..... 5

Best Bull of any age, Jas. Laurie, Scarborough, Diploma

Best cow, Thomas Thompson, Williamsburg, imported 1870..... 10

2nd do, J. P. Wheeler, Scarborough, "Dairy Maid"..... 15

3rd do, do, do, "Lilly"..... 10

Best 3 years old cow, J. P. Wheeler, Scarborough, "Blossom"..... 20

2nd do, Jas. Laurie, Scarborough, "Jet Head"..... 16

3rd do, Thomas Thompson, Williamsburg, "Spotted Beauty"..... 16

Best 2 years old heifer, Thos. Thompson, Williamsburg, "Queen," imported 1870..... 32

2nd do, do, do, "Lily," imported..... 12

3rd do, J. P. Wheeler, Scarborough, "Nelly Grey"..... 8

Best one year old heifer, Jas. Laurie, Scarborough, "Nonsuch"..... 12

2nd do, J. P. Wheeler, Scarborough, "Jessie"..... 9

3rd do, Thos. Thompson, Williamsburg, "Jenny"..... 6

Best heifer calf (under one year), J. P. Wheeler, Scarborough, "Cherry"..... 10

2nd do, Thos. Guy, Oshawa, "Flora"..... 6

3rd do, Jas. Laurie, Scarborough, "Beauty 2nd"..... 4

Best herd of Ayrshire cattle, consisting of one bull and five females, of any age or ages, J. P. Wheeler, Scarborough..... 2

CLASS 9—GALLOWAYS 32 ENTRIES

JUDGES—W. H. Peterson, Hawkesville; W. R. Havens, Komer; and John Wilson, Rozeel

Best bull, 4 years old and upwards, Arthur McNeil, Vaughan, "Hard Fortune"..... \$29

2nd do, Wm. Hood, Guelph, "Our John"..... 20

3rd do, Thos. McCrae, Guelph, "Pride of the Speed"..... 19

Best 2 years old bull, Thos. McCrae, Guelph, "Black Prince"..... 21

Best 1 year old bull, Arthur McNeil, Vaughan, "Duncan"..... 21

2nd do, Wm. Hood, Guelph..... 13

Best bull calf (under one year), Wm. Hood, Guelph..... 16

2nd do, Thos. McCrae, Guelph, "King Tom"..... 10

3rd do, Wm. Hood, Guelph, "Shoo Fly"..... 5

Best bull of any age, Arthur McNeil, Vaughan, "Hard Fortune"..... Diploma

Best cow, Wm. Hood, Guelph, "Idaho"..... 20

2nd do, do, do, "Lady Isabella"..... 15

3rd do, Arthur McNeil, Vaughan, "Lizzie"..... 16

Best 3 years old cow, Wm. Hood, Guelph, "Giggle Lander"..... 20

2nd do, Arthur McNeil, Vaughan, "Susan"..... 15

3rd do, Thos. McCrae, Guelph, "Grace Darling"..... 10

Best 2 years old heifer, Thos. McCrae, Guelph, "M. Hazlet Bay"..... 16

2nd do, Wm. Hood, Guelph, "Hyena"..... 12

3rd do, do, do, "Mary"..... 8

Best one year old heifer, Arthur McNeil, Vaughan, "Rosa"..... 12

2nd do, Wm. Hood, Guelph, "Lynda"..... 9

Best heifer (under one year), Thos. McCrae, Guelph, "Lady Herring"..... 10

2nd do, Wm. Hood, Guelph, "Topsy Wopsy"..... 6

3rd do, Thos. McCrae, Guelph, "Bessy Lee"..... 4

Best herd of Galloways, consisting of one bull and five females of any age or ages, Wm. Hood, Guelph..... 29

NOTE BY JUDGES—We, the undersigned Judges, beg to remark that the animals exhibited were well bred

CLASS 10—GRADE CATTLE 41 ENTRIES

JUDGES—John North, Addison Henry Wate, Port Hope; and Richard Manning, Exeter

Best grade cow, John Miller, Pickering..... \$21

2nd do, J. and W. Thomson, Nepean..... 16

3rd do, Hemlock Young, Guelph..... 11

Best 3 years old cow, Joseph S. Thompson, Whitby..... 20

2nd do, Joseph S. Thompson, Whitby..... 16

3rd do, do, do, do..... 16

Best 2 years old heifer, John Miller, Pickering..... 16

2nd do, Joseph S. Thompson, Whitby..... 12

3rd do, Hemlock Young, Guelph..... 8

Best 1 year old heifer, John Miller, Pickering..... 8

2nd do, George Miller, Markham..... 8

3rd do, J. S. Thompson, Whitby..... 6

Best heifer calf (under one year), John Miller, Pickering..... 16

2nd do, George Miller, Markham..... 6

3rd do, Samuel Barber, Guelph..... 4

NOTE—The Judges were very much pleased with the show of heifer calves. They were all very superior, better than the average

CLASS 11—FAT AND WORKING CATTLE, ANY BREED—35 ENTRIES

JUDGES—John Carter, Unionville; D. D. McPhoe, Alexandria; Philip Armstrong, Yorkville, and H. J. Brown, Niagara

Best fat ox or steer, 3 years old and over, Jas. Vine, Grantham..... \$30

2nd do, J. S. Armstrong, Eramosa..... 20

Best fat steer, under 3 years old, George Hood, Guelph..... 30

Best fat cow or heifer, 3 years old and over, Alex. Watt, Nichol..... 30

2nd do, do, do, do..... 20

Best fat cow or heifer, under 3 years, Hemlock Young, Guelph..... 36

Best yoke of working oxen, Archibald Speers, Norval..... 10

Best yoke, three year old working steers, Archibald Speers, Norval..... 16

2nd do, Archibald Speers, Norval..... 5

SHEEP, LONG-WOOLLED.

CLASS 12—COTSWOLDS—105 ENTRIES

JUDGES—Richard Rennelson, Galt, James Craig, Derwent, F. A. Nellis, York, David Messenger, Cooksville, and Matthew Walton, Peterborough

Best ram, two shears and over, John Snell, Edmonton..... \$26

2nd do, John Miller, Pickering..... 15

3rd do, Jas. Russell, Markham..... 10

Best shearing ram, F. W. Stone, Guelph, imported 1870..... 69

2nd do, F. W. Stone, Guelph..... 15

3rd do, John Snell, Edmonton..... 10

Best ram lamb, John Miller, Broughton..... 15

2nd do, Jas. Russell, Markham..... 12

3rd do, do, do, do..... 9

4th do, do, do, do..... 6

Best 2 ewes, 3 shears and over, Geo. Mitchell, Darlington..... 15

2nd do, Geo. Mitchell, Darlington..... 13

3rd do, F. W. Stone, Guelph..... 8

Best 2 shearing ewes, John Miller, Pickering, imported 1870..... 36

2nd do, Jno. Snell, Edmonton..... 13

3rd do, John Miller, Pickering..... 8

Best 2 ewe lambs, F. W. Stone, Guelph..... 15

2nd do, John Snell, Edmonton..... 12

3rd do, F. W. Stone, Guelph..... 9

4th do, Jas. Russell, Markham..... 6

EXTRAS—W. H. Wallbridge, Belleville, fair Lincolnshire ewes, imported 1870, 1st prize, \$26.

NOTE BY THE JUDGES—In the class of Cotswolds the Judges report a large number of animals of surpassing excellence

CLASS 13.—THE PRINCE OF WALES PRIZE—6 ENTRIES

JUDGES—The Judges of Cotswold and Leicesters

Best flock of Leicester sheep, consisting of 1 ram, one s. ewe and over; 1 ram lamb; 3 ewes, two shears and over; 3 shearing ewes 3 ewe lambs. Prize presented by His Royal Highness the Prince of Wales; John Snell, Edmonton..... \$60

NOTE BY THE JUDGES—The Judges to award His Royal Highness the Prince of Wales' prize for the best eleven Leicester sheep of various ages, have attended to that duty, and beg to report that they have awarded the prize to Mr John Snell, of Edmonton, reel.

CLASS 14.—LEICESTERS—107 ENTRIES

JUDGES—C. A. Jardison, Stirling, Robert Shearer, Niagara; Wm. Clark, Rosseau, Robert Kirby, Guelph; and J. H. Reid, New Brunswick

Best ram, 2 shears and over, Richard Lean, Hamilton township..... \$20

2nd do, John Snell, Edmonton..... 15

3rd do, Hugh Love, senr., Hay..... 10

Best shearing ram, John Snell, Edmonton, imported 1870..... 60

2nd do, Adam Oliver, Downie..... 15

3rd do, Thos. Clarke, North Dumfries..... 10

Best ram lamb, Thos. Teasdale, Chinguacousy, 15

2nd do, John Snell, Edmonton..... 12

3rd do, Thomas Russell, Markham..... 9

4th do, do, do..... 6

Best 2 ewes, two shears and over, John Snell, Edmonton, imported, and not previously exhibited..... 36

2nd do, Chris. Walker, London..... 13

3rd do, Adam Oliver, Downie..... 8

Best 2 shearing ewes, W. H. Wallbridge, Belleville, imported 1870..... 36

2nd do, John Snell, Edmonton..... 13

3rd do, Chris. Walker, London..... 8

Best 2 ewe lambs, Chris. Walker, London..... 15

2nd do, John Snell, Edmonton..... 12

3rd do, Chris. Walker, London..... 9

4th do, Adam Oliver, Downie..... 6

NOTE BY THE JUDGES—The Judges on Class 11 have attended to that duty, and beg to submit the following report—The sheep presented to us, to award prizes for, were short of the number entered, but still the show of Leicester sheep was a respectable show, and we have, to the best of our judgment, awarded according to the rules laid down in the Premium List, and we further beg to make special mention of the superior form and quality of the first prize Leicester shearing ewes just imported

SHEEP—MEDIUM-WOOLLED.

CLASS 15—SOUTH-DOWNS—61 ENTRIES.

JUDGES—J. W. Overholt, Marshville, Geo. Jones, West Flamboro'; Wm. Patterson, Shakespeare, Thos. Russell, Charing Cross, and J. P. Wheeler, Woburn

Best ram, two shears and over, F. W. Stone, Guelph..... \$15

2nd do, Donald Fraser, Ernestown..... 10

3rd do, Wm. Forfar, Agincourt..... 5

Best shearing ram, R. Kennelson, Galt..... 15

2nd do, H. H. Spencer, Whitby..... 10

3rd do, Wm. Forfar, Agincourt..... 5

Best ram lamb, H. H. Spencer, Whitby..... 8

2nd do, do, do, do..... 6

3rd do, F. W. Stone, Guelph..... 4

Best 2 ewes, two shears and over, F. W. Stone, Guelph..... 15

2nd do, F. W. Stone, Guelph..... 10

3rd do, Wm. Forfar, Agincourt..... 5

Best 2 shearing ewes, Wm. Forfar, Agincourt..... 15

2nd do, Jas. Anderson, Guelph..... 10

3rd do, Wm. Forfar, Agincourt..... 5

Best two ewe lambs, F. W. Stone, Guelph..... 8

2nd do, James Anderson, do..... 6

3rd do, do, do, do..... 4

CLASS 16—SHROPSHIRE, HAMPSHIRE, AND OXFORD-SHIRE DOWNS—16 ENTRIES.

JUDGES—James H. Bessoy, St Catharines; James Maxwell, Paris; Patrick Carroll, Gouerick

Best ram, 2 shears and over, H. H. Spencer, Whitby..... \$15

Best shearing lamb, H. H. Spencer, Whitby..... 15

Best ram lamb, H. H. Spencer, Whitby..... 8

2nd do, John Jackson, Chinguacousy..... 6

Best 2 ewes, 2 shears and over, John Jackson, Chinguacousy..... 15

2nd do, H. H. Spencer, Whitby..... 10

Best 2 shearing ewes, H. H. Spencer, Whitby..... 15

Best 2 ewe lambs, H. H. Spencer, Whitby..... 8

2nd do, H. H. Spencer, Whitby..... 6

SHEEP—FINE-WOOLLED.

CLASS 17—SPANISH, FRENCH AND SAXON MERINO—61 ENTRIES

JUDGES—Irvine Diamond, Napanea; J. B. Aylesworth, Newburgh, and Lewis Lapierre, Paris

Best ram, 2 shears and over, R. D. Foley, Darlington..... \$15

2nd do, John Smith, Burford..... 10

3rd do, R. D. Foley, Darlington..... 5

Best shearing ram, John Smith, Burford..... 15

2nd do, W. M. Smith, Burford..... 10

3rd do, R. D. Foley, Darlington..... 5

Best ram lamb, R. D. Foley, Darlington..... 8

2nd do, R. D. Foley, Darlington..... 6

3rd do, Platt Human, Haldimand..... 4

Best 2 ewes, 2 shears and over, John Smith, Burford..... 15

2nd do, Alex. Young, Barton..... 10

3rd do, J. W. Johnson, Grantham..... 6

Best 2 shearing ewes, John Smith, Burford..... 15

2nd do, W. M. Smith, Burford..... 10

3rd do, R. D. Foley, Darlington..... 8

Best 2 ewe lambs, J. W. Johnson, Grantham..... 5

2nd do, W. M. Smith, Burford..... 6

3rd do, R. D. Foley, Darlington..... 1

CLASS 18—FAT SHEEP—25 ENTRIES.

Judges—Same as for Fat cattle.

Best 2 fat wethers, 2 shears and over, R. Kennelson, Galt..... \$12

2nd do, R. Kennelson, Galt..... 8

Best 2 fat ewes, 2 shcars and over, James Russell, Markham 12
 2nd do, George Weldrick, Vaughan 9
 Best 2 fat ewes, under 2 shcars, James Russell, Markham 12
 2nd do, John Snell, Edmonton 6

PIGS—LARGE BREEDS.

CLASS 19—YORKSHIRE AND OTHER LARGE BREEDS—23 ENTRIES.

JUDGES—Malcolm McGillivray, Laggan, George Heck, Prescott and Donald McFavish, Shakespeare.

Best boar, one year and over, James Brodie & Son, Belleville \$15
 2nd do, James Brodie & Son, Belleville 12
 3rd do, J. P. Wheeler, Scarborough 9
 Best boar, under one year, James Main, Trafalgar 12
 2nd do, Samuel H. Reeves, Toronto Township 9
 3rd do, Samuel H. Reeves, Toronto Township 6
 Best breeding sow, one year and over, Angus Shaw, Kingston 15
 2nd do, James Brodie & Son, Belleville 12
 3rd do, W. H. Wallbridge, do 9
 Best sow, under one year old, James Brodie and Son 12
 2nd do do do 9
 3rd do Samuel H. Reeves, Toronto Township 6

PIGS—SMALL BREEDS.

JUDGES—John Randall, Newmarket, George Bennett, Charing Cross, and N. H. Pauling, Port Dalhousie.

CLASS 20—SUFFOLKS—30 ENTRIES.

Best boar, one year and over, George Roach, Hamilton \$15
 2nd do do do 12
 3rd do do Joseph Featherston, Toronto Township 9
 Best boar, under one year, George Roach, Hamilton 12
 2nd do do James Main, Trafalgar 9
 3rd do do Joseph Featherston, Toronto Township 6
 Best breeding sow, one year and over, George Roach, Hamilton 15
 2nd do do do 12
 3rd do do do 9
 Best sow, under one year old, George Roach, Hamilton 12
 2nd do do do 9
 3rd do do James Main, Trafalgar 6

CLASS 21—IMPROVED BERKSHIRES—74 ENTRIES

JUDGES—Hugh Campbell, Plainfield; John Foot, Port Hope; and David Melville, Nic.

Best boar, one year and over, George Roach, Hamilton, imported; not previously exhibited \$15
 2nd do do John Crumb, Hampton 12
 3rd do do Wm Major, Whitevale 9
 Best boar, under one year, John Snell, Edmonton, imported 1870 30
 2nd do do John Corrie, Dereham 9
 3rd do do Wm. Padgett, Sr, Markham 6
 Best breeding sow, one year and over, John Crumb, Hampton 15
 2nd do, M. Porter, Bowmanville 12
 3rd do, Wm. Forfar, Agincourt 9
 Best sow, under one year, John Miller, Pickering, imported 1870 24
 2nd do, do do 9
 3rd do, Wm. Padgett, senior, Markham 6

CLASS 22—ESSEX PIGS—29 ENTRIES.

JUDGES—John Best, Niagara; Edward McLean, non, Prescott; Tans. Card, Marden P. O.

Best boar, one year and over, Joseph Featherstone, Toronto township \$15
 2nd do, George Roach, Hamilton 12
 3rd do, Thomas McCrae, Guelph 9
 Best boar, under one year, George Roach, Hamilton 12
 2nd do, Thomas McCrae, Guelph 9
 3rd do, George Roach, Hamilton 6
 Best breeding sow, one year and over, George Roach, Hamilton 15
 2nd do, Thomas McCrae, Guelph 12
 3rd do, do do 9
 3rd do, do do 6

CLASS 23—OTHER SMALL BREEDS—EXCLUSIVE OF SUFFOLK, BERKSHIRE AND ESSEX—25 ENTRIES.

JUDGES—J. C. Langstaff, Ailsa Craig, Ayr; Chas. Port Hope, and James McDermott, Carleton Place.

Best boar, one year and over, John Cumming, Hullett \$15
 2nd do, Joseph Featherston, Toronto Township 12
 3rd do, Joseph Featherston, Toronto Township 9

Best boar, under one year, James Main, Trafalgar 12
 2nd do, David Roundtree, York Township 9
 3rd do, John Cumming, Hullett 6
 Best breeding sow, one year and over, Joseph Featherstone, Toronto Township 15
 2nd do, Joseph Featherstone, Toronto Township 12
 Best sow, under one year old, James Main, Trafalgar 12
 2nd do, James Main, Trafalgar 9
 3rd do, John Cumming, Hullett 6

CLASS 24—PULTRY, &c 27 ENTRIES.

JUDGES—T. J. Miller, Virgil, J. W. Sills, Prescott; John Plummer, London; Charles Panhard, Toronto, and Dr. Coleman, Belleville.

Best pair white dorkings, John Bogue, Westminster \$1
 2nd do, John Bogue, Westminster 2
 Best pair of coloured dorkings, W. H. Van Ingen, Woodstock 4
 2nd do, A. M. L. Howard, Toronto 2
 Pair of white tested black Polands, John Smith, Burford 2
 Best pair of Golden Polands, John Bogue, Westminster 4
 2nd do, James Main, Toronto 2
 Best pair of silver Polands, John Bogue, Westminster 4
 2nd do, John Bogue, Westminster 2
 Best pair of game fowls (black-breasted and other), James Main, Trafalgar 4
 2nd do, E. Maddaford, Toronto 2
 Best pair of any other variety, E. Maddaford, Toronto 4
 Best pair of white or other colour Chinas, A. M. L. Howard, Toronto 4
 2nd do, John Weatherstone, Brite 2
 Best pair of F. Dutch Pouter, light, H. M. Thomas, Brooklyn 4
 2nd do, John Bogue, Westminster 2
 Best pair of Brahma Pouter, dark, H. M. Thomas, Brooklyn 4
 Best pair of Spanish fowls, Daniel Allan Galt 4
 2nd do, John Bogue, Westminster 2
 3rd do, Henry Dawson, Brampton 2
 Best pair of silver pencilled Hamburgs, John Bogue, Westminster 1
 2nd do, John Bogue, Westminster 2
 Best pair of golden spangled Hamburgs, A. M. L. Howard, Toronto 4
 Best pair of silver spangled Hamburgs, John Bogue, Westminster 4
 2nd do, Jas. Main, Trafalgar 2
 Best pair of Houdan fowls, W. H. Van Ingen, Woodstock 4
 2nd do, W. H. Van Ingen, Woodstock 2
 Best pair of Sebright bantams, James Main, Trafalgar 2
 2nd do, E. Maddaford, Toronto 1
 Best pair of any other variety of bantams, Harry Killen, Guelph 2
 2nd do, Henry Killen, Guelph 1
 Best Turkey Cook (any colour), single bird, J. W. Johnson, Grantham 3
 Best pair of turkeys (any colour), J. W. Johnson, Grantham 5
 2nd do, John Bogue, Westminster 2
 Best pair of geese (white), John Cullis, Hamilton township 4
 2nd do, John Cullis, Hamilton township 2
 Best pair of geese (coloured), Thomas S. Henry, Oshawa 4
 2nd do, Richard Lean, Hamilton Township 2
 Best pair of Aylesbury ducks, John Bogue, Westminster 4
 2nd do, John Forsyth, York Township 2
 Best pair of Rouen ducks, M. Porter, Bowmanville 4
 2nd do, J. W. Johnson, Grantham 2
 Best pair of any other kind of ducks, John Bogue, Westminster 4
 2nd do, John Dickson, Weston 2
 Best pair of Guinea fowls, W. M. Smith, Burford 4
 2nd do, do do 2
 Best carrier, pouter, and tumbler pigeons, Jas. Magrath, Toronto 3
 2nd do, John Bogue, Westminster 1

HIKENS AND DUCKS OF 1870.

Best pair of dorkings of either variety, R. Carrie, Niagara \$1
 2nd do, John Bogue, Westminster 2
 Best pair of game fowls of any variety, E. Maddaford, Toronto 4
 2nd do, E. Maddaford, Toronto 2
 Best pair of Spanish fowls, John Bogue, Westminster 4
 2nd do, Daniel Allan, Galt 2
 Best pair of Chinas, of any variety, Jno Bogue, Westminster 4
 2nd do, do do 2
 Best pair of Brahma Pouter, John Forsyth, York Township 4
 2nd do, A. M. Howard, Jun, Toronto 2
 Best pair of Hamburgs, any variety, John Bogue, Westminster 4
 2nd do, do do 2

Best pair of Polands, any variety, Jno. Bogue, Westminster 4
 2nd do, J. W. Johnson, Grantham 2
 Best pair of Aylesbury ducklings, John Forsyth, York Township 4
 2nd do, Richard Lean, Hamilton Township 2
 Pair R men ducklings, M. Porter, Bowmanville 2
 Best pair ducklings, any other kind, Thos and S. Henry, Oshawa 4
 2nd do, W. H. Van Ingen, Woodstock 2
 Best pair of fowls of 1870, of any other kind, W. H. Van Ingen, Woodstock 4
 2nd do, Robert Paterson, Peterboro' 2

IMPLEMENTS.

CLASS 25—AGRICULTURAL IMPLEMENTS, WORKED BY HAND, STEAM, OR OTHER POWER—22 ENTRIES.

JUDGES:—Robert Madden, Newburgh, Am Biers Gnanogue; John Stevenson, Unionville; and Wm Hehn, Peterboro'.

Best portable steam engine for agricultural purposes, not less than six horse power, to be put in operation on the ground, William Hamilton & Son, Toronto \$30
 Best two furrow plough, John Gray & Co, Glasgow, Scotland 25
 Best iron plough, Geo. Wilkinson, Whit Harb., diploma and 12
 2nd do, John Morley, Thorold 8
 3rd do, Joseph Lohrie, Strath 4
 Best wooden plough, John Morley, Thorold, diploma and 12
 2nd do, G. Williamson, Seaford 7
 3rd do, James Whyte, Peterboro' 1
 Best sub-soil plough, John Morley, Thorold, diploma and 12
 2nd do, Peter Malloy, Weston 8
 3rd do, George Gray, London 4
 Best double share trench plough, John Watson 19
 2nd do, Joseph Lawrie, Sarnia 7
 3rd do, W. R. Grey, Dundas 1
 Best double mould plough, Chas. Thain, Guelph 10
 2nd do, John Morley, Thorold 7
 3rd do, John Walmley, London 4
 Best gang plough, Massey Manufacturing Company, Newcastle 12
 2nd do, W. Atkinson Pros., Etobicoke 8
 Best hold or two-horse cultivator, iron, John Doidge, Whitby 12
 2nd do, Samuel Sleep, Perrytown 8
 3rd do, Isaac Westcott, Bowmanville 4
 Best two-horse cultivator, wood, T. & George Morgan, Markham 12
 2nd do, Chas Thain, Guelph 8
 3rd do, Patterson Bros., Patterson 4
 Best horse hoe, or single horse cultivator, iron, Isaac Westcott, Bowmanville 4
 2nd do, Massey Manufacturing Company, Newcastle 3
 Best horse hoe, or single horse cultivator, wood, Patterson Bros., Patterson 4
 2nd do, John Watson, Ayr 2
 3rd do, Charles Thain, Guelph 1
 Best clod crusher, A. Harris and Son, Beamsville 8
 Best hand presser, W. Atkinson Bros, Etobicoke 8
 Best pair of iron harrows, John Doidge, Whitby 6
 2nd do, John Macintosh, Dumbarton 4
 3rd do, Henry Fallot, Klug 2
 Best pair of wood harrows, Lockhart and Millar, Peterboro' 6
 2nd do, George Carr, Sidney 4
 Best wooden roller, A. Kennedy, E. Zorra 10
 2nd do, J. Bolton, London 5
 Best grain drill, L. D. Sawyer and Co., Hamilton 12
 2nd do, Maxwell and Whitelaw, Paris 8
 3rd do, John Watson, Ayr 4
 Best seed drill for sowing two or more drills of turnips, mangolds, or other seeds, Chas. Thain, Guelph 8
 2nd do, John Watson, Ayr 6
 Best mowing machine, Brown and Patterson Whitley 20
 2nd do, Patterson Bros., Patterson 12
 3rd do, Massey Manufacturing Company, Newcastle 8
 Best reaping machine, Patterson Bros., Patterson 20
 2nd do, Brown and Patterson, Whitley 12
 3rd do, Massey Manufacturing Company, Newcastle 8
 Best combined mower and reaper, Massey Manufacturing Co. y., Newcastle Diploma and 20
 2nd do, J. Lawrence and Sons, Palermo 12
 3rd do, L. D. Sawyer and Co., Hamilton 8
 Best horse rake, Jas. Soutar, Chatham 1
 2nd do, John Watson, Ayr 3
 3rd do, L. D. Sawyer and Co., Hamilton 2
 Best horse pitchfork and tackle, Shorey and Campbell, Napanee 1
 2nd do, Andrew White, Galt 3
 3rd do, Peter Grant, Clinton 2
 Best horse-power threshing and separator, John Watson, Ayr, diploma and 20
 2nd do, Macpherson, Glascoe and Co., Fingall 12
 3rd do, Haggart Bros., Brampton 8
 4th extra prize for improved gearing, J. J. Lappin, Davenport 12

- Best potato digger, John S. Rote, Erin .. 10
- 2nd do., John Wainwright, London .. 5
- Best stump extractor, John Douglass, Vienna 8
- 2nd do., John Scott, Caledonia .. 5
- Best straw cutter, John Watson, Ayr .. 5
- 2nd do., Maxwell and Whitelaw, Paris .. 4
- 3rd do., do., do. 3
- Best portable grist mill, John Huband, Toronto .. 12
- Best grain cracker, Massey Manufacturing Co., Newcastle .. 8
- 2nd do., C. H. Waterous and Co., Brantford .. 6
- Best corn and cob crusher, C. H. Waterous and Co., Brantford .. 4
- Best clover cleaning machine, L. D. Sawyer and Co., Hamilton .. 12
- Best flour mill and press, H. Sells, Vienna .. 8
- Best two horse team waggon, Henry Sloan, Hamilton .. 12
- 2nd do., James Kay, Galt .. 4
- 3rd do., Joseph Foster, Milton .. 3
- Best two horse spring market waggon, J. A. Sprague, Ameliasburg .. 19
- 2nd do., Butt, Shatton, and Walton, Toronto .. 7
- Best one horse light market waggon, Peter Mallaby, Weston .. 9
- Best horse cart, Thos. Gibson, Markham .. 6
- Best farm sleigh, John Rice, Whitby .. 8
- Best brick making machine, Bulmer and Shepard, Montreal .. 10
- 2nd do., Copp Bros., Hamilton .. 6
- Best draining plough, or ditching machine for digging drains, Eyre and Brother, Richmond Hill .. 12

EXTRAS.—Extra prizes were awarded to John Dinins, Newmarket, for frame barn, new system, \$20. Geo. Willkluson, Whitechurch, iron beam plough, \$8 00. David Bell, Brampton, fence cap boring machine \$1 00. William Fraser, Esquesing, hay car, \$1 00. W. H. Wallbridge, Belleville, horse-power machine (2 prizes), \$5 00 and \$1 00. Sweet, Barnes and Co., Syracuse, N. Y., assortment of mowing and reaping machine knives and sections, \$3 00. Maxwell and Whitelaw, Paris, pea thresher and straw cutter combined, \$5 00. J. Shannon, Stratford, farmers thresher and horse power, \$6 00. Geo. Clark, St. Catharines, wheat separator for mill purposes, \$5 00, do, do, improved belt fittings, \$3 00. Jno. Westlock, Hope, horse cultivator and grain drill combined, \$3 00. J. Parker, Mount Brydges, farmer's self-unloading waggon box, highly commended. Edward Roblin, Southampton, improved cutting bar for reapers and mowers, highly commended. Park and S. Rolf, Erin, section bar for reaping or mowing machines, highly commended. Roderick Lane, Stratford, combined plough and cultivator, commended. Hugh A. Stringer, Chatham, self-raise attachment for reaping machine, commended. Mamer and Boxer, W. Flamboro, combined horsehoe and reaping plough, iron, commended. Atkinson Bros., Etobicoke, cast metal steamer for steaming food, commended. John Nelson, Belleville, cylinder for threshing machine, commended. Maxwell and Whitelaw, Paris, horse-power for farmers own use, commended. Improvement in Gearing, J. J. Lappin, of Davenport.

NOTE BY JUDGES.—We, the Judges in Class 25, respectfully recommend that this class be divided into two or more classes, the work gone over being too great for one set of Judges.

CLASS 26—AGRICULTURAL TOOLS AND IMPLEMENTS, CHIEFLY FOR HAND USE.—165 ENTRIES.

- JUDGES—John H. Grant, Grimby, A. McKellar, Chatham and Wm. McAlpine, Mandamin.
- Best machine for making drain tiles, David Darvill, London .. 20
- Best assortment of drain tiles, Wm. Gibb, Wellington Square .. 4
- Best half-dozen steel hoes, Tuttle, Date & Rodden, St. Catharines .. 3
- 2nd do., Whiting & Cowan, Oshawa .. 2
- Best half-dozen manure forks, Tuttle, Date & Rodden, St. Catharines .. 4
- 2nd do., Whiting & Cowan, Oshawa .. 2
- Best half-dozen spading forks, Tuttle, Date & Rodden, St. Catharines .. 3
- 2nd do., Whiting & Cowan, Oshawa .. 2
- Best garden, walk, or lawn roller, Massey Manufacturing Company, Newcastle .. 1
- Best half-dozen scythes the snaths, Thomas Bryan, London township .. 3
- 2nd do., P. Dick, Orillia .. 1
- 2nd do., Thomas Bryan, London township .. 1
- Best half-dozen grass scythes, Whiting & Cowan, Oshawa .. 3
- 2nd do., Tuttle, Date & Rodden, St. Catharines .. 2
- Best half-dozen cradle scythes, Whiting and Cowan, Oshawa .. 3
- 2nd do., do., Tuttle, Date and Rodden, St. Catharines .. 2
- Best lawn-mowing machine, Alexander Shanks and Son, Arbroath, Scotland .. 6
- 2nd do., do., do., do. 3
- Best half-dozen hay rakes, Thomas Bryan, London township .. 3
- 2nd do., do., James Coane, Manilla .. 2
- 3rd do., do., Thomas Bryan, London township .. 1
- Best half-dozen hay forks, Tuttle, Date and Rodden, St. Catharines .. 4
- 2nd do., do., Whiting and Cowan, Oshawa .. 2

- Best implement or machine for cutting, pulling, or otherwise harvesting peas, hand or horse power, L. Johnson, London .. 8
- 2nd do., do., Wm. Forfar, Agincourt .. 4
- Best straw or barley fork, wood, Thos. Bryau, London township .. 2
- Best fanning mill, A. and W. Wilson, Richmond Hill .. Diploma and 5
- 2nd do., do., J. H. Johnson, Newmarket .. 6
- 3rd do., do., Patterson Bros., Patterson .. 4
- Best straw cutter, Patterson Bros., Patterson .. 4
- 2nd do., do., Maxwell and Whitelaw, Paris .. 3
- 3rd do., do., John Watson, Ayr .. 2
- Best machine for cutting roots for stock, John Watson, Ayr .. 6
- 2nd do., do., Maxwell and Whitelaw, Paris .. 1
- 3rd do., do., James Cruikshank, West .. 2
- Best churn, Coridon Leurs, Salford .. 3
- 2nd do., do., Jas. Allan, Kerwood .. 3
- 3rd do., do., J. H. Thomas, Brooklyn .. 3
- 2nd do., do., A. C. Atwood, Vanneck .. 2
- 3rd do., do., Philip Nicholas Lindsay .. 1
- Best half dozen ave-handles, Coridon Leurs, Salford .. 2
- 2nd do., do., A. P. Thomson, Scarborough .. 1
- Best six chopping axes, Tuttle, Date and Rodden, St. Catharines .. 2
- Best set horse shoes, James Berry, Toronto .. 3
- 2nd do., do., G. Williamson Seaford .. 1
- Best farm gate, J. Parker, Mount Brydges .. 3
- 2nd do., do., D. S. Cornell, Arkona .. 2
- 3rd do., do., S. Washburn, South Dumfries .. Trans.
- Best specimen farm fence, wood, A. Weir Wellesly .. 3
- 2nd do., do., R. H. Jarvis, Hibbert .. 2
- 3rd do., do., Levi Wismer, Roseville .. Trans.
- Best specimen wire fencing, not less than two rods, erected on the ground, W. H. Rice, Toronto .. 8
- 2nd do., do., S. Washburn, South Dumfries .. 6
- Best wooden pump, Chas. Powell, Newton Brook .. 4
- 2nd do., do., A. T. Moore, Markham .. 3
- 3rd do., do., D. C. Ferguson, Scarborough .. 2

EXTRAS—A. C. Atwood, Vanneck, honeycomb emptying machine, com. B. Lasee, Cobourg, inside and outside door fastener, do.: John C. Lowe, Rothuy, new patent poke for breechy cattle, do.: Whiting and Cowan, Oshawa, Lull a dozen weedcutters, \$5 00, do.: Massey Manufacturing Company, Newcastle, sickle grader, for sharpening mowing and reaping machine knives, do.: Robert Williamson, West Oxford, bag holder and weigh stand, do.: John Easterbrook, Aldershot, glass lining for pumps, do.: S. O. Henry Bolton, Elizabethtown, dog power for household work; D. P. Crosby, Watertown, a hoisting machine, \$15. W. W. Kitchen, Grimsby, improvement on Isaac posts, \$3 00.

AGRICULTURAL PRODUCTIONS.

CLASS 27—GRAIN, SMALL FIELD SEEDS, HOPS &c.—325 ENTRIES.

JUDGES—David Thompson, M.P., Indiana, Robert Clapp, Fenton, Chauncey Bellamy, Toledo, Richard Sholts, Mt. Vernon, John Mulholland, Cobourg, Richard Church, Cataract, and John M. McKay, Toronto.

The Canada Company's prize for the best 25 bushels of Fall Wheat, the produce of the Province of Ontario, being the growth of 1870. Each sample must be of one distinct variety, pure and unmixed, of the best quality for seed, and not to be tested merely by weight. The prize to be awarded to the actual grower of the wheat, which is to be given up to and become the property of the Association, for distribution in the several agricultural districts for seed, James McNair, Richmond Hill.

- 2nd do., by the Association, John Cullis, Hamilton Township .. \$100
- 3rd do., do., James Freeman, west Flamboro .. 40
- Best two bushels of white winter wheat, Joseph Redmond, Ottonabee .. 20
- 2nd do., Geo. Taylor, Pickering .. 10
- 3rd do., Robert Shearer, Niagara .. 6
- 4th do., John Cullis, Hamilton Township .. 4
- Best two bushels of red winter wheat, Mr. W. A. Forfar, Scarborough .. 8
- 2nd do., Joseph Grant, Puslinch .. 6
- 3rd do., John Richardson, North Pelham .. 4
- 4th do., H. Kennedy, London Township .. 2

SPECIAL PRIZE

For the best four bushels of Spring Wheat, special prize given by Messrs. Robertson and Cook, of the Telegraph office, Toronto, the sample obtaining the prize to be their property, John Hanna, Mauvers .. 50

- Best two bushels of Erie spring wheat, J. Heacock, King .. 5
- 2nd do., George Carruthers, Haldimand .. 4
- 3rd do., John Hanna, Mauvers .. 4
- Best two bushels spring wheat of any other variety, Joseph Redmond, Ottonabee .. 5
- 2nd do., Wm. Westington, Hamilton Township .. 6
- 3rd do., C. Westington, Cold Springs .. 4

- Best two bushels barley (2 rowed), Thos. Gibson, Markham .. 6
- 2nd do., S. Heacock, King .. 1
- 3rd do., Geo. Carruthers, Haldimand .. 2
- Best two bushels of barley (6 rowed), Walter Riddell, Hamilton Township .. 6
- 2nd do., P. Bartholomew, Markham .. 1
- 3rd do., Andrew Black, Hamilton Township .. 2
- 4th do., William Thompson, Whitby .. Trans.
- Best two bushels of winter rye, James Freeman, W. Flamboro .. 6
- 2nd do., J. B. Aylsworth, Newburgh .. 1
- 3rd do., D. Lynn, York Township .. 2
- Best two bushels of oats (white), W. D. Stoddart, Bradford .. 6
- 2nd do., Donald McLavish, North Easthope .. 1
- 3rd do., Thos. Gibson, Markham .. 2
- 4th do., Wm. Thompson, Whitby .. Trans.
- Best two bushels of oats (black), John Richardson, N. Pelham .. 6
- 2nd do., Walter Riddell, Hamilton Township .. 1
- 3rd do., W. St. Smith, Burford .. 2
- 4th do., P. Bartholomew, Markham .. Trans.
- Best two bushels of small field peas, A. P. Thompson, Scarborough .. 6
- 2nd do., Chas. Shaver, Etobicoke .. 4
- 3rd do., D. Lynn, York .. 2
- 4th do., Thos. Gibson, Markham .. Trans.
- Best two bushels of marrowfat peas, John Cullis, Hamilton Township .. 6
- 2nd do., C. Westington, Cold Springs .. 4
- 3rd do., J. Bartholomew, Markham .. 2
- 4th do., A. Thompson, E. Flamboro .. Trans.
- Best two bushels of any other kind of field peas, E. Bagden, Flamboro .. 6
- 2nd do., D. Lynn, York township .. 4
- 3rd do., Wm. Bell, York township .. 2
- 4th do., Richard Foley, Darlington .. Trans.
- Best bushel of small white field beans, E. Bagden, Flamboro .. 6
- 2nd do., Walter Riddell, Hamilton township .. 4
- 3rd do., Jas. Moore, Etobicoke .. 2
- 4th do., Coridon Leurs, Salford .. Trans.
- Best bushel of large white field beans, Richard Foley, Darlington .. 6
- 2nd do., John Richardson, North Pelham .. 1
- 3rd do., Coridon Leurs, Salford .. 2
- 4th do., Walter Riddell, Hamilton township .. Trans.
- Best two bushels indian corn in the ear (white), F. Morrison, Hamilton .. 6
- 2nd do., H. J. Brown, Niagara .. 4
- 3rd do., R. Spooner, Kingston .. 2
- 4th do., G. J. Miller, Virgil .. Trans.
- Best two do. (yellow), H. J. Brown, Niagara .. 6
- 2nd do., F. Morrison, Hamilton .. 1
- 3rd do., J. B. Aylsworth, Newburgh .. 2
- 4th do., A. Thompson, East Flamboro .. Trans.
- Best bale of hops, not less than 112 lbs., J. A. Koolledge, Demorestville .. 15
- 2nd do., Moses Wilson, West Nisourit .. 15
- 3rd do., Alex. McKenzie, Nisourit .. 19

CLASS 28—SMALL FIELD SEEDS, FLAX, HEMP, ETO—71 ENTRIES.

- JUDGES—Jno. M. Laurie, St. Catharines, Jno. Tennant, Paris, and John Weir, Jr., West Flamboro.
- Best bushel timothy seed, A. Thompson, East Flamboro .. \$3
 - 2nd do., John Richardson, North Pelham .. 4
 - 3rd do., Coridon Leurs, Salford .. 2
 - 4th do., George Hoare, Auburn .. Trans.
 - Best bushel of clover seed, David Davis, Louth .. 6
 - 2nd do., Richard Foley, Darlington .. 4
 - 3rd do., R. D. Foley, Darlington .. 2
 - 4th do., John Richardson, North Pelham .. Trans.
 - Best half bushel of Alsike clover seed, John Richardson, North Pelham .. 6
 - 2nd do., H. M. Thomas, Brooklyn .. 4
 - Best bushel of flax seed, John Richardson, North Pelham .. 6
 - 2nd do., Joseph Gibb, Hamilton township .. 4
 - 3rd do., R. D. Foley, Darlington .. 2
 - Best Swedish turnip seed, from transplanted bulbs, not less than 12 lbs., John Crumb, Hampton .. 6
 - 2nd do., Richard Foley, Darlington .. 4
 - Best 12 lbs. white Belgian field carrot seed, Richard Foley, Darlington .. 6
 - 2nd do., R. D. Foley, Darlington .. 4
 - Best 12 lbs. of long red mangel wurzel seed, R. D. Foley, Darlington .. 6
 - 2nd do., John Harkers, Kingston .. 1
 - Best 12 lbs of yellow globe mangel wurzel seed, John Pratt, Cobourg .. 6
 - Best bush. tares, P. Bartholomew, Markham .. 6
 - 2nd do., George Taylor, Scarborough .. 3
 - 3rd do., Wm. Thompson, Whitby .. Trans.
 - Best bush. buckwheat, John Richardson, North Pelham .. 1
 - 2nd do., P. Bartholomew, Markham .. 2
 - 3rd do., Robert Coulter, Etobicoke .. Trans.
 - Second best bush. millet, John Smith, Burford .. 2
 - Best 10 lbs. of cured tobacco leaf, growth of Ontario, Robt. Shearer, Niagara .. 4
 - 2nd do., Angus Shaw, Kingston .. 3
- EXTRA PRIZE.—Load Scales, Toronto, assortment of Tobacco Leaf, American growth.
- CLASS 29—FIELD ROOTS, &c.—311 ENTRIES.
- JUDGES—Peter Adamson, Goderich; Wm. Slitt, Spencerville, Wm. McLaren, Melrose, and Wm. McLeod, Summerstown.

Best bushel of early Goderich Potatoes, John Ross, Toronto.....	3
2nd do., J. Macnamara, York Township.....	2
3rd do., Robert Worm, Brockton.....	1
Best bushel Garnet Chills, Wm. Westington, Hamilton Tp.....	3
2nd do., Hugh Elliott, Scarborough.....	2
3rd do., R. Spooner, Kingston.....	1
Best bushel Fluke Potatoes, T. McKivers, Hamilton township.....	3
2nd do., C. Westington, Cold Springs.....	2
3rd do., James Moore, Etobicoke.....	1
Best bushel Early Rose Potatoes, Harvey Draper, Bowmanville.....	3
2nd do., C. Westington, Cold Springs.....	2
3rd do., A. A. Baker, Guelph.....	1
Best bushel Peacocks M. Harrison, Cooksville.....	3
2nd do., Philip Armstrong, York Township.....	2
3rd do., C. Westington, Cold Springs.....	1
Best bushel Buckeyes or Carters, J. Moore, Etobicoke.....	3
2nd do., J. Macnamara, York Township.....	2
3rd do., Robert Worm, Brockton.....	1
Best bushel Harrison Potatoes, Harry Webb, York Township.....	3
2nd do., J. Macnamara, York Township.....	2
3rd do., James Moore, Etobicoke.....	1
Best bushel of any other sort of Potatoes, Robert Shearer, Niagara.....	3
2nd do., A. Thompson, E. Flamboro'.....	2
3rd do., C. Westington, Cold Springs.....	1
Best collection of Field Potatoes, a peck of each sort, named, Robert Shearer, Niagara.....	4
2nd do., James Moore, Etobicoke.....	3
3rd do., Wm. Lea, York Township.....	2
Best eight roots Marshall's Improved Swede Turnips, J. S. Armstrong, Guelph.....	3
2nd do., Jas. Anderson, Guelph.....	2
3rd do., J. and R. Hunter, Pilkington.....	1
Best eight roots green-top Swede turnip, J. S. Armstrong, Eramosa.....	3
2nd do., Henry Browne, Toronto.....	2
Best eight roots Skirving's Swede turnips, J. and R. Hunter, Pilkington.....	3
2nd do., James McCowan, Scarborough.....	2
3rd do., Thomas McCrae, Guelph.....	1
Best eight roots white globe turnips, George Carruthers, Haldimand.....	3
Best eight grey stone turnips, James Moore, Etobicoke.....	3
2nd do., George Carruthers, Haldimand.....	2
Best twelve roots red carrots, Wm. Burgess, Mimico.....	3
2nd do., Harvey Draper, Bowmanville.....	2
3rd do., Henry Browne, Toronto.....	1
Best 12 roots white or Belgian carrots, William Burgess, Mimico.....	3
2nd do., Harry Webb, York township.....	2
3rd do., Henry Browne, Toronto.....	1
Best eight roots mangel wurzel (long red), Hy. Webb, York Township.....	3
2nd do., John Pratt, Cobourg.....	2
3rd do., William Burgess, Mimico.....	1
Best 8 roots red globe mangel wurzel, Wm. Burgess, Mimico.....	3
2nd do., Harry Webb, York township.....	2
3rd do., Henry Smith, Yorkville.....	1
Best 8 roots yellow globe mangel wurzel, Wm. Burgess, Mimico.....	3
2nd do., Harry Webb, York township.....	2
3rd do., Simpson Rennie, Markham.....	1
Best 8 roots long yellow mangel wurzel, Wm. Burgess, Mimico.....	3
2nd do., Thomas McCrae, Guelph.....	2
3rd do., Robert Worm, Brockton.....	1
Best 8 roots of kohlrabi, William Burgess, Mimico.....	3
2nd do., R. H. Ramsay, Cobourg.....	2
Best 8 roots white sugar beet, Wm. Burgess, Mimico.....	3
2nd do., Henry Smith, Yorkville.....	2
3rd do., Thomas McCrae, Guelph.....	1
Best 12 roots parsnips, William Burgess, Mimico.....	3
2nd do., Wm. Benton, Guelph.....	2
3rd do., James Moore, Etobicoke.....	1
Best 12 roots chickory, Wm. Benton, Guelph.....	3
2nd do., Wm. Burgess, Mimico.....	2
Best two large squashes for cattle, Samuel Wood, Islington.....	3
2nd do., James Moore, Etobicoke.....	2
Best two mammoth field pumpkins, James Moore, Etobicoke.....	3
Best four common yellow field do., Jas. Young, Chester.....	3
2nd do., James Wright, York.....	2
3rd do., F. Nicholson, Leslieville.....	1

EXTRAS.—John S. Armstrong, Guelph, for sweet turnips (Laing's), highly commended; John McCarter, York township, bushel Early Rose potatoes, second crop on same ground this year, honourable mention; Richard Johnson, first crop seedling potatoes from the seed balls, commended.

NOTE BY THE JUDGES.—We would beg to make honourable mention of a second crop of Early Rose Potatoes, raised this year from off the same ground, by John McCarter, York township. We would also recommend a first crop of Seedling potatoes, raised this year from seed balls, by Richard Johnston, To-

ronto. We would beg to highly recommend a special entry of Laing's Improved Swede Turnip, by John S. Armstrong, Guelph.

HORTICULTURAL PRODUCTS.

CLASS 30.—FRUIT—98 ENTRIES.

JUDGES.—W. H. Mills, Hamilton; Wm Saunders, London; S. J. J. Brown, Niagara; and A. Servos, Niagara	
Best 31 varieties of apples, correctly named, six of each, Geo. Leslie & Son, Leslieville.....	38
2nd do., D. W. Beadle, St. Catharines.....	6
Best 20 varieties do., correctly named, six of each, Geo. Leslie & Son, Leslieville.....	6
2nd do., J. A. Bruce & Co., Hamilton.....	3
Best 6 varieties of fall table apples, named, six of each, D. W. Beadle, St. Catharines.....	3
2nd do., Geo. Leslie & Son, Leslieville.....	2
Best 6 varieties of fall cooking apples, named, six of each, J. A. Bruce & Co., Hamilton.....	3
2nd do., D. W. Beadle, St. Catharines.....	2
Best 6 varieties winter table apples named, six of each, D. W. Beadle, St. Catharines.....	3
2nd do., Geo. Leslie & Son, Leslieville.....	2
Best 6 varieties winter cooking apples, named, six of each, D. W. Beadle, St. Catharines.....	3
2nd do., J. A. Bruce, Hamilton.....	2
Best collection, not less than 15 varieties, pears, correctly named, three of each, D. W. Beadle, St. Catharines.....	3
2nd do., Geo. Leslie and Son, Leslieville.....	2
Best 6 varieties do., correctly named, six of each, J. A. Bruce, Hamilton.....	5
Best 6 varieties plums, correctly named, six of each, Geo. Leslie and Son, Leslieville.....	3
Best collection grapes, grown in open air, not more than 12 varieties, two bunches each, named, Charles Arnold, Paris.....	5
2nd do., J. C. Kilburn, Beamville.....	2
Best three varieties of black grapes, grown in open air, two bunches each, correctly named, Charles Arnold Paris.....	3
2nd do., J. C. Kilburn, Beamville.....	2
Best 3 varieties of grapes, any other colour, grown in open air, two bunches each, correctly named, J. C. Kilburn, Beamville.....	3
2nd do., Charles Arnold, Paris.....	2
Best collection of grapes, not more than 12 varieties, grown under glass, one bunch of each sort, correctly named, J. Gray & Co., Brockton.....	3
2nd do., Geo. Leslie and Son, Leslieville.....	2
Best 3 varieties black grapes, grown under glass, J. Gray & Co., Brockton.....	3
2nd do., J. A. Bruce, Hamilton.....	2
Best 3 varieties white grapes, grown under glass, J. Gray & Co., Brockton.....	3
2nd do., J. A. Bruce, Hamilton.....	2
Best and heaviest one bunch Black Hamburg grapes, grown under glass, J. Gray & Co., Brockton.....	3
2nd do., G. Leslie & Son, Leslieville.....	2
Best and heaviest one bunch black grapes, any other kind, grown under glass, J. Gray & Co., Brockton.....	3
2nd do., J. A. Bruce, Hamilton.....	2
Best and heaviest one bunch white grapes, grown under glass, J. Gray & Co., Brockton.....	3
2nd do., G. Leslie & Son, Leslieville.....	2
Best display of fruit, the growth of exhibitor, distinct from other entries, three specimens of each sort, named, grown under glass and in the open air, G. Leslie & Son, Leslieville.....	15

DOMESTIC WINES

Professional and Commercial List.

Best half-dozen dry wines James Brown, Toronto.....	\$12
2nd do., Samuel Coover, Toronto Township.....	8
Best half-dozen sweet wine, V. Casci, Toronto.....	7
2nd do., James Brown, Toronto.....	5

NOTE BY THE JUDGES.—The Judges are decidedly of opinion that the number of Pears in section 7 should be limited. One exhibitor shows 15 varieties, another 75, which is confusing. We think it would be much better to word the next List thus:—Best 15 varieties Pears, 3 of each, and if it is thought advisable to offer a prize for a larger number, let it be definite say 30, 40 or 50 varieties.

CLASS 31.—FRUIT—814 ENTRIES.

General List. Professional Nurserymen excluded	
JUDGES.—D. W. Beadle, St. Catharines; A. F. Wood, Madoz; D. Caldwell, Galt; W. Holton, Hamilton; and John Lawrence, Brockville.	
Best twenty varieties apples, correctly named, three of each, G. J. Miller, Virgil.....	\$10
2nd do., John Stewart, Colborne.....	8
3rd do., R. Currie, Niagara.....	6
Best ten varieties do., correctly named, three of each, G. J. Miller, Virgil.....	4
2nd do., R. Currie, Niagara.....	3
3rd do., Robert Warren, Niagara.....	2
Best four varieties dessert apples, correctly named, six of each, G. J. Miller, Virgil.....	3
2nd do., J. Forsyth, York Township.....	2
3rd do., Robert Warren, Niagara.....	1

Best four varieties cooking do., correctly name I, six of each, G. J. Miller, Virgil.....	3
2nd do., S. J. J. Brown, Niagara.....	2
3rd do., Samuel Wood, Islington.....	1
Best twelve snow apples, Samuel Wood, Islington.....	2
2nd do., John Shuttleworth, Weston.....	1
Best twelve fall pippins, F. Morrison, Hamilton.....	2
2nd do., G. Cooper, York Township.....	1
Best twelve gravensteins, G. J. Miller, Virgil.....	1
2nd do., H. J. Brown, Niagara.....	1
Best twelve any other variety fall apple, Saml. Wood, Islington.....	2
2nd do., James Best, Leslieville.....	1
Best 12 ribs on pippin, G. J. Miller, Virgil.....	2
2nd do., do., G. Cattle, Yorkville.....	1
Best 12 Esopins Spitzenburg, H. J. Brown, Niagara.....	2
2nd do., do., Sam Wood, Islington.....	1
Best 12 Baldwin, H. J. Brown, Niagara.....	2
2nd do., do., Wm. Haddon, Goderich township.....	1
Best 12 Rhode Island Greening, F. Morrison, Hamilton.....	2
2nd do., do., G. J. Miller, Virgil.....	1
Best 12 Roxbury Russett, G. J. Miller, Virgil.....	2
2nd do., do., H. J. Brown, Niagara.....	1
Best 12 American Golden Russett, H. J. Brown, Niagara.....	2
2nd do., do., G. J. Miller, Virgil.....	1
Best 12 swazze Pomme Gris, S. J. J. Brown, Niagara.....	2
2nd do., do., Robert Warren, Niagara.....	1
Best 12 Pomme Gris, H. J. Brown, Niagara.....	2
2nd do., do., John Cudmore, York township.....	1
Best 12 Northern spy, H. J. Brown, Niagara.....	2
2nd do., do., J. J. Brown, Guelph.....	1
Best 12 any other variety, (winter), G. Cooper, York township.....	2
2nd do., do., Geo. Savas, Toronto Township.....	1
Best 12 seedling apples, John Shuttleworth, Weston.....	2
2nd do., do., Wm. Forster, Ashcourt.....	1
Best collection of pears, 20 varieties, three of each, Robert Burnett, Hamilton.....	10
2nd do., do., G. J. Miller, Virgil.....	8
3rd do., do., Robert Currie, Niagara.....	6
Best 10 varieties pears, 3 of each, Robert Burnett, Hamilton.....	5
2nd do., do., J. Young, Hamilton.....	3
3rd do., do., Robert Currie, Niagara.....	2
Best 4 varieties, 3 of each, G. J. Miller, Virgil.....	3
2nd do., do., W. A. Smith, Brantford township.....	2
Best 6 varieties, Robt. Currie, Niagara.....	2
2nd do., do., G. J. Miller, Virgil.....	1
Best 6 White Doyenne, E. C. Fearnside, Hamilton.....	2
2nd do., do., G. J. Miller, Virgil.....	1
Best 6 Flemish Beauty, H. J. Brown, Niagara.....	2
Best 6 Louise Bonne de Jersey, Robert Currie, Niagara.....	2
2nd do., do., John Sharman, Oakville.....	1
Best 6 Belle Lucrative, John Sharman, do.....	2
Best 6 Duchesse d'Angouleme, Robt. Stubbard, Ealington.....	2
2nd do., J. Young, Hamilton.....	1
Best 6 Beurres Bosc, Robert Currie, Niagara.....	2
2nd do., G. J. Miller, Virgil.....	1
Best 6 Beurres Ciergeau, Robert Currie, Niagara.....	2
2nd do., Geo. Murray, York Township.....	1
Best 6 winter Neils W. A. Smith, Brantford Township.....	1
2nd do., J. Young, Hamilton.....	2
Best 6 Mount Morceau, R. Burnett, Hamilton.....	1
2nd do., W. A. Smith, Brantford Township.....	1
Best 6 Vicar of Wakefield, J. Young, Hamilton.....	2
2nd do., Robert Currie, Niagara.....	1
Best 6 Easter Beurres, G. J. Miller, Virgil.....	2
2nd do., J. Young, Hamilton.....	1
Best 6 of any other variety of fall pear, Robt. Warren, Niagara.....	2
2nd do., Robt. Burnett, Hamilton.....	1
Best collection, not less than six varieties, plums, correctly named, 6 of each, David Allan, Guelph.....	4
2nd do., M. C. Scholtenfeld, Berlin.....	3
3rd do., Wm. Benham, Guelph.....	1
Best 12 dessert plums, one variety, correctly named, David Allan, Guelph.....	1
2nd do., A. M. Ross, Goderich.....	1
Best 12 cooking plums, one variety, correctly named, Wm. Benham, Guelph.....	2
2nd do., Robert Currie, Niagara.....	1
Best 6 variety peaches, correctly named, H. J. Brown, Niagara.....	3
2nd do., G. J. Miller, Virgil.....	2
3rd do., Robert Warren, Niagara.....	1
Best 6 peaches, one variety, correctly named, Robert Warren, Niagara.....	3
Best 6 peaches, white flesh, one variety, correctly named, J. J. Brown, Niagara.....	3
2nd do., G. J. Miller, Virgil.....	2
3rd do., R. Currie, Niagara.....	1
Best 6 peaches, yellow flesh, one variety, correctly named, R. Warren, Niagara.....	3
2nd do., Robt. Currie, Niagara.....	2

Best collection of grapes grown in open air, not less than 12 varieties, 2 bunches of each, Jas. Taylor, St. Catharines..... 5
 2nd do, A. M. Ross, Toronto..... 3
 3rd do., Jas. Brown, Goderich..... 2
 Best 6 varieties, open air, 12 bunches of each, Jas. Taylor, St. Catharines..... 3
 2nd do, A. M. Ross, Goderich..... 2
 3rd do, J. Forsyth, York township..... 1
 Best 3 bunches Concord grapes, John Sherman, Oakville..... 2
 2nd do, J. Forsyth, York township..... 1
 Best 3 bunches Delaware, S. J. J. Brown, Niagara..... 2
 2nd do, Robert Currie, do..... 1
 Best 3 bunches Adirondac, Thomas Brownlie, Scarborough..... 2
 Best 3 bunches Diana, James Brown, Toronto..... 2
 2nd do, J. Forsyth, York Township..... 1
 Best 3 bunches Creveling, James Taylor, St. Catharines..... 2
 2nd do., Thomas Brownlie, Scarborough..... 1
 Best 3 bunches Rogers' 4, Jas. Taylor, St. Catharines..... 2
 Best 3 bunches Rogers' 10, J. Forsyth, York township..... 2
 2nd do, James Taylor, St. Catharines..... 1
 Best 3 bunches Hartford Frontic, Tho. Brownlie, Scarborough..... 2
 2nd do, A. M. Ross, Goderich..... 1
 Best 3 bunches any other variety, Geo. Durand, Niagara..... 2
 2nd do, James B. Hay, Waterdown..... 1
 Best collection grape, grown under glass, not more than 12 varieties, one bunch each, correctly named, J. Young, Hamilton..... 2
 2nd do, Thomas Lee, Toronto..... 1
 Best 2 bunches black Hamburg grapes, Thos. Evans, Belleville..... 3
 2nd do, J. Young, Hamilton..... 1
 3rd do, John Sherman, Oakville..... 1
 Best 2 bunches black grapes, any other variety, Thos. Evans, Belleville..... 3
 2nd do, J. Young, Hamilton..... 2
 3rd do, Thos. Lee, Toronto..... 1
 Best 2 bunches white grapes, grown under glass, correctly named, Thos. Lee, Toronto..... 3
 2nd do, J. Young, Hamilton..... 2
 3rd do, Robert Currie, do..... 1
 Best green flesh melon, G. Cooper, York Township..... 2
 2nd do, F. Nicholson, Leslieville..... 1
 Best red or scarlet flesh melon, A. W. Taylor, Barton..... 2
 3rd do, Wm. Benham, Guelph..... 1
 Best water melon, W. Burgess, Etobicoke..... 2
 2nd do, F. Nicholson, Leslieville..... 1
 Best 3 varieties cultivated crab, one dozen each, C. Walker, Virgil..... 2
 2nd do, Robert Currie, Niagara..... 1

DOMESTIC WINES.

General List. Professional and Commercial Wines - Makers excluded.

Best three bottles dry wine, James Taylor, St. Catharines..... 5
 2nd do, J. Forsyth, York Township..... 4
 Best 3 bottles sweet wine, Henry Browne, Toronto..... 3
 2nd do, James Taylor, St. Catharines..... 2
 Best 3 bottles sparkling wine, James Taylor, St. Catharines..... 4

COLLECTION.

Open to all - Professional and General.

The best collection of named varieties of apples, pears, peaches, grapes, plums, crabs, and quinces, contributed by any one person, or any number of persons, or any Society, (the 13th rule not to apply) Horticultural Society of Hamilton, Diploma and..... \$ 40
 2nd do, Galloway Society of Lincoln..... 20
 Extra Prize - Variety ornamental apples, Wm. Lea, York Township..... 2

CLASS 32 - GARDEN VEGETABLES - 150 ENTRIES.

Judges - George M. Manas, Minto Mills; John Mosley, Goderich; W. McKenzie Ross, Chatham, and John Richardson

Best 12 roots of salsify, H. Draper, Bowmanville..... \$2
 2nd do, F. Nicholson, Leslieville..... 1 50
 Best 3 heads cauliflower, J. Wright, Yorkville..... 2
 1st do, G. Tattle, Yorkville..... 1 50
 3rd do, A. W. Taylor, Barton..... 1
 Best 3 heads cabbage (summer), G. Cooper, York Township..... 2
 2nd do, J. Holmes, Scarborough..... 1 50
 3rd do, F. Nicholson, Leslieville..... 1
 Best 3 heads cabbage (winter), P. Armstrong, York township..... 2
 2nd do, H. Draper, Bowmanville..... 1 50
 3rd do, Wm. Burgess, Etobicoke..... 1
 Best 4 sorts winter cabbage, including savoy, 1 of each sort, H. Draper, Bowmanville..... 3
 2nd do, Wm. Burgess, Etobicoke..... 2
 3rd do, F. Nicholson, Leslieville..... 1

Best 3 heads red cabbage, H. Draper, Bowmanville..... 2
 2nd do, J. and G. Symes, Toronto..... 1 50
 3rd do, J. Wright, Yorkville..... 1
 Best 12 carrots for table, long red, A. W. Taylor, Barton..... 2
 2nd do, H. Draper, Bowmanville..... 1 50
 3rd do, A. A. Baker, Guelph..... 1
 Best 12 intermediate or half-long carrots, J. Young, Chester..... 2
 2nd do, J. and G. Symes, Toronto..... 1
 3rd do, A. A. Baker, Guelph..... 1
 Best 12 early horn carrots, A. W. Taylor, Barton..... 2
 2nd do, D. Allan, Guelph..... 1 50
 3rd do, E. C. Fearnside, Hamilton..... 1
 Best 12 table parsnips, D. Allan, Guelph..... 2
 2nd do, A. A. Baker, Guelph..... 1 50
 3rd do, F. Nicholson, Leslieville..... 1
 Best 6 roots of white celery, W. Burgess, Etobicoke..... 2
 2nd do, J. Wright, Yorkville..... 1 50
 3rd do, J. Maccaamara, York Township..... 1
 Best 6 roots of red celery, W. Burgess, Etobicoke..... 2
 2nd do, J. Wright, Yorkville..... 1 50
 3rd do, F. Nicholson, Leslieville..... 1
 Best dozen capsicums (ripe) J. Nicholson, Leslieville..... 2
 2nd do, A. W. Taylor, Barton..... 1 50
 3rd do, Wm. Lottridge, do..... 1
 Best collection of capsicums (ripe) J. Nicholson, Leslieville..... 3
 2nd do, F. Nicholson, Leslieville..... 2
 3rd do, G. Cooper, York township..... 1
 Best 3 egg-plant fruit, purple, A. W. Taylor, Barton..... 2
 2nd do, L. S. Lundy, Drummondville..... 1 50
 3rd do, C. S. Gzowski, Toronto..... 1
 Best 12 tomatoes (red), A. W. Taylor, Barton..... 2
 2nd do, J. Hamilton, Toronto..... 1 50
 3rd do, J. Ross, Toronto..... 1
 Best 12 tomatoes (yellow), E. C. Fearnside, Hamilton..... 2
 2nd do, J. Harker, Kingston..... 1 50
 3rd do, F. Nicholson, Leslieville..... 1
 Best assorted collection of tomatoes, E. C. Fearnside, Hamilton..... 3
 2nd do, George Cooper, Toronto..... 2
 3rd do, J. Nicholson, Leslieville..... 1
 Best blood beets, long, D. Allan, Guelph..... 1 50
 2nd do, A. A. Baker, Guelph..... 1
 3rd do, Wm. Benham, Guelph..... 1
 Best peck of white onions, William Lottridge, Barton..... 2
 2nd do, A. A. Baker, Guelph..... 1 50
 3rd do, James Wright, Yorkville..... 1
 Best peck of yellow onions, Joseph Fenmett, sen., Bradford..... 2
 2nd do, S. Turner, York township..... 1 50
 3rd do, Wm. Lottridge, Barton..... 1
 Best pack of red onions, H. Brown, Toronto..... 2
 2nd do, J. Fenmett, sen., Bradford..... 1 50
 3rd do, G. J. Miller, Virgil..... 1
 Best 2 quarts pickling onions, J. Wright, Yorkville..... 1 50
 2nd do, T. Ironfield, Toronto..... 1
 Best 12 white turnips (table), A. W. Taylor, Barton..... 2
 2nd do, Wm. Lottridge, Barton..... 1 50
 3rd do, J. and G. Symes, Toronto..... 1
 Best 12 yellow turnips (table), William Benham Guelph..... 2
 2nd do, F. Nicholson, Leslieville..... 1 50
 3rd do, G. Cooper, York township..... 1
 Best 12 ears sweet corn, fit for the table, A. W. Taylor, Barton..... 2
 2nd do, J. Wright, Yorkville..... 1 50
 3rd do, G. Tattle, Yorkville..... 1
 Best 6 varieties of potatoes for garden cultivation, half peck of each sort, named, H. Draper, Bowmanville..... 2
 2nd do, J. Cuppage, Orillia..... 1 50
 3rd do, R. Shearer, Niagara..... 1
 Best 4 summer or fall table squashes, H. Draper, Bowmanville..... 2
 2nd do, T. Ironfield, Toronto..... 1 50
 Best 8 winter table squashes, William Burgess, Etobicoke..... 2
 2nd do, J. Wright, Yorkville..... 1 50
 3rd do, Samuel Wood, Inlington..... 1
 Best 2 vegetable marrow, J. Russell, Toronto..... 2
 2nd do, G. Cooper, York township..... 1 50
 Best and greatest variety of vegetables (distinct from other entries), each kind named, G. Tattle, Yorkville..... 4
 2nd do, G. Cooper, York township..... 3
 EXTRA ENTRIES - Harvey Draper, Bowmanville, 3 weeks, 1st prize, 50¢; J. and G. Symes, Toronto, 3 entries, 1st prize, J. Russell, Toronto, 1 basket of garlic, 1st prize, 50¢

CLASS 33 - PLANTS AND FLOWERS - 118 ENTRIES.

Judges - Charles Meston, Hamilton; W. H. Boulton, Toronto; David Culbert, St. Catharines.

Best dozen dahlias, standard varieties, named, Geo. Leslie and Son, Leslieville..... 2
 2nd do, C. S. Gzowski, Toronto..... 1 50

Best 12 bouquet dahlias, Geo. Leslie and Son, Leslieville..... 2
 2nd do, C. S. Gzowski, Toronto..... 1 50
 Best and largest collection of dahlias, Geo. Leslie and Son, Leslieville..... 5
 2nd do, C. S. Gzowski, Toronto..... 4
 Best two large vase bouquets, Thomas Lee, Toronto..... 4
 2nd best pair side table or fan bouquets, E. S. Fearnside, Hamilton, 2nd prize..... 2
 Best hand bouquet, J. M. Hirschfelder, Toronto..... 2
 2nd do, Geo. Tattle, Yorkville..... 1 50
 3rd do, James Fleming, Toronto..... 1
 Best bouquet, everlastings, Jas B. Hay, Waterdown..... 2
 2nd do, C. E. Fearnside, Hamilton..... 1 50
 3rd do, David Davis, Louth..... 1
 Best collection of green-house plants, not less than 12 specimens, in flower, T. Wakelield, Yorkville..... 5
 2nd do, Thomas Lee, Toronto..... 3
 3rd do, C. S. Gzowski, Toronto..... 2
 Best 12 pansies, C. E. Fearnside, Hamilton..... 2
 Best 6 fuchsias, in flower, C. S. Gzowski, Toronto..... 4
 Best collection of annuals in bloom, named, J. B. Hay, Waterdown..... 2
 2nd do, E. C. Fearnside, Hamilton..... 1 50
 3rd do, Alex. McWigan, Toronto..... 1
 Best 6 cockscombs, D. Allan, Guelph..... 2
 2nd do, Robert Warren, Niagara..... 1 50
 3rd do, James Fleming, Toronto..... 1
 Best 6 balsams, in bloom, Alex. McWigan, Toronto..... 2
 Best 12 German asters, Thos. Pallister, Guelph..... 2
 2nd do, J. B. Hay, Waterdown..... 1 50
 Best collection of asters, J. B. Hay, Waterdown..... 2
 2nd do, A. McWigan, Toronto..... 1 50
 Best collection of 10 weeks' stock, D. Allan, Guelph..... 2
 2nd do, Thos. Pallister, Guelph..... 1 50
 3rd do, Alex. McWigan, Toronto..... 1
 Best collection of Bourbon, Tea and Noisette roses, named, James Fleming, Toronto..... 3
 Best 3 roses of any one variety, James Fleming, Toronto..... 2
 2nd do, J. Hirschfelder, Toronto..... 8
 Best floral design for supper table, J. Hirschfelder, Toronto..... 5
 Best 12 verbenas, named, Samuel Turner, York Township..... 2
 2nd do, G. Tattle, Yorkville..... 1 50
 Best collection of verbenas, named, James Fleming, Toronto..... 2
 Best 6 petunias, single, J. B. Hay, Waterdown..... 2
 2nd do, A. McWigan, Toronto..... 1 50
 Best 6 petunias, double, E. C. Fearnside, Hamilton..... 2
 Best collection, perennial phloxes, J. Gray & Co., Brockton..... 2
 2nd do, A. McWigan, Toronto..... 1 50
 Best collection of gladioli, James Fleming, Toronto..... 2
 Best collection double zinnias, Thomas Pallister, Guelph..... 2
 2nd do, J. B. Hay, Waterdown..... 1 50
 3rd do, E. C. Fearnside, Hamilton..... 1
 Best display of plants in flower, distinct from other entries, C. S. Gzowski, Toronto..... 10
 2nd do, T. Wakelield, Yorkville..... 6
 3rd do, Thos. Lee, Toronto..... 4

EXTRA ENTRIES - James Fleming, Toronto, collection of foliage plants, 1st prize, \$2 00; G. Tattle, Yorkville, collection of seedling verbenas, 1st prize, \$2 00; Thomas Lee, Toronto, design of house and garden, 1st prize, \$3 00.

DAIRY PRODUCTS, &c.

JUDGES - A. McCellar, Ottawa; J. Rannie, Allanburgh; Wm. Fisher, Cooksville; W. K. Atkinson, Ailsa Craig; Daniel Vanderwater, Belleville; Angus Cook, Grantham; and T. McEvers, Cobourg.

CLASS 34 - DAIRY PRODUCTS, HONEY, BACON, ETC.

Best firkin of butter, in shipping order, not less than 56 lbs, Donald Clark, Morriston..... \$12
 2nd do, John McLurge, Lobo..... 10
 3rd do, A. McFarland, Etobicoke..... 8
 4th do, Wm. Major, Pickering..... 6
 5th do, J. Grant, Paslinch..... 4
 6th do, George Stranger, Nassagawaya..... 2
 Worthy of a prize, Charles Porter, Trafalgar
 Best butter, not less than 23 lbs, in firkins, cracks or tubs, D. Clark, Morristown..... 8
 2nd do, C. Shaver, Etobicoke..... 6
 3rd do, D. Davin, Louth..... 4
 4th do, J. Patton, Scarborough..... 2
 5th do, A. McFarlane, Etobicoke..... 2
 6th do, M. Jones, Whitechurch..... 1
 Worthy of a prize, S. Wood, Inlington.
 Best 3 factory cheeses, not less than 50 lbs each, with statement of number of cows, and management of factory, A. McBean, Galt..... 30
 2nd do, P. Hinman, Hamilton..... 27
 3rd do, Thos. Valentyne, Scarborough..... 25
 Best cheese, dairy, not less than 30 lbs, A. Shaw, Missouri..... 12
 2nd do, J. Patton, Scarborough..... 10
 3rd do, J. Franks, Dorchester..... 8
 4th do, A. Glendinning, Scarborough..... 6

Best 2 Stilton cheeses, not less than 12 lbs. A Shaw, Missouri..... 5
 2nd do, H. K. Parsons, Guelph..... 5
 Best honey, in the comb, not less than 10 lbs, H. M. Thomas, Brooklin..... 4
 2nd do, Thomas Runige, Richview..... 2
 3rd do, J. Sudd, Toronto..... 1 50
 4th do, W. D. Stohart, Bradford..... Trans
 Best jar of clear honey, J. S. Armstrong, Guelph..... 4
 2nd do, Wm. Fraser, Esquesing..... 2
 3rd do, G. Miller, Markham..... 1 50
 4th do, H. Thomas, Brooklin..... Trans
 Best side cured bacon, Jas. Park, Toronto..... 4
 Best ham, cured, James Park, Toronto..... 3

EXTRA ENTRIES—James Park, Toronto, roll of spiced bacon, 1st prize, \$2 00; spiced beef ham, 1st prize, \$1 00; dried beef, 1st prize, \$1 00; and belly 1st prize, \$1

CLASS 35—MISCELLANEOUS—12 ENTRIES

JUDGES—Professor Buckland, Toronto; Thos. Stock, Waterdown; and John Weir, Jr., West Flamboro

John H. Fleet, Sarnia, Fleet's patent horse shoeing and veterinary stocks, highly commended. Hendrie and Co., Toronto, rock salt, for stock, commended; John Parker, Seaton village, Toronto Tp., bone dust, highly commended, superphosphate of lime, highly commended. John Macoun, Belleville, collection of Canadian grasses, highly commended. John Grenville, Thorold, door and gate fastening, highly commended. Charles Garlich, Montreal, Simpson's cattle spicce.

ARTS AND MANUFACTURES DEPARTMENT.

(COMPETITION OPEN TO THE WORLD)

CLASS 36—CABINET WARE AND OTHER WOOD AND HAIR MANUFACTURES 79 ENTRIES.

JUDGES—Geo. Stephens, Cobourg; D. B. Garlon Barri, and Wm. Simpson, Berlin.

CABINET WARE

Bedroom furniture, set of, Jacques and Hay, Toronto..... \$15
 2nd do., Bowmanville Furniture Manufacturing Co..... 8
 Carving in wood, decorative, not connected with any other article on exhibition, Bowmanville Furniture Manufacturing Co..... 10
 Centre table, Jacques and Hay, Toronto..... 8
 Drawing-room furniture, set of, Bowmanville Furniture Manufacturing Co..... 15
 2nd do., Jacques and Hay, Toronto..... 8
 Sideboard, Jacques and Hay, Toronto, diploma and..... 8

MISCELLANEOUS

Brushes, an assortment, Chas. Boeckh, Toronto..... \$5
 2nd do., A. Rossiter and Son, Toronto..... 4
 "Coopers" work, Coridon Leurs, Safford..... 6
 Corn brooms, 1 doz., Nelson, Wood & Co., Toronto..... 2
 2nd do., Allan Easson, Hamilton..... 1
 Joiners' Work, assortment of, McBean Bros., Toronto..... 6
 Turning in wood, collection of specimens, Jacques and Hay, Toronto..... 6
 2nd do., William Black, Bowmanville..... 3
 Veneers from Canadian woods, undressed, W. Clements, Newburg..... 8
 Veneers from Canadian woods, dressed and polished, never previously exhibited, and not connected with other articles on exhibition, F. S. Clench, Cobourg..... 8
 Wash tubs and pails, factory made, three of each, Coridon Leurs, Safford..... 4

EXTRAS—Fred Elliott, Woodbridge washing machine, \$3 00; Geo. Commander, Toronto, wash tubs, made by hand, 1st prize \$3 00. S. R. Briggs, Toronto, shingles, 1st prize, \$1 00; John Shaw, Whitby, house-keeper's pastry table, \$5 00; J. A. G'endinning, Toronto, a pleasure boat, \$5; Bowmanville Manufacturing Co., a hull rack, \$1; G. J. Baker, Oakville, washing machine, \$3 00; Joseph Copley, Toronto, wigs, plaits, braids, and hair tresses, 1st prize, \$5; F. A. Soverre, Toronto, family pleasure boat, 1st prize, \$7 00; F. S. Clench, Cobourg, fret work brackets, \$1 00; portable desk, \$3 00 Samuel Palling, Woodstock, pallings, and Ontario balanced window blind lifter, 1st prize, \$1 00; R. Leonard Oshawa patent spring mattress, \$1 00; Odell and Shorey, Napane, Odell's Royal Canadian clothes wringer, 1st prize, \$3 00; Joshua Johnston, Lindsay, patent air-tight adjustable door threshold, 1st prize, \$2 00; Valentine Spiers, New Lowell, 25 lbs manufactured hair, 1st prize, \$3 00; G. K. Jones, Bronte, a combined mop and scrubber, 1st prize, \$1 00; John McDonald, Hamilton, bird cage, 1st prize, \$1 50; Thos. McMurchy, Glen William, patent mangle, 1st prize, \$1 00; Jas. Thompson, Toronto, bazaltic table, 1st prize, \$5 00; Hugh Wright, Hamilton, 2 work boxes, inlaid Canadian wood, 1st prize, \$3 00; Wm. Peacock, Montreal, collection of cricket, base ball bats etc., 1st prize, \$4 00; David Fisher, Scarborough, wood work (mantel piece), 1st prize, \$1 00; Phillips and Oliver, Toronto, washable gilt mirror frames, do, do, imitation rose-

wood and gilt mirror, one prize, \$5 00; Wm. Rodgers, Toronto, small tool box, 2nd prize. Moorey and Rootzwill, Ingersoll, hammock or lounging chair, 2nd prize, \$2 00; D. A. Cooper, resqueing, 2 bunches sawed shingles, \$1 00; W. B. & C. P. Chisholm, Oakville, samples of fruit baskets, \$2 00; Joshua Johnston, Lindsay, patent air-tight window stops and slips, \$1 00; Phillips and Oliver, Toronto, washable gilt mouldings, \$1 00; William Rodgers, Toronto, small tool box, \$2 do, do, writing desk, \$1 00. Mrs. Ellis, Toronto, curls, braids etc., for ladies hair dressing.

CLASS 37—CARRIAGES AND SLEIGHS, AND PARTS THEREOF—112 ENTRIES

JUDGES—Josiah Holmes, St. Catharines and J. S. Martin, Goderich, and W. O. Donovan, Whitby

Axle, wrought iron, Myers and Mathan, Gananoque..... \$4
 2nd do, do, John Doty, Oakville..... 2
 Buggy, double seated, covered, J. B. Armstrong and Co., Guelph..... 10
 2nd do, Woods and Lyons, Bradford..... 7
 Buggy, double seated, uncovered, J. B. Armstrong, Guelph..... 8
 2nd do, W. J. Thomas, London..... 6
 Buggy, single seated, covered, J. and L. Sprague, Ameliasburg..... 8
 2nd do, J. B. Armstrong and Co., Guelph..... 6
 Buggy, single seated, uncovered, J. B. Armstrong and Co., Guelph..... 7
 2nd do, Hutchinson and Burns, Toronto..... 5
 Best buggy, trotting, George Smith, St. Catharines..... 6
 2nd do, W. J. Thompson, London..... 4
 Best carriage, two horse, pleasure, Geo. Smith St. Catharines..... 13
 2nd do, W. J. Thompson, Middlesex..... 12
 Best carriage, one horse, pleasure, W. H. Vermilyea, Belleville..... 12
 2nd do, W. J. Thompson, London..... 1
 Best carriage, child's (perambulator), W. M. Wheatley, Guelph..... 4
 2nd do, Noah L. Piper & Son, Toronto..... 2
 Best hubs, carriage, one dozen, John Heard, Lambeth..... 3
 Best sleigh, two horse, pleasure, J. B. Armstrong & Co., Guelph..... 15
 Best sleigh, one horse, pleasure, do..... 10
 Best spokes, carriage, machine made, John Heard, Lambeth..... 3
 Best springs, one set steel carriage, Myers and Penn, Gananoque..... 5
 2nd do, John Doty, Oakville..... 5
 Best sulky, trotting, W. J. Hamill, Grantham..... 6
 2nd do, W. J. Thompson, London..... 3
 Best wheels, 1 pair of carriage, unpainted, J. B. Armstrong & Co., Guelph..... 4
 2nd do, W. J. Thompson, London..... 2

EXTRAS—John Doty, Oakville, sample waggon skiers, 1st prize, \$1 do, sample spring heads, 1st prize, \$1; J. C. Cooper, Strathroy, bent cutter knees and benches, waggon hounds, waggon crotches, large strap or waggon strap, do, John Hawkins, Frogmore, tire upsetting machine, 1st prize \$3; J. B. Armstrong & Co., Guelph, oval harness, 1st prize, \$10; W. J. Thompson, London, skeleton waggon, 1st prize, W. J. Hamill, Grantham, skeleton waggon, 2nd prize, \$1; J. C. Cooper, Strathroy, clips for buggy shafts, commended, do, iron stakes for waggons and sleighs, commended, George Bell, Orangeville, combined waggon and sleigh, commended, John Webster, Toronto, confectioner's peddling waggon, commended, J. Hagaman, Oakville, a patent gearing for buggy, commended W. J. Thompson, London, skeleton waggon, \$1.

CLASS 38—CHEMICAL MANUFACTURES AND PREPARATIONS—31 ENTRIES

JUDGES—W. Saunders, London; Dr Beatty, Cobourg, and Thomas Lawrence, Hamilton
 Best Essential Oils, assortment of, 2nd prize, Peter Irish, Wicklow..... \$1
 Best medicinal herbs, roots and plants, native growth, John Macoun, Belleville..... 12

EXTRA ENTRIES (Class 38.)—J. C. D. Clark, Toronto, sample Mott's economic oil for machinery 1st prize, \$2. Montreal Rolling Mills, white lead in barrels, 1st prize, \$3; putty, \$2 James Robertson, Toronto, white lead paint, 1st prize, \$4; also 2nd prize for putty, \$3. The following were commended—Hugh Miller, Toronto, prepared glycerine for the toilet, Chinese garden powders, tick destroyer and illuminator or burning fluid; A. Dredge & Co., Toronto, writing and copying inks, fancy perfumed inks and melleage; Bronson & Paton, Toronto, assortment of white lead in kegs; G. B. Stock, Brougham, lubricating machine oil brush, \$2.

CLASS 39—DRAWINGS, ARCHITECTURAL AND MECHANICAL ENGRAVINGS, BUILDING MATERIALS AND CONSTRUCTIONS, POTTERY, &c—56 ENTRIES

JUDGES—John Shter, Whithy Wm. Armstrong, C. E., Toronto

Best bricks, pressed, 1 doz., Wm. Gibbs, Wellington Square..... \$2
 2nd do, Joseph Brown & Co., Davenport..... 1
 Best bricks, kiln-burnt, 1 doz., Wm. Gibbs, Wellington Square..... 2
 Best drawings, architectural, geological and perspective view, Grant Helliwell, Toronto..... 6

Best drawing of machinery, in perspective, A. M. Gibson, Toronto..... 4
 Best decorative house painting, Wm. Phillips, Toronto..... 6
 Best engraving on wood, with proof, C. F. D'Amoreau, Toronto..... 6
 Best engraving on copper, with proof, J. T. Rolph, Toronto..... 6
 2 d do, Copp, Clark and Co. Toronto..... 1
 Best filterer for water, Wm. Campbell, Hamilton..... 3
 Best lithographic drawing, plain Copp, Clark and Co., Toronto..... 6
 2nd do., J. T. Rolph, Toronto..... 1
 Best lithographic drawing, colours printed, T. R. Iph, Toronto..... 6
 2nd do., Copp Clark and Co., Toronto..... 1
 Best lithographic commercial work, in black or colours, Copp, Clark and Co., Toronto..... 6
 2nd do, J. T. Rolph, Toronto..... 1
 Best mantlepiece in marble Robert Forsyth, Toronto..... 3
 Best mathematical, philosophical and surveyor's instruments, collection of, Hearn and Harrison, Montreal..... 1
 2nd do., Chas. Potter, Toronto..... 14
 Best monumental headstone Robert Forsyth, Toronto..... 6
 Best picture frame, ornamental, gilt, R. W. Laird, Toronto..... 8
 Best pottery, an assortment, Robert Westcott, Peterboro..... 6
 2nd do., Wm. Campbell, Hamilton..... 1
 Best sewerage pipes, stoneware, assortment of sizes, Wm. Campbell, Hamilton..... 6
 Best sises for roofing, Melbourne slate Co., Melbourne..... 6
 2nd do., Erskine Slate Co., Shefford..... 1
 Best stained glass, collection of specimens, R. Lewis, London..... 12
 2nd do., Joseph McCausland Toronto..... 8
 Best stench traps for draining, stoneware, Wm. Campbell, Hamilton..... 3
 Best stoneware, an assortment, Welding and Belding, Brantford (also diploma)..... 8

EXTRAS—Clevedon and Coombe, Toronto, patent earth closet, 1st prize, \$1. Francis Kennedy, Toronto, Kennedy's Restorer Cement, 1st prize, \$1; Jas. Authors, Toronto, an assortment of artificial limbs, 1st prize, \$8; J. House, St. Catharines, patent window fastener, 1st prize, \$1. Geo. Bishop and Co., Montreal, illuminated stamping for steel dies, 1st prize; do, specimen stencil plates for cuts and trade marks, on prize \$6; C. H. Jones, Bronte lever window fastener, 2nd prize, \$1; Henry Wandy, Yorkville, artificial stone for building purposes, highly commended. Joseph Brown and Co., Davenport, water urn, highly commended. Copp, Clark and Co., Toronto, lithographic stone and drawing, highly commended; do, assorted specimens of copper plate printing, commended. J. T. Rolph, Toronto, specimens of monograms, commended, do, specimens of business cards, commended, do, wedding and invitation cards, commended, do, embossing, commended. Copp, Clark and Co., Toronto, manufacturer's labels, commended. St. Geo. Scarlett, Weston, window press holder, commended. McLaren and Barber, London, India rubber artificial leg, \$3. Samuel Meadows, Toronto, one Corrugated mirror plated reflector, \$5

CLASS 40—FINE ARTS—170 ENTRIES

Professional List—Oil (Originals)

JUDGES—J. Griffiths, London, D. Fowler, Amherst Island, A. R. Pratt, Bothwell, and W. Armstrong, Toronto
 Best any subject, A. Vogt, Montreal..... \$15
 2nd do, F. A. Verner, Sandwich..... 10
 Best animals, from life, A. Vogt, Montreal..... 12
 2nd do, Robert Whales, Burford..... 5
 Best flowers, grouped or single, Henry Martin, Toronto..... 10
 2nd do, James Griffith London..... 6
 Best figure subject, J. C. Forbes, Toronto..... 12
 2nd do, J. W. Bridgeman, Toronto..... 8
 Best landscape, Canadian subject, F. A. Verner, Sandwich..... 12
 2nd do, T. M. Martin, Toronto..... 8
 3rd do, Henry Martin, Toronto..... 5
 Commended, F. A. Verner, Sandwich
 Best landscape or marine painting not Canadian subject, F. A. Verner, Sandwich..... 10
 2nd do, C. S. Millard, Toronto..... 6
 Best marine painting, Canadian subject, Robt. Whales, Burford..... 12
 2nd do, T. M. Martin, Toronto..... 8
 Best portrait, J. C. Forbes, Toronto..... 10
 2nd do, Robert Whales, Burford..... 7
 3rd do, F. M. Martin, Toronto..... 4
 Best still life, T. M. Martin, Toronto..... 10
 Commended, F. M. Martin, Toronto

Amateur List—Oil (Originals)

Any subject, Robert Crocket, Hamilton..... 8
 Mrs. Carty, Toronto, equal..... 8
 do, highly commended..... 8
 Animals from life, 2nd prize, Robert Whales, Burford..... 5
 Best landscape or marine view, Canadian subject, Charles Chapman, London..... 8
 2nd do, Alex. Jardine, Toronto..... 5

Professional or Amateur—Figure Subjects. (Originals.)

Best carving in stone, in relief, Robert Forsyth, Montreal. 12
Best statue or group, in stone, Robert Forsyth, Toronto. 15
2nd do, J. E. Pearen, Guelph. 10

Photography.

Best ambrotypes, collection of, L. Ecker son, Hamilton. 6
Best photograph portraits, collection of, in duplicate, one set coloured, Notman & Fraser, Toronto. 10
2nd do, James Inglis, Montreal. 6
Best photograph portraits, collection of, plain, Notman & Fraser, Toronto. 8
2nd do, James Inglis, Montreal. 5
Best photograph landscapes and views, collection of, R. W. Anderson, Toronto. 8
Best photograph portrait, finished in oil, Notman and Fraser, Toronto. 6
2nd do, J. W. Bridgeman, Toronto. 6
Best photograph portrait, finished in Indian ink, Notman and Fraser, Toronto. 4
2nd do, James Inglis, Montreal. 4
Best photograph portrait, finished in water colours, Notman and Fraser, Toronto. 6
2nd do, James Inglis, Montreal. 4

EXTRA ENTRIES W. E. Wright, Niagara, a fruit piece, 1st prize, \$1; J. W. Bridgeman, Toronto, photograph portrait on canvas, finished in oil, 1st prize, \$5. V. Casci, Toronto, castings in plaster of Paris, 1st prize, \$2, James Inglis, Montreal, combination photograph, 1st prize, \$3, J. H. Noverre, Toronto, photographic studies from nature, 1st prize, \$3; L. Ecker son, Hamilton, plain photograph portrait, 1st prize, \$2, J. G. Parks, Montreal, two frames of stereoscopic views, 1st prize, \$1, Miss Carty, Toronto, any subject in oil, 1st prize, \$6, also highly commended, Miss A. Clarkson, Toronto, animals from life in oil, 1st prize, \$6, Miss A. Clarkson, Toronto, still life in oil, 1st prize, \$6.

CLASS 41 FINE ARTS—245 ENTRIES

Professional List (Originals.)

Judges—Rev. A. Clement, North Duro, Henry Langley, Toronto, and Thos M Simons, Galt.

Water Colours.

Best, any subject, Daniel Fowler, Amherst Island. 310
2nd do, Chas. S. Millard, Toronto. 8
COMMENDED—Thos. M. Martin, Toronto.
Best animals from life, Daniel Fowler, Amherst Island. 8
Best flowers, grouped or single, Daniel Fowler, Amherst Island. 7
2nd do, Henry Martin, Toronto. 7
Best figure subject, Chas. J. Way, Montreal. 8
2nd do, Daniel Fowler, Amherst Island. 6
Best landscape, Canadian subject, Chas. S. Millard, Toronto. 6
2nd do, Henry Martin, do. 6
Best landscape or marine view, not Canadian subject, Chas. S. Millard, Toronto. 5
2nd do, Daniel Fowler, Amherst Island. 5
Best marine view, Canadian subject, Chas. S. Millard, Toronto. 5
2nd do, Henry Sandham, Montreal. 7
Best portrait, M. Mathews, Toronto. 7
Thos. M. Martin, Toronto. Commended
Best still life, Thos. M. Martin, do. 7
2nd do, Jas. Griffiths, London. 5

Pencils, Crayons, &c.

Best crayon, coloured, Daniel Fowler, Amherst Island. 6
Best crayon, plain, 1st, J. C. Forbes, Toronto. 6
2nd do, A. Vogt, Montreal. 5
Best crayon or pencil portrait, Daniel Fowler, Amherst Island. 6
2nd do, T. M. Martin, Toronto. 6
Best pen and ink sketch, Mrs. B. Walker, Toronto. 6
2nd do, Henry Sandham, Montreal. 4
Best pencil drawing, D. Fowler, Amherst Island. 6
Best Sepia drawing, Chas. S. Millard, Toronto. 4
2nd do, Henry Sandham, Montreal. 4

Amateur List (Originals.) Water Colours.

Animals from life, Chas. Chapman, London. 57
Best flowers, grouped or single, Miss A. Clarkson, Toronto. 6
2nd do, Mrs. Hornby, Toronto. 4
Best figure subject, Miss Hornby, Toronto. 7
Best landscape or marine view, Canadian subject, Chas. Chapman, London. 7
2nd do, Miss Mary Strickland, Oshawa. 5

Pencils, Crayons, &c.

Pen and ink sketch, R. Lee, Toronto. 55

Amateur List (Copies).—Water Colours.

Best flowers, grouped or single, Miss C. Mountcastle, Goderich. 55
2nd do, Miss Nancy Strickland, Oshawa. 3
Figure subject, Miss C. Mountcastle, Goderich. 5
Best landscape, Mrs. Hornby, Toronto. 5
2nd do, Miss C. Mountcastle, Goderich. 3
Best marine view, Mrs. Hornby, Toronto. 5
2nd do, Miss C. Mountcastle, Goderich. 3

Pencils, Crayons, &c.

Best crayon, coloured, Miss H. Thurtell, Guelph. 4
2nd do, Miss H. Thurtell, Guelph. 4
Best crayon, plain, Miss Lillie Switzer, Toronto township. 2
2nd do, Miss Bray, Toronto. 2
Commended, Miss A. Clarkson, Toronto, (2). 2
Best crayon or pencil portrait, Miss Annie Clarke, Toronto. 4
2nd do, Miss Risley, Toronto. 4
Best pen and ink sketch, J. T. Rolph, Toronto. 4
2nd do, Miss Nancy Strickland, Oshawa. 4
Best pencil drawing, Mrs. M. Hargrave, Toronto. 4
2nd do, Miss A. Clarke, Toronto. 4
Best sepia, J. T. Rolph, do. 4
2nd do, Miss C. Mountcastle, Goderich. 4

EXTRA.—Hard, Leigh & Co., Toronto, enamelled, painted, and gilt china and earthenware, 1st prize, diploma and \$10; Miss M. Murney, Belleville, cabinet painted on wood, 1st prize, \$5, Mrs. Hornby, Toronto, "Summer Night," 1st prize, \$1, do, miniature on ivory, 2nd, \$2, do, group of seashells, 2nd prize, \$2, Miss Bray, Toronto, coloured seal, water colour and pencil, 2nd prize, \$3; Notman and Fraser, photographic composition picture, \$3.

CLASS 42.—GROCERIES AND PROVISIONS—47 ENTRIES.

JUDGES—John Junkin, St. Catharines. E. A. McNaughton, Cobourg, and Henry Horton, Junior, Goderich.

Barley, Pearl, 25lbs., Robert King, Hamilton. 53
2nd do, Andrew Paul, Reach. 2
Larley, Pot, 25lbs., Robert King, Hamilton. 3
2nd do, Robert Williamson, Ingersoll. 2
Bottled fruits, an assortment, manufactured for sale, James Goodchild, Bradford. 6
Bottled pickles, an assortment, manufactured for sale, G. F. Moore and Co., Toronto. 6
Buckwheat flour, 25lbs., E. D. Tilson, Tilsonburg. 3
2nd do, Robert King, Hamilton. 2
Chicken, 20lbs., prepared, George Pears, Toronto. 3
Indian corn meal, 25lbs., E. D. Tilson, Tilsonburg. 8
2nd do, Robert King, Hamilton. 2
Oatmeal 25lbs., Andrew Paul, Reach. 3
Salt, 1 barrel fine, J. H. Belfry, Clinton. 5
Sauces for table use, an assortment, manufactured for sale, G. F. Moore and Co., Toronto. 6
2nd do, David Davis, Louth. 4
Soap, one box of common, Benjamin Riggs, Stratford. 4
Starch, 12lbs. Corn, Edwardsburg Starch Co. 2
Tobacco, 1lbs., Canadian manufacture, Job Scaer and Co., Toronto. 5
2nd do, Alex. Hartill, junr., and Co., Toronto. 5
Vegetables, hermetically sealed, Grimsby Fruit Canning Company. 3
Wheat flour, 50lbs., E. D. Tilson, Tilsonburg. 7
2nd do, Andrew Paul, Reach. 7

EXTRA ENTRIES—Commended.—George Pears, Toronto, assortment of spices and coffees. E. H. Shordes, Thorold, meats and poultry. John Steel, Toronto, patent self-raising prepared flour. Highly Commended and Diploma.—W. W. Park and Co., Toronto, six samples of vinegar, prize \$3; Edward Lawson, assortment of biscuits and confectionary manufacture, prize \$5; Judd and Co., vegetable union yeast, \$3, V. Casci, Toronto, two boxes of macaroni.

CLASS 43.—LADIES' WORK—282 ENTRIES.

Braiding, Embroidery, Needlework, &c.

JUDGES—Mrs. James Young, Galt; Miss C. M. Stephens, Cobourg; and Mrs. Holmes, Brampton.
Bead work, C. W. Postlethwaite, Toronto. 53
2nd do, Miss J. M. Lemon, Maitland. 2
3rd do, Miss Sarah Strickland, Oshawa. 1
Braiding, Miss N. Strickland, Oshawa. 3
2nd do, Miss Sarah Strickland, Oshawa. 2
3rd do, Miss Barker, Markham. 1
Crochet work, Miss Nancy Strickland, Oshawa. 3
2nd do, Mrs. Pollard, Bowmanville. 2
3rd do, Miss Sarah Strickland, Oshawa. 2
Embroidery in muslin, Mrs. Mackay, Meadow Brook, Simcoe. 2
2nd do, Miss Bidwill, Colborne. 2
3rd do, Miss Sarah Strickland, Oshawa. 1
Embroidery in cotton, Miss Nancy Strickland, Oshawa. 3
2nd do, Mrs. Van Ingen, Woodstock. 2
3rd do, Miss H. Bidwill, Colborne. 1
Embroidery in silk, Miss J. N. Lemon, Maitland. 3
2nd do, Miss S. Staunton, Toronto. 3
3rd do, Miss Barker, Markham. 1

Embroidery in worsted, Miss Isabella Symons, Toronto. 3
2nd do, Miss M. A. Thorne, Guelph. 2
Quipuro work, Miss Bidwill, Colborne. 3
2nd do, Miss E. Lee, Toronto. 2
3rd do, Miss H. Bidwill, Colborne. 1
Knitting, Miss Belth, Darlington. 3
2nd do, Mrs. Mackay, Meadow Brook. 2
3rd do, Miss Eliz. Choate, Ingersoll. 1
Lace work, Miss H. Bidwill, Colborne. 3
2nd do, Miss Bidwill, Colborne. 2
3rd do, Miss A. Brunskill, Toronto. 1
Miss E. White, Bedford, England, Bedfordfordshire lace. Highly Commended
Mrchine sewing, family, Wm. C. Bell, Markham. 3
Needle work, ornamental, Miss N. Strickland, Oshawa. 3
2nd do, Miss P. A. Cullis, Cobourg. 3
3rd do, Miss H. Lundy, Drummondville. 1
Netting, fancy, Miss N. Strickland, Oshawa. 3
2nd do, Miss J. Cullis, Cobourg. 2
3rd do, Mrs. J. Harper, King. 1
Plait for bonnets or hats, of Canadian straw, Miss Bidwill, Colborne. 3
2nd do, Miss H. Bidwill, Colborne. 2
3rd do, J. G. Paterson, Scarborough. 1
Quilt, silk, Mrs. Robert Wilson, Islington. 7
2nd do, Miss J. Haldiday, Streetsville. 2
3rd do, Miss Maria Barton, Toronto. 1
Quilt, patchwork, Mrs. J. S. Armstrong, Guelph. 7
2nd do, Mrs. J. Harper, King. 2
3rd do, Mrs. Marlie, Harrison. 1
Rag carpet, Miss Currie, Niagara. 3
2nd do, Mrs. John Hare, Yorkville. 2
3rd do, Mrs. Ellen O'Connor, Toronto. 1
Rag mat, Mrs. John Laidlaw, Toronto. 1
2nd do, Miss Sarah Strickland, Oshawa. 1
3rd do, M. Porter, Bowmanville. 1
Shirt, gentleman's, Mrs. John Brock, Bowmanville. 3
2nd do, Mrs. Mackay, Meadowbrook. 2
3rd do, Miss M. J. Lacey, Cobourg. 1
Tatting, Miss Lillie Beattie, Cobourg. 3
2nd do, Miss M. M. Parks, Trafalgar. 2
3rd do, Miss H. Bidwill, Colborne. 1

EXTRA ENTRIES.—Mrs. J. McClellan, Bowmanville, fancy quilting, 1st prize \$2; Mrs. A. Piddington, Toronto, case of wax dolls, dressed, 1st prize, \$3; W. Symons, Toronto, Berlin wool, beadwork, and string of buttons, 1st prize, \$2; Mrs. James Park, Oxford Centre, fancy quilt, 1st prize, \$2; Mrs. Howarth, Toronto, map of the world in needlework, 1st prize, \$2; Miss Capron, Paris, pair of fancy pen-wipers, 2nd prize, \$1; Mrs. Thos. Wylie, Caledon, Tuft Quilt, 2nd prize, \$1 50; Miss Bondidier, Toronto, shoulder brace, 2nd prize, \$1.

COMMENDED.—Geo Stranger, Nassagawoya, knitted quilt; Joshua Narish, do, knitted quilt; Miss M. Ramage, Richview, hexagonal cushion; Miss Mary Strickland, Oshawa, embroidery on net; Mrs. E. Lee, Toronto, leather work, card basket, &c.; Wm. C. Bell, Markham, ladies' under-clothing; H. McCaw, Toronto, scarlet robe; Mrs. W. D. Bundy, Toronto, Honiton lace handkerchief lace, 11 months' work; Mrs. McBride, Toronto, assortment of millinery.

CLASS 44.—LADIES' WORK—160 ENTRIES.

Flowers, Hair, Moss, Wax, and Worsted Work, &c.

JUDGES—Miss Frankie Palmer, Thurlow; Miss Kate Miller, Galt, and Mrs. Wm. Cooke, Galt.
Best flowers, silver wire, Mrs. E. P. Demson, Weston. \$2
2nd do, Miss J. Armstrong, Toronto. 1
3rd do, Mrs. Jas. Park, Oxford Centre. 50
Best flowers, feather, Mrs. Jas. Park, Oxford Centre. 2
2nd do, Mrs. E. Street, Toronto. 1
Best gloves, 3 pairs, Mrs. Hinman, Haldimand. 1
2nd do, Mrs. J. Harper, King. 1
3rd do, Mrs. Jas. Park, Oxford Centre. 50
Best hair work, Miss E. A. Cullis, Hamilton township. 3
2nd do, Miss J. Armstrong, Toronto. 2
Best mittens, 2 pairs, woollen, Mrs. Hinman, Haldimand. 2
2nd do, Mrs. J. Grant, Puslinch. 1
3rd do, Mrs. J. Harper, King. 50
Best moss picture, Mrs. Kivas Tully, Toronto. 3
2nd do, Mrs. Band, Toronto. 2
3rd do, Mrs. Carto, Toronto. 1
Best moss work, Mrs. Jas. Park, Oxford Centre. 1
Best shell work, Miss Mary Strickland, Oshawa. 1
Best socks, 3 pairs woollen, Mrs. Jane Harper, King. 2
2nd do, Mrs. G. Bennett, Cobourg. 1
3rd do, Mrs. Hinman, Haldimand. 50
Stockings, 3 pairs woollen, Mrs. G. Bennett, Cobourg. 2
2nd do, Mrs. Jane Harper, King. 1
3rd do, Mrs. H. M. Thomas, Brooklin. 50
Wax flowers, Mrs. A. Dredge, Toronto. 3
2nd do, Miss L. Warner, Brentwood. 3
3rd do, Mrs. John Heyes, Toronto. 1 50
Wax fruit, Miss Phemy Meavers, Hamilton Township. 5
2nd do, Mrs. John Heyes, Toronto. 3
3rd do, Mrs. J. Park, Oxford Centre. 1 50

Wax shells, a collection of, Miss A Taylor, Scarborough 6
 Worsted work, Mrs W. J. Marsh, Clarksburg 3
 2nd do, Miss M. McArthur, Bowmanville 2
 3rd do, Mrs. Hornby, Toronto 1
 Extra prize, Mrs. Pavey, Toronto 2
 do, do, Miss J. M. Leman, Matland 1
 Worsted work, fancy for framing, Miss Ida A Taylor, Toronto, diploma and 3
 2nd do, Miss Sophia Lea, York Township 2
 3rd do, Miss M. Henderson, Toronto 1
 Worsted work, raised, Miss Annie Hill, Weston 1
 2nd do, Mrs. E. P. Demson, Weston 2
 3rd do, Wm. Tolton, Eramosa 1
 Wreath, seed, Mrs. Amelia Carroll, Toronto 2
 2nd do, Mrs. E. P. Demson, Weston 1
 3rd do, Miss J. Armstrong, Toronto 1

EXTRA ENTRIES—Miss A. Choate, Ingersoll, phantom puppet, 1st prize, \$1; Miss McHolson, Toronto, fancy leather frame, 1st prize, \$1; Mrs. J. Grant, Richmond Hill, small wax figure dressed in Turkish style, under glass shade, 1st prize, \$2; Mrs. Hornby, Toronto, ornamental braided chair, 1st prize, \$1, and card rack in sawed wood, 1st prize, \$1; Mrs. James Park, Oxford Centre, wreath of flowers, \$2; Mrs. J. E. Smith, Pickering, chenille work, 1st prize, \$1; E. Hirschfelder, Toronto, collection of stamps, 1st prize, \$1; Miss F. Symons, Toronto, paper flowers, 1st prize, \$1; Mrs. Cartero, Toronto, braiding in hair, 1st prize, \$3; Mrs. John Macnamara, York Township, velvet painting, 2nd prize, \$1; Miss Warren, Toronto, crown of imitation coral, 2nd prize, \$1.

CLASS 45. MACHINERY, CASTINGS AND TOOLS—150 ENTRIES

JUDGES—James Crossen, Cobourg, John Cowan, Oshawa, and Thomas Northey, Hamilton.
 Blacksmith's bellows, Joseph Westman, Toronto 20
 Card clothing, assortment of, E. Thuresson, Ancaster 4
 Castings for general machinery, Dickey, Neill & Co., Toronto 16
 Cast wheel, spur or bevel, not less than 40 lbs. weight, Dickey, Neill and Co., Toronto 8
 Castings for railways, railroad cars and locomotives, assortment of, John Gartshore, Toronto 12
 2nd do, Dickey, Neill and Co., do 10
 Cordwood sawing machine, steam or horse-power, B. Mitchell, Millbrook 10
 2nd do, L. Rutherford, Bradford 6
 Edge tools, an assortment, Fittle, Date and Rodden, St. Catharines 10
 Engine, steam, stationary, five horse-power and upwards, in operation, C. H. Waterous, and Co., Brantford 15
 Fire engine, hand power, Robert Dunn, Stratford 10
 2nd do, Chas. Powell, Newtonbrook 10
 Machines for planing and drilling metals, McKechnie and Bertram, Dundas 12
 2nd do, do 8
 Pump, in metal, Horsay and Freden, Kingston 5
 2nd do, L. W. Scott, Toronto 5
 Refrigerator, James McKelvey, St. Catharines 5
 Saws, an assortment, James Flint, St. Catharines 10
 2nd do, James Robertson, Toronto 6
 Saw mill, steam, in operation, C. H. Waterous & Co., Brantford 20
 Sash and moulding machines, McKechnie & Bertram, Dundas 12
 2nd do, Goldie, McCulloch and Co., Galt 6
 Scales, platform, C. Wilson, Toronto 5
 Scales, counter, C. Wilson, Toronto 5
 Scales, an assortment of, Barney and Hervoy, Springfield 5
 2nd do, Henry Ostram, Toronto 3
 Spinning machine, Alexander McConnell, Caledonia 3
 2nd do, John B. Lent, Hamilton township 3
 Tools for working in metals, assortment of, McKechnie and Bertram, Dundas 12
 2nd do, Thos. Worswick, Guelph 7
 Turning lathe, McKechnie and Bertram, Dundas 8
 2nd do, Littler, Maw and Co., Dundas 5

EXTRA ENTRIES—W. E. Beebe, Markham, pump augers and runners, 1st prize, \$1, and millstone picks, 1st prize, \$2; Paxton, Tate and Co., Port Perry three leaf double turbine water wheels, 1st prize, \$8; E. Thurison, Ancaster, card clothing setting machine (English) 2 prizes, 1st and 2nd, \$1 and \$1; Joseph Westman, Toronto, cooper's bellows, 1st prize, \$2, and portable forge, 1st prize, \$1; Lewis Bright, Brampton, Bright and Mallen's self connecting car couple, 1st prize, \$4; George Blake, Whitby, machine for cutting off round iron pipes, 1st prize, \$2; Jas. Findlay, Toronto, Findlay's improved self-adjusting vice, 1st prize, \$2; Thomas B. Van Every, Goderich, portable steam engine for steaming food for cattle and horses, 1st prize, \$3; McKechnie and Bertram, Dundas, planing and matching machine, 1st prize, \$10, dimension planer, 1st prize, \$3, pony plower, 1st prize, \$9, car mortising machine, 1st prize, \$6, power mortising machine, 1st prize, \$4, wood

shaping machine, 1st prize, \$5, and car wheel borer and a tenoning machine, 1st prize, \$10; Stratton and Walton, Toronto, mill picks, 1st prize, \$2; C. H. Waterous and Co., Brantford, lath machine, 1st prize, \$5, and lath boulder, 1st prize, \$5; Goldie, McCulloch and Co., Galt, tenoning machine, 1st prize, \$5, circular re saw machine, 1st prize, \$5, flusher earthing machine cloth brusher, 1st prize, cloth sheen, 1st prize, wool picker, 1st prize, measuring and winding machine, for cloth, 1st prize, hand waste picker, 1st prize, water wheel governor, 1st prize, four millstones, 1st prize, and proof staff, 1st prize, for the whole, \$10 and diploma; Jones and Co., Markham, 5 steel amalgam bell, 1st prize, \$1; C. Wilson, Toronto, butcher's seal, 1st prize, \$2; Robert Emery, Toronto, saw trough press, 1st prize, \$1; C. T. Pala grave Montreal type casting machine, operated by a workman, 1st prize, \$4; J. O. Parker and Bros., Toronto, assortment of machines for the manufacture of soda water, 1st prize, \$5; H. T. Smith, steam pump for manufacturing soda water, 1st prize, \$5, French cottage shop fount for soda water, 1st prize, \$1, and an enamelled cylinder for containing soda water, 1st prize, \$1; Dickey, Neill and Co., Toronto, stationary steam engines not in operation, 1st prize, circular saw rig, friction gear, friction set, works not in operation, 1st prize, log cutting machine, 1st prize, and double edging machine, 1st prize, for the whole diploma and \$10; Hiram Kimball, Toronto, low water indicator, \$2; A. F. Whaley, Markham, iron manipulator, 1st prize, \$1, Sweet, Barnes and Co., Syracuse, N. Y., champion drill for drilling iron, 1st prize, E. Thurison, Ancaster, card clothing setting machine (American), 2nd prize, C. H. Waterous and Co., Brantford, double edger, 2nd prize, \$4; Goldie, McCulloch and Co., Galt, combined moulding and matching machine, 2nd prize, \$3; Littler, Maw and Co., Dundas, wood shaping machine, 2nd prize, \$10; H. T. Smith, Toronto, square marble fount for soda water, 2nd prize, \$1. Commended—John Shaw, Whitby, Shaw's improved washing machine, J. B. Johnson, Toronto, working model of steamboat; Jas. McKelvey, St. Catharines, a cream still, or portable cream gatherer, \$5; Jonathan Downing, Clarke, family clothes mangle, \$1; Sweet Barnes & Co., Syracuse, N. Y., one champion drill for drilling iron, \$10

CLASS 49. MACHINES, SEWING AND KNITTING—51 ENTRIES

JUDGES—John Fensom, Toronto, M. C. Lutz, Galt and Samson Worthen, Guelph
 Best knitting machine, family, Lam's Knitting Machine Co., U.S. 27
 2nd do, Huxley Knitting Machine Co., New York 6
 Best sewing machine, manufacturing, C. V. Williams and Co., Montreal 20
 2nd do, L. C. Mendon, Toronto 2
 Best sewing machine, family, Wilson, Bowman and Co., Hamilton 25
 2nd do, Guelph Sewing Machine Co 15
 Best sewing machine, button hole, Guelph Sewing Machine Co 10
 2nd do, Wheeler and Wilson, New York 12
 Best sewing machine, embroidery, Wheeler and Wilson, New York 5
 2nd do, Guelph Sewing Machine Co 6
 Best sewing machine, single thread, Guelph Sewing Machine Co 5
 2nd do, G. W. Gates and Co., Toronto 3

EXTRA ENTRIES—C. G. Hampton, Hamilton a fluting machine, 1st prize, \$5; A. M. Forster, Hamilton, boiler purger and vacuum lubricators, 1st prize \$2; G. W. Gates, Toronto, hand-sewing machine, double thread, 1st prize, \$5; M. Hutchinson, Toronto, hand-sewing machine, 2nd prize, \$1

NOTE BY THE JUDGES—The Judges would especially recommend to the Association that sewing machines should be classified in more classes; in doing so the Judges could do better justice to the manufacturer and purchaser. We would recommend the following division or classification:

- 1 Class, or fine work.
- 2 " " Coarse work
- 3 " " Coarse and fine work
- 4 " " Light leather work
- 5 " " Heavy leather work
- 6 " " Improved sewing machine fixtures

CLASS 47. METAL WORK (MISCELLANEOUS), INCLUDING STOVES—230 ENTRIES

JUDGES—Peter Moran, Prescott, Wm. Buck, Brantford and J. N. Tarbox, Hamilton
 Copersmiths' work, an assortment, Beard Bros & Co., Toronto 8
 2nd do, Copp Bros., Hamilton 5
 Engineers' brass work, an assortment, David S. Keith, Toronto 8
 2nd do James Morrison Toronto 7
 Files, collection of cast steel, W. L. Kennin & Co., Montreal 3
 Fire-proof office safe, J. & J. Taylor, Toronto, diploma and 8
 Gas fixtures, an assortment, David S. Keith, Toronto 7
 2nd do, George Harding Toronto 1
 Goldsmiths' work, J. G. Joseph & Co., Toronto, Gold and silver leaf, C. H. Hubbard, Toronto 4
 Iron work from the hammer, ornamental, James Berry, Toronto 1

Plumbers' work, an assortment, George Harding, Toronto 4
 2nd do, James Morrison, Toronto 5
 Sheet brass work, an assortment, John Bovall Toronto 6
 Silversmiths work, J. G. Joseph & Co., Toronto 6
 Tinsmiths work, an assortment, John Bovall Toronto 6
 Tinmiths lacquered work, an assortment, N. L. Piper and Son, Toronto 6
 Wire work, an assortment, Wm. H. Rice, Toronto 6
 Cooking stove for wood, Copp Brothers, Hamilton 6
 2nd do, Beard Brothers and Co., Toronto 4
 Cooking stove for coal, Copp Brothers, Hamilton 6
 2nd do, Beard Brothers and Co., Toronto 1
 Furniture for dining stove, one set, Beard Brothers and Co., Toronto 6
 2nd do, Copp Brothers, Hamilton 3
 Hall stove, for wood, James Moore, Brantford 7
 2nd do, Copp Brothers, Hamilton 7
 Hall stove, for coal, Copp Brothers, Hamilton 1
 2nd do, Beard Brothers and Co., Toronto 1
 Parlour stove, for wood, Beard Bros & Co., Toronto 3
 2nd do, Copp Bros., Hamilton 3
 Parlour stove, for coal, Beard Bros & Co., Toronto 5
 2nd do, Copp Bros., Hamilton 5
 Parlour grate, Robert Forsyth, Toronto, Diploma and 5

EXTRAS First prizes were awarded to the following:—Copp Bros., Hamilton, vice, 12 sad irons, and agricultural furnace, \$1; John Bovall, Toronto, 2 toll lamps, improved arhimedeian ventilator, assortment silver-plated railroad lanterns, assortment brass railroad lanterns, assortment tin railroad lanterns, assortment railroad tail lamps, assortment railroad gauge lamps, assortment railroad switch lamps, 2 improved carriage lamps and assortment silver-plated collectors, for the whole, \$15; W. Stillchamp, Toronto, druggists' and jewellers' show cases, assortment of jewellers' trays and sample of silver-plating, for the whole, \$11; John Trot, Oakville, improved drum heater, improved patent teapot and improved patent adjustable stove-pipe, for the whole, \$5; W. R. Munger, Toronto, assortment of japanned goods and Munger's improved fire-proof housemaid's box, \$5; Jas. Morrison, Toronto, cabinet brass work, steam indicator and hydraulic test pump (brass), for the whole, diploma and \$15; James Robertson, Toronto, lead shot \$1; N. L. Piper & Son, Toronto, 4 tea canisters (Chinese painting), \$1; Dickey, Neill & Co., Toronto, general machinery forgings, \$1; B. R. Deacon, Montreal, Deacon's patent coal safe, etc., \$1; A. W. Russell, Toronto, collection of gold and silver watches and chronometers (marine and pocket), diploma; Fred Oakley, bolts, nuts and washers, \$3; George Harding, Toronto, fountain for lawn or conservatory improved soda water fountain, iron trap for asylums and prisons, aquaria for conservatories, iron screen with marble slab for heating coils, iron pipe boiler for heating purposes, iron telescope force and lift pumps, for the whole, \$18; David S. Keith, ornamental brass counter rail, \$5; Parson Bros. Toronto, assortment of kerosene fixtures, \$5, one hotel cooking stove for coal, \$1; W. O. Littleford, Toronto, hair work for jewellery \$2; W. L. Kimmond & Co., Montreal, assortment of recent files \$2; George Stapley, Jefferson, N. Y., iron-clad factory milk can, iron-clad factory milk pails, \$5; Montreal Rolling Mills, assortment of lead pipes, \$2.

The following received second prizes:—James Robertson, Toronto, assortment of lead pipe; David S. Keith, Toronto, steam and vacuum gauges; George Harding, Toronto, iron pipe boilers for heating pumps; Montreal Rolling Mills, shot, \$1; John Ritchie, Toronto, sample of counter rail, \$3; John Collins, Toronto, assortment of steam pressure and vacuum gauges, \$1; Copp Bros., Hamilton, agricultural furnace, \$7; Wm. Althuis, Paris, a portable heater, \$5; Hiram Piper, Toronto, 3 coal hods, \$2; Thos. Stenard, Hamilton, elbow and brush for cleaning stove pipes, \$1; N. L. Piper, Toronto, 2 ventilators, \$4; Jas. Robertson, Toronto, assortment lead pipe, 2nd prize, \$2.

A diploma was awarded to James Morrison, Toronto, for steam gauges.

CLASS 48—MUSICAL INSTRUMENTS—37 ENTRIES.

JUDGES—L. N. Soper, St. Catharines, Thos. W. White, Hamilton, and G. M. Scribner, Chatham.
 Case, for or on any kind of instrument, best made and finished, R. S. Williams & Co., Toronto 25
 2nd do, W. Bell & Co., Guelph 15
 Harmonium, McLeod, Wood & Co., Guelph 12
 2nd do, W. Bell & Co., Guelph, equal 12
 Meadeon, W. Bell & Co., Guelph 6
 2nd do, R. S. Williams & Co., Toronto 1
 Organ, cabinet or parlour, R. S. Williams & Co., Toronto 12
 2nd do, W. Bell & Co., Guelph 8
 Best piano square, Heintzman & Co., Toronto 15
 Best piano, cottage, Heintzman & Co., Toronto 10

Best piano of any kind (instruments awarded prizes in other sections allowed to compete), Heintzman & Co., Toronto..... 15

2nd do, Joseph F. Rauber, Whitby 8
EXTRA ENTRIES.—The following were awarded first prizes:—McLeod, Wood & Co., Guelph, reed (hall) organ, \$3; Leonard Allen, Garafrana, one bass and one snare drum, \$4 R. S. Williams & Co., Toronto, melodeon and organ reeds and keys, \$2. Wm. McLoughlin, Toronto, polishing or turpentine varnish, and graining in rosewood on pianofortes, \$1

CLASS 49—NATURAL HISTORY 28 ENTRIES
JUDGES—Thos. McLivraith, Hamilton, Dr R. Mylens, Berlin, W. Saunders, London, and Mrs. Beatty, M. D.

Best birds, collection of native, stuffed, with common and technical names attached, and classified so as to show those injurious and those beneficial to agriculture and horticulture, S. Herring, Toronto \$12

2nd do, J. Sands, Toronto 8
Plants, collection of native, arranged in their natural families, and named, John Macoun, Belleville 10

2nd do, Miss Jane Choate, Ingersoll 6
Saml. Wilmot, Newcastle, specimens of preserved and living fish Highly commended
John Macoun, Belleville, set of Canadian trees, named and classified Commended

NOTE BY THE JUDGES—After a careful examination of Mr. Wilmot's specimens of salmon, White Fish and Trout, illustrating in a very interesting manner the production and growth of these fish, we regard his display as well worthy of an extra prize and diploma.

CLASS 50—PAPER, PRINTING, PENMANSHIP, BOOK BINDING, AND TYPE 36 ENTRIES

JUDGES—D. W. Bisby, St. Catharines; George Eyc. Brampton; and Daniel McGregor, Seaforth

Best book-binding (blank book), assortment of, Brown Bros., Toronto \$5

2nd do., Wm. Warwick, Toronto 3
Best book-binding (letter-press), assortment of, Brown Bros., Toronto 5

2nd do., A. Dredge & Co., Toronto 3
Best letter-press printing (plain), GLOBE Printing Company, Toronto 5

Best letter-press printing (ornamental), GLOBE Printing Company, Toronto 5

Best letter-press printing—Posters, plain and ornamental, Globe Printing Comp'y, Toronto 5

Best paper-hangings (Canadian paper), one dozen rolls, assorted, M. Staunton, Toronto 6

Best penmanship, business hand, without flourishes, Odell and Trout, Toronto 4

2nd do., E. G. Conklen, Hamilton 2
Best penmanship, ornamental (not pen and ink pictures), Odell and Trout, Toronto 4

2nd do., E. G. Conklen, Hamilton 2
Best pocket-hooks, wallets, etc., an assortment, Brown Bros., Toronto 5

EXTRA ENTRIES—Wm. Downie, Hamilton, sand paper, emery paper and emery cloth, 1st prizes, \$3. C. T. Paisgrave, Montreal, set of type cases and cabinet of cases, one set of labour-saving brass rule and metal furniture, 1st prizes, for the whole, \$6; Brown Bros., Toronto, embossed cloth case, &c., 1st prize, \$2; Mitchell and McKroy, Guelph, quarter thousand boxes of envelopes, 1st prize, \$2. Mitchell & McKroy, Guelph, one case of assorted window paper, \$3; F. P. Flanagan, Paris, Eastman's penman's assistant, &c., \$3.

CLASS 51—SADDLERY, ENGINE HOSE, TRUNKMAKERS' WORK, LEATHER, &c.—90 ENTRIES.

JUDGES—Hugh Cant, Galt; Duncan McKay, Brantford; and W. Edwards, Toronto.

Saddlery, &c.

Collars, an assortment, Robert Nicolls, Toronto \$5

2nd do, Thos. Stanton, Toronto 3
Engine, hose and joints, 2 1/2 inches diameter, 50 ft. of copper rivetted, J. C. McLaren, Montreal 8

Harness, set of double carriage, Philip Young, New Hamburg 8

Harness, set of single carriage, Philip Young, New Hamburg, and Garduer and McKay, Brantford (equal), each 7

Harness, set of team, Garduer & McKay, Brantford 6

2nd do, H. McCrorey, Fergus 4
Leather machine belting, an assortment, J. C. McLaren, Montreal 8

2nd do, Whalley and Woods, Montreal 5
Saddle, lady's full quilted, Thos. Thompson, Toronto 8

Saddle lady's quilted safe, Lugsdin and Barnett, Toronto 6

2nd do, J. S. Thompson, Toronto 4
Saddle, gentleman's plain shafted, Lugsdin and Barnett, Toronto 6

2nd do, Thos. Thompson, Toronto 4
Trunks, an assortment, Lugsdin and Barnett, Toronto 8

Whips, an assortment, H. A. King, Hamilton 4

Saddle and Harness Stock.

Cheek for horse collar, one piece, Donald Clark, Morrison 6

2nd do, Jas. Moore, Etobicoke 4
Belt leather, 30 lbs., James Wilson, Mitchell 4

2nd do, J. C. McLaren, Montreal 3
Peter King, Fergus Commended

Brown strap and bridle, leather, one side of each, Wm. Kerr, Fullarton 1

2nd do, Jas. Wilson, Mitchell 3
Carriage cover, two skins (whole) Peter King, Fergus 4

Decisions, three dressed, H. Ferdinand, Waterloo 3

Harness leather, two sides, Peter King, Fergus 3

2nd do, Bowman and Zinkan, St. Jacobs 4
Hog skins for saddles, three, James Wilson, Mitchell 4

Horse blankets, two pairs, Cornwall Manufacturing Co. 6

2nd do, D. S. McFarlane, Pickering 3
Kersey, for horse clothing, one piece, Cornwall Manufacturing Co. 5

2nd do, John Moore, Etobicoke 3
Skirting for saddles, two sides, James Wilson, Mitchell 4

2nd do, Wm. Kerr, Fullarton 3

EXTRA ENTRIES.—The following were awarded 1st prizes: James Wilson Mitchell, 1 side buff bridle leather \$4, and one side carriage, \$1. Lyden & Bennett, Toronto, steple chase saddle, \$4. J. C. McLaren, Montreal, patent tanned lace (Canadian), \$3; Robert Nicolls, Toronto, 2 suits of horse clothing, \$3. Wm. Kerr, Fullarton, 1 side stirrup leather, 1 side rim do, and 1 side trunk do, \$3. The following received 2nd prizes: Jas. Wilson, Mitchell, 1 side of loop leather, \$2 and 1 side of collar leather, \$2. Jas. McLaren, Montreal, horse leather, \$2. Thos. Thompson, Toronto, gentleman's light steple chase saddle \$3

CLASS 52.—SHOE AND BOOTMAKERS' WORK, LEATHER, &c.—2 ENTRIES.

JUDGES—John McMechan, London John Tyner, Toronto, and J. H. Thomas, Berlin.

Shoemakers' Tools and Stock

Best boot and shoemakers' lasts and trees, an assortment, Selway and Fiedale, Toronto \$3

Best calf skins, two, Bowman and Zinkan, St. Jacobs 1

2nd do, Peter King, Fergus 2
Best calf skins, two, grained, Bowman and Zinkan, St. Jacobs 3

2nd do, Peter King, Fergus 2
Best calf skins, two, morocco, Bowman and Zinkan, St. Jacobs 3

2nd do, Peter King, Fergus 2
Best cordovan, two skins, Bowman and Zinkan, St. Jacobs 1

2nd do, Peter King, Fergus 2
Best cow, buffed, two skins, R. Camirant, Montreal 3

2nd do, Bowman and Zinkan, St. Jacobs 2
Best cow, pebbled, two skins, Bowman and Zinkan, St. Jacobs 3

2nd do, Peter King, Fergus 2
Best splits, two skins, Bowman and Zinkan, St. Jacobs 3

2nd do, Peter King, Fergus 2
Best dog skins, two dressed, Bowman and Zinkan, St. Jacobs 3

2nd do, Peter King, Fergus 2
Best kip skins, two sides, Bowman and Zinkan, St. Jacobs 3

2nd do, Peter King, Fergus 2
Best kip skins, two, grained, Bowman and Zinkan, St. Jacobs 3

2nd do, Peter King, Fergus 2
Best leather, kinds not otherwise described, assortment of, Peter King, Fergus 5

2nd do, R. Camirant, Montreal 3
Best linings, six skins, H. Ferdinand, Waterloo 3

Best soft leather, two sides, Mackle and Kirkpatrick, Chippewa 3

Best upper leather, two sides, Wm. Kerr, Fullarton 3

2nd do, Bowman and Zinkan, St. Jacobs 2
Best upper leather, grained, two sides, Peter King, Fergus 3

2nd do, John Haver and Sons, Guelph 2

EXTRA ENTRIES.—Isaac Myers, Hamilton, Myer's patent combined boot and shoe stretcher, 1st prize, \$4.

CLASS 53—WOOLLEN, FLAX AND COTTON GOODS, FURS AND WEARING APPAREL—183 ENTRIES.

JUDGES—W. D. Michael, Oshawa; F. Guggisberg, Galt; Andrew McNaughton, Newcastle; and Nelson Haight, St. Catharines.

Best bags, 1 dozen, cotton, Percy Cotton Mills, Hastings \$4

Best blankets, woollen, 1 pair, Cornwall Manufacturing Company 6

B. D. Foley, Darlington, and Miss Beith, do, highly commended.

Alex. McLaren, Caledon, commended.

Best carpet, woollen, one piece, Mrs. J. McClellan, Bowmanville 6

2nd do, Thomas A. Allan, Grimsby 6
Best carpet, woollen stair, one piece, Mrs. J. McClellan, Bowmanville 7

Best carpet, rag, one piece, Mrs. John Marshall, Palermo 6

2nd do, L. S. Lundy, Drummondville 3

Best cassimere cloth, from merino wool, one piece, Paton Manufacturing Company, Sherbrooke 7

2nd do, Barber Brothers, Streetsville 4

Best cloth, filled, one piece, Barber Brothers, Streetsville 7

2nd do, Paton Manufacturing Co., Sherbrooke 4

3rd do, special, Mrs. Jane Harper, King 3

Best counterpanes, two, A. Ploethners, Preston 5

2nd do, James Brown, North Dumfries 3

Mrs. J. Grant, Puslinch, and Miss M. Dowyard, Toronto, were highly commended.

Best cordage, assortment of, Edward Law, Kingston 7

Best drawers, fancy made, woollen, six pairs, Armstrong, Metrae & Co., Guelph 5

Best flannel, factory made, one piece, Adam Lucas, Sherbrooke 5

2nd do, S. T. Willett, Chambly 3

Best flannel, not factory made, one piece, Donald Clark, Morrison 5

2nd do, Alex. McLaren, Caledon 3

Best flannel, scarlet, one piece, S. T. Willett, Chambly 5

2nd do, Adam Lucas, Sherbrooke 3

Best fur, gentleman's set of, R. W. Cowan, Montreal 5

Best fur, lady's set of, R. W. Cowan, Montreal 5

Best fur, Scotch robes not less than three kinds, an assortment, R. W. Cowan, Montreal 15

2nd do, H. Ferdinand, Waterloo 8

Best gloves and mitts of any leather, an assortment, H. Ferdinand, Waterloo 6

Best Oxford grey cloth, one piece, Paton Manufacturing Company, Sherbrooke 6

2nd do, Barber Brothers, Streetsville 3

Best satin, black, one piece, Barber Brothers, Streetsville 6

Best satin, mixed, one piece, Barber Brothers, Streetsville 5

2nd do, John Richardson, North Pelham 3

Best shawl, home made, Mrs. Hinman, Haldimand 1

2nd do, T. A. Allen, Grimsby 2

Thomas Thompson, Williamsburg, was commended

Best sheep-skin mats, dressed and coloured, an assortment, R. Camirant, Montreal 6

2nd do, H. Ferdinand, Waterloo 4

Best shirts, factory made, three of each, woollen and Angola, Armstrong, Metrae and Co., Guelph 5

Best stockings and socks, factory made, woollen, three pairs of each, Armstrong, McCrae and Co., Guelph 4

Best tweed, winter, one piece, Paton Manufacturing Company, Sherbrooke 6

2nd do, Barber Brothers, Streetsville 4

Best tweed, summer, one piece, Paton Manufacturing Company, Sherbrooke 6

2nd do, Barber Brothers, Streetsville 1

Best winsey, checked, one piece, John Richardson, N. Pelham 5

Best woollen cloths, tweeds etc., an assortment, Paton Manufacturing Company, Sherbrooke 10

2nd do, Barber Brothers, Streetsville 6

Best woollen shawls, stockings, drawers, shirts and mitts, an assortment, Armstrong, McCrae and Co., Guelph 10

2nd do, Donald Clark, Morrison 6

Best yarn, white and dyed, 1 lb. of each, Armstrong, McCrae and Co., Guelph 3

2nd do, Arch. Frank, Caledon 2

Best yarn, fleecy woollen, for knitting, 1 lb., John Richardson, N. Pelham 3

2nd do, Armstrong, McCrae and Co., Guelph 2

Best yarn, cotton, two pounds, Percy Cotton Mills, Hastings 3

EXTRAS.—D. S. McFarlane, Pickering, home made plaid, \$1; Alex. McLaren Caledon, flannel shirt, \$1; S. T. Willet, Chambly, piece of tweed flannel, \$3; Edward Law, Kingston, sash cord, \$1.

OMISSION.—Mr. Charles Boeck, of Toronto, received a diploma for an assortment of brushes at the Exhibition, as well as a first prize.

NOTE BY THE JUDGES.—The Judges recommend that in future the coloured fancy flannels be entered separate from white and plain colours.

The custom of renting rams for a year instead of selling them is quite common among English sheep breeders. Recently one gentleman let 120, at an average price not far from \$50 gold each. The highest price was about \$200 gold. These were Lincoln sheep; at another letting one ram was let for about \$250 gold.

Miscellaneous.

The Grain Exchange of the World.

No two syllables are more familiar in every grain-growing country of the four continents than Mark Lane. They head a column of all British newspapers; are quoted in French, German, Spanish and American journals. The corn exchange takes the name of the street in which it stands. It is the only market in London for corn, grain and seed. England is always a buyer of grain. The 77,000,000 acres in the United Kingdom never produce a sufficiency of cereals in the most abundant harvest to fill the mouths of the 32,000,000 people through the year. Hence the price that England pays for grain, settled tri-weekly at the corn exchange in Mark Lane, rules the prices not only at home, but slightly decreasing in the ratio of distance, all over the world. Mark Lane stands in the heart of mercantile London. It is close upon the Thames. On every side are vast warehouses, crammed with the freights borne in by every tide. Pendulous bales swing from fifty feet aloft. Casks plunge and duck headlong into cellars. The street is jammed with loaded wains. The wayfarer dives beneath nosebags, and rubs shoulders with dripping tires of broad-wheeled wagons.

The Corn Exchange stands in the centre of Mark Lane, on the eastern side. It was built soon after 1747, when the present system of factorage commenced. In an open Doric colonnade, sheltered, well lighted, roofed in from the weather, and covered by a large and handsome dome, stand before stalls filled with samples of every variety of grain and pulse productive of food for man and beast, factors and millers, lightermen and granary-keepers, bluff country gentlemen and Kentish farmers. There are more than seven hundred independent places of business. The counters are polished by the friction of grain. They are covered with open canvas bags, containing samples. All responsibility rests with the principals; who, if they do not deliver goods according to the sample, must abide the disagreeable consequences. Grain lies in heaps everywhere. It is under the stalls, on the seats, over the counters, and ankle deep covering the floor. The ever moving crowd are grinding it under foot. A hundred hands are taking samples from the bags, rubbing and comparing and "palming" them, and then throwing them upon the floor. "Why is not the grain returned to the bag?" was the question put to a friend. "That would never answer," he replied. "Suppose I were buying oats. I take a sample; try its dampness or dryness in my hand; shift it to my other, move it about, and examine its colour, smell, and taste. It has lost its dryness or dampness, is no longer a sample; and to return it to the bag would be to deceive the next comer. Of course I throw it on the floor. It is somebody's perquisite."—*The Independent.*

The Wool Product of the World.

We have before us an enquiry from a patron of the *Western Rural*, as to which is the heaviest wool-producing country in the world, and will answer by giving the following estimates of German statisticians, presuming them relatively correct:—

	Pounds.
Great Britain.....	260,000,000
Germany	200,000,000
France	123,000,000
Spain, Italy and Portugal	119,000,000
European Russia	125,000,000
Australia, South America, and South Africa	157,000,000
British North America	12,000,000
United States	95,000,000
North Africa	19,000,000
Asia, very general estimate	470,000,000

The aggregate production of the wools of the globe, by these estimates, is 1,610,000,000, or a pound and a quarter to each inhabitant, reckoned at 1,285,000,000 people.—*Ec.*

Two men in Boston have invented a device by which a horse is unhitched at once from a vehicle of any sort. A touch of the foot upon a treadle near the dash board releases the animal with a certainty, and applies a break which stops the carriage within a rod.

The California State Board of Agriculture have awarded State premiums to Mrs. E. M. Weston, Sacramento, for 626,000 silk cocoons; A. Packard, of Santa Barbara, for 150,000 cocoons; H. G. Ballow, of Yolo county, for 100,000 cocoons; and to several parties for mulberry plantations.

As an evidence of the extent of the cattle trade around Elora, the *Times* states that during the past week there was shipped from the Elora station nineteen carloads of cattle; each car would contain on an average twenty-one head, or a total of say four hundred head. In addition to this, several droves were driven to Guelph.

EXTRACTING WHEEL GREASE, ETC.—I have cleaned wheel grease from a nice silk thus: Laying the silk on a clean sheet folded to eight thicknesses, I rubbed the greased part with a soft cloth dipped in lard, moving the silk to a new spot frequently. After a time the wheel grease all went through, leaving only clean lard. This was then cleaned out in the same way, by rubbing it with some nice soap and alcohol, using a clean cloth to rub with, and frequently changing to a new spot on the under-laying sheet. The silk was then laid on a clean cloth, and rubbed dry with a soft cloth. A friend cleaned white Canton crape in this way, and you cannot find a place where it was greased.

DENOMINATIONAL OXEN.—A gentleman travelling in Texas met on the road a waggon drawn by four oxen, driven by a countryman, who, in addition to the skilful flourish and crack of whip, was vociferously encouraging

his horned horses after this fashion:—"Haw, Presbyterian! Gee, Baptist! Ahoh, Episcopalian! Geet up, Methodist!" The traveller stopped the driver, remarking to him that he had strange names for his oxen; he would like to know why he thus called them. Said the driver: "I call this ox Presbyterian, because he is true blue and never fails, pulls through difficulties, and holds out to the end; besides, he knows more than the rest. I call this Baptist, because he is always after water, and seems as though he'd never drink enough; then, again, he won't eat with the others. I call this Episcopalian, because he has a mighty way of holding his head up, and if the yoke gets a little tight he tries to kick clear of the traces. I call this ox Methodist, because he puffs and blows and bellows as he goes along, and you'd think he was pulling all creation, but he don't pull a pound unless you continually stir him up."

Advertisements.

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OR

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The undersigned has received instructions from **1 T. COL. TAYLOR**, to offer for sale at Springwood, Township of Westminster, one mile south of the Great Western Railway Station, LONDON, on **TUESDAY, 22nd NOVEMBER**, at 1 o'clock, the following

PURE DURHAM CATTLE:

1 yearling Bull, "PROL. D. 11" 870, bred by J. O. Sheldon, Esq., Geneva, U.S.
6 Pure Bred Cows, in calf to "Froud Duke"
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TERMS OF SALE—All sums under \$50 each, over that amount 12 months credit on approved joint notes, without interest. Account 8 per cent. per annum.
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Berkshire Swine
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I WILL sell on **WEDNESDAY, the 23rd day of November next**, at my Farm near Talula, Ill., on the Jacksonville Division of the Chicago & Alton R. R., my herd of Short-Horn Cattle, consisting of ten head No. 1 Bulls, including the Prize Bulls Duke of Forest Hill, Major Story and Major Jones, (the latter has never been beaten in the show ring; has taken six first prizes this fall) sixteen Cows and Heifers, including all my prize animals. I can safely say that it is the opinion of many of the best Judges that this herd of Cows is second to no herd in the country. Nothing would have induced me to part with this stock, but the state of my health being such that I cannot hope to be able to give it the necessary attention

I will also sell 60 head of Pure Bred Berkshire Swine—some fine South Down Sheep
20 head of First Class Jacks and Jennets
some fine Mules and Horses.

I want it distinctly understood that every animal offered will be sold to the highest bidder; there will be no reserves or by-bidders. Terms made known on day of sale. Talula is 21 miles from Jacksonville and 65 from Bloomington. Parties attending the sale will be provided for on the arrival of trains, either day or night.
J. H. SPEARS, Talula, Ill.
v2-11-11

October 25, 1870.

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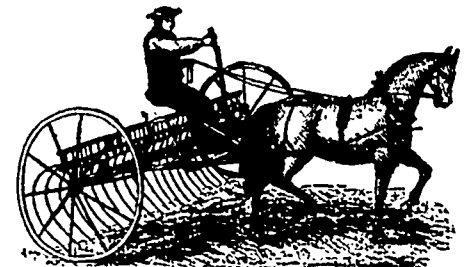
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Wishing to give more attention to the raising of bee and queens, I offer the following inducements till the close of the coming Provincial Fair—

To any person sending \$3, I will send my single-boarded hive with improved entrance, price \$3, or an individual right, price \$3, and my dollar book on bee culture, soon to be published; tickets will be sent for the book. For \$5, both hive and right, or an Italian queen, and the book. For \$10, or the highest bid above that during the next six weeks, a township right and the book. For \$12, or highest bid above that, a township right, one hive, and the book. For \$400, or highest bid above that, a right for the entire Province of Quebec, with the exception of two or three counties that are sold; this right is worth \$2,500. For \$200, or highest bid above that, I will sell a patent for a Self-coiling Buggy Hub, lately introduced, specimen carriage to be seen at Brocklin, Ont.; this patent is worth \$2,000. Sale of townships not to interfere with sale of hives upon the above conditions.
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Brooklin, Ont.

2-5-41.

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To Capitalists, Tenant Farmers, Agricultural Labourers, Mechanics, DAY LABOURERS, And all Parties desirous of Improving their Circumstances by Emigrating to a New Country.

THE attention of intending Emigrants is invited to the great advantages presented by the Province of Ontario. Persons living on the interest of their money can easily get eight per cent. on first-class security.

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Can buy and stock a Freehold Estate with the money needed to carry on a small farm in Britain. Good cleared land, with a dwelling and good bath and out houses upon it, can be purchased in desirable localities at from £4 to £10 Stg. per acre. Farm hands can readily obtain work at good wages. Among the inducements offered to intending Emigrants, by the Government, is

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All Persons over 18 years of age can obtain a FREE GRANT OF 100 ACRES.

The Free Grants are protected by a Homestead Exemption Act, and are not liable to seizure for any debt incurred before the issue of the patent, or for twenty years after its issue. They are within easy access of the front settlements, and are supplied with regular postal communication.

Registers of the Labour Market

And of Improved Farms for sale, are kept at the Immigration Agencies in the Province, and arrangements are made for directing emigrants to those points where employment can be most readily obtained. Several lines of railway and other public works are in course of construction, or about to be commenced, which will afford employment to an almost unlimited number of labourers.

Persons desiring fuller information concerning the Province of Ontario, are invited to apply personally, or by letter, to the Canadian Government Immigration Agents in Europe, viz.: Wm. Dixon, 11 Adam Street, Adelphi, London, W.C.; J. G. Moylan, Dublin; Charles Foy, Belfast; David Shaw, Glasgow, and E. Sunnys, Continental Agent at Antwerp.

Also to the Emigration Agents in Canada, viz.

John A. Donaldson, Toronto; R. H. Rae, Hamilton; Wm. J. Wills, Ottawa; Jas. Macpherson, Kingston; L. Stafford, Quebec; J. J. Daley, Montreal; E. Glav, Halifax, Nova Scotia; Robert Shiver, St. John, and J. G. G. Layton, Miramichi, New Brunswick, from whom pamphlets issued under the authority of the Government of Ontario, containing full particulars in relation to the character and resources of, and the cost of living, wages, &c., in the Province, can be obtained.

JOHN CARLING,

Commissioner of Agriculture and Public Works for the Province of Ontario.

Department of Immigration, Toronto, October, 1869.

v.2 121.

Markets.

Toronto Markets.

"CANADA FARMER" Office, Nov. 14th, 1870.

FLOUR AND MEAL.

The produce market generally has been dull during the past few weeks. Exportation from the leading grain centres of the West, in view of the approach of winter and the closing of navigation, has been very active. Hence all the distributing points are over-loaded with supplies. Millers in Ontario have procured wheat from the Western States cheaper than they could buy in the Province. This has of course tended to keep down prices here.

Flour—Fancy, \$5.40 to \$5.50; Sprm Extra, \$5.30. Oatmeal—\$5.00 to \$5.25. Cornmeal—\$4.00 to \$4.75. Bran—\$13.

GRAIN.

Wheat—Sprng, \$1.10 to \$1.15, Mid. Prod, \$1.10 to \$1.15; Soules, \$1.15 to \$1.25, Treadwell, \$1.12 to \$1.15. Barley—Inferior, 55c; Bright, 65c to 72c. Oats—42c. Peas—63c. Rye—70c.

HAY AND STRAW.

Hay—There has been a fair supply selling from \$11.00 to \$14.00.

Straw has been very scarce, and has in some instances brought as high as \$13 per ton, \$11 to \$12 being the ordinary price.

PROVISIONS

Beef—6c to 7c per lb. Mutton—6c to 7c. Pork—Mess, \$25 to \$26. Bacon—12c to 13c. Hams—14c to 16c. Lard—12 1/2c to 13 1/2c. Butter—18c to 20c. Cheese—12c to 15c; Royal Arms, 17c; Reesor's Standard, 18c. Eggs—25c to 25c per dozen. Hops—9 1/2c to 13c. Salt—Goderich, \$1.00, American, \$1.55, Liverpool, per bag, 75c. Hides—Live, 5 1/2c, dressed, 6c to 7c.

HIDES AND SKINS.

Hides—7c to 9c. Sheepskins—40c to 50c. Calfskins—12 1/2c to 15c. Wool—30c. to 31c.

New York. Flour—Dull, and 5c to 10c lower, receipts, 15,000 bbls; sales, 9,000 bbls, at \$4.90 to \$5 for Superfine State and Western; \$5.50 to \$6 for common to choice extra State; \$5.35 to \$6.60 for common to choice extra Western. Rye Flour, quiet. Wheat, dull at 1c lower; receipts, 173,000 bush; sales, 45,000 bushels, at \$1.20 to \$1.27 for new No. 1 spring; \$1.70 to \$1.37 for winter red and amber western. Rye, quiet. Corn, dull and lower; receipts, 25,000 bush; sales, 29,000 bushels, at 50c to 50c for old mixed western. Barley, unchanged; receipts, 6,900 bushels. Oats, firmer; receipts, 34,000 bushels, sales, 29,000 bush at 50c to 57 1/2c for western; 57c to 59c for Ohio and State. Pork, dull at \$24.37 to \$24.50. Lard, dull at 13 1/2c to 14 1/2c for steam, and 14c to 15 1/2c for kettle rendered. Butter, steady. Cheese, quiet.

Provincial Markets.

Montreal. Flour—Extra, \$6 to \$6 1/2; Fancy, \$5 50 to \$5 85; Welland Canal Superfine, \$5 25; Superfine No. 1 Canada Wheat, \$5 25 to \$5 75; No. 1 Western wheat, \$5 20 to \$5 25. No. 2 Western wheat, \$5 to \$5 05; Bag Flour, \$2 40 to \$2 50. Wheat, Canada fall, \$1 12, western, \$1 11 to \$1 12 1/2. Oats—Per 32 lbs, 42c to 46c. Barley, per 45 lbs, 67 1/2c to 72c. Butter, dairy, 19c to 21c; storepacked, 16c to 18c. Ashes, pots, \$6 05 to \$6 15; pearls, \$6 70. Pork, mess, \$25 to \$25 50. Dressed Hogs, \$7 to \$7 50.

LONDON, Nov. 8.—Spring wheat, \$1 15 to \$1 25. Red Faid do, 95c to \$1 10. White do, \$1 10 to \$1 20. Barley, 45c to 52c. Peas, 62c to 66c. Oats, 35c to 38c. Corn, 50c. Rye, 50c. Butter, rolls, 19c to 21c, do, tubs, 16c to 18c. Cheese, 9c to 13c. Eggs, 17c to 19c. Dressed Hogs, \$6 40 to \$7 12.

GALT, Nov. 8.—White wheat, \$1 15 to \$1 20; Treadwell, \$1 15 to \$1 17. Barley, 52c to 55c. Oats, 35c to 40c. Peas, 55c to 60c. Butter, 20c to 22c. Eggs, 15c to 16c. Potatoes, 2c. Pork, \$6 50 to \$6 75 per cwt.

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