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THE CANADA FARMER

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The Field.

Fighting the Devil with Fire.

The above heading, when interpreted, means, dosing the potato-beetle with Paris green We have never been in favor of this, and have never practised it. During the panic, for such it has been, created by the appearance of this insect pest, heralded by the terrible accounts of its devastating march over the Western prairies, it was well nigh useless to argue against the use of this virulent poison; but now that we have had the visitation three successive years, and have managed to survive, and also grow some potatoes, perhaps a few words of remonstrance may stand a chance of being patiently read

One strong argument in opposition to the use of this poisonous application, is that it can be done without. We have dispensed with it, and have had as good potatoes as our neighbors. So have many others. Of course, our expedient has been hand-picking Very tedious and costly, it is objected. Not so very, after all An intelligent farmer, in the state of New York, who has carefully experimented on it these three seasons past, says hand-picking can be done for three dollars an acre. Take the cost of Paris green, and the value of the time it requires to put it on, and how much do you save by the use of it?

The fact that the substance is a virulent poison should deter from its use unless absolutely necessary. It requires the greatest care in handling, so as not to get into the throat and nostrils of the operator It is by no means certain that it does not affect the plant and tuber. Entomologists have denied that it does them harm, but we are not convinced, and refuse to be until some satisfactory experience prove that those who take this ground are right. Florists know quite well how readily coloring matter is taken up by plants, and some of the most brilliant and charming effects have been produced in this way Some cases of severe diarrhœa, we have known attributed to eating early potatoes, may very likely have been at least partially caused by the application in question. In one neighborhood that we could mention, about a score of cows have died the present summer. A post mortem examination of some of them showed the presence in their stomachs of Paris green in sufficient quantity to cause death They were cows that ran on the commons, and they obtained the Paris green either by eating grass in the vicinage of potato patches that had been dosed with it, the wind having spread it outside, or by eating potato tops thrown over the fences out of plots where the poison had been used.

A third consideration against this practice is, that it thwarts the very means to which we are warranted in looking for ultimate deliverance from this pest. Prof. Riley, and other eminent entomologists tell us, that already twelve or thirteen insect enemies of the potato beetle have been discovered preying upon it, and it is to the multiplication of these, and the vigorous prosecution of their mission, that we must look for the extermination of the nuisance. But Paris green is as fatal to our friends as to our enemies. It is like a double-back-action-gun on the battle field—it kills our allies as well as our invaders.

The advice is usually given to plant very early to avoid the worst ravages of the beetle But a correspondent of the *Country Gentleman*, who advocates hand-picking, says he shall plant none but early varieties hereafter, such as the Early Rose and Peerless, and plant them *late*. He thinks the early potato crop *only provides* rich pasturage for the beetle, facilitating their increase, and helping their depredations. Whether potatoes are planted early or late, cultivators cannot be too prompt in watching for the appearance of the beetle, so as to destroy them, and with them their progeny for the season.

Threshing and Stacking Wheat.

Mr. Joseph Harris contributes the following lively and instructive article on the above subject to the *American Agriculturist* for September:

We are now (July 23) threshing our wheat—drawing it in from the field as we thresh. I am the only man in this neighborhood who adopts this practice. Come and see how it works. After the wheat is cut, and the sheaves put into stooks, we rake the ground carefully between the rows of stooks, going over the ground twice in opposite directions. Before commencing to thresh, we load up all the rakings When these are threshed, all is plain sailing We have three waggons and two teams; as soon as a waggon is unloaded, it is pushed out of the way by hand, and the next load is driven up. The man who has just unloaded the previous waggon, takes off the team and puts it on to the empty waggon, and goes to the field for another load. He reaches the pitcher just as he has finished the third load, and the work is fairly commenced. There is one waggon at the machine, another going back or forth, and another being loaded in the field. Where this kind of work is new to the men, it will be likely to dissipate some of their old traditions. They will find that a machine does not thresh as fast as they have hitherto supposed. Two of my best men jumped on to the waggon to throw the sheaves to the machine. I had a man to spare for half an hour, so I said nothing It is one of the old notions that it takes two, three or four men to "get the grain to the machine" from the stack or bay. "One man can't get it us as fast we want it," said the threshers. "Perhaps not," I replied, "but at any rate one man can throw the sheaves off the waggon as fast as the man in the field can pitch them on to the waggon." "We want three good men on the straw stack." This is another traditional notion. One man is pitching on to a waggon all the grain and straw that is going through that machine.

But wait. They have just finished a load, and the threshers see we are talking about them, and are doing their best. Let us see how long it takes to thresh the next load. How long? Fourteen minutes, and there was 15 bushels in the load. That will do. Now then, about stacking the straw. With a fair crop of wheat like this, that will go say 30 bushels per acre, there is about 100 lbs. of straw to each bushel of grain. That load we have just threshed, therefore, weighed 2,400 lbs. The machine takes out 900 lbs. of grain, and 1,500 lbs. of straw is elevated by the straw carrier on to the stack. Now, if one man can pitch 2,400 lbs. on to a waggon, at an average height of 9 feet, why are three stout men required to handle 1,500 lbs. in the same time on the level? "You get on to the stack and try it," says the Deacon, "and you will find out." I have been there a great many times. The labor consists, not in moving the straw, but in moving yourself about the stack. And the way to lessen the labor is to make large forkfuls An average forkful of straw, say as large as a two-bushel basket, does not weigh more than 8 lbs. As men usually build a stack, they walk around the outside more than in the centre, while the centre ought to be kept full and trodden solid, so that, as the stack settles, the inside or roof shall not settle as much as the outside. To do this, as well as to lessen the labor, you should, in building the outside layers of the stack, take pains to get the largest forkfuls of straw, and not waste your strength in placing a thin layer of straw around the outside of the stack. It is like carrying water in a two-quart pail. You move 150 lbs. of your own weight to move 4 lbs. of water.

Every year before commencing to thresh, the question arises "how long and how wide shall we make the stack bottom?" This year we made it 36 feet long and 20 feet wide. The machine stands about three feet higher than the bottom of the stack. After we had threshed 402 bushels of wheat, the stack was 24 feet high, with an average width of 25 feet, and an average length of 38 feet. The stack, therefore, contains 22,800 cubic feet. And if we calculate that each bushel of wheat gives us 100 lbs of straw, there are 20 tons of straw in the stack This is not far from my old rule of calculating, that each ton of straw requires about 1,000 cubic feet of space. "But you won't leave your stack without topping it off," remarks the Deacon. No, I have got about 8 tons more straw to put on top; and it has got to go up there whether it will or not. By Monday morning the stack will have settled at least four feet, and I propose to carry the walls up four feet higher than they are now. Then by making a good steep roof, it will hold it all, and we shall have 28 tons of straw in a stack, the bottom of which is 36 feet long and 20 feet wide. It is of course more labor to top off a high stack, but there is a great advantage in getting as much straw as possible under one roof.

An English Prize Farm.

The Royal Agricultural Society, which held its annual show at Bedford in July, offered among its premiums a prize of a fifty-guinea cup and fifty sovereigns for the best-managed farm, and another of fifty sovereigns for the second-best farm. Descriptions of these farms are published in our English exchanges, and we copy from the *Agricultural Gazette* the following account of the first-prize farm of Mr. Richard Cheekley, of Brogborough, Bedfordshire.

Mr. Cheekley's farm occupies about a square mile of land between the Ridgmount and Lidlington stations on the Bedford and Bletchley line, by which it is divided. It lies on the dark-colored Oxford clay, here forming a ridge or escarpment, on the height of

which the substantial and somewhat lofty farmhouse is situated, overlooking an admirable landscape. About two-fifths of the land is in permanent pasture A good part of the arable land was broken out of this pasture 20 or more years ago. Its present tenant has, we understand, lived all his life upon the farm, and certainly its crops, and its herd and flock, the result of his management—for they are all home-bred—do great credit to his judgment and his skill. There are two sets of farm buildings—one of brick and wood and slate and thatch, including barn and stabling, and several yards, and large accommodation for cattle; the other, newer and more systematically planned, with yards and sheds and central double-stalled cow-house. There are here also some excellent cottages for the herdsman and the shepherd. A herd of 45 cows were being milked as we walked round the building, having come into their stalls for the purpose, and receiving at the time a meal of chaff, and cake, and bean and maize meal. They are a capital lot of large-framed, unpedigreed Short-Horn cows, exhibiting quality as well as size. They are kept for a butter dairy. We saw also an admirable lot of calves, a first-rate set of yearlings, and a still more admirable lot of (some 20 or 30) 2-years old heifers in the fields. Only the cow calves are kept, the others being sold early. A flock of long-woolled sheep (about 240 ewes) are in the fields. A number of pigs are fattening in the sties (the skim milk being available for them); and a rare lot of poultry of all kinds spread themselves over the home pasture.

What is there to feed all this stock? Not much that we could see upon the farm just now. The grass fields are the only home resource, we believe, at present, and they are very bare—there are no cabbages, no vetches, no second cut of clover, and everything else is eaten very bare: but, said our guide, "our master don't make hisself uneasy about that—they've got water laid on in every field, and what little grass there is is as good as hay." Add to this the artificial feeding twice a day, and the cows are taken care of. And for the sheep, though there is a large extent of clover eaten barely down just now, some of the fields are unoccupied and getting rapidly freshened up with last week's rains; and certainly there is no sign anywhere of any want of prosperous well-doing in any of the stock.

The land is laid out in large fields, from 20 to 40 acres apiece, and the grain crops are magnificent We have nowhere seen better or more even wheat, nor barley anywhere so good; the oat crop, too, is first rate. And these great areas—40 acres at a glance—are very striking pictures of what good cultivation can effect; for the soil is not naturally very tractable or fertile. It has been drained; and a handsome tankard on the sideboard testifies to the fact that it was drained at the tenant's expense more than 20 years ago. Considerable purchases of artificial manure are made for the mangels, kohl rabi, Swedes and turnips, of which we saw one piece of 40 acres in various stages of growth. There is also a large area in bare fallow which had been worked by hired steam power. And thus good tillage, artificial manuring, and much enrichment of the home made manure by large quantities of cake and meal bought for the dairy stock, together produce the admirable results which this year's crops exhibit. Of the 16 farm horses by which the land is worked, we saw three powerful Suffolks, with foals by their sides, in the field. The four course system for the most part rules the cultivation: (1), wheat; (2), fallow, or fallow crops; (3), barley or oats; and (4), clover—being the succession—beans, for which the land is well suited, being taken occasionally in the last quarter; there are no beans this year, however. We saw about 170 acres of wheat, barley and oats, 90 acres of fallow and fallow crops (more than half bare fallow) and some 70 acres of clover An immense produce of grain off 160 to 170 acres, such one-year old mutton as a flock of 240 heavy long-woolled ewes can yield, a quantity of pork and bacon, and the butter of 40 or 50 cows;—this, with some store stock and some beef, of which, however, we did not obtain detailed information, is the produce of a square mile of generally stiff clay soil upon the Duke's estate; and for this, after long years of farm management—persistent, excellent, unpretentious, from boyhood upwards—the tenant of a quiet, life-long home awakes to find himself the foremost farmer of the five counties which this year's district of the Society includes

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A GOOD FIELD of corn is described by the *Danville Union*, Indiana, whose editor says: We found upon actual measurement that it would average eleven feet or over, many stalks being found thirteen feet high. We had to stand on the top of a 10-rail fence to see over the field, and the tops of the corn seemed as level almost as water. We have seen many fields of corn this season, but none better than this.

How I Killed Thistles.

The thistles evidently did not suspect my intentions until the latter part of July or first of August. Nothing unusual had occurred till that time. The ground—a clover sod—was ploughed in the spring, but that was only what is always done for a corn crop. It was a Londoner, I think, who objected to farming—that "land was always naturally wrong side up, and had to be turned before a crop would grow." Then the field was dragged, cultivated, rolled and marked out in the usual way, and finally planted on the 28th of May. In all this there was nothing uncommon—nothing indeed that the thistles really objected to The field was ploughed so early that the young growth had not commenced, and though the plough did cut some roots in two, it only replanted them in mellow soil for a more vigorous growth than before A week after planting, the field was gone over with Thomas's smoothing harrow; but that also had no reference to the thistle. If the roots were sending up new shoots, the fine tilth of the soil would make them to grow all the faster. Even the first cultivation, both ways, and the hand-hoeing, were not expected to kill the thistles Farmers generally do as much as that, and yet seldom, if ever, make much headway in this direction. There was no reason why this should prove an exception. If the roots suffered a slight check, it was sure to be made up by the long breathing spell commencing at haying time and continued through the remainder of the season. Most farmers drop the hoe then, and what with harvesting and preparing ground for wheat, they never take it up again. Now a thistle left in mellow, rich ground at early haying time, will often ripen its seed before frost comes to cut it down. It will spread at the root and be ready to choke the next year's crop of oats or barley, and be rampant again in the wheat the year after.

So it was at harvest time that I began the real campaign against the thistles. The clover sod was rotting and the thistle roots were showing effects in their unusual vigor. The cultivator was run each way through the rows, cutting out everything except in the hill. Then every weed of any kind was carefully pulled from among the corn, and those between the rows cut up by a hoe. After this two more dressings with a cultivator at intervals of one week apart. My neighbors advised me to wait a little longer, as "the thistles were not up yet;" but I was determined that they never should get up. By this time the corn formed a dense mass of foliage, completely shading the ground, and the stalks were so bent and twisted that further horse cultivation was impossible. Just then the barley had to be got in and I waited a whole week after the last cultivation I then went through with a sharp hoe, cutting out every thistle as deep as the hoe would reach in mellow ground, and where the hoe could not go I used the thumb and finger. Taken thus young thistles are a very harmless weed, as they have no thorns worth speaking of, but they do stain the fingers badly. I went over the field once after that, bending under the crossed and twisted cornstalks. But there were few thistles. Keeping them under ground so long, together with the dense mass of foliage above them was too much, and they never recovered. The corn was followed by barley and that by wheat, and not a thistle was to be seen in either crop excepting close to a stone fence on one side of the field.

Now for summing up the cost and results of the operation The field was one of the most weedy on the farm; yet it was cleaned in one season, at a cost of two cultivations each way and two hand-hoeings more than every farmer gives. These came at a season of the year when labor is most expensive; but estimating it at its highest, it did not cost me $6 per acre, or say $50 for the nine acres in the field. This would include pay at $1 per day for an old mare to do the cultivating, while if not so used said mare would be in pasture doing nothing. I am sure I made $50 worth more of corn than I should if I had not tried to kill the thistles. The second hand-hoeing and pulling the weeds from the hills more than paid the cost It came just as the corn was earing, and made the ears fill better if not grow longer. At least something caused an unusual number of stalks to produce two ears, I laid it to killing thistles. The only loss was the usual stolen crop of pumpkins, which I did not plant that year because I expected to cultivate later than is common, but the pumpkin crop grown in this way, like everything else that is stolen, always costs more than it is worth.

No farmer is excusable for having thistles on land that has been in corn. Killing them costs nothing but the use of $5 or $6 extra labor per acre, from July till the crop of corn can be harvested and sold and every cent repaid. But this is not the whole or greatest advantage. The land is cleaner for all future crops. Millions of weed seeds are stimulated to growth by the unusual thoroughness of cultivation, and these are got rid of forever. Frequent stirring of the ground breaks the crust which forms on the surface, and makes the soil absolutely more fertile than it would have been. I got ten bushels per acre more of barley than I would if the corn had not been cleaned of thistles. I am sure I got at least five bushels per acre more of wheat. And the field still shows the good effects, and is worth at least $10 to $20 per acre more than if covered with thistles. So then for the use of $50 for three months, I got a return almost immediately of the capital, dividends of 100 to 200 per cent. for two years, and the capital is unimpaired and capable of yielding equal dividends for years to come. Can anything pay better than this?—*Cor. Country Gentleman.*

Cleaning Carrot Seed.

Gather the heads when fully ripe and thresh them with a flail before the stems are brittle enough to crumble or break up. Rake these stems from the seeds, then put the seeds in some out of the way place until dry, cold, freezing weather in the winter. By threshing the seed with a flail when frozen dry, the fuzz can be separated from it by running it through a fanning-mill. The seed, and heavy fine dust, will fall through the wheat screen into the screen-box. The seed that goes over the screen can be threshed again. After the seed has once passed through the wheat screen it can be separated from the fine dust by putting a grass-seed sieve (or any sieve too fine to allow the carrot seed to go through) in the place of the wheat screen. The fine dirt, too heavy to be blown out, will now go through this fine sieve into the screen-box, and the clean seed will pass over. Two men will thresh and clean 300 to 500 pounds of seed in a day. Or if you wish to prepare your seed for market this fall, you can do so by drying it a day or two in the hot sun after separating it from the stems as before recommended When thoroughly dried in the sun it can be threshed and cleaned as readily as when frozen; but it can only be done when the atmosphere is very dry. I frequently see inquiries, how to clean cucumber and tomato seeds? When the cucumbers are fully ripe, but still sound, cut them into halves, give each half a sudden squeeze with the hand, and nearly every seed will be forced from the cucumber. Tomatoes may be left till very soft and the whole jammed up fine, or they may be rubbed over a sieve coarse enough to allow the seeds and juice to pass through into a tub Let the pulp and seed (either cucumber or tomato) stand in a barrel from one to four days, according to the weather, to sweat just enough to allow the pulp to separate from the seed. The whole can then be washed through several waters, and the seed dried. Care must be taken not to let it sweat long enough to injure the vitality of the seed.—*Cor. N. Y. Tribune.*

IT HAS BEEN SHOWN that at the Michigan Agricultural College a single bushel of plaster added a full ton of hay to the yield of an acre of ground in the five, most of it in the four mowings that followed—two crops being taken off the ground each of the two years succeeding the sowing of the plaster

KEEPING OLD POTATOES.—Potatoes, to be good, should never be exposed to the light, but be kept in as dark a place as possible. After they begin to sprout in the spring they should be taken up from the bins or heaps and be kept in boxes or barrels. If you have a few barrels saved out for family use, instead of picking them over and spreading them every few weeks, put them into enough barrels so that you can easily turn them from one to another. Have one extra barrel, and once every week turn them all out from one barrel to another This keeps them moving so often that the sprouts cannot grow enough to do much harm The sprouts which come out from the potato use up the nourishment it contains, and leave it soft, watery, and insipid. By treating them as proposed above, they may be kept in condition for the table several weeks longer than by sprouting them, and at the same time save a deal of work.

Grasses and Forage Plants.

Curing Corn Fodder.

Many farmers who have no difficulty in drying the common coarse corn stalks, from which ripe ears have been pulled, are disappointed and vexed to find that they do not succeed in curing thickly-sown corn stalks that have been grown for fodder purposes. They wonder why the thin, spindling stalks do not keep at least as well as the thicker ones. There are two reasons for this. One is that the thin stalks lie more compactly together in a stack or mow than the coarse ones do, and are therefore more apt to ferment and get mouldy. The other is that the stalks which have ripened ears are much less surcharged with moisture than those which have retained all the succulent juices within themselves.

Ventilation is the great thing to be secured in the preservation of corn fodder. If placed in stooks, well bound at the top, it may be left in the field until very late in the autumn, so as to give the *searching winds opportunity* to dry it thoroughly. Some leave these stooks of corn in the field, and haul them as they are needed for foddering during the winter. If carted to the barn-yard and stacked, thorough ventilation must be secured by some device or other, else the crop will be a loss. A stack may be built on a platform of poles raised a little from the ground. An easy method of securing ample ventilation is by means of empty barrels, furnished with handles, or a cross rope, and drawn upwards as the stack is built. Other expedients to accomplish the same end may be resorted to, but effectual measures must be adopted to provide circulation of air, or the fodder will spoil. It is easy enough to cure corn stalks in such a way as to have them green, fresh, and toothsome, if the proper means be taken, and there is all the difference in the world between this fodder when well and when ill-cured. In the one case it is a sweet, nutritious feed, while in the other it is mouldy, bad-smelling, repulsive, and worthless.

A Crop of Chess Hay.

Farmers in the United States are very much in the habit of writing the local as well as the agricultural journals, giving details of their farm practice and experience. This is a good thing, and tends to awaken interest and spread information among the tillers of the soil. A farmer in Pike county, Illinois, publishes the following item in the local paper. It is not only interesting as narrating how a crop of weeds was utilized and a crop of clover saved, but in its bearing upon the much vexed subject of the spontaneous growth of chess, it is worth reading and considering:—

"Three years ago I had twenty acres in wheat that I seeded to clover, getting a fair stand for the latter. Last year, and the season previous, I pastured the clover. Unfortunately, last season I was obliged to use my pasture too late, and the consequence was my clover drew out and froze out in the winter, and this spring the crop was entirely gone. I determined, having more ground for ploughing than I could use, to let it lie, grow up to weeds, and whatever clover might come turn it under early and re-seed to wheat and clover, thus losing one year's use of the ground. Instead, however, of growing up to weeds there came up as full a crop of chess as if it had been regularly sown to chess, and I have just finished mowing and stacking, and now have in stack over twenty tons of almost entirely pure chess. I cut it green, and it consequently did not scatter out, and made the heaviest hay I have handled for many a year. There is a small quantity of clover with it, but no weeds, and my ground is as well seeded to clover as I could desire. And now about the chess. I can readily understand how the seed could lie in the ground and germinate under favorable circumstances, but the quantity that thus lay there for three years, and then grew, surprises me. And why it had not germinated, and been eaten off by the cattle during the two years it was in grass also surprises me. Be it as it may, I have got the crop, have not lost the year's use of the ground, and the field is nicely settled to clover—better, in fact, than it was at first."

Experiments with Fertilizers on Grass.

Mr John I Carter, Superintendent of the Eastern Pennsylvania Experimental Farm, sends the *Bucks County Intelligencer* the following report of experiments made with artificial manures:—

Plots containing one-eighth of an acre were laid out on ground in wheat last year, seeded to timothy and clover, and the grass well set, though principally clover. April 10th, 1874, the following fertilizers were sown at the rate of $30 per acre, except the plaster and salt. The grass was cut June 26th, and put up in good condition June 27th, resulting as follows:—

No. of Plots.		lbs of fertilizers.	lbs of hay per ¼ acre.
1.	Nothing		600
2	Plaster	1 peck.	650
3.	I P Thomas Ground Bone	50 lbs.	690
4	Pure Peruvian Guano	45 "	735
5.	S. Carolina Dissolved Rock	75 "	700
6.	Sulphate of Ammonia	17½ "	650
7	Nitrate of Soda	25 "	675
8.	Muriate of Potash	41 "	651
9.	C H North's Animal Dust	45 "	624
10.	Common Salt	1 peck.	
11.	Mix of Sulp Ammonia, 6 lbs, Muriate Soda, 7 lbs, S. Carolina Dissolved Rock, 25 lbs	38 lbs.	691
12	South Carolina Rock, double quantity	150 "	735
13.	Nothing		550
14	Equal values of Soda and Potash		600

Additional experiments were made with plots upon which fertilizers were used when they were in wheat. These plots were retained to test the continued action of the fertilizers. The third column shows the yield of wheat in 1873 on these plots.

No. of Plots.		lbs. of fertilizers.	lbs. of hay per ¼ acre	lbs. of wheat ¼ acre.
1.	Bone and Ash Compost	$30 worth	644	2[illegible]
2.	Dissolved S. Carolina Rock		700	257½
3.	Kainit		500	225
4.	Ville's Wheat Food		620	251
5	Nothing		496	190
6	Ground Bone on surface broadcast		700	2[illegible]2½
7.	Ground Bone, half broadcast, half drilled in with wheat,		716	238
8.	Ground Bone, all drilled in with the wheat		710	252

In another field, on thin ground, where a peach orchard had previously stood, were plots testing manner of ploughing. When ploughed for corn, eight plots were subsoiled sixteen inches deep; a corresponding number ploughed six inches deep. When ploughed for wheat the subsoil plots were ploughed with double Michigan plough, twelve inches deep; the other plots with common plough, six inches deep, other treatment alike in all respects.

	lbs. of hay
Average of subsoil plots per ¼ acre	501
do. common plough per ¼ acre	411

A Few Remarks on Turnip Cultivation.

It has frequently been said, "Oh, there is nothing new under the sun," and I am not so vain as to think that I know more than everybody or anybody; but, as a woldsman of North Lincolnshire who has had twenty years' experience, perhaps I may be able to show something in a new light. Now, it is my opinion, and I hold it as a rule in general, that land only requires twice ploughing for turnips. If there is a little couch-grass (or, as it is generally called in Lincolnshire, "twitch") let it, if possible, be got out in the autumn by digging it out with a manure fork before the land is ploughed at all after the harvest, as the best and also the cheapest way of getting rid of it, and carting it into a heap to rot. The remaining part of cultivating to be done by the Benthall's broadshare, drag harrows, Cambridge roller, &c. With regard to the drilling I may say the drill rows here vary from 18 in. to 21 in. apart—I should say by far the greater part 20 in. from one row to another, and set out and singled with a 9 inch hoe. Now, the principal point I wish to advance is this—that, as the turnip receives its nourishment and support from all round, as likewise the top spreads all round, I think each turnip should be equidistant from its fellow, whatever the distance apart may be, which must be decided by experience and with regard to circumstances, nature of soil, kind of turnip sown, growing more or less top, &c. But the theory I advance is worth considering on the ground of economy in more ways than one, and especially with regard to horse-hoeing; for, being in straight lines each way, as soon as they had been horse-hoed one way over they could at once commence the other way, without having any alterations to make with regard to the arrangements of the horse-hoe. Let us suppose an acre of Swedes so planted, with two turnips to every square yard of land, averaging 7 lbs. each, or a stone per square yard; that would give 30 tons 5 cwt. per acre. But, planted on this principle, how far would they be apart? As it took me some little trouble to calculate this, I think perhaps some of your readers will the better remember it if they calculate the distance for themselves. I shall be glad to hear the opinion of any person at all interested in this matter; and also to answer any question on the point so far as I am able.—*Cor. Field.*

Sorrel.

This plant, *Rumex Acetosella*, is a very great nuisance on some soils, especially light, sandy ones, and is almost as difficult to eradicate as Canada thistles or quack. The best process we ever tried for its extermination is to make the soil as rich as possible, and then seed heavily with grain or clover, and so crowd the sorrel out. The *Prairie Farmer* says:—

Sorrel may be eradicated the same as other weeds, by summer fallowing, or by putting the land into some hoed crop, the production of which will make it necessary to keep the soil clean. If the soil contains many seeds, it may be necessary to follow this course for more than a single year. Another method of subduing sorrel is to put the land into some forage crop and manures that will stimulate its growth. Red or white clover are good crops, and lime and plaster good manures for this purpose. At one time it was believed that an application of lime was sure to kill sorrel, and at the same time was certain to sustain the growth of valuable plants. The fact that sorrel may be found growing in the crevices of ledges of lime rocks will disprove this theory. It is quite certain that the only agency the lime exerts is to sustain the growth of the plants which will overshadow the sorrel, and thus check its growth. It is a popular idea that the application of some substances will act as a poison to certain plants and as food to others, but the notion finds little to support it in science or observation.—*Rural Home.*

Securing the Buckwheat Crop.—Consult any experienced miller, and he will tell you that one great fault with buckwheat is its grit (dust or ground). This it gets by lying on the ground or in swaths, the rains spattering the dust against it when it is moist or mud, and hence adheres the more to it. This should be avoided, as it hurts both buckwheat and the flour. Cut and immediately set up in loose (unbound) sheaves, tied at the top to give it the appearance of a cone, so as to shed the rain. In this way the air will circulate through, prevent mouldings, and yet not dry so fast but the berry will have a chance to mature and ripen, for it is to be cut when part of the crop is yet in the dough—the largest part—and some still less advanced. If left till all is ripe, the crop will be late, and if heavy, will be twisted and lodged, and much of it will "shell" in harvesting. A clear sound crop is what is wanted, and not a dusty, with the late kernels dried, and hence shrunk instead of rounding out and maturing, as they will if put up in sheaves as soon as cut. *Do not* in any case let ve lying on the ground, and cut early, when the greater part of the grains are in the dough.—*Utica Herald.*

Canada Thistles wanted for Manure.—An old man, not afraid of Canada thistles, writes as follows to the *Country Gentleman* of September 17th:—"In your paper of September 3, 1874, page 563 there is a way told us by W. J. F. *now to kill Canada thistles.* I bought part of this farm in 1821, it being nearly all woods. This timber was nearly all cut into cordwood for boiling salt at Salina. Of course the land was cleared slowly, and *thistles got the start of me*, but they are the poor man's clover. I wish I had every thistle in the state on this farm. I have turned under, I presume, five tons of them to the acre when full y in the blow—*summer fallowing and taking off* 1,400 bushels of wheat the next year, from 35 acres, and not one bundle left unbound. This 1,400 bushels was put into shock in five days, with three cradles, and hands to rake and bind. Those who dread thistles do not know how to get good out of evil. I have drawn wheat to Albany from this farm before the Erie Canal was made, this farm joining that ditch for a mile. A poor man must work and step quick to perform what I have done. I have sunk more than 200 stones on this farm, some that would weigh more than twenty tons each, and am quite smart yet, for a man born before the nineteenth century.

Agricultural Emplements.

Steam Cultivation.

We gave in a recent issue a few articles on steam cultivation, and the probability of its adoption in Canada, at an early period. Let us continue the subject.

The reports of farms cultivated by steam under one system or another, which for many months back have been made public fully demonstrated the advantages derivable from the use of steam power in the important operations of tillage These may be briefly enumerated as follows:—1st, a considerably less number of horses are required; 2nd, the work is more efficiently done, and at the most favorable time and 3rd, far better crops are grown, and at greatly reduced costs.

In calculating the expense of steam cultivation, it is important to estimate the favorable changes which are effected by it in the character of the soil, both as regards drainage and tillage operations, and we cannot better express this than by the following extract from the report of the Royal Agricultural Society of England on the steam plough trials at Leeds.

"That culture by steam power is destined to supersede that by horse power to an enormous extent can scarcely be doubted by those who witnessed the trials. On the very light sons cultivation may be effected at perhapsas low a price peracre by horse as by steam power; but we think it an error to measure the advantages of the two systems by their direct relative cost. It is the time and manner in which it is done that gives value to the operation; for instance a ploughing or scarifying during the dry autumnal months may be of the greatest possible benefit, whereas the same operation in the winter might be a positive injury. But as farmers can never command a sufficient amount of horse power for the busy season, they must then be dependent on the auxiliary power of steam, which is not only the sole auxiliary power to be had, but will also be found the cheapest power, even on light soils, if deep cultivation be adopted. On all well-drained land, open furrows will be obliterated. These not only cause a waste, but offer a serious impediment to the well-working of reaping and mowing machines"

On farms cultivated by steam, every after-operation requires less power, and only half the number of operations are required to produce the same results; this is accounted for in two ways—first, the land will be generally dealt with at the most suitable season of the year, and when it is in the best condition for the purpose, which is immediately after the removal of the crops: secondly, the implements can be made to work quite under the roots of weeds, and by this means get the land into clean condition; improved crops being the result, will also tend to keep the land clean.

The comparatively rapid motion of the implements when worked by steam power lays the soil so lightly that the atmosphere can take the greatest effect upon it; and the land being broken up when hard and dry in autumn, remains in a rough state, thus allowing the frost to act on the subsoil and to pulverize the soil by degrees, leaving it in a most desirable state for the reception of the seed,—much better than could be effected by the clod-crusher or any other mechanical application.

Another important point is gained by avoiding the indented path produced by the treading of the horses by which the "pan" (on strong land particularly) becomes so solid as to be impervious to water, and too hard for the roots of plants to penetrate through it into the subsoil.

Indeed, great as are the advantages of steam power in enabling the tiller of any kind of soil to get through his work in the busy season in a way which he could not otherwise do for want of sufficient horses—and in a style far superior to that in which it could be done if he had the command of sufficient horse power at the moment favorable for its employment—it is most probably on clay land that the greatest advantage will be apparent from steam cultivation.

When we consider that a team of horses and men such as are used in England for clay land tillage, weigh at least two tons, and that this weight must pass over every ten inch strip of earth before it can be turned over as a furrow slice, it will be evident that the already dense soil will be made more solid by the tramping of the horses, and thus left in a scarcely more favorable condition for the action of the atmosphere than before it was moved To counteract this, how many subsequent operations are required, crossings, and re crossings, repeated ploughings and harrowings, until at last, if the season be favorable, the soil is reduced to a tolerable tilth, but if there is a wet autumn and spring, or an unfavorable winter sets in, every clay land farmer knows how deficient is the result in proportion to the cost and labor expended.

Contrast all this with the operation of the steam ploughing tackle No matter how busy the horses or oxen may be at the favorable moment, the steam engine may be brought out, and the plough or cultivator, as may be most suitable, carried on two large wheels, neither of which travels on the land which has been moved, and which distributes its weight (27 cwt.) over 40 inches breadth (thus reducing the weight carried on each 10 inches width to less than one-sixth what it is by horse-power)—passed rapidly through the stubborn soil, loosening and laying it in such a manner that the dry autumn atmosphere takes immediate effect upon it, and the rain and frost of winter leaves it, when spring comes, in such a soft and wholesome condition as no horse cultivation can ever effect.

The various plans which have been introduced for the purpose of steam cultivation, are, 1st. Traction engines passing over the land and drawing the tillage implement after them. 2nd. The guideway system, in which a traction engine works on a permanent railway laid on the land 3rd The (direct traction) system in which an engine works along one headland, and an anchor along the opposite one, whilst the implement is drawn to and fro by an endless rope passing round a pulley on the engine, and one on an anchor. 4th. The stationary system—in which the engine and windlass are stationary—and the implement is worked by a wire rope passing round pulleys and anchors, placed at various convement situations.

The results achieved on the 1st and 2nd plans have been so costly and unsatisfactory, whilst the difficulties attending their employment are essentially so insurmountable, that they may be dismissed without further description.

Where a farm is laid out in large fields, no stationary windlass can compete with a set of tackle where the engine and anchor move along their respective headlands. With a stationary windlass, of whatever kind, as soon as 10 or 12 acres are finished, horses have to be fetched, and either the ropes and anchors or the engine and windlass removed, thus causing both loss of time, increasing the labor of the men, and diminishing the quantity of work that can be got through in the day But when the land is laid out in small irregular fields with crooked fences, or when it is desired to apply an ordinary portable engine, we recommend a stationary windlass with tackle, fitted with the new compensating brake, and although more parts and more labor and rope will be required, it will be found best adapted to contend with the adverse circumstances of occupations not specially laid out for steam tillage

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Hay Cutters.—A Missourian has patented an invention which consists in improving hay and straw cutters by the application thereto of a grinding plate that takes up the wear on the knife as fast as it occurs, a peculiar support for the cutter blade, and also novel means for operating the feed roll. These are said to cause the machine to operate with less labor and to cut the hay or straw more uniformly than is usual.

Endless Chain Tread Powers.

Tread powers have been extensively used both in England, the United States and Canada, during the past few years, but an objection was sometimes raised to them that they were hard on the horses. To those of long experience, however (we mean horses), they seemed to offer no great trouble. A late invention in the gear work of these machines facilitates the work for the horse whilst it secures equal velocity.

Among the principal improvements claimed for this power over others before in use, are the application of wheels of greater diameter which generate the force and motion, and using connecting and multiplying cog-wheels and shafts by which an infinite variety of forces and velocities of the band-wheel may be obtained, while the travel and labor of the horses remain unchanged; and at the same time the several gears and shafts having a corresponding strength to each other, as the ratio of the squares of their several velocities require, thereby securing the greatest ease in working, greater durability, and at the same time adapting them to every possible want of the farmer, planter, and mechanic.

The perfect and, at the same time, simple adjustability of all the working parts of the horse powers, by which the best possible results may be obtained at all times. without regard to amount of use or wear, is superior to that of any other ever made, as nearly ten years constant and extensive use has demonstrated, not an instance being known where they have become useless and inefficient from any amount of wear of the several working parts.

In the power all the gearing is removed from under the horses and inside the power, to the outside, where it can at all times be seen and cared for, and readily attached or transposed for the purposes for which it is to be used, as also from side to side of the power as is desired.

This power also is the only one provided with heavy cast-iron flanged track throughout the entire circuit of the small wheels, both last features being of great utility. The angle of elevation necessary to operate it is never greater but often less than that of any other Railroad Power, and is less than one and a half inches to the foot, with horses weighing one thousand pounds each, and without harness.

The one-horse power is mostly used for light work and where it is necessary to be removed to a new position, as in sawing wood at railway stations, and in the wood lot, among the trees and without roads, for the purpose of driving log cross-cut saw mills; also for mechanical purposes, where the room occupied is a great consideration; also, for threshing grain among farmers with small crops and small barns to operate them in.

When it is consistent, it is always preferable to use the wide power, as its cost is but little more than the narrow. While it is preferable for one horse alone, its effective force with two horses is increased nearly one hundred and fifty per cent. Again, the work is much easier for the team when two horses are used together and no changing of team is required. Whenever an excess of force is generated by both horses, the power should be lowered to a less angle of elevation, until their weight and travel just equal the resistance or work being done, thereby making it still easier for the team.

The weight of the two-horse power is about 1,700 pounds, that of the one-horse power 1,350 pounds.

Dull Mowing Knives increase the draft of the machine more than is imagined. At a trial of reapers by the American Institute, at Poughkeepsie, it was found by a careful dynamometer test that the draft of each machine was nearly one third greater when the knives were dull, and in this test the knives were only moderately dull, having been used to mow only one acre. It is therefore important to keep the knives sharp. Any one can prove the truth of this statement by himself trying a sharp and then a dull scythe. He will declare that there is even more than one-third difference.

A Cement Roller.—The *American Agriculturist* thus describes it:—The roller consists of segments eight inches thick, thirty inches diameter, made of concrete, or a mixture of one part of cement and four parts of sand, with a V edge. The centre, in which the axle works, is made of four pieces of hard wood, cut so that the wear is upon the ends of the fibres, and channeled upon their outer edges. The centres are fastened in the mould, and the cement is cast around them, where it sets and hardens, holding them firmly. The segments are strung together upon an iron axle, one inch in diameter, fitted into a frame. A tongue is fastened in the usual manner, and two horses are required to draw it.

Horticulture.

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

THE ORCHARD.

Fruit Growing in the Ottawa Valley.

The recent meeting of the Fruit Growers Association of Ontario, held in the city of Ottawa, has called attention to the fruits of that region, and has added not a little to our knowledge of what may be done there in the way of fruit-raising.

The valley of the Ottawa enjoys a high reputation for productions of various kinds. Her lumber production is enormous, her quarries of stone inexhaustible, her marble abundant and susceptible of a high finish, her agricultural productions of a most valuable description, but we have been in the habit of thinking of that region as one possessing a climate far too inhospitable to admit of the growing of fruits Nor has this impression been altogether without foundation. The severity of her long winters, with upwards of sixty degrees of frost, must of necessity preclude the raising of many very fine sorts of apple, pear, plum and cherry, thus almost always necessitating in the planter a degree of knowledge of the relative hardihood of different sorts which he could not be expected to possess.

Many were the attempts made to grow the finer varieties of our various fruits, and nearly as many were the failures, not because of a want of knowledge on the subject of fruit culture in general, but because of a failure to perceive what modifications the peculiarly severe climate and the nature of the soil demanded. Trees were introduced which were wholly unable to bear the severity of that climate, and planted in soil not prepared to receive them. To these two causes, the planting of varieties too tender to endure the climate and the want of proper drainage of the soil, may be attributed the many and repeated failures which have resulted so disastrously to the planters themselves, and thrown for a time such a cloud over the whole subject of fruit production throughout that region. Happily for all interested, that cloud is being lifted. With the increase of wealth among the population there has come an increased attention to the question whether good fruit could not grow in their own grounds. Relieved from the pressure of that necessity which compelled the earlier settlers to toil that they might eat and to eat that they might toil, then came the leisure to study out the differences of constitution in different sorts of the same fruit, and to experiment with these different sorts until those were ascertained which could bear the severity of the climate; while at the same time the means wherewith to underdrain and thoroughly prepare the soil for the growing of fruit trees was at command.

Hence it is that now we have some well established data to go upon in the planting of fruit trees in the Ottawa valley, some points ascertained by actual experiment which serve as guides and finger posts for all who may hereafter desire to grow fruit there. From the very interesting discussions and relations of experience in these matters which were elicited by the recent meeting of the Provincial Association, we can now say to every land owner in the valley that he may grow good fruit of many kinds if he will carefully inform himself upon three points:

1st. The varieties that are sufficiently hardy.

2nd. The drainage of the ground upon which he intends to plant; and

3rd. The form in which he trains his trees.

Experiment has demonstrated that the varieties of the apple which can be grown successfully are the Duchess of Oldenburg, Red Astracan, Snow Apple, Hawthornden, St. Lawrence, and Golden Russet, and all the different crab apples. To this list of varieties might be added, with every prospect of success, a few more which have proved to be very hardy in other places where the winters are fully as severe as they are at Ottawa. Of these we venture to name the Telafski, Pewaukee, Wallbridge, Wealthy, Ackerman, Allen's Russet and Clark's Orange. They have stood unhurt through winters in which the thermometer frequently ranged from thirty to forty degrees below zero, and therefore are worthy of a trial wherever hardihood is an essential requisite.

It seemed to be a very difficult matter to find a pear tree that would endure the climate. Even the Flemish Beauty had been killed to the snow line, yet we are disposed to believe that with proper drainage and training both the Flemish Beauty and Clapp's Favorite could be grown and fruited there.

Some of the finer sorts of plums have been grown with a measure of success. Gentlemen spoke of the Bradshaw, Coe's Golden Drop, Lombard, &c, but the impression remains that plums do not succeed as well here as they do at Owen Sound, whether it be because of the cold or for want of proper drainage, it is not yet possible to decide.

The only cherry that has been successfully grown here is the one known generally as the Kentish or Red Pie Cherry. Probably a few of the different sorts of the hardy Morello cherries would succeed but none of those likely to endure the climate are of any better quality than the Kentish.

Quite a number of varieties of the early ripening grapes will thrive well here, but they must all be laid down and protected during the winter. The Eumelan, Hartford Prolific, Israella, Delaware and other ripening not later than these, could be grown with great satisfaction.

Small fruits of every description and every sort, whether currants, raspberries, gooseberries, blackberries or strawberries, can be grown here in the highest perfection and with the greatest ease The snow affords them a perfect protection from the cold so that sorts which are tender at St. Catharines never suffer from the winters at Ottawa. There is no reason why a plantation of small fruits for the Ottawa market should not be a success.

One of the difficulties in the way of the successful growing of the apple and other large fruit trees seems to be found in the amount of water present in the subsoil. During the winter the ground is not frozen, and the snow is gradually but continually melting and filling the ground with water. And in the spring this process goes on in increased proportions, so that when the sun has become warm and by its heat is causing the sap to flow in the branches, and the buds to expand, the roots are kept inactive by the cold wet soil. Under such circumstances it is impossible for the trees to thrive, they may endure for a few years until the roots get into this cold, wet subsoil, and then they will begin to show signs of decay and rapidly die out. The only remedy for this evil is thorough underdraining. Where sufficient fall can be had, the drains should be about four feet deep and not more than forty feet apart, and of sufficient size to discharge the surplus water rapidly Would our Ottawa fruit growers thus prepare their ground before planting their fruit trees, we feel sure they would find their trees would be much longer lived, and that some varieties could be successfully grown that have hitherto failed.

From what we saw in the grounds of the Hon. R W Scott, and gathered from conversation with other gentlemen, there can be no doubt that *low heads* is the proper form in which to train fruit trees in the Ottawa valley. A long upright trunk is too bare and exposed for the extremes of that climate, and growers have learned by the test of experiment that those trees are the most healthy which are trained low.

The members of the association living in milder latitudes have returned from the meeting favorably impressed with the capacity of that section for the production of many varieties of fine fruit. All that is required to enable gentlemen to grow all their own summer and early autumn fruits is a judicious selection of sorts, combined with well drained soil and properly trained trees.

Alkali for an old Apple Tree.

In considering the growth of organisms, the action of the alkalies is to be looked upon as scarcely less important than that of air and water. Lime is the great animal alkali, and potash the vegetable one; its old name of vegetable kali expressed that fact, and all the potash of commerce is well known to be derived from wood ashes. The importance of potash as a manure has been frequently overlooked by farmers, who rarely know the large amount of this material found in grass, grain crops, leaves, barnyard manure, roots, and fruits. How potash acts in plants, in conjunction with carbon and silex, to form woody fibre, starch, sugar, and oil, is yet unknown to chemical observers, but the fact of its action is beyond a doubt.

Liebig long since pointed out that the chief cause of barrenness is the waste of potash carried off by such crops, especially tobacco, with no replacement by proper manure. How many millions of pounds of potash have been sent to Europe from the forests of America, and in the grain, tobacco, and hemp! Luckily one alkali may be replaced by another, and we have received a considerable quantity of soda from European seaweed and in the shape of salt. Latterly, nitrate of soda from natural deposits in South America is brought to us at a cheap price.

The point to which we now call attention is that our farmers and fruit growers have ignored, or rather have been ignorant of, the importance of wood ashes as a vegetable stimulant and as the leading constituent of plants. Even coal ashes, now thrown away as useless, have been shown both by experiment and analysis, to possess a fair share of alkaline value. According to our observation, if the practice of putting a mixture of wood and coal ashes around the stems of fruit trees and vines, particularly early in the spring, were followed as a general rule, our crops of apples, grapes, peaches, etc., would be greatly benefited in both quality and quantity, and the trees and vines would last longer. We will relate only one experiment.

Some twenty-five years ago, we treated an old hollow pippin apple tree as follows:—The hollow, to the height of eight feet, was filled and rammed with a compost of wood ashes, garden mould, and a little waste lime (carbonate). The filling was securely fastened in by boards. The next year the crop of sound fruit was sixteen bushels from an old shell of a tree that had borne nothing of any account for some time. But the strangest part was what followed. For seventeen years after filling the old pippin tree continued to flourish and bear well.—*Scientific American.*

HEMLOCK HEDGE.—There are few if any of our native evergreens that surpass in gracefulness, compactness, and attractiveness for ornamental hedging that of the common hemlock Those who have not seen a hedge of this kind can form no idea of its beauty when kept under control by cutting, which it will bear quite as well as Arbor Vitæ or Norway Spruce When the young plants are taken from their native forests, they are poorly furnished with fibrous roots, and the loss in transplanting is as a rule large, but when grown for two or three years in a nursery row, they are no more difficult to transplant than Arbor Vitæ. Nurserymen follow this plan, and farmers who can get young hemlock from the forest would do well in this matter to imitate the nurseryman's example.—*Indiana Farmer*

CULTIVATED AND GRASSY ORCHARD.—The *Practical Farmer* describes an experiment made on the Eastern Experimental Farm of Pennsylvania, in a standard Bartlett pear orchard. One portion had lain in grass five or six years, and had formed a tough sod. This was carefully and thoroughly ploughed last year Another portion had been cropped with vegetables until within two years, when it was seeded to grass. Both portions had been alike dressed with fresh ashes a year ago, at the rate of one bushel per tree. Both set a heavy crop of fruit this year The trees on the portion two years in grass, ripened their fruit soonest, dropped their leaves prematurely, and the fruit was smaller than the other. The trees on the portion ploughed last year retained their leaves late, the fruit was large and perfect, and sold at $4 per crate wholesale.

THE FRUIT GARDEN.

Growing Strawberry Plants in Pots.

The practice of using small pots in which to rear new and valuable varieties of strawberries, so as to secure certainty of success in their transportation long distances, and that in the growing season is no entirely new, and is generally understood by the more intelligent growers; though but few, I apprehend, fully realize the value of this method, by which plants may be sent any distance requiring not over two weeks' time, and still be in a flourishing condition.

There is a very general impression, however, that pot-grown plants are connected with hothouse culture, as I have had parties write me that they would prefer plants grown in the open air—as though, forsooth, those grown in pots were not. It is partly to correct this error, but more particularly to call the attention of cultivators to the manifest advantages of this manner of propigation, not alone of rare sorts of which a few hundred only are to be grown, but of sorts of large beds, that I am induced to write.

It is conceded, I believe, by the most experience growers, that if strawberries can be successfully planted out in July or August, so as not to materially check their growth, they are more certain to give satisfaction than if set at any other time. It is one of the greatest drawbacks in raising this fruit, that the land devoted to it must have one season's cultivation with our little if any return. And if it can be known that a plot of ground may be stocked with strawberries in August, by the use of pots, in as perfect a manner that the first crop will be as good as the second is in the ordinary way, it may be some inducement to the extensive planter, no less than the amateur gardener, to give this method a trial. Those conversant with greenhouse culture will need little if any instructions; while to the ordinary cultivator a few suggestions will probably be necessary to make his first attempt a success. The best beds for propagating purposes are those set the preceding season. I find they make much stronger plants than larger hills from which the runners have been cut. A border should be fitted up for this special purpose, and be made so rich and fine that the pots may be filled from between the rows; and, if possible, should be in the vicinity of the ground to be planted. The best time for potting is when the second or third plant on the runners is beginning to root, though it may be done successfully after they have become well established in the ground. They should be loosened carefully with a spade or fork; the roots shortened with a sharp knife to about three-fourths of an inch, inserted into the soil in the pot, and pressed down. Some care is needful not to injure the runner, as the new plant is dependent upon that for nutriment until it forms new roots of its own; and it is advisable not to pot more than twenty-five or thirty of the strongest plants to each hill, in order to secure the utmost vigor; the rest to be removed. When a hundred or so are potted, they should be wetted down thoroughly, adding one quart of the leachings of the manure tank to each pail of water; and if the weather be dry, they will need water once a day until ready to plant. In about ten days, according to the weather, or as soon as the roots have penetrated to the sides and bottom of the pots, they may be turned out, and the pots refilled.

My experience has, however, demonstrated to my own satisfaction, that there are decided advantages in putting three plants in a hill, the hills two feet by two and a half feet. By propagating and setting plants as above in August, and even as late as September, I have frequently gathered an average product of one quart to the hill the following season. Nor is this result confined to one variety alone; for I have several from which such a crop may be counted on with certainty, under a good and thorough system of cultivation.

The extra work necessary in this process is about the amount required for the potting; say one day for every thousand plants. The watering will require some time: but where there are hundreds of plants growing in immediate proximity, as in the pots, it is but a small task; while, if transplanted from the ground and the weather be dry, it will need ten times the amount of labor in watering to save them. The setting is in favor of the potted plants, as they can be turned out of the pots much faster than they can be well set in the ordinary way.

Altogether I think that growers of this fruit who take any pride in attaining the highest success, after giving this system a trial, will not willingly go back to the old system.—*Cor. Farmer (Eng.)*

About Fruit.

A correspondent of *Chambers's Journal* communicates the following very sensible remarks on the treatment of fruit:—I am not quite sure whether fruit is always brought to us as it should be. Pears and apples, no doubt bear careful carriage, and, however sudden they may ripen at last, are often a long time reaching the perfection of maturity, even after they have been gathered. But there is an essence which belongs to most fruit, and which begins to vanish the moment it is plucked. Even the short transfer from the garden wall to the dish at dessert cannot be made without the loss of some of that subtle flavor which is conveyed by the living stalk from the sun-fed tree.

Fruit should be eaten alive, like oysters. There is an edge to the taste of a fresh opened oyster which comes, I suppose, from the surprise he feels at being suddenly scooped out of his shell, in a few minutes, this gives place to a feeling of alarm, and then, in an hour or two, to one of despair. When he is laid out with his brethren in a dish, the whole mood is hopeless and sad, they may still taste of life, but it is of life disappointed. The fresh opened oyster has no time to grow feverish or melancholy.

While a plum, for example, hangs upon its stalk it is in some kind of magnetic correspondence with all the powers of nature. Cut it off, and it decays, corrupt, unwholesome, and every moment in its progress from life to death is marked by a decadence of that essence which makes fruit delicious. Therefore, supposing that you pluck it ripe, the sooner a plum is eaten, the better for you. This, of course, applies most to tender, thin-skinned fruit.

A firm apple dies slowly. A nut holds out long against the debasing influence of separation from its source of life. But plums, figs, peaches, apricots, and strawberries begin to suffer directly they are gathered. This is the case even with pines, which are susceptible of bruises; but they contain such an apparent surplusage of flavor, that the first stages of their decay are not perceived except by a cunning palate.

I think the morning is the best time for fruit; I am not quite sure, though. The afternoon is good; but I don't recommend fruit with the dew on it. Let the fruit get its own breakfast before you eat it yourself. It breakfasts on early sunshine and dew. It takes these good things in, and smiles upon itself and the world, just as you do half an hour after a pleasant breakfast. Eat it while it is in this humor—by no means in the raw and early morning; thus you have the young freshness and virgin flavor of the fruit. It has another character later in the day, when it is filled with sunshine, then I think it is sweeter.

Experience of an Ohio Pear Grower.

In the report of the Ohio State Horticultural Society we find the following account of the visit of the "Visiting Committee" to a nurseryman and pear grower:

Mr Fahnestock's Varieties of Pears.

Mr. Fahnestock, who was formerly a nurseryman at Syracuse, N. Y., and afterwards at Toledo, informed us that before planting his pear orchard he asked the advice of a number of fruit growers and vendors in New York and elsewhere, as to the varieties to plant for 1,000 standard trees, and the sum of their replies, together with his own judgment at that time, was about as follows:—100 Louise Bonne, 100 Buffum, 100 Seckel, 200 Flemish Beauty, 100 Beurre D'Anjou, 200 Sheldon, 200 Bartlett.

He planted thirty-one rows of trees, thirty-three in a row, on ten acres; two rows Louise Bonne, three rows Buffum, three rows Seckel, six rows Flemish Beauty, three rows Beurre D'Anjou, six rows Sheldon, six rows Bartlett, making in all 957 trees. To these he added two or three trees each of the following sorts: Rostizier, Beurre Diel, Lawrence, Easter Beurre, Stevens Genesee, Belle Lucrative, Virgalieu, Doyenne Boussock, Onondaga, Beurre Gifford, Beurre Bosc, Kirtland, Oswego Beurre, Duchess D'Angouleme, Vicar of Winkfield, Beurre Clairgeau and a few others. These were mostly for testing qualities and for exhibition, &c. The result, thus far, he reports as follows:

Louise Bonne has done poorly, and one-half of the trees are dead. Buffums one-third dead—trees grow too fast—wood soft and succulent, are more subject to blight than any other. These he had been regrafting with Beurre Gifford, Winter Nelis, Beurre Clairgeau, Beurre Bosc, &c., and they are doing well. This Seckel are handsome trees and produce well, but the fruit, being small, will not sell in Toledo market, the taste not being cultivated up to the standard of quality which a Seckel possesses, or other the size governing the sale. For instance, my Onondagas, or any pear of large size without much flavor, will command nearly double the price, at quick sales, that the high-flavored Seckel will. Hence, here it is not a profitable market sort, and were I to plant again, I would discard the two first, except a few trees of each, and plant only one-third, or not more than what I did of Seckels. Flemish Beauty has done well; they are perfect beauties, many having five bushels choice fruit to the tree the present season. I never saw finer pyramids—say twenty-five feet at base, and twenty-five to thirty feet high—limbed low, about two feet from the ground. Beurre d'Anjou, Sheldon and Bartlett have also done very finely. There being very little blight or disease of any kind in the last five sorts, Stevens' Genesee, Belle Lucrative, Virgalieu and Doyenne Boussock, each are great bearers, but come in market with Bartlett and Flemish Beauty, and will not sell as high; therefore, they are only desirable to have as a sort, and a very few trees will answer. Easter Beurre grows very imperfect fruit generally. Winter Nelis and Lawrence are fine late pears and they succeed well so does Vicar and the Duchess d'Angouleme. But I prefer Lawrence before all of them, and will set next spring a row of thirty-three, and graft about one dozen Buffums with the same. Onondaga sells well, as it is large—got $3.00 per bushel for them. Rostizier ripened 16th of August, but it is not showy or attractive and not large. Picked Beurre Giffard 12th of August—is showy. One size for an early pear and very delicious. Will graft, say one dozen Buffums with Beurre Giffard. It will command $3.00 in the market.

From the above you will see that I would plant Beurre Giffards, and any other good early pear to commence with—then the four sorts named first, to be followed by such as Beurre Diel, Onondaga, Beurre Clairgeau, Winter Nelis and Lawrence, and some Duchess and Vicars. This will fill the market from early to late; all others appear to me to be superfluous. My Lawrence pears were delicious, fine size, and trees loaded with fruit, being a very abundant bearer, and being sought after at $3.25 per bushel. I regret now not having thirty or forty trees of Lawrence in bearing condition. The idea is, commence with early pears, only two or three best sorts; then main crop Bartlett, Flemish Beauty, Sheldon and Beurre D'Anjou, followed by those named already as late pears.—*Rural Home.*

THE APPLE CROP.—It is said that the apple crop, which promised largely early in the season, has been very much reduced by the unusual number of apples which have fallen from the trees on account of being stung by insects. This is said to be the cause in all parts of the country. The quality of the fruit remaining on the trees will no doubt be improved by the quantity being reduced.—*St. Mary's Argus.*

A BUNCH of black Hamburgh grapes was shown the other day at the Great International Horticultural Exhibition at Belfast, which weighed 20 lbs. 12 ozs. This was furnished by Mr Hunter, of Lambton Castle, and exceeds the weight of Speechly's cluster of Syrian by about a pound; setting aside the fact that the latter variety is a much coarser grape, bearing large clusters under the most ordinary cultivation, the analogy between the two grapes in this case being similar to that existing between a Queen Pine and a Providence. This cluster is the largest as yet known in Britain, and, like the celebrated 15 lbs. Providence Pine grown at Gunnersbury by Mills, will long be remembered as a triumph in the history of fruit culture.

PINCHING RASPBERRIES.—The past season I pinched off the top end of a part of my raspberry bushes when they were about three feet high, for the purpose of making them grow slowly, and to spare the trouble of setting poles to tie them to. Those canes pinched off threw out side branches, and the yield of fruit is about double this season on the bushes which were shortened in last season, in comparison with those which were left to grow naturally. As the currant worm has destroyed nearly all our currant bushes, we can easily supply their place in our garden with other small fruits such as strawberries, blackberries, raspberries, and berberries, which as yet have few insect enemies. The best dressing I find for raspberry bushes is decayed chips or rotten wood from the forest, and ashes. In my berrying days of childhood I always found the largest raspberries and most fruitful bushes growing around rotten logs and decayed stumps in the pastures.—*Maine Farmer.*

THE VEGETABLE GARDEN.

A Normandy Vegetable Market.

One has to push through throngs of basket-women to reach the fruit and vegetable stalls. The clatter, the laughter, the gesticulation and harangue of a keen-faced, dark-eyed man, in a blouse, who is selling an immense pile of melons by auction—all the merry sounds so indescribably French, are bewildering, but they seem to fill the place with sunny mirth. It is a bright morning, too, after the rain, and the sun seemingly revels among the patterns and citrons-melles lying about in front of the stalls some of them with a slice cut out, glowing with a delicate golden tint within. Beside the stall is a heap of tin and wooden measures, and on these lies an open sack of cornichons, another of rosy onions; in front is a basket of large white radishes, a heap of orange carrots, glowing again with their feathery foliage, and a bunch of silver-skinned leeks, cabbages, not crumpled out of sight in a basket, but arranged on the stalls so as to show their exquisitely-veined leaves to the best advantage; a few creamy cauliflowers, placed temptingly beside a pile of scarlet tomatoes; and, raised higher, so as to be more under the shelter of the canvas overhead, are plums, and peaches, and grapes. The pears are not ripe enough yet but they lie brown and tempting in the mouths of their open baskets. There does not seem any attempt at effect, and yet everything is placed in happy, harmonious contrast; the turnips and carrots have been carefully washed; everything is at its brightest and best, no one seems to have a care or a trouble on market day. Our friend, the melon auctioneer, is having a fierce battle with a woman as sharp-looking as himself. He has been brandishing a clasp knife so close to his own thin nose that the effect has been alarming; and now, as his customer flattens her nose on the melon, in the endeavor to test its soundness, he snatches at the fruit and plunges his knife into it, as if he were stabbing an enemy; he hands her the slice, but she shakes her head. "Gathered green," she says, with a smile. She turns away, and our friend stamps, and, catching sight of us, holds out the melon. "Gathered green!—ma foi—smell it," he screams; "taste, and then see if it is not the cheapest of cantaloups, only one franc-and-a-half for the best fruit in the market."—K. S. Macquoid.

Surgery as Applied to Squash Vines.

In August of 1872, I noticed, when walking through the field where my squash vines were growing, that some of them were withering and others quite dead. Wishing to learn the cause of this, I examined the vines closely, to detect if possible the point where the mischief began to work. Just where the vine in branching from the root makes an angle, I found a slight knot or protuberance. With my pocket knife I cut the vine longitudinally for a couple of inches above and below this knot, and gently turned the vine at this opening nearly inside out, and found at once the cause of the mischief. A borer with a black head and about three quarters of an inch long dropped from the opening upon the ground. Gently closing the vine together, I wrapped a bit of muslin about the cut, tied it up with a woollen thread, killed the borer, and satisfied that this little creature was at the root of the growing mischief, I went carefully over all my vines, applying the knife and bandage to every vine on which the little knot appeared. A few days after I examined my squashes again and found that many of the vines that had begun to wither were fully restored, and the wounds I made had healed. In the fall I harvested a large number of fully ripe squashes, having a larger yield from that field than usual. The past season my vines were entirely free from the ravages of this noxious insect. I find this borer described in "Harris on Insects," page 331. It seems "that after devouring the interior of the stem the worm enters the soil, forms a cocoon of a gummy substance covered with particles of earth, changes to a chrysalis, and comes forth the next summer a winged insect. This is conspicuous for its orange-colored body spotted with black, and its hind legs fringed with long orange-colored and black hairs. The hind wings only are transparent, and the fore wings expand from one inch to one inch and a half. It deposits its eggs on the vine close to the roots, and may be seen flying about the plants from the 10th of July till the middle of August." The name of this insect is *Egeria Cucurbitæ*, and it attacks other cucurbitaceous vines than the squash.—*Cor. N. Y. Tribune.*

Big Cucumber.—We stated lately that Dr. Garnet, of Lucasville, had a cucumber 27 inches long. Mr. W. M. Mann, of this town can beat that, for he has five, the largest of which measures 42 inches, and the shortest about 36 inches. They all grew on one hill.—*Guelph Mercury.*

The *Mount Forest Confederate* says:—We were shown on Friday last a pea stalk taken from the garden of Mr. I. Coyne which was certainly the most productive that ever came under our attention. There were over 60 pods on the one vine, and when shelled, yielded more than 200 peas.

Moles in Cutting Beds.—Of all garden pests, I know of none that can equal the mole in the production of annoyance. It is not so much a destructive animal as a nuisance, and as for the good it is said to do, if its food consists mainly of the harmless earth-worms, then I question its usefulness in any degree. If one of them starts a run amongst a plot of potatoes, cabbages, or other established vegetables, it cannot do much harm, except when very dry weather prevails, and then the soil is drained rather too freely; but when one gets in a seed bed or amongst flowers, or, as one ran with me the other night, amongst a large bed of pansy cuttings, it does a deal of mischief. When in a nice loose moist soil, such as my cutting bed, it runs hither and thither with the most disastrous results, and the work of days is in an hour almost entirely destroyed. In this special case I had just replaced the cuttings, and made all ship-shape, when my sable friend commenced working again, and I at once ung him out. In such case it is no good to attempt trapping moles. The best mode of dealing with them is to have a small fork in hand, and watch, then seize the favorable moment, and give the subterranean worker a quick hit out of the ground.—A. D., *in The Garden.*

THE FLOWER GARDEN.

A Parlor Flower Box.

A device for holding easily a large number of window plants is thus described by a correspondent of the English *Country Gentleman*:—

Among the not expensive window gardens we may name a device we used in our own sitting-room, which we called an "Adoptive Case" as we made it a receptacle to receive our pots, and our experiment not being patented, and not by any of the constructive genius of the village carpenter, of course any one who chooses can have one made to order. Our window shelf being only 6 inches in width, we had a box made that would just fit into our window, of the following dimensions:—The length of the box was 3 feet, the depth 11 inches, and the width 14 inches. Into this box we had a zinc pan placed, made so that it would just fit the inside, or 4 inches in depth. This box was to receive the drainage of surplus water from the plants; had a hole to draw of dirty or surplus water from the end, and was stopped with a wooden stopper. A box of this kind, properly made and attended to, would not need drawing off perhaps during the winter, and I am speaking of the winter treatment of plants now.

Having placed the zinc pan within the box, fill the same with tolerably small bits of broken crock until it is even with the top of the pan; then cover the top of this pan with a thin piece of board (pasteboard will do), in which holes are bored, and then place your composition of earth for your plants; set out your plants, choosing those of any species you may wish, and at once commence your study and treatment of the same. With such a simple box as this you may grow not only the greater number of our native ferns, but add to them from time to time, as your knowledge increases.

A Plea for a More Natural Arrangement of Bouquets, &c.

He must have an artist's eye for color and form who can arrange a hundred flowers as tastefully, in any other way, as by strolling through a garden, picking here one and there one, and adding them to the bouquet in the accidental order in which they chance to come. Thus we see every summer day the fair lady coming in from the breezy hill-side with gorgeous colors, and most bewitching effects. If only she could be chandeliered to alabaster, was ever a richer show of flowers in so fine a vase? But instead of being allowed to remain as gathered, the flowers are laid upon the table, divided and rearranged on some principle of taste, I know not what, but never again that charming naturalness and grace which they first had. As to the bouquets put up for market, the less said about them the better. They are more pill-boxes in which fine innocent children put into the stocks, flowers are punished! Squeezed, tied on sticks, formal and pedantic, the flowers lose their rare charms, their delicacy, their individuality, their exquisite variety of form, every element of floral beauty except color. They are used as mere pigments. They are poor studies in color. With what complacency can such a one look upon the merchandise of flowers which is exhibited at every party, every wedding, every congregation of rich people, who torment themselves through untimely hours for the sake of tormenting their host? Look at the atrocious bridal bouquets! If, instead, the bride were to issue forth bearing in her hand a sprig of orange-blossoms just as it was plucked from the branch, or two or three simple rose-buds on the one stem, loosely clustered, and with their own fresh green leaves, or a simple white lily, would not every one feel how superior flowers were for such an occasion, in their own simplicity and individuality, than when, as generally happens, they are smothered up in an artificial heap, in which all naturalness is utterly lost? A single blossom of carnation with a geranium leaf, an exquisite saffrano rose-bud just beginning to open, with a fresh leaf from its own bush for company; a stem of mignonette, girt round with a dozen fragrant blue violets, a long sprig of maurandia creeper with its charming blue bells, hanging from a tall wine-glass, or carelessly trailing round it—these, and such little things, confer a pleasure on those who have a sensitive eye for grace and simplicity, which the formal and pudding-like arrangement cannot. We would not be understood as objecting to all masses of flowers, nor to large combinations for coarser and more distinct effects, they are permissible. But even then, the more they can be made to have a loose, airy, open habit, the finer will be their effect. But first, simplicity, naturalness, singleness and individualism in flowers.

H. W. Beecher.

A New View of Draining Flower Pots.

Mr. Peter Henderson, who grows hundreds of thousands of pot plants without drainage, writes to this effect in a contemporary:—The question of drainage is not whether plants require it or not; we all agree on that. But the question is in what way the water passes from the pot; whether from the bottom or whether from the sides. We who advocate that the practice of crocking pots is useless, claim that nine-tenths of the escape of moisture is from the sides; they who practice "bottom drainage," would signify by so doing, that in their opinion the escape of water is mainly from the bottom. If any one wishes to decide this matter for himself, let him take half-a-dozen glazed pots, such as water will not percolate through, let him knock the whole bottom out if he will, and "drain" in the usual way with potsherds, charcoal, or anything else he thinks fit. Let him also take half-a-dozen of the ordinary style of flower-pot. Fill these up with the same soil as used for the glazed pots, but without drainage. Let the same sort of plant be grown in each lot, and under the same conditions of temperature and moisture. Let him note the result three weeks after the experiment has been made, and if he does not find that the glazed pots, with the bottom drainage, show indications of stagnant water in a greater degree than those in the porous pots, then all my observation on this subject have gone for nothing. If I am correct in this, does it not most emphatically prove that the escape of moisture is nearly entirely from the sides of the pot, and not from the bottom, and hence the futility of placing potsherds in the bottom for drainage?

Roses.—The *N. Y. Tribune* says that the person who expects to have a nice yard without a bed of roses, might just as well undertake to make a first-class plum-pudding without fruit. But how few persons really know how to take care of these roses after they are planted. A large circle cut in the lawn and filled with choice tea roses, as for instance, La Practole, Safrans, Isabella, Sprunt, etc., will yield a constant supply of buds and flowers all summer long, and then, as freezing weather sets in, they may be lifted carefully and placed in large boxes, so as to winter in the cellar. Bourbon roses, which are a hardier race than the tea, may be wintered out of doors, if well covered with litter, and a roof of rough boards placed over to keep out all rain and snow. If kept dry, they will endure considerable freezing. They may also be taken up carefully and buried in a trench on dry ground, and in the spring to be re-planted. It is a good practice if done with care.

The Dairy.

The Butter Trade.

Report of the Committee of the New York Produce Exchange.

The Committee of the Produce Exchange appointed to consider the subject of classifying and grading butter and facilitating the trade in this important staple, have made their report. From this lengthy document, as published in the *American Grocer*, we condense those portions of the report which more nearly interest those of our readers who are engaged in butter dairying. The report states that the census statistics of dairy products are incomplete, and only estimates can be had. The most practical method of ascertaining the extent of the commerce in the staple of butter is by estimating the amount consumed. Since the organization of the trade various estimates have been made, but the latest, the most analytical and reasonable is the following, by an experienced and careful statistician :—

It is estimated that of our population
5,000,000 consume 1 pound each per week.
10,000,000 consume ½ pound each per week.
10,000,000 consume ¼ pound each per week.
10,000,000 consume ⅛ pound each per week.

At this rate 35,000,000 people would consume 1,040,000,000 pounds per annum for table use, and one-third as much as the above amount for culinary purposes; this leaves a population of 9,000,000 not included as consumers. In addition, the exports are estimated at 53,333,333 pounds, making the product aggregate 1,440,000,000 pounds, which, at 30 cents per pound, amounts to $432,000,000.

The importance of facilitating the dealings in this immense amount of produce is obvious. Hitherto there have been various irregularities and difficulties which need correction.

The first and most serious irregularity existing was the erratic and conflicting market reports consequent upon various classifications, of which there were nearly as many as there were merchants. The various grades were defined by one class as "fancy," "fair to good," "poor to fair," and another class "good to choice," "fair to prime," &c., with quotations attached to suit individual interests without representing the general market. Press and circular market reporters were compelled to adopt scattering and conflicting terms and quotations as best they could gather from the different merchants and branches of the trade.

The term "Orange County," used in the market reports with the highest quotation attached has constantly misled. The quantity of butter made in Orange county is but a trifle, and is still decreasing, and considerable of that is of inferior quality. This term, Orange County, has of late years been made use of in connection with the pail butter trade, which was formerly confined to the jobbing and retail business, and the supply was mainly from Orange county It was customary for the dealers in it to raise or lower the price 5c. ℔ lb., and by quoting it in the general market reports gave the impression that a radical change had taken place in the New York market for butter from all the dairying section, whereas it sometimes occurs that the radical change of 5c. ℔ lb. made in Orange county does not affect materially the price of the bulk of the stock

Within the past few years the trade in pail butter has gradually changed, and it is now received from all dairy sections of New York, New Jersey, and Pennsylvania, by wholesale houses, and much of it is sold by the invoice the same as other classes of butter. So much of the product is being marketed in this manner that it constitutes a material feature of the market and of market reports But it is only a very small proportion of the butter crop of the country or of the supply in this market, hence the action of the wholesale dealers on the Exchange, resulting in this class of butter being sold and quoted like any other grade, and ignoring the absurd system of raising or lowering the price 5c. ℔ lb. at any change.

The term "Goshen Butter" is likewise a misnomer in the classification of butter, and is so understood in this market, and is only in use and abuse in connection with the southern trade, where from custom this brand is insisted on as designating genuine Goshen butter, whereas there is no such article in the market, and from common custom and usage the name is generally applied to all kinds of butter distributed to southern trade.

This want of system and uniform classification has led to much confusion, and, in many cases, to misrepresentation and fraud. The natural consequence has been distrust and dissatisfaction.

The committee, after thorough consideration, have adopted the classification submitted. It first classifies butter as eastern and western, and next into extras, firsts, seconds, and thirds, of each. Eastern constitutes the supplies from the eastern states, and western is the product west of New York and Pennsylvania. This is necessitated by the wide difference in the qualities and prices actually existing between the productions of the eastern states and the bulk of those supplied from western states This method of grading by extras, firsts, seconds, and thirds is simple, practical, and not experimental, it having been long in practice in other countries.

The general division of butter into eastern and western recognizes what already has always existed, and without detriment to either section, especially so under the new classification, since it is the same for both eastern and western, and the prices obtained and quoted will more surely determine and represent the quality and value as a guide to the producers of the two great dairying sections.

While the importance of and rapid improvement in dairying in the west is fully recognized and encouraged, still there exists so wide a difference in the quality of the general productions of the two sections as to require a division in the classification in order to do justice to both To place all western upon the same basis as eastern would result in a comparatively small portion of it being sold and quotable at the price of state, and at the same time tend to misrepresent the actual market value of the great bulk of western butter This is a question of so much importance and so little understood, that the reason should be here fully explained and set forth for the first time under the authority of the Exchange of the difference in quality between eastern and western butter. In order to explain it and encourage improvement in western dairying in the adoption of the best method and process of manufacturing it is necessary to describe the system of making and other encumstances that cause the differences in quality generally in the productions of the two sections. In the eastern dairy states, as the cultivation of cereals became less profitable and lands enhanced in value, the demand for dairy products increased, and, being more profitable, led to special attention to their production as a main source of income Extensive and improved herds were introduced, the pasturage was by cultivation freed from weeds and wild grasses, and close turfed meadows of the finest grazing were afforded, and the springs and streams of water purified by changes These are indispensable conditions for the production of choice dairy products. Skilled manufacturers were employed, and from large herds greater masses of the product were yielded, and being consequently less exposed to the atmosphere, whether packed for future use or marketed immediately while fresh, was superior in quality.

One creamery dairyman in the state of New York, during the season of making, markets 15,000 pounds per week, and, at an average of 37½ cents per pound, realizes $5,625 weekly. One farmer in this state annually markets his season's product in this market toward spring. Year before last it aggregated 22,136 pounds, from which he realized 50 cents per pound, or $11,068. The celebrated fine state products, held in reserve for winter market, are made only in the finest dairy districts, are most skilfully and perfectly made, and packed in uniform packages, numbered as packed, and kept in cool airy cellars, expressly fitted and in many instances cooled by running streams of water. Until this system of dairying, with the requisite conditions of pure water and grazing, is introduced in the western states their product will not compare with that of the eastern states. This can be accomplished by increasing and improving the herds and grazing, and the adoption of the New York dairy system, or by the creamery system of taking the milk, where the dairies are small and scattering, to a common factory for the manufacture of butter of a uniform quality, the same as the factory system in cheese-making

Of western butter arriving in this market, it is estimated that less than two per cent is made on the system followed in the state of New York In the western states, as a whole, the herds are comparatively small, and the water and grazing in many sections impure The butter is gathered in small parcels, and reworked together in order to have it uniform in character, all of which is more or less injurious to its keeping qualities. While great strides of improvements have taken place to the extent of an enhancement of its market value some forty per cent in two two or three years, there is still room for great progress by the adoption of the eastern system and co-operation with the transportation companies in recommending and encouraging improved facilities for safe and quick transportation For it should be remembered that the western products have a serious difficulty to overcome in being transported from 1,000 to 2,000 miles, to which the eastern butter is not subjected. Already in many dairy sections of the western states qualities are produced nearly equal to eastern, and give evidence beyond question that if made and marketed by the same process would be quite as good.

No greater service can be rendered to the western farmers than the dissemination of these facts in relation to the production of dairy products, and the financial and commercial interests in connection therewith. The farmer who labors throughout the season to produce a crop of grain from a middling-sized farm, situated distant from the railways or markets, has the bulk of his crop absorbed in transportation to the railroad and to the market. One bushel of corn fed to milch cows yields two pounds of butter, worth in New York, say fifty cents. A car load of corn, containing 20,000 pounds, or 357 bushels, pays $90 freight from Chicago here, and at present prices realizes $385 60, and, less freight, nets $195 60. A car load of butter, containing the same weight, pays $220 freight, and realizes, at 25 cts per pound, $5,000, or nets $4,780. In other words corn pays 53 per cent. of its value for transportation and butter 5 per cent.

It is a notable fact that the average prices of butter in all the markets of the world are at the highest point ever known, and at the same time the demand for American butter for export is increasing, and affords a most profitable opening to the western dairying states where lands are cheap It can be safely asserted and relied on that for years to come the demand for dairy products will increase in proportion to the improvements in quality.

We find one objectionable feature in the report, and that is a serious one. Western butter still remains under a cloud Why the most excellent dairy districts of northern Ohio, not to mention other districts of the western states, should be placed thus deliberately in an inferior position to the whole of Pennsylvania and New York, from which much inferior butter is shipped, is what few will be able to find out Why western butter that will pass muster with the best from any New York or Philadelphia dairies, although it may be in small proportion comparatively, should be graded below them, or should be invidiously and injuriously classed along with the generally inferior goods of the western country, is a matter that should be explained in a more satisfactory manner by the committee It is certain that while this ban is permitted to remain, an injury is indiscriminately inflicted upon western dairymen which they will be swift to resent. We are fully impressed with the need of amending the classification proposed so far as to abolish local nomenclatures altogether, and grade butter according to its quality, irrespective of its place of manufacture, and are far from being convinced otherwise by the defective knowledge and reasoning of the committee.—*N. Y. Times.*

Patent Artificial Cheese.

The Utica *Herald* remarks as follows upon the manufacture of a new kind of cheese, for which a patent was recently granted :

The insertion of the prepared solid fat of the body to take the place of the fat taken from the milk is not alone employed to make an imitation of butter. It is reported that, as fat and buttermilk are employed to make artificial butter, so fat and skim-milk are used to make cheese The aims involved are similar in either case, although the methods of manipulation are of course varied. It is reported that a factory is in operation in Brooklyn, where the olein and margarin expressed from the interior fat of cattle is intimately mixed with skim-milk, and the rennet then poured in, producing a curd rich in oil, which can be cured, and sold for cheese Here we have a process for putting back into skim-milk, an animal oil in the place of the cream which has been removed We have heard that something of the kind has been practised nearer to Utica than Brooklyn It is an ingenious device for adulteration, and nothing more nor less No matter if the oil derived from the tallow be chemically pure, still the mingling of it with milk to take the place of cream is adulteration, and though it may not be a change of composition which produces an unhealthy material, it is a change which occasions a loss of value Thus the schemes for artificial butter and cheese are fraudulent at the outset and even when we suppose that none but the purest oils and fat are used If these compounds come into any wide consumption there will be materials used variously disguised which are wholly unfit for entrance into the system Then will the evils of an enterprize which now seems only mildly objectionable be recognized and appreciated.

Breeder and Grazier.

Cost and Profit of Hay.

It has been said by a western writer that hay can be produced in Illinois, on land worth $60 an acre for $4 75 per ton. Some estimates give a lower rate of cost than this, and others higher, according to the locality, the season, the value of land, &c. Senator Boutwell, in an agricultural address, quoted the cost of an acre of hay in Massachusetts at $9, and the yield at four tons; making the cost per ton, $07,25, against a market value of $25. This shows a profit of $7 75 per ton, or $31 per acre, being over 40 per cent. on the investment. This case was quoted by the Senator as an evidence that farming is a lucrative business.

Col. Waring paid a rent of $200 for two acres of clover that yielded eleven and a half tons of hay in three cuttings. If in this case the expense of cutting, curing and hauling is added to the rent, it would make the cost per ton not less than $20. What it may have cost the owner of the two acres to bring his land up to an agricultural value of $100 per acre for the season, is not reported. But it is safe to assume that the rent received for the land made the clover a profitable investment for the owner. That it was equally profitable for the colonel, may be inferred from the fact that he usually gets 75 cents to $1 per pound for his butter, while the average product of his dairy is over 200 pounds per cow per annum.

In the *Rural Carolinian* a product of clover is reported by Major Le Heux, at the rate of four and three quarter tons per acre, of which the cost for the first year was $12 per ton, and the average cost for two years was $7 50, against a market value of $30 per ton. When land is newly seeded to meadow the hay crop of the first year costs more, as a matter of course, than the subsequent crops. Land that has a natural tendency to grass will often yield liberal crops for successive years, with little or no attention beyond occasional manuring. In such cases the cost of the hay is but little more than the expense of cutting and gathering. These instances, however, are exceptional, and the general average cost is, of course higher, though still very much less than in the case adduced by Senator Boutwell.

Without attempting at present to be very exact, it may be safely assumed that a ton of hay costs, on a general average, not much less than $10 for the first crop after seeding, and probably about half that rate for succeeding crops, making the final average from $7 to $8 per ton.

When hay is sold directly from the farm, it leaves no fertilizing element behind for the benefit of the soil. But when by feeding it is converted into other and more valuable products, the resulting manure has a specific value that belongs to the estimates of cost and profit of the hay crop. According to Dr Dana, a ton of hay will yield a cord of solid manure. According to Prof. Johnston a ton of hay is equivalent to 3,400 pounds of fresh manure, or 850 pounds of the dry substance. According to a German agricultural calendar for 1874, a ton of hay contains 28½ pounds of nitrogen, 26 pounds of potash, 8 pounds of phosphoric acid, 17 pounds of lime, 6½ pounds of magnesia and 5 pounds of sulphuric acid. The theoretical value of the manure from a ton of hay is given at $6 43 for timothy and $9 64 for clover. The money value of the nitrogen phosphoric acid and potash contained in a ton of clover, according to Prof. Johnson, as cited by Joseph Harris, in the *Agriculturist*, is equal to $17 57. Without stopping to analyze or to reconcile these various estimates, we may bring them to a very safe practical standard by taking the lowest of the above figures ($6 43) and reducing it about 40 per cent. This will give us $4 as an average valuation of the manure from a ton of hay. Deducting this from the average cost per ton ($7 50), we have $3 50 as the net cost of a ton of hay on a general average, *when applied to feeding purposes.* Of course every farmer can determine how far his own experience differs from this general average, and when he finds out how much mutton and wool there is in a ton of hay, or how much butter and cheese, he can soon tell whether his hay is a paying crop, and whether it is more profitable to sell it abroad and rob his land, or make a home market for it in his own stalls.—*Cor. Country Gentleman.*

MR. J. ANDERSON, of Albion, Mich., has received during the past three years $3,033 for the wool from a flock of sheep averaging 449 in number.

Breeding Swine.

The numerous shows now going on in all parts of the country give farmers an opportunity of comparing the different breeds of hogs. In most neighborhoods, the introduction of one or more thoroughbreds would add materially to the value of the hog product in that locality. Just what breed would be most profitable must be decided by the breeders of each locality, but in order to assist any of our readers who may be in some doubt, we condense the following advice from the American *Rural Home*.

"It does not pay to breed or to feed poor hogs. The hog is a voracious animal, and unless his voracity can be turned to profitable account, it is better to have nothing to do with him. The great majority of farmers who breed pigs do so without reference towards producing a profitable animal. Most of them have got a nondescript sort of stock of no particular breed, and remarkable only for combining as many of the bad qualities and as few of the good points as it is possible for a beast can have. Having come to them as it were as a legacy, they look upon it as being a burden only to perpetuate the race. Yet bad as these hogs are, they have two redeeming points. In the first place they are hardy, and have good constitutions; and in the second place they are capable of being rapidly improved at small cost, by crossing them with the modern improved breeds of pure-blooded sorts. Use what breed you will to begin the improvement, if it is only persevered in by those who understand the business, it must result profitably. A good thoroughbred boar costs money. We will say twenty-five to fifty dollars for a really first-class young one, three to six months old. But one is enough for a whole neighborhood, and a several will club together to purchase and keep one among them, or agree to pay a moderate sum for each sow they may get served, the cost will be small to each.

As to what breed is best to originate the improvement from much will depend upon circumstances. If medium-sized hogs, ready to fatten at eight or twelve months old, are desired, use the Suffolk and Essex. Those who have the so-called Chester Whites, or prefer white pigs, can greatly improve them by crossing with the Suffolk. Those who do not object to black or spotted pigs will find most profit in crossing with the Essex. The genuine Suffolk, in its purity is, however, scarce, and great care must be taken to secure a boar only from a known and reliable breeder. The same may be said of the Essex, but it is so marked a breed from being unique in its color,—a rich black, inclining sometimes to brush, without a white hair about it,—that it is difficult to substitute any other kind in its place.

For those who want large hogs, giving from three to six hundred pounds when fattened, and are willing to keep their stock till over a year old, there is nothing equal to the Berkshire, either as a pure breed or as an improver of the common sort. Berkshires have been largely imported and bred of late, and they are now becoming plentiful enough to cease to be classed as fancy stock. The large among breeders of this variety is running so much in the direction of particular fancy points as regards hair and markings, that there is great danger of the most important ones of early maturity and aptness to fatten becoming overlooked or thrown in the shade. We consider color a very secondary consideration in a Berkshire so long as there is no question of the purity of the blood. We have bred and fed them for years, and could not tell that those with white spots on their bodies were any way inferior as regards feeding properties to those having the now established registration marks about them, and what is more, we have rarely seen a sow of that breed however well marked, bring a litter that would show the same markings. These fancy markings will doubtless in time be so impressed upon the breed as to become typical, but at present those animals without them can be purchased at low prices from first-class breeders, and will answer the purpose of improving the common stock equally as well.

One great source of loss to farmers on their hog production is that they keep the animals they breed too long, and feed them too little. If they were better fed they would come to maturity earlier, and produce better pork at a less cost. An animal kept in full flesh from its earliest day is ready to fatten and does so quickly at small cost, and at an early age, and will have a fair proportion of well mixed fat and lean. An animal put up to fatten from a starvation point will take a long time to get fat, and when it does so most of the fat will be laid on superficially much of it in the hog going into lard rather than pork."

How to Judge of Wool.

There is perhaps no defect which renders wool, and otherwise good wool too, so absolutely useless for manufacturing, and especially for combing purposes, as tenderness or brittleness; and it is my conviction that this defect is more general, and causes greater loss to the country through the pockets of our sheep owners, than all the other defects in our wools together. However fine, or however much your wool in every other desirable quality may excel, no sooner is it submitted to the wonderfully acute and skilful examination of the European woolsorter, classer, buyer, or manufacturer, than its tenderness in this respect is detected, and a price is bid for it scarcely exceeding that offered for locks and pieces, in fact, nothing is wanting to reduce these to that class, but the solution of continuity which is sure to take place in the course of the very first manufacturing process to which it is subjected. Except, however, possibly in cases where neglect or mismanagement have been the rule for generations, it is not hereditary; nor is any one breed of sheep more liable to it than another. To these conclusions I have come, by repeatedly finding an entire flock affected with breaks one year, and quite free from it the next, in consequence of a change in management. On the whole, it is to be feared that this defect is yearly gaining ground, and I am creditably assured that for the last two or three years we have produced more wool of this description than was ever known before.

Certain it is that wheresoever this most objectionable tendency manifests itself, sheer carelessness, neglect, ignorance, overstocking, inordinately large sheepwalks, or scarcity of feed or water—each or all will be found.

When sheep get into very low condition, the pores of the skin contract, and part with only wool of a very fine fibre to extrude. When the feed once more becomes abundant, the pores again expand, and permit the passage of a larger and stronger fibre. In consequence of this, the extremities of the fibres are stronger than their centres, and the wool upon the slightest strain snaps at the weakest place; namely at the portion which grew when the sheep were in the lowest condition.

But nothing is so sure to cause a break in wool, or indeed in many sheep a perfect stripping or shedding of the entire fleece, as want of water.

Trueness or Evenness of Fleece.

It is not only important that wools should be free from the defects above described, but it is desirable that the whole of the various parts of the fleece should have as nearly as possible a uniformity of character; that is, as regards fineness, length of staple, density and softness. The method of determining this quality of evenness is thus described:

"Always assuming that the wool to be inspected is really a fine wool, we first examine the shoulder at the part where the finest and best wool is usually found. This we take as the standard, and compare it with, in turn, the wool from the ribs, the thigh, the rump and the hinder parts; and the nearer the wool from these various portions of the animal approaches the standard, the better. First we scrutinize the fineness: and if the result be satisfactory, we pronounce the fleece, in respect of fineness, very 'even.' Next, we inquire into the length of the staple, and if we find that the wool on the ribs, thigh and back approximates reasonably in length to that of our standard, we again declare the sheep, as regards length of staple, true and even.

We next desire to satisfy ourselves of the density of the fleece, and we do this by closing the hand upon a portion of the rump, and of the loin wool, the fleece at these points being usually the thinnest and finest; and if this again give satisfaction, we signify the fact by designing the wool 'even' as respects density. Now to summarize these separate examinations. If you find the fleece of nearly equal fineness from the shoulder to the thigh; of nearly equal length at the shoulder, rib thigh and back; and of equal density at the shoulder and across the loins, you may conclude that you have a nearly perfect sheep."—*Bulletin Association of Wool Manufacturers.*

THE BURNSIDE SHORT-HORNS.—The best sold of the many dear Short-horns at the late Inverness show were, in our opinion, the second-prize yearling bull, Duke of Richmond, and the third-prize yearling heifer exhibited by the lucky and deserving breeder, Mr. Bruce, Burnside, Fochabers. The bull goes to Mr Iles, Illinois, at 200 guineas, and the heifer to Mr. Thomson, Canada, at 120 guineas. Such figures for yearlings are very encouraging.—*N. B. Agriculturist.*

Poultry Yard.

Poultry Notes.—No. 19.

Selecting Fowls for Exhibition

The standard of excellence referred to in our last notes as published by the London (England) Poultry Club, places a positive value on each of the fancy points of a breed of fowls, the total, as already stated, summing up only fifteen in number for each bird. The values attached to these points are not alike in all breeds. In some they are calculated on a different scale to that of others, a thorough knowledge of which makes the successful exhibitor an good judge. In the Cochin breeds, the varieties known as Buff, Lemon, Silver Buff, Silver Cinnamon and Cinnamon, size and color are highly estimated to these two points the value of seven is assigned out of a total of fifteen, the former having three and the latter four given to it; while to the six remaining points, viz., head and comb, carriage of wings, legs, fluff, symmetry and condition, a value of eight is attached. In the Grouse and Partridge varieties of this breed, instead of a general value of four being given to color, it is divided into sub-values of two each, on account of the more specific markings of the feathers of these birds, and which exhibitors would do well to note. The value of points in White and Black Cochins are the same as in the Buff and Cinnamon, the difference in color only considered, and the same remark holds good as to Dark or Pencilled Brahmas and Light Brahmas, as to the values of points. To breed to size as well as feather has long been the chief feature in Dorking breeding. That this should be so is not to be wondered at, seeing the prominent place assigned to it by Englishmen as a table fowl. Special value is therefore given to size in the Dorking class beyond that of any other class or breed of fowls, except to La Fleche, Turkeys, and one variety of Ducks. In the colored Dorking size counts five, symmetry four; while head and comb, legs, feet and toes, and condition, count but two each. To the White Dorking, a point of excellence is given not recognized in the colored--purity of plumage, on which a numerical value of two is placed To make up this a deduction of one is made from each of the two points, size and symmetry, reducing their value to four and three respectively, instead of five and four as in the colored. A still further deduction from size is made in the Silver-grey variety and added to color; thus we have in the Silver-greys the points size, color and symmetry, all ranked of the same numerical value—three, while the other three points rank, as in the colored, two each. The Spanish breed of fowls has only two recognized varieties, although there are several sub-varieties, known as the Minorca, White, Andalusian, and Anconas. In the Black, face, ear-lobe and symmetry, are all of equal rank, each point counting three; comb, condition of plumage, and purity of white face and ear-lobe, count two each; of the six points to which the numerical value of fifteen is assigned, the face and ear-lobe count eight—over one-half. It will be seen, therefore, of how much importance it is to select fowls of this breed with face and ear-lobes free from those red blotches which are so frequently met with in birds of this variety. The points of the numerous varieties of game fowls usually known as the Black-breasted, Brown, and Ginger Reds, Yellow and Silver Duckwing, Birchen, Yellow, Pile, White and Black, are seven in number. Color of plumage ranks the highest, and has a value of three given to it; while shape of head and neck, body and wings, tail, thighs, legs and toes, symmetry, handling, condition, and hardness of plumage, have each a numerical value of two. Of the many breeds of fowls which are to be met with at an exhibition, there is perhaps none which attracts the attention of the visitor more than those of the Hamburgh class. The beautiful markings of the feathers of the different varieties known as the Gold and Silver-pencilled, Gold and Silver-spangled, and Black Hamburghs, call forth his admiration, and ought to be an increased incentive to exhibitors in the exercise of great care in the selection and breeding of these fowls. In the Gold and Silver-pencilled Hamburghs there are in the cock six points of excellence, three of which—comb, color of plumage, except tail, sickle feathers, and tail coverts and color of tail sickle feathers, and tail coverts, count each three, the deaf ear, symmetry, and condition numbering two each. The hens have a similar number of points, but vary in name and numerical value—comb, deaf ear, symmetry and condition numbering two each; while purity in color of head and neck, purity of ground color, and accurate and distinct pencilling in every part, except head and neck, count three and four respectively. The difference in marking between the spangled and pencilled varieties call for a separate classification of points. In the Gold and Silver-spangled Hamburghs then, the comb, deaf ear, breast and under parts of body and thighs, wings and bars, symmetry and condition of the cocks should each number two, and color and markings of head, hackle, back, saddle and tail three; whilst in the hen, comb, deaf ear, bars symmetry and condition, count two. Neck most distinctly and evenly striped, one. Remainder of the plumage (except tail in golden) cleanness of ground color, evenness and distinctness of spangling, with rich large round spangles, four. In the Black Hamburghs, plumage and shape each count four; comb, head and face, three; deaf ear and condition, each two. The Polish variety are not of recent days nearly so numerous as they were at one time. A really excellent specimen is now rarely to be seen. The few exhibitors who still continue to show this breed have not so many competitors to contend against as in some of the other classes. They ought not, however, on that account to be the less careful in the selection of their exhibition birds. There are three acknowledged varieties, White-crested, Black, and Gold and Silver-spangled. In each of the three varieties, size of crest and shape of crest, each count three; symmetry and condition, each two. The other points, however, differ. In the White-crested, Black, richest black plumage counts two; deaf ear, one; and crest of the purest white and most free from black, two. The remaining points in the other two varieties are color of crest, one; plumage accurately marked according to the "standard" rules, two; purity of ground color, one; bars, one. Of the French fowls there are three recognized breeds—Houdans, Creve-Cœurs and La Fleche. To the Houdans are allotted six points, which count as follows:—size, four; crest four; symmetry, plumage, and condition, each two fine claws, one. The Creve-Cœur have also six points of excellence, viz., size, four; crest and color, three each; shape, symmetry and condition, two each; comb, one. The La Fleche have five points given them—size, five; comb, shape and condition, each three; deaf ear, one. Game Bantams have seven points allotted them—smallness of size, shape of head and neck, of body and wings, of tail, of thighs, legs and toes, and condition, each two, color, three. Sebright Bantams, gold and silver-laced, plumage most evenly and distinctly laced throughout, counts four. Purity of ground color in silver, and richness and cleanness of ground color in golden, comb, smallness, symmetry, condition and general appearance, each two; tail, one. Black and White Bantams are judged by one standard—purity of white or richness of black; smallness and symmetry each count three; while comb, deaf ear, condition, and general appearance, count two each. The two varieties of Malays, Brown and White, have six points given them—height, shortness, hardness, and closeness of plumage, color and symmetry, each count three; condition two, and head one. Of the Brown variety of Malays there are several sub-varieties; but no distinction as to separate values of points are given in the "standard." Sultans are pure white, beautifully crested, on which a high value is placed. There are five points of excellence, of which the crest counts four; muffling, shape, and leg feathering, each three; and condition, two. The leading features of Turkeys are—size, to which a value of six is given; symmetry, four; richness of color and matching in hen, three; condition, two There are four recognized varieties of Ducks. The Aylesbury, a pure white, has five points—size, four; purity of color and shape of bill, symmetry, purity of color in plumage, each three; condition, two. In the Rouen, size counts four; shape and color of bill, color of plumage and symmetry, each three; and condition two. The Black East Indian Duck has the value of four placed on richness of plumage; on symmetry, neatness and elegance of form, three; size, four; bill and condition, each two. Call Ducks, being a very different variety from those mentioned, a change in the values of points is necessary—smallness of size counting five; compactness and symmetry of shape, color of plumage, each three, bill and top of the forehead, and condition, each two. There are two varieties of Call Ducks, grey and white. Toulouse and Embden Geese close our list; in each breed size and weight count six; symmetry, four; color, three; and condition, two. There are also certain disqualifications which exhibition birds should be free from.

Ventilation for Poultry.

The person who supposes that small chickens are in the habit of clustering under the mother on extremely warm nights, "with their heads buried in her feathers and their little bills pressed close against her warm body, where it would seem an impossibility for them to get any air at all," could not have formed their conclusions from very close observation.

Being obliged to keep small chickens closely confined at night, I have had abundant opportunities for watching their habits in this particular, while visiting them late in the evening, for the purpose of shutting up their coops. And in such extremely warm weather I have invariably found them lying flat on the ground in a circle around the mother, and while their bodies were mostly covered by her feathers, their heads would be stretched out away from her as far as their little necks could reach, while the mother hen would be standing with her wings half spread, apparently suffering from the heat of even so close a contact.

A few years ago the weasels began to make fearful depredations among my small chickens. As I had nearly 300, and had no accommodation for confining them, I was obliged to use old boxes, or anything which could be procured for the purpose, so that my experience was as varied and conclusive as it had instituted a series of experiments for the express purpose of determining the effect of ventilation on chickens; and I feel assured that any person who attempts to raise poultry without providing them with a sufficient amount of fresh air, will come to grief.

There is certainly no young animal that will render the air more foul and impure when confined. They are emphatically "fowls of the air,' and in their natural state are accustomed to plenty of it, pure and sweet, and if we would succeed with domestic fowls, we must supply their natural requirements.—*Cor. W. Rural.*

A SURE CURE for a sitting hen—put her on live clams instead of eggs. As the clams begin to get warm they open their shells, and the hen don't go on that nest the second time.

SMALL FOWLS.—An Indiana poultry fancier has a trio of bantams that weigh very little The cock weighs thirteen ounces, one hen seven and the other nine ounces. He is raising a brood of chickens, hatched from the eggs of these hens, that are as healthy and active as those hatched from eggs of larger fowls.

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Our Shows.

Is the system of judging and prize-giving at our shows really beneficial? This is a question which has agitated many minds for several years back. There can be no doubt but that the practical experience of a great many persons is that the decisions rendered at these shows are upon the whole not satisfactory. Judges are apparently either partial or incapable of judging as to the merits of this class and that. They render their judgments to be sure, but no sooner have the people heard of them than divisions without number are immediately formed. Some declare this exhibitor has been wronged, some that, and some the other, until really a doubt supervenes in the best-balanced mind as to whether the system of judging should not be done away with entirely. Take, for instance, cattle of different grades, —what two can agree upon their qualities? And when we descend from cattle to sheep and hogs, the divergence of opinion becomes much greater. When again we descend into the scale of implements and manufactures in general, how much more widely said do opinions differ? The fact is, our shows, it appears from every point of view, whilst giving a certain impetus to some in one sense, are an equally certain clog upon others equally deserving in another. Now, what is the remedy for all this? It must be admitted that the general object of all shows is business, traffic, gain. Men show their cattle in order to secure premiums and thereby increase trade in them. Manufacturers show their various wares for a similar purpose. Indeed, if we except the "Ladies Departments" and one or two more, the same may be safely said of all others. If, then, judging and prize-giving injure some whilst the public, who are really the purchasers, are not satisfied, we may with some degree of reason ask—Why not do away with the system? Why not turn our shows into fairs; hold them for two or four weeks instead of one, let exhibitors show their wares to the very best advantage and to any extent; and let the public be the judges, giving their decisions *not* by awarding prizes, but by leaving their orders? True, there are certain classes of exhibited goods and workmanship which every one likes to see at these exhibitions, and without which the exhibitions themselves would prove not nearly so interesting. Let these continue to occupy their present position; let competent, impartial judges be appointed over them, and let prizes be awarded. We refer in this instance more to "Fine Arts" than anything else. But in most other departments we would say, let the people be sole judges and suit themselves. We have reason to believe that, were this system followed, our shows would be larger and better attended; for it cannot be denied that many articles of superior excellence are thrown into the shade by the opinion passed upon them at these exhibitions.

Cheese Exhibitions

The Cheese Exhibition this year, open to all Canada, was held in Belleville, under the auspices of the Canadian Dairymen's Association, yesterday, September 30th, and continued to-day, the premiums amounting to $500 in gold. The following is the schedule of awards:

Class A.—Best 6 factory cheese, make of 1874, not less than 50 pounds each—two cheese made in July, one on the 22nd and one on the 29th July; two cheese made in August, one on the 6th and one on 20th August, two cheese made in September, one on the 1st and one on the 8th September, each cheese to weigh not less than 50 pounds, to be judged and awarded prizes on their merits and excellence for shipping purposes to the English markets, to be the actual make of the dates named. First prize, $100; second, $75; third, $50; fourth, $25; fifth, $20; sixth, $15; seventh, $10; eighth, ninth, tenth, eleventh, twelfth and thirteenth, $5 each.

Class B.—President's prize, given by Ketchan Graham, M.P.P., gold medal, value $50 and upwards, best two factory made cheese, season of 1874, to weigh not less than fifty pounds each, of any age, description or color. Cheese to be judged, not for present use, but best value for British markets. Prize to be given to the cheese maker who manufactures the cheese.

Class C.—Best two factory-made cheese, season of 1874, to weigh not less than 50 pounds each, to be plain white, uncolored cheese of any age. First prize $15, second, $10. These prizes are given by Mr Thomas Watkins, Esq. Belleville.

Butter.—Best firkin of butter to weigh not less than eighty pounds, $20. Best tub butter, not less than fifty pounds, first prize, $15; second, $10; third, $5, to be judged on its merits for shipping purposes to British or other markets.

One of the conditions under which cheese is to be shown is that no cheese is to be boxed previous to Exhibition under forfeiture of prize.

Any person making misrepresentations or giving incorrect answers to questions will forfeit the prize. No two cheese of same day's make to be shown, nor can the same cheese be shown in more than one class.

Each entry must be accompanied with a lucid, concise statement of the process of manufacturing, handling of milk, process of curing, &c., &c.

W. S. Yates, of Belleville, is the Chairman of the Committee of Arrangements, who furnishes all information concerning the show to those desiring to make a display of their manufacture.

Our Climatic Changes all Bosh.

The London *Pall Mall Gazette* speaks rather contemptuously of the climatic changes which we Americans think are taking place on our continent. It calls the notion a "preposterous fancy," and snubs us by adding — "They have scarcely begun to scratch the surface of a small corner of the soil for a couple of hundred years, and already the idea has begun to be popular among them that, whether from the result of man's operations, or from some unexplored physical causes, the elements themselves are participating in the great revolutions which they have themselves accomplished in the political and social world; that summer and winter are more or less intense in their temperature (for both theories have partizans), the heavens less prodigal of moisture, the seasons more irregular."

The Hay Trade.

Shipping hay, as a business, is growing largely, and usually pioneers hay baling in all sections; properly conducted, it has proved itself safe, remunerative, and requiring less capital than any other business affording the same margin, extant. It has been found to be not alone profitable in itself, but wherever located—whether in villages, at stores, public houses, coal or lumber yards—it always brings trade and business with it, and we have furnished presses to many who at first had only this in view, but have since adopted it as their sole business, and have proved the most successful of hay merchants. Indeed, it has been found that a large local retail trade always follows a baling establishment, as lose hay will not sell in competition, even at greatly reduced rates, if the bales are honestly put up, and a flourishing business could be established in many of the smaller cities and towns by locating a press in them, and retailing baled hay. There is nothing about the hay business that is not easily understood. Properly conducted, such business is safer and more remunerative than ordinary business investments, and may always be increased to any extent, or closed at pleasure, without the usual loss incurred in closing almost any other business. It is not unfrequently conducted with other business, and forms an important addition, requiring but a small increase of capital, and often becomes the main or most remunerative part of the business. Making bales alone is not all that is required, but they should be of the proper size and shape to load or stow well, and at the same time so proportioned as to look well, so smoothly and neely packed as to show the quality to the best advantage—and if hay, the sooner marketed after baling the better, as the outside of the bale soon becomes faded and bleached by contact with light and air—also, soon loses the smooth and neat appearance peculiar to newly baled hay, when properly put up. In consequence of all which, such hay is rated much under its real quality. Indeed, the merchant frequently makes it profitable, and passes rough and faded bales as a much better grade by re-baling. It should always be borne in mind that consumers in most of our large cities are but insufficient judges of the quality of hay, and that their selections are based much upon the appearance of the bales. We think it safe to estimate that the second grade of hay in bales of proper dimensions, neely put up and marketed when baled, will at least command the price of first quality indifferently baled hay—hence an inferior press is not only attended with the expense and loss of time usual in operating indifferent machinery, but really deteriorates the value of the product when prepared for market.—*Dederick's Report.*

German Emigration.

It appears from statistics recently published, that the emigration from Hamburgh and Bremen during the last five years has amounted to 700,000 persons yearly. In the more thinly-peopled districts of Prussia serious disadvantages have arisen from this exodus of the people, and the attention of the Government has been called to it. Amongst the causes to which it is attributed are the great increase in the number of emigration agents in all parts of the empire; the disinclination of young men to serve in the army; the improvements which have been made in the course of the last ten years in the means of communication between the interior and the seaports; the comparative comfort and cheapness of the voyage to transatlantic countries; and the knowledge of the fact that greater protection, advice, and assistance now than formerly are afforded by the emigration offices to the emigrants at the ports of embarkation. The English Consul at Hamburgh, writing on the subject, says that there has been a general improvement in the condition of the operative and agricultural classes in Germany; but the emigration goes on increasing, and the proportion of emigrants who are forwarded by way of England is also at an augmented ratio from year to year.

Agricultural Intelligence.

The Provincial Exhibition.

The Annual Exhibition of the Agricultural and Arts Association of Ontario took place, as announced, on the 21st-25th ult. The weather during the whole time of the show was most propitious, the concourse of people immense, and nothing occurred to mar the satisfaction that universally prevailed. The Exhibition was undoubtedly the best, in most respects, that has hitherto been held by the Society.

HORSES.

As usual the heavy draught and Canadian draught classes appear to be best represented. In the class of thoroughbred horses the number of entries is small. We observed Mr. Linton's, of Pickering, fine imported stallion, "Warmanbie," already well known in the Province and the winner of the first prize for aged stallions at the Provincial Exhibition in Hamilton two years ago. Mr. Linton has also a very fine yearling filly sired by "Warmanbie," out of a Black Hawk mare. "Warmanbie's" stock appears very promising, and we believe he will prove one of the most useful sires in this country.

Mr. M'Crarey, of Bradford, is represented by "Norlander," a very fine thoroughbred horse, five years old, and a winner of several first prizes at previous Provincial Exhibitions. "Norlander" is well-known in this district, and was bred by the late Mr. Sh[illegible] farm near this city.

Mr Crawford, of Montreal, enters a very promising two-year old colt, by "Thunder," out of "Miss Shanly."

Heavy Draught Horses

In this class we notice a very fine black filly, two years old, the property of Mr. Torrance, Etobicoke. This filly is sired by "England's Glory," and although only about two years and four months old she weighs upwards of 1,500 pounds. She combines symmetry with strength, and her action for a heavy animal is perfect. It will be hard to defeat Mr. Torrance's filly, even with the best imported stock. Mr. Armstrong, of Markham, has two excellent yearling colts, a black and a bay, on the ground, that he imported from Scotland last spring. Both colts are very well bred, and will be difficult to defeat. Mr Fisher, the well-known importer of horses, is forward with his coaching stallion, Peacock, the winner of several first prizes at the Provincial. Mr Fisher's horse has filled out well, and is a very fine animal, but lacks the quality that he promised when he won the first prize as a two-year old at Hamilton two years ago. Mr. Fisher was the importer of that famous horse, England's Glory, who has done so much to improve the stock of horses in several sections of the Province, and he has still a very good representative of the old horse in the fine brood mare he intends to exhibit. Mr Graham, of Pickering, will show his brown horse Victor, imported last season, and bred by Mr Wm. [illegible], Kirkcudbright, Scotland. Mr. Charles Mason will exhibit his three-year old horse, "Honest Sandy," and only imported three weeks ago. This is a very fine horse, of a dapple bay color, and combines very great substance with light action, and we consider he will make a very desirable horse for this country. "Honest Sandy" gained the first prize at the Highland Society's Show at Inverness, Scotland, in July last, and last year he received the first prize of £40 at the Ross-shire show. Mr. Mason is deserving of credit for his enterprise and judgment in the selection of such a valuable animal. Mr John Mason has his fine black horse, Crown Prince, imported last season, an excellent type of the heavy draught, and one that will be likely to carry off honors in this country, as he has already done in his native land. Mr Davidson of Pickering, is on the grounds with his handsome brown mare, who has so often been selected for first honors at county exhibitions, and who has also placed two first prizes at previous provincials to the credit of her owner. Messrs. Westey & McClintock show Young Comet, five years old. This horse is a dapple grey like his sire Comet, and although very handsome he lacks the bone and substance of the old horse. The well-known exhibitors the Messrs. Berth & Darlington, are as usual well represented; they show a very fine bay mare of great strength and remarkably handsome; in fact, although one of the heaviest horses on the ground, she has the style and action of a carriage horse. Their two-year old colt is also one of the finest on the grounds. The Messrs Berth were unfortunate to lose a very fine young mare on Saturday night from an attack of inflammation of the bowels. We sympathize with them in their loss, as it is difficult to replace such a promising young brood mare. Mr. Porter, of [illegible], shows his horse, Scotland's Glory, [illegible] 1871, and which gained the second prize [illegible] that year. Mr Wm Thompson [illegible] very fine lot of imported horses, [illegible] of the West, three years old, and [illegible]. He also shows three three year old [illegible], which are first class animals. Mr [illegible], exhibits his brown horse, [illegible] received the second prize as a two year old at last year's Provincial Exhibition. Mr [illegible], the importer of that fine horse [illegible], an excellent yearling by Lord Haddo. This colt, although only sixteen months old, weighs close on 1,400 lbs. Mr. Innes has [illegible] year old coaching stallion. One of the largest exhibitors is the veteran importer of first class stock, Mr Simon Beattie, of Markham, whose name is famous all over this continent as well as in Great Britain. Mr. Beattie is universally allowed to be one of the best judges of stock in this country, which has been well testified to by his annual importations. This year he has brought out a very large number of superior animals, and Mr. Beattie is certainly deserving of credit for the great enterprise he has so long shown. Mr. Beattie has quite a number of horses already on the grounds, and more coming forward. The first that strikes our attention is the powerful brown horse Johnny Cope, bred by Mr Leech, of Inverness. This is one of the best animals that Mr Beattie has as yet imported, and is a specimen of the Clydesdale horse that is not often met with. He was one of five horses selected from a lot of ninety-five at the Glasgow Show in April last, and he afterwards received a £60 prize from the Blairgowan Agricultural Society. We anticipate that it will be hard to [illegible] the horse in the ring. His two year old [illegible] quite [illegible] and is [illegible] specimen of the [illegible]. Of the recent importations we are [illegible] two year old and two [illegible] mares, the latter carried off a prize at the [illegible].

Mr Beattie shows some Canadian bred horses also. A two year old colt "Sultan" [illegible], and is a splendid animal with immense bone and muscle, and his action like a trotting horse. This colt is a pure Suffolk, and his dam is also on exhibition, with a foal at her feet by Heart of Oak. In the class for road and carriage horses Mr. Beattie exhibits Grand Turk and a two-year old colt, also a very good driving horse.

The Aurora Importing Company exhibit a number of good horses, among whom we noticed Highland Chief four years old, bred by Mr. Hunter, Kintyre, and imported last year. This horse gained the first prize of £60 given by the Midcalder Agricultural Society and also stood third at the Glasgow Show. At the Provincial last year he was placed second in his class. They also exhibit three excellent two year old colts two imported last season, and one the present. One of the colts has taken four first prizes in Scotland. Mr. Burgess, Etobicoke, is again in the field with his fine two year old colt by England's Glory which we believe has been invincible hitherto, and has been the terror of exhibitors at our country shows. This colt carried off the first prize at London last year against a number of imported animals. Mr. Isaac Boulton, Etobicoke, also shows a two year old and a three year old colt.

Mr Blanchford shows a very powerful two-year old imported colt and also a Canadian bred one. Mr Atkinson, Etobicoke, and Mr. R Hodgson, Toronto, exhibit very fine colts, sired by that well-known horse "Old England." Mr. Hall Pickering has an exceedingly fine two-year old stallion imported last year, and the winner of several first prizes.

Mr George B Holmes of Lansing, York, has recently imported some very fine horses which were selected by his father, Mr Holmes, of Beverley, Yorkshire, England, the well-known exporter of English horses of all classes. He shows a splendid Cleveland bay horse five years old, named Whalebone. This horse must prove a desirable acquisition to this country, and he represents a class of horse that is greatly wanted. Whilst the heavy horses are being imported by the dozen the Cleveland is seldom seen. Whalebone was bred by Mr. Thompson of Selby, Yorkshire, and is a beautiful brown horse, with great substance and perfect symmetry, and stands considerably over sixteen hands high. He is the winner of sixty seven first prizes in England, including the Great Yorkshire prize three successive years. At the Guelph Show last week he gained the first prize in his class, and was also awarded the diploma for the best stallion of any age. Mr. Holmes also shows the four year old pure-bred Yorkshire cart horse The Duke of Edinburgh, and also the Prince of Wales, a very fine three year old Clydesdale horse.

In the class of carriage horses Mr Cook, of Davisville, exhibits his well known horse Coachman, the winner of several first prizes. Mr Armstrong of Vaughan, shows a very good three-year old. Mr. R. Clarky, of Brampton, exhibits Ontario Chief, three-year old, sired by Eton Chief. This is a remarkably handsome colt, and will be almost sure to carry off high honors.

Mr Thomas Cargill, Toronto township, exhibits Glencoe Chief, a very fair specimen of the roadster horse.

Mr Long of Lansing, York, exhibits his three-year old horse Luck's All, bred by W. Hudson, of Yorkshire, England. We believe Mr. Long has imported some very fine horses recently, that will not be exhibited.

Mr Murray, of York, shows a very nice stylish filly, by his Wagner horse.

Mr Townsend, of Dickersonville, Lewiston, N.Y., exhibits the beautiful roadster stallion Niagara Chief, sired by Old Toronto Chief, and also a six-year old horse, a son of Niagara Chief. The two horses resemble each other very much, and are both magnificent specimens of the roadster horse.

Mr. Thomas Armstrong, Aurora, shows Young Glencoe, a very handsome nice stepping horse.

In this class Mr. Hugh McTavish exhibits a very useful looking horse. Mr. Hall, of Clark, shows a fine rangy filly, and Mr. W. Rolph, of Clark, shows a good two-year old filly, by Jack the Barber. Mr. Moulton has another two-year old, also by the old horse.

Mr. McKay, of Wingham, shows his six-year old horse Young Leopold, by Anglo-Saxon, dam by imported Leopard. This horse gained the first prize in his class at London last year. Mr. Brace, of Wingham, shows a nice looking two-year old colt, a full brother to Mr. McKay's horse.

Mr. Joe Smith, of Etobicoke, will show in the Canadian draught class his handsome black stallion, Dominion. He also exhibits a very good yearling colt by Dominion.

In section twelve, for single roadster gelding or mare in harness, there are eighteen entries, and some very good ones will be exhibited. Mr. Lewis Reford, Toronto, shows a very fine mare and a very fast mover. Mr. John Leys, Toronto, also enters a nice driving horse. Mr C. T. Ewes, Toronto, exhibits a pair of magnificent chestnut mares that gained the second prize at Hamilton two years ago. They have greatly improved, and will now be difficult to defeat.

The display of driving horses so far is not what we have seen at former Exhibitions, but a great many fine animals are yet expected. The show of heavy and agricultural horses, we believe, was never excelled by any previous Exhibition, and the splendid and valuable array tends to show the unbounded prosperity of our agricultural community.

CATTLE.

The show in this department, though numerically less in the aggregate than that of last year, is, in point of excellence of the animals exhibited, undoubtedly the best that has yet been held in Canada; indeed, we question much whether a finer miscellaneous display could be made anywhere else on the continent.

Short-horns.

In all mixed gatherings of the bovine race, in whatever quarter of the globe, the short-horn family now occupies, and will doubtless continue to occupy, the foremost rank. Cosmopolitan to an extent unapproached, and probably unattainable by any other breed, its *habitat* may be said to be everywhere. From its native spot in Great Britain it has spread from John O'Groat's to Land's End, and the "universal intruder" appears to thrive as well amid the blustering breezes of the Orkneys as in the more temperate regions of China and Japan. "Wherever Britons colonise—and where do they not?—" the short horn" says Mr Thornton, "makes his home, and even in many a distant land, where the English tongue is unknown, his influence is extending, and he undoubtedly is the great means of transmitting to other climes and other nations that great national institution—the 'Roast Beef of Old England.'" On this Continent, and especially within the bounds of our own Dominion, the progress made in the breeding of this noble animal during the past few years has been little short of marvellous, and present indications would seem to point to a period not very far distant, when some, nay many of our enterprising breeders will lay claim to selections of stock that will rival in purity and excellence the choicest herds of either Great Britain or the United States.

Burdened with a due sense of the responsibility of attempting to describe animals in whose veins

perhaps course the blood of "8th Duchess of Geneva," of $30 60 memory, we cautiously approach the sheds, and finally come to a stand-still among a number of animals recently imported by Mr John R Craig, of Edmonton, who knows they will be somewhat difficult to beat. The first we notice is "Lady-le Moor," a massive roan cow, of excellent proportions and fashionable pedigree, bred by Sir W C. Trevelyan, Northumberland, England, sire Young Lord Abbott (31609). "Ozone" a white six year old, bred by Mr Knaggs, Yorkshire, is also a very fine animal. Next comes "Mystery," a pretty red 3 year old, of great symmetry. Following these we find "Waterloo 1," a grandson of good Bates Blood, winner of first prize at the late Newcastle Show, England; and lastly "Euphemia," a handsome red roan, bred by Mr R. Stratton, Moss Pitts, England, and winner of seven first premiums at various English shows; beating, in more than one instance, the winners at the Royal

Having noticed the herd of Mr John R Craig, we next inspect a number of animals recently imported by Messrs Beattie & Miller, Whitevale, Ont. Prominent among these is "Royal Oxford Gwynne," by Baron Oxford (2375), of Bates-Princess descent, bred by Mr C. J Webb, Elford, England. He is a truly noble-looking animal, and was a "highly commended bull," in his class, at the recent Bedford Show of the Royal Agricultural Society of England. "Baroness Conyers, by Baron Rattery (27909), is a stately three year old, from better of admirable mould and touch, breeder Mr Dathwark, Yorkshire, England. She has also been a winner at several English shows, and stood first in her class at Bedford. "Butterfly Duchess" is an exceedingly well-formed roan four-year old, got by Royal Butterfly 20th (25097.) She was the second prize cow at the Royal. "Edith Emily," a highly commended in calf heifer at Bedford, and "Victoria Royal," a successful prize taker at some of the best Irish shows, are each of them animals that deserve and attract much attention. The former was got by Cambridge (3441), and bred by Mr Dathwark, Yorkshire, England, the latter is from the herd of Mr. J. Downing, Ashfield, Ireland. The last on Messrs. Beattie & Miller's shorthorns that we notice is "Nectar," a nice two year old red heifer, by Heir of Englishman (24122), bred by W. S. Marr, Uppermill, Aberdeenshire, Scotland. Messrs. J & R. Hunter, Alma, show a number of Canadian bred cattle, among which we notice "Rose Blossom," a two year old heifer, of good parts, sired by Prince of Wales (536), a yearling bull, "Lord Aberdeen," by Knight of Warkany (1034); "Queen of Sunnyside," a shapely cow, by Sir Henry (678); "Lady Fanny" aged four and a-half years, red, bred by Mr Cruikshank, Aberdeen, Scotland, "Oxford Rose," a two-year old red roan heifer, by Oxford Duke, and a few other animals of less note. Messrs. Birrell & Johnston, of Greenwood, Ont., exhibit a number of very good animals, among which we find "Scotchman 2nd," an imported three year old bull of excellent proportions, bred by the Duke of Buccleuch, Scotland, and winner of first prize and diploma, we are informed, at the late show at Whitby, also the handsome yearling roan heifer, "Maggie Hill," which bore away the premium in her class on the same occasion. John Miller, Brougham, shows a very good Canadian bred cow "Maggie Bly," a yearling heifer, "Maggie Bly 2nd," and a pretty roan, "Maggie Bly 3rd." His two-year old bull "Cherry Duke," by "Oxford Mazurka," (1923) is a very promising animal. J. & R. McQueen, Pilkington, also exhibit some Canadian bred animals of much merit, one of which, "Our Fritz," is deserving of special notice. James Russel, Markham, shows "High Sheriff," an importation from the herd of Mr. S. Campbell, Aberdeenshire, Scotland; "Nonpareil," by Kinnellar 2nd (sold to go to Prince Edward), "Isabella," a very pretty three-year old roan, by Wellington (2421) and two nice heifer calves. The foregoing we believe to be the "cream of the show. If we have omitted anything of note, the inadvertency, if such it may be called, is attributable not so much to the large number of animals on exhibition as the difficulty of making selections where everything is so good.

Ayrshires.

The representatives of this choice breed of cattle are present in great force, and a finer lot of animals it would be difficult to find within even the confines of old Ayrshire itself. Certainly a larger or choicer collection of the breed it has never been our privilege to witness before in Canada. The principal exhibitors are Messrs. J. K. & J. W. Jardine, Saltfleet, who show a large herd of imported cattle, comprising one bull four and a half years old, one yearling bull, one bull calf, one aged cow, one three-year old cow, one two year old heifer, and two younger animals—eight head in all, and a fine lot they are. This herd we understand stood first at the Guelph Central Fair William Rodden, Plantagenet, shows a very fine aged bull, one two-year old bull, one yearling bull, two cows, two two-year old heifers, two yearling heifers, and a number of calves. John Holden, Belleville, exhibits a number of imported animals, among which we notice, specially "Pride of the Hill," first prize winner in the three-year old bull class at the New York State Fair, held last week at Rochester, and "Canova," winner of the second prize in the two-year old bull class at the same Fair. George Huston, Blanshard, shows a collection of very fine animals, male and female. J. P. Wheeler, Scarboro', also exhibits extensively—among other good animals the fine bull Torbolton, a successful prize winner at former shows. Among the remaining exhibitors are Messrs. T. Guy, Oshawa; John Patton, Scarboro'; James Lawrie, Malvern, &c.

Herefords.

The only exhibitors in this class are Messrs. F. W. Stone and George Hood, Guelph; the former gentleman showing twenty head, five bulls and fifteen females, and the latter five bulls and three females. Prominent among the animals exhibited by Mr. Stone are, "Commander-in-Chief," a six-year old bull of much substance and beauty; "Victor 2nd," a handsome three-year old, and "Lord Dufferin," a very promising yearling. Among the females shown by the same gentleman, "Gentle 4th," a pretty three-year old, and "Sweetheart 3rd," a very snug two-year old, are worthy of notice. Mr. Hood's "Canadian Knight" is a grand specimen of a Hereford bull, and "Sir Colin" looks as though he were going to be "just such another." "Verbena" and "Graceful" are old yet comely, and "Lottie Lee" has every appearance of some day distinguishing herself.

Devons.

The majority of entries in this class are by Messrs. George Rudd, Guelph, T. R. Armstrong, Markham, and Thomas Guy, Oshawa. Mr. Rudd shows twelve animals in all, among which we notice—"Hartland," a very fine bull bred by the late John Burk, Bowmanville, "Dandy," a well-shaped two-year old bull bred by H. H. Spencer, Whitby, and "Sheriff," a promising yearling. Mr. Armstrong shows two very serviceable-looking cows—"Marion" and "Stately"—and Mr. Guy a nice aged cow—"Helena"—and a very pretty heifer calf.

Galloways.

In this class the only exhibitors are Messrs. Wm. Hood and Thomas McRae, Guelph, the former showing nineteen head and the latter eleven. Among the animals exhibited by Mr. Hood are "Roger," a massive four-year old bull of good appearance and action, and "Sall," a handsome aged cow of good substance. At the head of Mr. McRae's herd stands "Lord Kenmuir," a noble-looking animal, flanked by several good heifers and calves.

Fat Cattle, &c.

There are but few entries in this class, but the quality of the animals exhibited is more than usually good. Walter West, Guelph Tp., shows the same white mammoth that took the first prize and sweepstakes at the Guelph Central Fair The animal is very large—a perfect tower of beef—and enormously fat. Satchell Bros., Ottawa, and George Hood and William Whitelaw, Guelph, are also exhibitors in this class.

SHEEP.

The show in this department is, on the whole, a very good one, rendered particularly so by a more than usually large display in some classes of very superior imported stock.

Cotswolds.

In the "two shears and over" class, Messrs. Beattie & Miller, and John Snell & sons show one pair each of imported rams, Joseph Franks, Dorchester, and James Russell, Markham, one pair each; and John R. Craig, one very good animal—imported last month. Messrs. Birrell & Johnston, John Miller, and a few others also exhibit in this class. In shearling rams, James Russell is forward with six very fine animals indeed; J. R Craig figures for five; John Miller, three; John Snell's sons, five; and Beattie & Miller, ten—all this year's importations. Some idea of the estimation in which this breed is held in Great Britain may be gathered from the fact that one of the above, belonging to John Snell's sons, cost, this season, in England, $540—the highest price, by the way, reached at any of the British sheep sales of this year. There are a few other exhibitors in this class, whose names we are unable to learn. In ram lambs, John Snell's sons are again on hand with five representatives; James Russell shows three; Joseph Franks, Dorchester, two; John Miller, two; and Beattie & Miller, one. The animals in this class are, without exception, good.

Passing to the ewes, we notice in the "two shears and over" class, two pair of splendid animals, exhibited by James Russell—some of them prize winners, as lambs, at the Royal and Gloucester shows of 1872. Messrs. R. J. Craig, Beattie & Miller, John Miller, and Birrell & Johnston have each some of their recent importations in this class. In the remaining Cotswold classes, the gentlemen last mentioned have it pretty much their own way, and we notice that a large number of the animals exhibited are this season's importations. In the "shearling ewe" class, a pen of animals shown by the Messrs. Snell is particularly attractive, in that it contains some of the first-prize winners at the late Royal of England.

Lincolns.

Under this head James Russell, Markham, shows two very fine shearling rams, two pair of ewes, and a pair of nice ewe lambs. Jas. Anderson, Westminster, is on hand with a two-shear ram, one ram lamb—both prize takers at Guelph Central—and a pair of handsome ewe lambs. Patrick McLevie, Walpole, shows a very nice shearling ram, and a good ram lamb; and James Healey, Adelaide, a two-shear ram of some merit. The entries of Lincoln sheep number forty-five.

Leicesters.

Adam Oliver, Downie, shows a very good aged ram, some fine ram lambs, two pairs of shearling ewes, and a pair of very promising ewe lambs. C. S. Smith, Acton, exhibits a splendid aged ram and a pair of excellent ewe lambs. Samuel Harper, Hamilton, Northumberland, shows a couple of good rams and some ram lambs. Patrick McLevie, Walpole; Peter Rodgers, Ayr, and several others exhibit in this class.

Southdowns.

In this class John R. Craig exhibits a number of prize winners at the recent English shows, including the Royal, and bred by the noted Southdown breeder, Lord Walsingham. Robert March, Richmond Hill, James Anderson and John Anderson, Guelph; H. H. Spencer, Whitby, and a few other breeders also show pretty extensively. The entries of Southdowns number about one hundred.

Shropshire, Hampshire and Oxfordshire Downs.

The principal exhibitor of these animals is H. H. Spencer, Whitby, who shows two very fine aged rams, two shearling rams, one ram lamb, two pair of aged ewes, two pair of shearling ewes, and two pair of ewe lambs. The entries in this class number twenty-five.

Fine Woolled Sheep

The only exhibitor in this class is P. Hinman, Haldimand, who shows as ugly a lot of merinos as the most fastidious breeder of these animals could possibly wish for.

PLANTS AND FLOWERS.

This department of the Exhibition is of course one of the most attractive in it. We have seen it fuller, however, and more variety in the species shown, particularly in the large greenhouse plants. The principal display of the latter—a very large proportion of the whole—is from the conservatory of the Government House. It contains several rare and beautiful specimens, but not much that is very striking. There are a great many other conservatories in the city which might have contributed some exceedingly fine plants as they have done at local flower shows, but which on this occasion are quite unrepresented. Mr. Francis Richardson, of Toronto, shows sixteen greenhouse plants in one collection, three or four of which are very pretty. Mr Thomas J. Harris, Toronto, takes the first prize for the best display of plants and flowers, consisting of representatives of upwards of twenty different species. Mr. Joseph Pape, York township, shows in the same section nearly thirty pots, but the flowers are not as well grown as those of Mr. Harris. Mr. Pape takes the second prize. Mr. Jas. Fleming, Toronto, exhibits among the extras six fine large coleus, on which he has received a prize. Mr. Pape also shows some of the same plants.

Coming to the cut flowers, we find the only exhibitors in stocks to be Messrs. John Stacey, Kingston, M. Flanagan, Kingston, and Charles Scott, Caledon. Mr. Flanagan takes the first prize, and Messrs. Stacey and Scott the second and third respectively. The display of roses, "three of any variety," is very small. Messrs. George Leslie & Sons, Leslieville, take the first prize, and Mr. Flanagan the second. The third is awarded to Mrs. J. Harris, Toronto, who exhibits three yellow roses of the "Gloire de Dijon" variety. Quite a fine display of gladiolus is made. In this section again Mr. Flanagan takes the best prize, while Mr Scott gets the second, and Mr. James Fleming, Toronto, the

third. Among Mr. Scott's is a very pretty rich-colored one of a variety called the "Neptune."

Large vase bouquets are shown by Messrs. John Paxton, Carlton, Joseph Pape, Francis Richardson, Toronto, and some one else whose name does not appear on his exhibit, two bouquets each So much taste has been displayed in the arrangement of the flowers, and the flowers themselves are so fine, that the judges must have experienced considerable difficulty in awarding the prizes Mr Pape has taken first, Mr. Paxton the second, and Mr Richardson the third.

Eight hand bouquets are exhibited, but with the exception perhaps of one exhibited by Mr Pape, who takes the first prize, and one by Mr Harris, none of them are particularly fine The judges have not given the second prize to Mr Harris, however, but to Mr. Paxton, and have awarded the third to Mr. Fleming Three pair of side table bouquets are shown, and on one pair which Mr. Paxton shows he deservedly takes the first prize. The latter are prettily formed, at the same time that the flowers are tastefully arranged. Mr Richardson takes the second prize on a pair containing a great variety of flowers, very tastefully arranged. The third has been given to Mr. Flanagan. Four bouquets of everlasting flowers are shown. In one of them belonging to Mr. James Wright, the flowers are arranged so as to constitute the bouquet an extremely pretty ornament. It takes the first prize. In the collection of cut flowers fine displays are made by Mr Charles Scott, Mr George Tyre, Brampton, and Mr. R M Smith, Burford. These exhibitors have taken prizes in the order in which their names are mentioned. In double zinnias there are five exhibitors, among whom Mr. Flanagan takes the first prize for a very pretty collection. Of China asters Mr. Flanagan shows a large and extremely fine collection, but excellent though his flowers are, he only takes the second prize in them, a considerably prettier collection being shown by his fellow-citizen, Mr. Stacey, and taking the first prize. The same two gentlemen show German asters, with the same result as in the other section A large number of collections of verbenas are shown, but few of them are of much account. Messrs Leslie & Sons, however, take the first prize for the best collection, and also the first for the best twelve named. But few phlox are shown, and Messrs. Leslie & Sons and Flanagan are the only two persons who exhibit any which merit anything like special notice. These gentlemen take first and second prize respectively. Only three collections of pansies are exhibited. Two of them, shown by Messrs. Flanagan and Stacey, who take first and second prize respectively, are very fine; the flowers in the other collection are of but indifferent quality. Ten collections of dahlias are shown, and most of the flowers in them are magnificent specimens Messrs Leslie & Sons exhibit a very large collection, on which they take the first prize for the largest and best. Mr Flanagan takes the second prize, and Mr Stacey the third.

Mr. Flanagan exhibits something in this department which forms a peculiar attraction to a great many, viz., a collection of daisies, on which he has been awarded an extra prize.

Messrs. Leslie & Son take a first prize on a collection of six hardy shrubs, spikes in flower

Mr. Charles Scott shows two bouquets of wild flowers, and has been awarded an extra prize on one of them.

Among the extras three specimens of the Phlox Drummondii are shown In the same section Messrs Flanagan and Stacey exhibit specimens of an extremely beautiful flower, the Danthus Beddewigii Mr. Flanagan easily takes the first prize in this

In the section "Bourbon, Tea and Noisette roses," there are three entries. On much the best specimens Messrs Leslie & Sons take the first prize, the second going to Mr Pape In the section "Hybrid perpetual roses," Messrs Leslie and Flanagan are the only exhibitors; they take the first and second prize respectively, both on very fine flowers The only roses in pots are those shown by Mr Pape

There is a pretty fair display of petunias, both double and single. In cockscombs there are three entries. Mr Noah Sunley, Guelph, takes the first prize on six very good ones, while Mr John McCarter, Toronto, receives the second on half a-dozen, of which three are very good, and the others inferior. Mr. W. H. Doel, Chester, takes the third. Of fuchsias, only two collections of six each are shown, and only three or four of them altogether are what might be called fine flowers Mr. Harris takes the first prize, and Mr Pape second

Among the extras in this class Mr. Fleming exhibits some very ornamental large flowers called tritomas, on which he takes a prize. He also exhibits in the same section a collection of carnations.

Mr Paxton takes a first prize in a floral design for a supper table—a magnificent affair, into the taste of ornamentation of which fruit as well as flowers enter. The same gentleman shows a beautiful rustic work ornament for a garden, adorned with flowers, creepers, &c.

GARDEN VEGETABLES

The display in this department is unusually small, which is of course to be attributed to the drought The cauliflowers are inferior, though a considerable number are shown Beets are small The large onions exhibited are of fair quality, but there are not very many of them The pickling onions are very fine. A peck of very fine shallots are shown The corn exhibited in this class is extremely fine Table parsnips are not so numerous, but what are shown are, without exception, very fine. The table turnips are small in number, and rather inferior in quality, There are a fine lot of vegetable marrows A large number of fine fall and winter squashes, and several samples of salsify of fair quality The potatoes are very few in number, but what are shown are excellent Among them, Mr. W H Doel, of Chester, exhibits a sample of a seedling called "Brownill's Beauty," apparently a good variety. A ticket on them states that 22 lbs 11 oz. of these were produced from one pound of seed.

Among the extras of this class Mr Joseph Simpson, Toronto, shows samples of Dana Oara beans, and "Victor" tomatoes. In the same section Mr. Charles Scott, Caledon, exhibits a sample of Chinese winter radishes, which somewhat resemble beets, and Messrs. Syme Bros. show leeks, and a sample of what are called 12-pound beets. Three cabbages constitute the whole show of that vegetable. They are entered in the extra section as "marble mammoth cabbage, but their name belies their size, and they are, perhaps, no more like marble in hardness than any other cabbage.

FIELD ROOTS, &c.

This department affords another instance of the extent to which the drought has operated against the successful production of certain classes of the "fruits of the earth" Tables which in former fairs groaned under their loads of mammoth squashes and pumpkins, and of cart loads of turnips, mangolds, carrots, &c, now show a great many vacant spaces, or are in part occupied with some of what properly belong to other classes Potatoes are, however, shown in no inconsiderable quantities, and despite both the Colorado beetles and the drought, the samples exhibited are without exception good Those of the Early Rose variety constitute a very large proportion of the entire display, and are both fine sized and sound The Garnet Chilis are perhaps not so numerous as at some former shows, but are just as fine Among the mangel wurzels some immense ones grown on the Lunatic Asylum farm, and on the farms of Messrs James Burgess, Mimico, Thomas S Coleman, Bowmanville, and Simpson Rennie, Scarboro' are shown There is quite a large display of sugar beets, of which Messrs Alex Marsh Richmond Hill, Burgess, and Renne are the chief exhibitors The carrots shown are not very numerous, but remarkably fine. Some of them might almost be described as mammoth. Among them are several samples of Belgian carrots, some of which are of immense size Parsnips are also good. A considerable quantity of good chicory roots are shown. The display of turnips is not large, but fair as regards quality Some excellent globes, Aberdeen yellows, Greystones and Swedes are exhibited Among the latter are some of Marshall's improved, which are very large Of the Skirvings shown some are also very large. Two squashes are all that are exhibited, and they are not unusually large, though they are of a good size for the year Mr James Moore, Eglinton, is the exhibitor The same gentleman exhibits two large pumpkins, which are all that are shown A few dozen roots of kohl rabi are exhibited, which are perhaps smaller than usual, with the exception of some shown by Mr Wm. Burgess, Mimico, which are very large.

DAIRY PRODUCE.

The display in this department is perhaps not as large as might be expected, but with regard to cheese, fairs for that commodity alone are now held periodically in the great centres of its production, and as a consequence there is not so much of an object for exhibiting at the Provincial Fair as otherwise there would be. The following is a list of the exhibitors of factory cheese, with their places of residence:—Peter Frederick, Belleville; A. W. Forfar, Bowmanville; O. S Philips, King; J. W Bressie, Balderson; G. V. De Long; Valentine Kerteber, Melverton; Andrew Johnston, Bucksgrove, R. Z. Rogers, Gratton; E. F. Brentwell, Thurlow; E. Hunter, Mount Elgin. Among them, these gentlemen show about 30 cheese Messrs. John Calver, Brantford; John Rowat, North Dorchester; Michael Ballantyne, Blanchard, and John Currie, Dereham, each exhibit a dairy cheese. The above, with two Stilton s apiece shown by Messrs. H. K. Parsons, Guelph, and Rowat, North Dorchester, make up the display of cheese. But though there is not a very large quantity of cheese shown, what is on exhibition is all, at any rate as far as can be judged from a cursory examination, of excellent quality The display of butter comprises nine packages of not less than 56 pounds each, and nineteen of not less than 25 pounds —not a very large one for a Provincial Fair; no rolls are shown on this occasion. Only one person exhibits bread—a white and a brown loaf—and the judges have not awarded it a prize. In this department a few samples of exceedingly fine honey are shown, both in the comb and strained. There are a few samples of maple sugar sold and powdered, none of it particularly fine. What has been mentioned, together with one side of bacon and a ham, make up the whole display in this class.

FIELD GRAINS, HOPS, &c.

The exhibition of grain is not at all what might have been expected in Toronto, and not nearly so large as was seen at London last year. The competition was not so embarrassing to those who had samples on exhibition. It must be said, too, that what was shown was of a very good quality, and none of the grain was of an inferior sort. It is remembered that the fall wheat was severely winter-killed, but the berry was well filled and bright of all the varieties of winter wheat shown. The average yield per acre was not high, but it was partly compensated for by the excellent quality of the grain. In spring grain the sample was not so good perhaps as the farmers have seen, but the yield has been fuller from the ground. A novel proceeding this year is the action of the Board in purchasing all the first prize samples of grain and seeds. It is also said to be the intention of the Ontario Government to procure this grain, and send it to their emigration agents in Britain, to assist in demonstrating the advantages of Canada as an agricultural country.

There are not so many bales of hops as have been seen at former exhibitions, but what is exhibited is a good sample. The exhibitors are C. J. Conover, Toronto township, who takes the first prize; Coolledge & Dunning, Prince Edward County, take the second prize; and John Wheaton, London, takes the third prize. The other exhibitors are W. H. Cotter, Demorestville, D. S. Smith, Acton, and N. Sprague, Demorestville

The first prize, 25 bushels of fall wheat, is awarded to Robert Shearer, Niagara township, who receives also the Canada Company's prize of $100, Thomas Manderson, Reach, takes the second prize, and John Smith, Burford, gets third. These samples are all of the Diehl variety, and are first-class, full, bright, and sound. There is also a good quantity, and the competition has been healthy. In spring wheat the samples are first-class; scarcely so fine, some of the farmers say, as it was last year, but still very good and a considerably better average to the acre There is not so much of this grain shown as of the fall wheat.

Barley is a bright fine sample, but there is not much on exhibition; indeed, the paltry seven or eight bags was a reflection on the enterprize of the farmers of York and Peel, lying round the metropolis. The sample is bright, and not so heavy as it was last year, it is generally conceded. There was, however, a higher average to the acre. There were samples of two rowed barley here, but the variety is scarcely known as an article of production, the six-rowed being the staple growth.

There are three bags of rye, so meagre a display that it is needless to further mention them. There is a better display of oats that is not so heavy in the grain as we have seen, but a general satisfaction appears to be felt with regard to the yield.

There is a better show of peas, to which the observation made concerning the oats may be applied with propriety.

There is a large display of field beans, also of fair quality. These beans promise to become a staple article of food here, as they have long been in other parts of the Dominion and United States.

Of timothy seed there is not much shown, and what there is on exhibition is small, and, it would seem, not well nourished or matured in the growth. The same remark may be made with emphasis of the two small parcels of clover seed that are exhibited. There are only two small parcels of flax seed, which looks very good, however. The display of turnips, field carrots, and mangel wurzel seeds is quite fair, and of good quality. Tares, buckwheat, millet, and

Hungarian grass seeds demonstrate mostly that these productions of the field are of general cultivation.

And it will not be without interest to a large number of our people to know that there were some very good samples of tobacco.

THE CLOSE.

Friday, like the fifth act of a melo drama, was the close of the latest and by far the grandest in some respects of all the Exhibitions that have been held in Canada. It is easy to point out in what particular the Exhibition falls short of former ones, namely, in some articles of orchard, or garden, or field production and in this we claim exemption from reproof in the observation that the present was the best Exhibition; for the season, which is not men to arrange, was not so favorable as seasons that have ripened the better crops of other years. But in all articles of manufacture, and wherever the spirit of enterprize, and wealth, and skill enter there it was plain that this was by far the best of all the Exhibitions on record. Even in the interest taken in this great fair and show, notwithstanding the rival attractions of the Great Central Fairs at Guelph, London, and Hamilton, the attendance here shows a marked improvement. It may be interesting to note the number of total attendance at the Exhibitions during, say the past six years. The total gate money is given which multiplied by four will give the visitors, and it may be allowed that 10 per cent may be added for members and complimentary tickets. In 1869, London, the money was $15,038, and, in round numbers, 66,000 visitors. 1870, Toronto, $17,451, 78,000 visitors; 1871, Kingston, $6,053, and 26,600 visitors; 1872, Hamilton $12,563 and 55,200 visitors; 1873, London, $15,950 and 69,900 visitors, and 1874, Toronto, $19,260, and 85 000 visitors. And these visitors are, it may be said, also greatly improved; for it is a matter to be proud of, that nearly all the visitors to this Exhibition are land-owners, tenants in their own rights, yeomen in the highest sense of the word. And it is a good thing to know that generally the visitors are well pleased with their visit to Toronto itself. But the Exhibition is at an end. At two o'clock the gates were adandoned and the movement to get away became general. The outward march of the live animals had been going on from a much earlier hour; horses and cattle on foot, and sheep and great heavy swine in open cages, and poultry in coops. So the stream went on leaving the grounds during all the hours of the afternoon and late in the evening. But long before the evening came the visitors had gone, in all the directions leading homeward, by private conveyances and by rail in long crowded trains. The downfall of all the refreshment booths followed late in the afternoon; and when the evening came on, there was nothing but the dregs, the camp followers, over whom the police exercised wholesome control. It is satisfactory to have it to say that there never was less disorder at any Exhibition than at this, which was owing far more to the general respectability of the visitors than to all the display of moral and physical force on the ground.

Guelph Central Fair.

This show opened on the 15th ult., and continued for three days. The attendance, especially on Wednesday and Thursday, was very large, but on the whole the exhibition was not equal to that of last year. We subjoin brief notices of some of the leading departments:—

HORSES.

In this department the present exhibition is a grand success. Such a show of roadsters as there is only what it is reasonable to expect to find in a portion of the country so celebrated for that class of horses as the section about Guelph. The agricultural and heavy draught horses, too, are of such a character and so numerous that it would seem that with that description of live stock the farmers in this part of the country must be pretty well provided. In blood horses there is a considerable falling off from last year's show.

CATTLE.

Unlike the show of horses, that of cattle is a great falling off from last year. This is in part attributable to the fact that two of the principal exhibitors hitherto, Mr. Snell and Mr. Miller, have no cattle here this year. The cattle which Mr. Snell has imported this season, to replace what he disposed of at his last sale, he is reserving for exhibition in their best condition at Toronto next week. Mr. Stone, too, though he is one of the principal exhibitors at the present fair, does not show as many beasts as previously, owing to having less stock in his possession than usual, as well as because, like other breeders, he did not care to bring his beasts to the Exhibition during such very warm weather as just preceded it. As has generally been the case at past Exhibitions, the competition on this occasion is confined chiefly to two or three breeders in each class in Durhams—that being the most popular of the breeds—there is a fair number of competitors. Some of the finest animals of that breed are shown by Mr Stone and by Messrs J. & R. Hunter, of Alma. The other principal exhibitors are Messrs. J. R. Craig, of Edmonton; James Cowan, of Galt; Joseph Brown, of Galt; and J. & W. Watt, of Nichol.

Of Devons there is not a satisfactory show, either in point of numbers or of quality. Only three or four of the animals are really fine ones; the rest, if not actually poor, are at the most not very good specimens of their breed.

The Herefords perhaps hold their own in this show better than any other class, but the display, with the exception of perhaps half a dozen animals, is entirely made by Messrs. Stone and George Hood, of Guelph.

Of Ayrshires there is a pretty good display, though numerically it is somewhat inferior to that of last year. The Messrs Jardine, of Saltfleet, are again the principal exhibitors in the class, though Mr George Huston, of Anderson, enters into competition with them with a considerable number of beasts. Mr Thomas McCrae, of Guelph, also exhibits a few animals in this class, and Messrs. W. Howand & Co., of Walkerton, several.

Of the Galloway breed of cattle there is a display proportionally much larger than any other in the Exhibition. There are 57 animals of this breed entered, against 42 of last year. Only a few of the beasts are, however, very fine looking specimens. Mr Wm Hood, of Guelph, is the largest exhibitor in this class, but Mr. Thomas McCrae also shows a considerable number of animals. Mr. William Dow, of Nichol, is the only other exhibitor of Galloways.

In grades there is a pretty fair competition.

Of fat cattle there is a large show. Few, if any, of the beasts in this class have the enormous amount of adipose tissue which renders a carcass finer to look at in the shambles than the meat is pleasant to the taste of most persons, but most of the animals would make good eatable beef.

SHEEP.

Leicesters.

The show in this class is said to be fully equal, both in quantity and quality, to at least the average of former years. The principal exhibitors are Messrs. Wm. Whitelaw, of Guelph township, Adam Oliver, of Downie, and the Messrs. Parkinsons, of Eramosa, Messrs Waldie and Smith, of Acton, and a few others also show some very fine animals. The principal prizes were about equally divided between Messrs. Whitelaw and Oliver.

Cotswolds.

The entries in this class are not so numerous as we have seen them on some former occasions, but the animals, in most instances, show unmistakable evidences of good and careful breeding. The leading exhibitors are Mr J. R. Craig, Edmonton, who shows a pair of very superior imported shearling rams, and Thos Waters, of Eramosa, whose four pens attract general attention. Messrs. T. McDonald and D McRae, of Guelph and a few others are also successful exhibitors in this class.

South Downs.

The number of entries is large, and the entries generally so superior and nearly matched, that it must have given the judges in some instances no small trouble to arrive at conclusions. Mr. John R. Craig shows a magnificent, imported shearling ram, and two pairs of as fine shearling ewes as perhaps ever crossed the Atlantic. Mr. James Anderson, Pushinch, has four very fine pens, and Mr. Douglas, of Dumfries, the same number—all fine looking animals.

Lincolns and other Long-Wools

The leading exhibitors in this class are Messrs. Wright and Butterfield, of Sandwich. Mr. Darling, of Middlesex, and Mr. Thomas Easton, of Nassagaweya, also show some nice animals. The show, on the whole, is more than usually good.

Fat Sheep.

The first, second, and third prizes for "aged wethers" go to Mr. Hood, of Guelph; the first prize for shearling wethers and fat ewes, as also the weightstakes for "best fat sheep" has been awarded to Mr. Whitelaw, of the same place. Most of the animals exhibited are in grand roasting condition.

PIGS.

Berkshires.

There is a very fine display of this famous and favorite breed, and the pens allotted to them appear to be the chief centres of attraction in this department. W. A. Bookless, Guelph, takes first prize for his magnificent boar, "John A. Macdonald," imported by Mr. Roach, of Hamilton. The other exhibitors are Mr. James Cowan, who carries off the first prize for boar under one year old; Robert Ford, Limehouse; J. & R. Miller, Guelph, first for breeding sow; Geo. Rudd, Puslinch, first for boar one year and under; John Bunyan, Guelph, first for sow under one year; John Hewer, Guelph, first for pigs dropped during 1874; and a few others.

Essex.

There is a large number of entries in this class also, but owing to the tickets having in most instances been removed, and in the absence of the owners, we are unable to give particulars. The principal exhibitors are Messrs. Wright and Butterfield, James Anderson, Thos. McRae, and J. Featherston.

Suffolks.

There are but few representatives of this class on the ground, but we observe that the quality of those exhibited is fully up to the standard. James Mair shows, among other fine animals, a very nice sow, under one year, which deservedly carried off the first prize. Messrs. Wright and Butterfield take the ribbons for sow, one year old and under, and for a boar, both very choice animals. Mr. J. Hunt and Mr. West also exhibit in this class.

Yorkshires.

Mr Solomon Gooding, of Guelph, takes first prize for a very handsome young sow, and Messrs. Wright and Butterfield the same for an equally fine boar. John Tuck, Guelph, J. & R. Miller, W. West, J. Mair, J. Featherston, and a few others, also make a good display.

GRAIN, &c.

The show of grain, field seeds, &c., is scarcely as large as was to be expected from the good accounts which have been received of the year's crops.

The white winter wheat shown is decidedly fine, large, plump, and clear in the berry. For the premium for the best two bushels there are seven competitors. Mr. William Tuck, of Waterdown, takes the first prize with a splendid sample, while the second prize goes to Mr. Robert Tuck of the same place, and the third to Mr. W. M. Smith, of Fairfield Plains.

Thirteen bags of the Treadwell variety are shown. This is also very fine grain. For the best two bushels Mr Samuel Sugg, of Clifford, takes the first prize; the second prize in the same section is taken by Mr George Short, of Salem, and the third by Mr. James Auld, of Eramosa.

Of red winter wheat two bags comprise the entire display. With one of these Mr. Wm. Whitelaw, of Guelph, takes the first prize, and with the other Mr. Richard House, of Pilkington, carries off the second.

Of Fife wheat there are eight bags on exhibition. The first prize is taken by Mr. John Turner, of Garafraxa, the second by Mr. Simpson Rennie, of Milliken, and the third by Mr. Isaac Anderson, of Eramosa.

The spring wheat shown is generally of about average quality; perhaps it is somewhat darker than usual. Altogether there are about fifty bushels of it shown. On two bushels of "any kind" Mr. John Turner takes the first prize, Mr Isaac Anderson the second, and Mr. Robert Tuck the third. On the best ten bushels Mr. Anthony Turner, of Garafraxa, takes the first prize.

Of barley a large quantity, comparatively, is exhibited, almost all of it six-rowed, and, without exception, it is splendid grain.

The oats shown, of which there are quite a number of bags, are also, with the exception perhaps of a couple of bags of black, beautiful grain, being very full and clean. With the rest there are five bags of the Norway variety shown.

Peas seem scarcely up to the standard of former years, marrowfats in particular.

Of flax seed a considerable quantity is shown. Of grass seed there are only two bags, and of clover seed only one.

Hops are shown to the extent of five bales and are of unusually good quality. Mr. C. S. Smith, of Acton, takes the first prize, Mr. John Allan, of Erin, the second, and Mr. George Moore, of Waterloo, the third.

POULTRY.

In this department at any rate the exhibition is decidedly one of the finest ever held in the Province, as it is one of the largest. So numerous are the

entries that it would be useless even to attempt an enumerationof the meritorious fowls to be seen. Mr. H. M. Thomas, of Brooklin, is as usual a very large exhibitor, having upwards of 150 birds in the show. Among the principal exhibitors are also Messrs. F. Sturdy, Guelph; N. M. Campbell, Brooklin; John Bogue, London; D. Allen, Galt; L. G. Jarvis, London, and P. Breiding, Berlin.

ROOTS.

Owing to the drought this department of the show is a very poor one. The entries are much less numerous than last year and the quality of what is shown is in general much below the standard. The turnips, with the exception of perhaps two or three good samples, are unusually small, as are also mangolds and beets. Of white carrots there are some very fine samples; the rest are poor. The potatoes constitute the finest portion of the display of roots A very large quantity is shown, mostly of excellent size and quality. The Early Rose and Garnet Chili are very fine; there are also a few good Kidneys.

FRUIT.

In this department the tables are far from being as well covered as they have been on former years, the number of entries being this year 573 against 846. The drought has been against apples, pears, &c., as well as against other things. There is a pretty large number of apples shown, and a few of the varieties are really good fruit, but most of them have not that clear skin and appearance of soundness which is desirable, Among the largest exhibitors are a Rochester nurseryman; Messrs. J. W. Miller, of Pickering; Charles H. Stock, of Brampton; and Thomas McCullough, of Eramosa. The pears are a small display of perhaps nearly average quality. There is quite a large show of grapes, both of those grown in the open air and of those grown under glass. Of both there are a great many very good specimens. On the whole, this display is a very satisfactory one. The exhibitors of this fruit are chiefly Guelph, Brantford, and Galt people. Of crab apples there is not a very extensive but an excellent display. A large number of samples of plums are shown, and some of them are extremely fine.

PLANTS AND FLOWERS.

A large number of fine house plants are shown, and the show is a very extensive but not very meritorious display of flowers. In this department, Mr. George K Readum exhibits some vegetable curiosities. Among them are an ice plant, the leaves covered with little crystals which break easily, a house leek, a Rocky Mountain cone, and a sugar loaf pea.

Mrs. J. Garnham, of Guelph, exhibits a cotton plant.

GARDEN PRODUCE

The number of entries in this class is nearly as large as usual, but far from being up to the average as regards quality; the cabbages are a striking contrast to the big, though hard hearted ones which figured in last year's exhibition. Squashes and melons are of fair size Turnips, onions, carrots, &c, are small.

DAIRY PRODUCE

The entries in this department are fairly numerous. There are quite a number of excellent cheeses shown, including several apparently good Stiltons. A large quantity of butter is also shown which is, almost without exception, of very excellent quality. Several cakes of maple sugar and an unusually large quantity of maple molasses are shown There are several jars of honey, strained, and a couple of fine samples of the same in comb. In this class are also shown a ham or two, one or two pieces of bacon, and a few barrels of Canadian salt.

AGRICULTURAL IMPLEMENTS.

Messrs. Macpherson, Glasgow & Co., of Fingal, exhibit a climax double cylinder threshing machine and separator, fitted up with safety coupling gear. They also show a single thresher and Pitts' power, which is mounted on wheels, and from which it is not necessary to remove it when the power is used.

Mr. E. Leonard, of London, exhibits a drag sawing machine, the saw of which moves with a rocking motion, and, when necessary, lifts itself.

Messrs. Smith & Thurston, of Ancaster, exhibit an improved Cayuga Chief reaper, with Wheeler's improved rake on it. This rake is so constructed that any number of the arms can be set, so that when they reach the front of the table the teeth will turn up and thus avoid touching the grain. The object of this is that when grain is light sheaves may be raked off the table less often than when it is heavy. On this reaper is an improved leger plate guard, so constructed that when necessary the leger plate can be removed, ground, and put back again. Another improvement in this machine consists in the weight being taken off the outer edge of the table by means of a rod attached to the tilter. These exhibitors also show an iron jointer plough.

Messrs. Harris, Son & Co., Brantford, exhibit a Kirby reaper and mower with Burdick rake attached; also a Burdick reaper. They further exhibit a new combined reaper and mower with a Baltimore rake connected with it. The peculiar feature of this rake is that a reel works along with it, an arrangement which, it is claimed, results in eight beaters going to the knives in every eighteen feet of onward progress against only four beaters in every eighteen feet where other rakes are used. Another advantage claimed for this reaper is that every beater and reel goes square to the knife as in the old fashioned reel. By means of a lever the driver can so control the rakes as to cast off the sheaf just when he wishes The same firm exhibit the Kirby two wheeled mower In this machine the driver has full control of the finger-bar while in his seat, and when the finger-bar is raised the knives work as freely as when it is down, so that there is no unusual strain on the machine when it is going over uneven ground.

Messrs. L. D. Sawyer & Co., Hamilton, show the combined grain drill and seeder on which they carried off prizes at several previous exhibitions They also show an improved drill, one of the features of which is a double distributor. There are two openings to each grain tube, one for small and the other for large grain, and by means of a shifting bottom to the grain box all of these in either set are closed, while at the same time all in the other set are opened. Another implement shown by this firm is the Hamilton Combined Harvester, in which the driver, while in his seat, can by means of levers raise the grain wheel, and otherwise entirely control the table.

Messrs. John H. Grout & Co., of Grimsby, exhibit the Meadow Lark Mower, a new machine, which is very simple in construction and very light

Mr. John Forsyth, Dundas, shows his Dominion Harvester, an Empire grain drill, a straw cutter and a horse power.

Mr. D. Maxwell, Paris, exhibits two grain drills. a combined feed mill, a root pulper, several straw cutters, two grain drills, a two horse power and a four horse power.

Mr. J. P. Billington, Dundas, shows an Empire grain drill, a drag saw, and a very simply constructed and light horse power, easily workable by from one to four horses.

Messrs. B. Bell & Son, St. George, exhibit one of the old St. George reapers, with a self acting rake added to it. They also show a new model Canadian mower, light and simple in construction; an Ohio Buckeye reaper, with a number of improvements, straw cutters, ploughs, scufflers, &c.

Mr John Elliott, of London, shows the Lark reaper, with a very simply made and easily worked tilter, and a very simple gearing contained in a box. He also shows the Meadow Lark mower, which is constructed on the same principle as the former. Besides these implements, they have on exhibition a straw cutter of a new pattern, in this the whole length of the knife (a straight blade) comes down at once, preceded by a block of wood, which presses the straw together before it is cut.

Mr. C. Thain, of Guelph, is on hand with several of the implements manufactured by him. These include a turnip drill, one of the celebrated Eclipse gang ploughs, a double mould-board plough, an Anderson cultivator a straw-cutter, and a number of other articles in that line.

Messrs. Thomson & Williams, of Mitchell, exhibit a Jackson single reaper, a Cayuga Chief, jr., mower, a large straw-cutter for horse power or which may be driven by one or two cranks, a Strong & Gray's patent two-horse power sawing machine, a Gray plough with wrought-iron beam, a gang plough, and an Easterly broadcast improved seeder and cultivator combined. The latter is said to do its work satisfactorily in any kind of ground, and to be a complete substitute for hand sowing, while at the same time it covers the grain.

Messrs. Joseph Hall & Co., Oshawa, are the exhibitors of a Superior Broadcast Spring Hoe, seeder and cultivator, and of a similar implement with what is called a friction hoe. In these cultivators the grain falls on a sort of little shoe, and from that flies off in a semicircle toward the front, and when a hoe strikes a large stone or a root it swings back and thus avoids being broken. Each cultivator has what are described as double force feed and combination funnel The same firm exhibit a couple of other grain drills constructed on the same principle as those just mentioned.

Messrs Lawrence & Sons, Palermo, show a new reaper and mower, called the Ontario Harvester, which is of very simple construction and has a good feature in the form of an iron bar at the inside of the table, by means of which the reaper is changed into a mower very speedily, and the process of unbolting avoided.

Messrs. Rosemond, Miller & Scott show a potato digger which is a light and very simple looking machine, but is said to do excellent work.

Mr. John Watson, of Ayr, make a very large display of implements, having 38 altogether on the ground The newest among them is a combined triple action root-cutter and pulper This machine contains a peculiarly constructed hopper with movable shoes, by means of which it can be made to cut roots for either sheep or cattle, or to pulp them for mixing with straw and chaff; and it is claimed that the machine performs each of these processes as well as if each were the work of a separate implement. Another of his exhibits is a turnip and potato harrow, the pattern one of which he imported from Scotland. Another is a side hill plough, the mould-board of which is changed from one side to the other by means of a pedal, so that the ploughman does not need to touch the mould-board with his hand. The following are the other articles shown by Mr. Watson —A four horse Pitts power, a six-horse Pitts power, a ten-horse power, a circular saw, a Bevil jack, a drag saw, a field roller, a gang plough, two scufflers, a turnip drill, four Hill's patent ploughs, a sub-soil plough, a jointer plough, a double mould-board plough, a hay rake sulky, a humming bird mower, a clipper self-rake reaper, a corn sheller, a nine-tube shifter grain drill, a twelve-tube shifter grain drill, a combination grain drill for plaster, two large power straw-cutters, two hand straw-cutters, two Victor chopping mills, a fluted roller chopping mill, a Gardners' root cutter, a Cant's root cutter.

Messrs. Haggart Bros., Brampton, exhibit a threshing machine, in which the driving shaft is continued to the extreme end of the separator, from which the several parts of the separator are driven. The shoe is quite closed, and has an agitator and a reversible chaff carrier. They also exhibit a patent dustless separator, a double land roller with spring seat, a single reaping machine with cold rolled iron cutter bar, a four-horse power, a drag saw, a horse power straw cutter, a sulky horse rake, and a feed mill on the principle of a burr stone.

Mr. A. Whitelaw, Paris, exhibits a grain drill, three straw cutters, a grain crusher, a root cutter, and a four horse power. One of the straw cutters has a knife of a new shape, which is said to work easier than the ordinary ones.

Messrs. B. & A. Tolton, Eramosa, exhibit a pea harvester which consists in an attachment to an ordinary mowing machine.

Messrs Mitchell & Teeple, Harriston, exhibit a wood sawing-machine, which with eight horses is said to saw eighteen cords of wood a day. They also show a number of other articles in this department.

Mr. Wm. Webb, of Pickering, shows what he calls a root unloader. It consists of a bottom to a lumber waggon, made in three pieces. The two end pieces incline downwards to the centre piece, which is about a foot and a half wide, and which can be let down at either side of the waggon so as to allow the contents to run out as from a hopper.

Western New-York Fair

This fair was held recently in Rochester, and was a creditable show, and in some departments quite above the usual range of local exhibitions. Floral Hall particularly presented a brilliant and varied display—Briggs & Brother, Frost & Co., Ellwanger & Barry and other Rochester growers sending in liberal collections of flowers, while Messrs. E. & B. also occupied a large share of the fruit shelves with 120 varieties of apples and 150 of pears Good grapes were exhibited by G. Bahmiger and B. W. Clark. In poultry also there was quite an extensive assortment, with no less than 900 entries. 220 of them from E A Wendell, Albany, and 95 from George Chapman & Co. of Brighton. Short-horns were shown, among others, by Benj Fellows, D. K. Bell, H White and Judson Howard, Devons by Walter Cole and Chas Leggett, and Jerseys and Ayrshires by several breeders In horses, aside from the trotting classes, there were 220 entries, including some very fine Canadian draught stallions. In vegetables, Crosman Bros sent a fine collection of 200 varieties Domestic Hall, a two storey building, was well filled, and the remaining departments of the exhibition presented interesting features.—*Country Gentleman.*

Sale of the Duke of Devonshire's Short-horns.

We have been often told that the mania for high-bred short-horns had reached its limit. Unbelievers in the virtue of pedigree shake their heads, and have been wont to characterise as fancy prices the sums realized by animals of particular strains. Yet the value of such has been steadily increasing, and so far the demand has more than equalled the supply. How long this is to continue it would be difficult to say, seeing that the science of breeding is now better understood than formerly and, as a consequence, valuable herds are rapidly becoming more numerous; but the splendid results of the Holker sale prove that really good animals bred with care and judgment, are still more in demand than ever. The crowd that thronged round the ring on Wednesday, including most of the notabilities of short-horn history, and the prices realized, not for one particular family but for all the animals sold, are unanswerable evidence on this point. The 9th of September, 1874, adds another to the list of red-letter days in the diaries of Bates breeders; and without disparaging other great events, we may safely say this is the brightest that this country at least has yet seen, and fully confirms the proud position which the Duke of Devonshire has won in the first rank. The sale in 1871, when a similar number of animals were dispersed, realized £10,347 17s., being an average of £240 13s. 10d. The total on Wednesday reached the magnificent sum of £16,497 12s., being an average of £383 13s 3½d. per head—a result far exceeding the highest previous average, which we believe was made by Mr. Leney in June last at Wateringbury, Kent, where a large selection from his herd averaged £290 odd.

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Of late years the Duke of Devonshire's short-horns have been more particularly identified with the Oxford family, a tribe that has been largely crossed with the Duchesses, and has since Kirklevington days, occupied a position second only to that fashionable line. Oxford 15th, by 4th Duke of York, was bought at the Tortworth sale for 200 guineas, a great price in those days. Her granddaughter by Imperial Oxford, Lot 1 in the catalogue, though ten years old, is still in full vigor—about half gone in calf to the 5th Duke of Wetherby, the 2,000 guinea bull recently purchased from Col. Gunter. She had several admirers, especially Mr. Holford and Mr. Allen, and having been put in at 100 guineas, rose, principally by fifties, to 500 guineas, at which price she was secured by the latter gentleman, if she goes on breeding heifers as regularly as she has done, she will not prove a bad investment. The next from the same origin was Lot 3, Grand Duchess of Oxford 11th, by Grand Duke 10th, a magnificent red cow with a beautiful head, level outline, and great depth; she is the dam of the heifer for which Lord Bective gave 1,025 guineas at the 1871 sale. Started at 500 guineas by Mr. Moore, Mr. Holford and Col. Kingscote were competitors, but gave way to the determination of the opener, who transfers her to Cumberland for a "cool thousand." Lot 6, Grand Duchess of Oxford 6th, by 2nd Duke of Wetherby, was a much plainer cow, but has a high character as a bull breeder, two of her calves having realized 1000 guineas each, her dam was bought by Lord Penrhyn at the last sale. Set going at 500, she was secured by Mr. Brogden at 1010 guineas. Such prices for old cows led us to anticipate a higher figure for the next, Lot 19, a white two-year old by Baron Oxford 4th (25580); as she was quite a plum—possibly a Grand Duchess sire would have been preferred—she looked a comparative bargain for Mr. Ashburner at 760 guineas. The gem of the collection was Lot 26, Baroness Oxford, a deep red, ten-months old heifer, by Col. Kingscote's American bull Duke of Hillhurst (28491). The additional style of the Duchess cross was here very manifest. She is out of a Baroness Oxford, and a granddaughter of the splendid cow Lady Oxford 5th, which though thirteen years old, carries her years bravely. This calf promises to be a worthy successor, and a very high figure was anticipated. 800 guineas was a business-like commencement, and three bids brought her to 1100 guineas, at which the glass ran out to Mr. Holford, who takes home a fit companion for his American purchase. The last of the Oxford ladies was a descendant of the Tortworth cow, by Duke of Oxford 24th, a son of Lot 6, and one of the 1000 guinea calves already referred to. She was not so perfect in form as some of the others, and after some competition from Lord Feversham and Sir John Swinburne—the latter of whom helped the sale a good deal, though he did not buy—became the property of Mr. Robt. Ashburner at 675 guineas. The six females averaged £936. Lot 1 of the Oxford bulls was to our mind a long way the best, and, though four years old, decidedly cheap at 250 guineas. Baron Oxford 5th (27958), by 2nd Duke of Clare (21576), was sold to Lord Dunmore at 590 guineas, and bought back for 400 guineas at the Dunmore sale in 1872. He has a good deal of style, and is very big in his fore quarters, though perhaps rather slack in the ribs; he looks like a bull, and is a capital getter. Lot 6, Duke of Oxford 26th, by Baron Oxford 4th, was mean in his quarters, and not very stylish; about 15 months old, his age was favorable for present service, we thought him well sold at 420 guineas. The best of the youngsters of this line was Lot 9, Duke of Oxford 28th, a lengthy growing calf, with splendid quality, like many of the younger stock by Baron Oxford 4th or his sons; his loins were not quite so well covered as they might have been. He is just the bull to improve a herd, and we think Lord Chesham has got a cheap animal, although the highest priced of the lot. Lot 10 was flat in the ribs, and narrow in the crops though a gay looking calf. Lot 11, a red calf by 5th Duke of Wetherby, was high on the loins, but looks an improving sort; Mr. Morris bought him at a somewhat moderate figure. Looking at the character of the younger animals, we think the purchase of the 5th Duke of Wetherby, a very grand bull with splendid quality, most judicious, as he cannot fail to give a style and carriage which are somewhat wanting. The average of the Oxford males was £393 15s, and the general average of the eleven animals £559 13s 2d—about £100 more than the result in 1871, when eight Oxfords were sold.

The Wild Eyes family have found a congenial home at Holker, and, taken as a whole, the twelve animals sold were of great merit. There is a matchlessness about the tribe by which they are recognisable, the heads and fore quarters are always grand. They appear in the catalogue as Winsomes. The first, Lot 4 not being well, was represented by a roan calf Winsome 18th, a very neat one, by 4th Baron Oxford. Lot 21, Winsome 16th, just thirteen months, by Baron Oxford 4th, was a general favorite. Started at 300 guineas, she went on merrily to the close, making, we believe, the highest price yet realised for a member of this family viz, 700 guineas, to Mr G Fox. The excellent prices realised will be best seen by a tabular statement:

Lot 4.—Winsome 18th (9 months old)	310	guineas.
Lot 7.—Bright Eyes 5th	500	"
Lot 8.—Winsome 5th	350	"
Lot 13.—Winsome 12th	360	"
Lot 17.—Winsome 14th	605	"
Lot 21.—Winsome 16th	700	"
Lot 24.—Winsome 17th	310	"
£470 5s average	3135	

The Winsome bulls, five in number, contained two or three very useful lots, averaging £141 10s. 9d. The total average of the twelve animals sold was £333 3s 9d., against £240 1s 4d. for eleven animals in 1871—a comparatively greater advance than was made by the Oxfords.

The Barringtons are a sort much prized at Holker: their breeding is exceedingly good, and it was the general opinion that the Barrington bulls, especially a very smart calf, Lot 8, were the best-looking of the lot. We caught a glimpse of a very grand old cow, his dam (reserved), Lady Ellen Barrington, which was purchased from Mr. Sheldon of Brailes, and her relative, lot 2 of the sale—a fine old cow, the dam of a big useful bull, Lot 4—goes into the same herd, being bought by Mr. Sheldon for 300 guineas. Unfortunately, all four bulls are white. The other female was Lot 14, a daughter of the reserved cow, a three-year-old with level outlines, great fore-quarters, and signs of improvement. She will make a valuable addition to the Wateringbury families. The six specimens of this valuable sort made the high average of £254 11s. Two very good cows of the Musical or Gwynne tribe, both by Mr Stamforth's bulls, and two daughters of the former by Baron Oxford 4th also sold exceedingly well, averaging £253 7s 6d. Lot 11, Lady Blanche 3rd, by that excellent sire General Napier (24023), is a creditable specimen of the Sockburn Blanches; she is very compact and massive, with a minimum of offal. Her daughter, Blanche 13th, a red and white calf by Duke of Oxford 4th, was also very good-looking. The four females of the Rose of Raby tribe were all bought by a Mr Longman, who is forming a herd; they averaged £215 8s. 9d. It will be remarked as a noticeable fact that only one female, the last calf, made less than 100 guineas.

The sale was ably conducted by Mr. Strafford, and it is hardly necessary to say that every arrangement was made to secure the comfort of visitors and to expedite business. * * * * We append a list of prices:

Cows and Heifers.

	£	s.	d.
Grand Duchess of Oxford 6th (1861) Mr. Allen	5[illegible]	5	0
Countess of Barrington 4th (1866), Mr. Sheldon	315	0	0
Musa (1866), Mr. Postlethwaite	210	0	0
Winsome 18th (1873), Mr. T. Wilson	325	10	0
Grand Duchess of Oxford 11th (1867), Mr. Moore	1050	0	0
Grand Duchess of Oxford 12th (1868), Mr. Brogden, M.P.	1060	10	0
Bright Eyes 5th (1868), Lord Skelmersdale	525	0	0
Winsome 4th (1863), Lord Feversham	367	10	0
[illegible], Sir W. Lawson	378	0	0
[illegible] (1868), Mr Longman	262	10	0
[illegible] (1870), Sir W. Lawson	393	0	0
[illegible], Mr. Postlethwaite	136	10	0
Winsome 12th (1871), Mr. Holford	378	0	0
Countess of Barrington 6th (1871), Mr. Leney	583	0	0
[illegible]ary 2nd (1871), Sir J. Whitworth	215	5	0
Oxford Rose 4th (1872), Mr. Longman	320	5	0
Winsome 14th (1872), Sir W. Lawson	635	5	0
Harmony (1872), Mr. J. P. Foster	210	0	0
Grand Duchess of Oxford [illegible]th (1872), Mr. Ashburner	798	0	0
Maid of Lorne 2nd (1873), Col. Gunter	157	10	0
Winsome 16th (1873), Mr. G. Fox	735	0	0
Melody (1873), Mr G. Fox	325	10	0
Blanche 13th (1873), Sir J. Whitwell	215	5	0
Winsome 17th (1873), Lord Skelmersdale	325	10	0
Oxford Rose 6th (1873), Mr Longman	241	10	0
Baroness Oxford 3rd (1873), Mr. Holford	1155	0	0
Grand Duchess of Oxford 26th (1873), Mr. Ashburner	703	15	0
Severn Maid (1874) Mr Luckworthy	64	0	1

Cow, property of Mr. Drewry.

	£	s.	d.
Clarissa (1866), Mr R. Loder	105	0	0

Bulls.

	£	s.	d.
Baron Oxford 5th (27958) (1870), Duke of Roxburghe	262	10	0
Duke of [illegible] (1872), Mr. Dalzell	48	6	0
Baron Winsome 2nd (1872), Mr. Coleman	262	10	0
Baron Barrington 4th (1873), Mr. W. H. Wakefield	220	10	0
[illegible] (1873), Lord Skelmersdale	315	0	0
Duke of Oxford [illegible]th (1873), Mr Robinson	441	0	0
Baron Tregunter (1873), Mr. Postlethwaite	262	10	0
Baron [illegible] (1873) Mr Harward	194	5	0
Duke of [illegible] (1873), Lord Chesham	577	10	0
Duke of Oxford [illegible]th (1874), Sir J. Whitworth	420	0	0
Duke of Oxford [illegible]th (1874), Mr Morris	283	15	0
Baron Barrington 7th (1874), Mr. Martin	71	11	0
Baron Winsome 4th (1874), Mr. Lofton	50	8	0
Baron Winsome 5th (1874), Mr Fawkes	70	16	0
Baron Winsome 6th (1874), Mr Cronuson	52	10	0

Summary.

	Average	Total
28 cows and heifers	£462 8 3	£12,947 11 0
15 bulls	£23[illegible] 13 4	3,550 1 0
	£383 13 3½	£16,497 12 0

Sale of the Earl of Bective's Short horns.

This event came off at Underley Park on Thursday last—on the day following the Holker sale—under the able administration of Mr. Thornton. The catalogue included fifty-seven animals, of which forty-two were cows and calves, and fifteen bulls. Two of the former were withdrawn, not being in a fit condition for sale. The demand, especially for the bulls, was more active than on the previous day. The sale was another extraordinary event, and most satisfactory to the spirited owner. Lord Bective has been breeding for only a short time, and some of his tribes were not so well bred, or so valuable as the carefully selected strains at Holker—a fact which should be considered. He sold more animals, and had several young calves, hence we think a general average of £363, 4s 5d. per head, and a grand total of £19,977. 6s., represents quite as successful a sale, and the prices of his bulls were much higher. Had time permitted, a careful inspection of all the reserves would have been a treat; as it was, we could only have a peep at the American Duchesses, which were bought for Lord Bective at the famous New York Mills sale by Mr. Berwick. The seven-year-old cow, 10th Duchess of Geneva, by 2nd Duke of Geneva, which cost about £6,200 sterling, is certainly one of the grandest cows we have yet seen; her size, style, and quality are worthy of a Duchess; her head, long and fine with horns curling forward, is well set upon a long, graceful neck, and she has all the grandeur of fore-quarters, for which the tribe are so remarkable; her ribs are well sprung, and the quality of touch is admirable. She has bred four calves, of which the oldest a bull, remains in America; Mr. Leney has the 6th Duke of Oneida, by 4th Duke of Geneva (30,958); and his own sister, a two-year old heifer, big and useful, but rather plain about her horns, and lacking the style of her dam, was also bought at the American sale for Lord Bective. 10th Duchess of Geneva's last calf, by 2nd Duke of Oneida—the bull recently sold at a very high figure, born Jan. 18—is her first contribution for her owner, and if she will only present him with three or four as good, his investment may not be a bad one. This is a magnificent calf, blood red, with a tremendous coat, great thighs, wonderful neck vein, a bull's head, and plenty of masculine character. His ribs are at present rather flat, but, with such loins and level lines, he will spring as he grows. Altogether, he is an extraordinary youngster, and cannot fail, if he lives, to make his mark in the right direction. To see these animals alone would amply repay a visit to Underley. The highest figure was made of Lot 27, a Cherry Duchess heifer out of Mr. Cheney's Cherry Princess. She is by Baron Oxford 5th (27,958), and comes of a sort that is very highly prized. Started at 500 guineas, she reached 1220 guineas amidst much excitement, being purchased by Mr. Larking, Messrs. Loder and Halford being his principal competitors. This was the only specimen of the sort. The single

representative of the Oxfords, Lot 29, Empress of Oxford, the first produce of the 1,005 guinea heifer from Holker sale in 1871, a neat white yearling, did not make nearly so much. Mr Holford secured her at 770 guineas, which, if she breeds, is a reasonable figure. The Siddi tons or Kirklevingtons, derived from Mr. Bowley, are bo n a well-bred and good-looking sort, and the seven animals sold at Underley were a striking collection. That they are in increasing request may be judged from the fact that the four females averaged over £320, and the three bulls £383 10s Five Darlington females averaged over £5 0 each, and Gwynns and Wild Eyes—of each of which there were several specimens—made most excellent prices Duchess bulls are not such rarities in the sale ring as formerly, yet th y find customers Last year. Lord Bective purchased 3rd Duke of Gloster, by 10th Duke of Thorndale, at Gaddesby, for 810 guineas; after a year's service he changes hands at 900 guineas, going to Mr. Coleman, of Stoke Park Bucks; he is rather short, and not a remarkable animal in any way. The older bull Grand Duke of Kent 2nd, for which a thousand was paid to Mr Leney, is now past his best and made a fair price The demand for the other bulls was most satisfactory; indeed, we do not remember a better. The animals had character and style and were well shown; not loaded with flesh, but in a thoroughly healthy condition. The influence of good sires was unmistakable.

The herd is now reduced to about twenty-five head, comprising three Duchesses—for we omitted to mention a yearling, 9th Duchess of Oneida, by 2nd Duke of Oneida, also from New York Mills, which we heard well spoken of, but did not see, as she was lame, and not paraded with the others—one Oxford, a Waterloo, one Cherry Duchess, several of the Lady Bates tribe. Siddingtons. Princesses. Gwynne, &c, a very choice collection We must congratulate Lord Bective on the success of his sale, which is most encouraging for the future, as the experience acquired during the formation of the herd cannot fail to benefit him in his future operations. The grass at Underley is quite good enough for breeding cattle, and the situation eminently healthy.

Duchess Gwynne (1862), Mr Salt	£151	10	0
Violantes Butterfly (1862), Mr. T. Wilson	241	0	0
Kirklevington 16th (1865), Sir J. Swinburne	441	0	0
Flora M'Ivor (1864), Mr. Coleman	157	10	0
Winsome 2nd (1864), Mr Coleman	8	0	5
Lady Oxford (1865), Mr. Coleman	105	0	0
Oxford Belle (1866), Mr. Robertson	63	0	0
Siddington 4th (1867), Earl of Ellesmere	630	0	0
Carolina 7th (1867), Mr Coleman	178	10	0
Darlington 17th (1868), Mr. Loder	525	0	0
Chaff 13th (1869), Col. Loyd Lindsay	283	10	0
Goneri 4th, withdrawn.			
Siddington 7th (1869), Lord Fitzhardinge	787	10	0
Fair Maid of Colingham (1869), Mr Brogden, M P	315	0	0
Lady Cambridge (1869), Sir W Lawson	189	0	0
Darlington 19th (1869), Mr Loder	682	10	0
Princess (1869), Mr. Brogden, M.P	315	0	0
Winsome 9th (1869), Mr. T Wilson	5	0	5
Marchioness 3rd (1870), Lord Ellesmere	630	0	0
Dentsdale 1870, Mr. Loder	577	10	0
Lady L. Barrington (1870), Duke of Devonshire	320	5	0
Bourbon Belle, withdrawn.			
Baroness Bradwardine (1871), Mr. Grant Morris	173	5	0
Duchess Gwynne 4th (1872), Mr Loder	609	0	0
Winsomdale (1872, Lord Fitzhardinge	682	10	0
Princess Gwynne (1872), Rev. P. Graham	262	10	0
Cherry Queen (1873), Mr Larking	1281	0	0
Duchess Gwynne 5th (1873), Mr. Holford	336	0	0
Empress of Oxford (1873), Mr Holford	808	10	0
Deepdale (1873), Mr George Fox	330	5	0
Oxford Lily (1873) Mr Postlethwaite	136	0	0
Clotilde (1873), Col. Loyd Lindsay	262	10	0
Underley Darling 2nd (1873), Mr. Postlethwaite	210	0	0
Dentsdale 2nd (1873), Lord Penrhyn	441	0	0
Princess 6th (1873), Marquis of Headfort	472	10	0
Fair Maid of Kent (1873), Marquis of Headfort	288	15	0
Lord Senda (1874), Mr. Robinson	147	0	0
Lily Beckfoot (1874), Mr Stanley Hall, M P	42	0	0
Princess Sale (1874), Sir John Swinburne	288	10	0
Winsomdale 2nd (1874), Mr. Larking	346	10	0
Princess 7th (1874), Mr. Salt	273	5	0
Castalia (1874), Col. Loyd Lindsay	73	10	0
Bulls.			
3rd Duke of Gloster (1872), Mr Coleman	945	0	0
Grand Duke of Kent 2nd (1870), Mr De Vitre	787	10	0
Marquis 3rd (1871), Capt Gandy	183	15	0
Duke of Dentsdale 2nd (1873), Mr. Hutchinson	131	5	0
Duke of Kirklington (1873), Sir R. Musgrave	320	5	0
Lord Lunesdale Bates (1873), Mr Caswell	635	10	0
Amadeus (1873), Mr. Dalzell	63	1	0
Duke of Gosta (1873), Mr. Miles Kennedy	315	0	0
Lord of Garsdale (1874), Mr Wakefield	189	15	0
Marquis 4th (1874), Mr. Williamson	231	0	0
Marquis 6th (1873), Major Webb, Tamworth	346	10	0
Ostrogoth (1873), Mr. Lunds	346	10	0
Visigoth (1874), Mr Lowe	126	0	0
Duke of Dentsdale (1874) Marquis of Headfoot	115	10	0
Lawrence Barrington (1874), Mr. Barnes	105	0	0
Summary.			
40 cows and heifers...Average, £382 11 10 .Total,	£15,303	15	0
15 bulls do. 311 11 4 do.	4,673	11	0

—*Field.*

Guelph Central Exhibition—At a special meeting of the Directors, held after the show, it was resolved that the next Central Exhibition be held the week before the Provincial.

Miscellaneous.

Experiments With Toads.

Dr. Buckland, to test the matter in some degree, made some remarkable experiments. He caused twelve circular cells or cavities to be cut in a large block of coarse oolitic limestone, with provision for an air-tight glass cover to each cell Twelve other cells were cut in a block of siliceous sandstone. Twenty-four live toads were put into the cells, one in each, the cover fastened down air-tight, and the blocks of stone buried three feet deep in a garden They were left undisturbed for twelve months, at the end of which time the cells were opened And the toads in the sandstone rock were dead; but most of those in the oolitic (the cells of which were larger,) were still living, some had lessened in weight, some had increased; but, as a few of the plates of glass were found cracked, it was deemed possible that minute insects might have entered The living toads were left alone for another twelve months, at the end of which time all were dead seen through the glass covers, the poor fellow seemed to be always awake, with open eyes Perhaps they were marvelling what crime of theirs had subjected them to a sentence of two years solitary confinement A smaller experiment to confirm this principal one. Dr Buckland placed four toads in three cells or holes cut for the purpose in the trunk of an apple-tree. Two were companions in the largest cell the other two occupied a small cell each; but though small these cells were tolerably roomy for middle-size toads, being about five inches deep by three inches diameter The cavities were carefully and closely plugged with wood All four toads were found dead and decayed at the end of the first year. In another subsidiary experiment, four small basins of plaster of Paris were scooped out, a living toad placed in each, and a cover luted down air tight on the top. The whole were buried underground. Twelve months after two of the toads were dead, the other two living, but greatly emaciated. To sum up, the best naturalists now agree that, however wonderful the ascertained phenomena really are, frogs and toads cannot live one year wholly without air, nor probably two years wholly without food.—*All the Year Round.*

Decrease of Farm Laborers in England.

According to recently published statistics, the agricultural workers in England are steadily diminishing in number The harvest is great, but the laborers are becoming fewer and fewer. In the census, persons "working the land" are grouped under the seven heads given in the table below which shows the number in each class according to the last three of these decennial enumerations.

	1851	1861.	1871.
Farmer, grazier	249,431	249,735	249,907
Farm bailiff	10,561	10,078	10,441
Farmer's son, grandson, brother nephew	111,701	9 ,2	76 16
Farmer's daughter granddaughter sister, niece	105,147	83,840	92,187
Agricultural laborer (out-door)	962 997	958..62	795, 87
Farm servant in-door)	288,-2	261,962	185,156
Shepherd (out-door)	1 ,17	2 559	21 92

The farmer grazier's section has remained remarkably steady at each census, showing very slight increase. Farm bailiffs increased about 50 per cent in the first decade, and a small addition was made to their number in the second decade. The farmers sons, etc., the farmers' daughters, etc, are placed in the class because they almost invariably work, we are told, on the farm or engage in some farm operation The sons, etc, have exhibited a steady decline, while the daughters etc, diminished largely between 1851 and 1861, but during the last decade have increased upwards by 8,000 The most noticeable change is that apparent in the two next sections The out-door agricultural laborers have decreased since 1861 by 160,000, the decrease of the in-door farm servants was great both in 1861 and 1871. There seems to be nearly 130,000 less in this section than 20 years ago. The shepherds, who doubled their numbers between 1851 and 1861, fell off between 1861 and 1871 by more than 2,200. Counting all below the farm bailiffs as supplying ordinary farm labor of one kind or the other, it will be found that the working force in 1861 was 1,365,000, and that in 1871 it amounted to 1,149,000 hands, hence the decrease in the latter year was nearly 16 per cent.—*Boston Jour. Chem.*

Fecundity of the Lower Animals.

The lower an animal stands in the scale of organized beings, the more it is subject to destructive agencies, which would soon cause the race to become extinct were it not that nature has compensated this by provisions for the most prodigious fecundity. This is strikingly manifested in the case of fishes, which produce so many eggs that if vast numbers of eggs and fish were not continually being destroyed, they would at last fill up all the waters. For instance, a full grown cod takes about 60,000,000 or 70,000,000 codfish from the sea annually around the shores of Newfoundland But even that quantity seems small when we consider that each cod yields something like 4,500,000 eggs each season, and that even 9,000,000 have been found in the roe of a single cod. Suppose the 60,000,000 cod caught on the coast of Newfoundland were left to breed, the 30,000,000 males procreating each 5,000 000 eggs every year, it would give a yearly addition of 150,000,000,000,000 young cods. Other fish, though not equalling the cod, are wonderfully productive. A herring six or seven ounces in weight is provided with about 30,000 eggs After making all reasonable allowances for the destruction of eggs and of the young, it has been calculated that in three years a single pair of herrings could produce 154 000,000, and Buffon calculated that if a pair of herrings could be left to breed and multiply undisturbed for a period of 20 years, they would yield an amount of fish in bulk equal to the globe on which we live. *Manufacturer and Builder.*

Early Frosts, but as yet few killing ones, are reported in Maine, Michigan and Minnesota.

Good Price.—Mr. James Parkinson, of Eramosa, sold his farm of 153 acres, to Mr. Joseph Carter, of Rockwood, for the handsome sum of $8,000.

The Arabs, passing a rich harvest or a tree in full bloom, will greet it with a "Barak-Allah!"—May God bless you!

The Hay in some parts of Iowa is so very abundant and cheap that it has been found more economical as a fuel for steam purposes than peat or any other substance.

Over 95,000 lbs of Cheese was shipped from Watertown recently, via the Canada Southern. It was consigned direct to the London market.

Legal Advice Without Fee.—As the time of fruit stealing is now here, it is proper to remind owners of gardens and orchards that by a law now in force every fruit grower is made his own constable, and can arrest and take before the mayor or any justice of the peace any fruit thief on his premises. The penalty is fine and imprisonment.

A gentleman living on Stanton River, near Otter's Island, Va, reports that that section is literally covered with frogs, varying in size from a grain of corn to usual size. These frogs jump from the river in both sides, striking out through the country for miles, destroying in their march the millions of chinch bugs that line the fields.

The Salt Colony.—This colony, which located in the Tennessee mountain region 1x years ago, has made a fair record as an agricultural community. There are in the colony 325 inhabitants living in twenty six houses They have 7,600 fruit trees, 4,700 grape-vines, and till about 1,000 acres of land. They have two schools, and have established an agricultural society. The growth is not like that of a mushroom on prairie railroads, but it is growth, nevertheless

To do Red Cabbage.—Slice right across perfect ones, and put into a tray or jar, first a layer of cabbage well salted, then salt, then cabbage salted, layer upon layer Then after draining off the brine, heat vinegar enough to cover, adding an ounce of mace to each quart of vinegar and a handful of whole pepper Just let it heat well—not boil. Then pour it over the cabbage. When it is cool, tie it up. Use white wine vinegar; about six quarts of vinegar will be sufficient for eight good sized cabbages

Preserving Grapes with Honey.—Take seven pounds of sound grapes on the stems; have the branches as perfect as possible and pack them snugly without breaking, in a stone jar. Make a syrup of four pounds of honey and one pint of vinegar, with cloves and cinnamon to suit, or about three ounces of each is the rule. Boil them well together for twenty minutes and skim well, then turn while boiling hot over them, and seal immediately. They will keep for years if you wish, and are exceedingly nice Apples peaches and plums may be done in the same way.

THE SIXTH ANNUAL SALE
OF
MR. GEO. BROWN'S
THOROUGH-BRED
SHORT-HORNS
WILL TAKE PLACE
ON TUESDAY, OCTOBER 13, 1874,
AT
BOW PARK,
Three Miles from the Town of Brantford, Canada,

When will be offered for sale by Auction, without reserve, to the highest bidder, the following High-bred Cows, Heifers, and Bulls:—

COWS AND HEIFERS.

SALLIE TAYLOR, 3rd, (American Herd Book, Vol. XII., page 1226). Red and White, calved 29th February, 1872: her Dam was *Sallie Taylor* 2nd by Abram Van Meter's famous Rose of Sharon Bull, *Dick Taylor* 5598 her Sire was Mr. Alexander's pure Duchess Bull *Fourteenth Duke of Airdrie* 7379, got by Mr Samuel Thorne's *Royal Oxford* (18774) from *Fourth Duchess of Airdrie*; [Sallie Taylor 3rd was served on 16th July, 1874, by the pure Duchess Bull *Second Duke of Oneida* 9326—the bull sold on 10th September, 1875, at Mr. Samuel Campbell's (of Utica), great sale, for $12,000.]

CAMBRIDGE 10TH (Am. H. B., Vol. XIII, page 505) Red and White: calved 11th January 1872 Dam *Cambridge 7th* by the pure Duchess Bull, *11th Duke of Thorndale*, 5611, Sire (imported) *King of the Ocean*, 8465, [1619].

MABEL (Am. H. B., Vol. XIII, page 755) Rich Roan, calved 1st January, 1872, Dam *Jennie* by Young *Ethelbert*, 18824, [235]; Sire (imported) *Grand Duke of Gordon*, (28757) 11216.

LADY SCARLET, (Am. H. B., Vol. XIII., page 706), Red; calved 10th January, 1872; Dam *Primrose* by *Kentucky Baron*, 18737; Sire Canadian *Boy*, 18619, [1160].

ROSALIE; (Am. H. B Vol. XIII, page 904) Red Roan, calved 25th February, 1872, Dam *Moss Rose* by *Marion, Duke of Airdrie*, 4150, [434]; Sire (imported) *King of the Ocean*, 8465, [1619].

MINNIE, (Am. H. B. Vol. XIII, page 803) Red with a little White, calved 14th February, 1872, Dam *Young Rosalie* by *Robin Hood*, 3256, [615]; Sire *Oxford Chief*, 15071, [1911].

HESTER 5TH (Twin with *Hester 4th*): (Canadian Herd-book, Vol. II. page 505) Red with little White, calved 20th March, 1872; Dam *Hester* by *Sir William*, [693]; Sire (imported) *Grand Duke of Gordon*, (28757), 11216.

MYRTLE 2ND, (Am H B, Vol. XIII, page 827), White; calved 18th May, 1872; Dam *Myrtle* by *Butterfly 2nd*, 7037, [91], Sire (imported) *Grand Duke of Gordon* (28757), 11216.

FANCHETTE (Twin with *Fairy*): (Canadian H. B. Vol. II, page 468) Red and White; calved 14th July, 1872, Dam *Fanny Pettit* by *Young Grimsby* [330]; Sire (imported) *King of the Ocean*, 8465 [1619]

BEAUTY, 7TH (Am. H. B., Vol. XIII., page ——); Red, with a little White; calved 9th March, 1872; Dam Beauty 4th by *Garibaldi*, 17136 [263]; Sire (Imported *Grand Duke of Gordon* (28757), 11216.

ROSIE: (Can. H. B., Vol. II., page 772) Red and White; calved 27th July, 1872; Dam *Rose 4th*, (Am. H. B. Vol. X., page 825) by *Prior*, 7155 [589]; Sire (imported) *Grand Duke of Gordon* (28757), 11216.

VERONICA (Am. H. B. Vol. XIII, page 964) Red and White; calved 25th July, 1872; Dam *Virtue* by *Butterfly 2nd*. 7037 [91]. Sire (imported) *Grand Duke of Gordon* (28757) 11216.

BELLE OF BRANT; (Can. H. B., Vol. XIII, page 469) Red and White; calved 13th September, 1872; Dam *Batavia*, by *Ontario Chief*, 18772 [1886]. Sire (imported) *Lord Barrington*, (31616), 17559.

FANNY 6TH; (Can H. B., Vol. II., page 466) Rich Roan, calved 31st July, 1872; Dam *Fanny 4th*, by *Oxford Chief*, 15071 [1911]; Sire (imported) *Grand Duke of Gordon* (28757), 11216.

BLANCHE 3RD; (Am. H. B. Vol. XIII., page 483); Red; calved 2nd December, 1872; Dam *Blanche* by *Burnside* 4618; Sire *Clifton Duke 2nd*, 7711 [133].

BRENDA Red, calved 30th September, 1872; Dam *Bridget* (Can. H. B. Vol. II., page 372) by *Beauregard*, [48]; sire (Imported) *Grand Duke of Gordon* (28757) 11216.

PRINCESS LUAN 2ND, (Am H. B., vol XIII, page 868); Red; calved 6th January, 1873, Dam *Princess Luan*, by *Prince of Bourbon*, 7141, Sire, imported *King of the Ocean*, 8465 [1619].

ROSALIND (Amer. H. B. Vol. XIII., page 905) Red; calved 22nd November, 1872; Dam *Flamboro' Belle* by *Young Volunteer*, 18816 [2394]; Sire (imported) *Lord Barrington* (31616), 17559.

ISABELLA 27TH (Twin), (Am. H. B. Vol. XIII., page 465); Red; calved 27th December, 1872; Dam *Isabella 15th* by *Twelfth Duke of Northumberland*, 4744, Sire *Grand Duke of Cambridge*, 8250 [1492].

ROSE OF BRANT (Am. H B., Vol. XIII., page 916) Red with a little White; calved 29th December, 1872; Dam, *Rose of Markham* by *Bell Duke of Oxford*, 6419 [830]; Sire (imported) *King of the Ocean* 8465 [1619]

HESTER 7TH Red Roan; calved 2nd April, 1873; Dam *Hester* (Can H. B. Vol 2, page 504), by *Sir William* [693]; Sire *Grand Duke of Gordon* (28757) 11216.

BERTHA, (Am. H. B. vol. xiii, page 478). Light Roan; calved 7th June, 1873. Dam *Beauty 4th*, by *Ontario Chief*, 18772; Sire *Grenadier*, 18726.

DAISY 2ND (Am. H. B Vol. XIII., page 531); Red; calved 3rd August, 1873; Dam *Daisy* by *Second Grand Duke of Clarence*, 9063 [1212]. Sire *Pickwick*, 18779 [2585].

DIANA, (Am H B Vol XIII, page 538), Red and White; calved 30th July, 1871, Dam *Mary* by the pure Bates Bull *Ethelbert* 1516 [231], Sire *Louden Tom*, 11224 [1724].

FOREST QUEEN; (Am. H. B, Vol. XIII. page 603) Red and White; calved 6th February, 1871; Dam *Lady Bedford* by *Vanguard* 18315 [2280], Sire *Oxford Chief* 15071 [1911].

VANDA (Am. H. B, Vol. XIII, page 962) Roan (Twin) calved 21th May, 1871; Dam *Rosalie* by *Sultan*, 15555, [718]; Sire *Oxford Chief*, 15071, [1911].

LUNA, (Am H B Vol. XIII page 751) Roan; calved 3rd January, 1870, Dam *Lady Bedford* by *Vanguard* 18315 [2280] Sire *Oxford Chief* 15071 [1911].

GERTRUDE; (Am H B, Vol. XIII page 614) Red and White, calved 6th February, 1871, Dam *Young Duchess of Woodhill* by *Garibaldi* 17136 [263] Sire *Candidate* 11196 [1063].

RED ROSE OF PICKERING; (Am. H B. Vol X. page 808) and bull calf *President Pickering* at her side, Red, calved 16th October, 1869, Dam *Red Rose 4th* by *Clifton Duke 2nd* 7,711 [1,337] Sire (imported) *Highland Chief* 6861 [1517].

THE BELLE OF BINBROOK; (Am H. B, Vol. XIII, page 954.), Roan, calved 10th March, 1870, Dam *Rosella* by *Captain*, 18650 [105], Sire *Eastern Prince* 18697 [1361].

LAVINA, (Am H. B. Vol. X, page 637); Roan, calved 6th October, 1868 Dam *Welcome* by imported *Baron Solway*, 6132 [51], Sire *Duke of Bourbon*, 5516 [184].

BARBARA; (Am. H. B. Vol XIII. page 455) White; calved 8th January, 1870; Dam *Louisa* by *Garibaldi* 17136 [263]; Sire *Braedalbane* 18614 [1017].

MARTHA; (Am. H. B., Vol. XIII, page 771); Roan; calved 31st March, 1869, Dam *Alabama* by (imported) *Clarendon*, 2632; Sire *11th Duke of Thorndale*, 5611.

AGNES; (Am. H. B., Vol. XIII, page 435); Roan and White; calved 7th March, 1869; Dam *Phœbe* by *Ethelbert*, 1516 [231], Sire *Braedalbane*, 18,614 [1017].

NETTIE; (Am. H. B., Vol. XIII., page 837); Red and White; calved 28th April, 1868; Dam *Wild Rose* by *Bronte*, 18610 [91], Sire *Duke of Marlboro'*, 5587.

BUTTERFLY BLOOM; (Am. H. B, Vol. XIII., page 502), and bull calf *Oxford Butterfly* at her side; Roan; calved 30th May, 1867; Dam *Dairymaid* by *Garibaldi*, 17136 [263], Sire *Butterfly 2nd.*, 7037 [91].

YOUNG ROSALIE; (Am. H. B, Vol XIII, page 981) Roan; calved 9th May, 1865; Dam *Rosalie* by *Sultan* 15555 [718]; Sire *Robin Hood* 3356 [615].

BRIDGET, (Can. H.B. vol. II, page 322), red, calved 20th April, 1865; dam *Ecaly* imported *Falcon* [239]; sire *Beauregard* [48].

YOUNG DUCHESS OF WOODHILL; (Am. H.B., vol. X., page 903) Red and White; calved 7th July, 1864; Dam *Duchess* by *Halton* (11552) 556; Sire *Garibaldi* 17,136 [263].

MUSIC; (American Herd Book, Vol. XIII., page 825), Red and White; calved 27th January, 1863; Dam *Lady Barrington 11th* by (imported) *John O'Gaunt 2nd*. (13089); Sire (imported) *Baron Solway* 6132 [45].

BULLS.

THE DUKE OF OAKLAND, 18431, [2389]; Red and White; calved 3rd December, 1871; Dam *6th Duchess of Oakland* by *Plantagenet*, 6031, [531]; Sire (imported) *King of the Ocean*, 8465, [1619].

FAMOSA CHIEF, 17070, Red; calved 24th October, 1872; Dam *Famosa 3rd* by *Miss Belleville's Son of 3rd Duke of Airdrie*, (23717); Sire *Fourth of June*, 10070, [1414].

BARON ROSE OF SHARON, 16243, Red and White; calved 6th April, 1873; Dam *Rose of Sharon 3rd* by *D'ble Duke*, 10659, 8833; Sire *Prince Airdrie*, 8335.

EARL BARRINGTON, 17004, Red, with a little White, calved 16th February, 1873; Dam *Martha* by *11th Duke of Thorndale*, 5611, Sire (imported) *Lord Barrington*, (31616), 17550.

EARL LOUAN, 17006, Red and White; calved 13th July, 1873, Dam *Louan of Brant 3rd* by *Crown Prince of Athelstane* (21512) 5157, Sire (imported) *King of the Ocean* 8465 [1620].

OMAR PACHA, 17855, Rich Roan; calved 27th January, 1872, Dam *Beauty* by *Canadian Punch* 5415 [103]; Sire (imported) *Grand Duke of Gordon* (28757) 11216.

ROBERT THE BRUCE, 18193; Red and White; calved 2nd July, 1872; Dam *Music* by (imported) *Baron Solway* 6132 [45]; Sire (imported) *Grand Duke of Gordon* (28757) 11216.

BARRINGTON BUTTERFLY, 16217, Red, calved 10th February, 1873; Dam *Belle of Oneida* by *4th Duke of Geneva*, 7931; Sire (imported) *Lord Barrington* (31616), 17550

LORD BYRON (Can. H. B., Vol. II., page 499); Red; calved 4th of August, 1872; Dam *Maidee* by *Lord Duke 2nd* 18744 [1674]; Sire (imported) *Grand Duke of Gordon* (28757), 11216.

BALTHAYOCK; Red; calved 26th February, 1873; Dam *Belleisle* by *Young Volunteer* 18826 [2394]. Sire (imported) *Lord Barrington* (31616), 17550;

LUCULLUS, 17017; Red and White; calved 1st January, 1873; Dam *Lucilla* by *Duke of Hamilton* 16417 [1209] Sire *Count Bismarck* 16560, [1154].

BARON WOODHILL, 16246; Red with a little White; calved 21th April, 1873; Dam *Duchess 3rd of Woodhill* by *Butterfly 2nd*, 7037 [91]; Sire (imported) *Lord Barrington* (31616), 17550.

DUKE OF LUCKNOW, 16258, Roan; calved 2nd April, 1873; Dam *Rose of Luckrow* by *Knight of St. George*, (26544), 8472; Sire *Knight of St. George* (26544) 8472.

EARL OF OAKLAND, 17023; Red and White; calved 2nd June, 1873; Dam *6th Duchess of Oakland* by *Plantagenet*, 6031 [531]; Sire (imported) *King of the Ocean*, [1619] 8465.

SARACEN, 18301; Red Roan; calved 22nd April, 1873; Dam *Daisy* by (imported) *Young Tweedside* 5288 [760], Sire (imported) *King of the Ocean* 8465 [1619].

BELL DUKE OF AIRDRIE, 16254; Red; calved 18th March, 1873; Dam *Kentucky Belle* by *Airdrie 2nd* 7450, Sire *Oxford Chief* 15788 [1911].

BLAIR-ATHOL, 16303; Red; calved 23rd August, 1873; Dam *Bessie Belle 5th* by *Mac* 8501 [852]; Sire (imported) *King of the Ocean* 8465 [1619].

BARON BEDFORD, 16205, Red with little White; calved 1st January, 1874; Dam *Julia Bedford* by *Louden Duke*, 10390; Sire *Lord Strathallan* 17591, [1713].

BRAEDALBANE, Red, calved 29th October, 1873; Dam *Bridget* by *Beauregard*, [48]; Sire *Oxford Chief*, 17878, [1911].

BARON MARKHAM; Red with little White; calved 5th January, 1874; Dam *Rose of Markham* by *Bell Duke of Oxford*, 6419, [830]; Sire *Oxford Chief*, 17878. [1911].

STRATHALLAN CHIEF; Red; calved 18th January, 1874; Dam *Red Duchess* by *Kosciusko*, 10330; Sire *Lord Strathallan*, 17591. [1713].

OXFORD BUTTERFLY; Red with little White; calved 3rd May, 1874; Dam, *Butterfly Bloom* by *Butterfly 2nd*, 7037 [91]; Sire *Oxford Chief*, 17878 [1911].

BERKSHIRE PIGS.

Also a number of first-class BERKSHIRE SOW and BOAR PIGS, from IMPORTED PRIZE STOCK.

All the Short-Horns offered are registered in the Canada Herd-book, and are either registered or entitled to registry in the American Herd-book. The numbers used in the Catalogue, when placed in brackets thus: [486], refer to the Canada Herd-book; when placed within parenthesis thus: (486), they refer to the English Herd-book: and when placed simply thus 486, they refer to the American Herd-book.

The principles on which the Bow Park sales were originally established, were: 1st. That the stock should be kept in good breeding condition, but not over-fattened. 2nd. That no animal unfit for breeding purposes, within the knowledge of the proprietor, should be sold, without a clear statement of the fact. 3rd. That no animal offered for sale should be withdrawn, without the consent of the buyers present. And 4th. That no bid on any animal should be made by or for the proprietor, directly or indirectly. These principles have been firmly adhered to at all previous sales, and will be maintained at this one.

On the day of sale a printed list of the several dates of service will be distributed.

The Great Western Railway Company have agreed to carry persons attending this sale, from any Station on the Great Western Main Line or its branches, to Brantford and return FOR ONE FARE.

The Grand Trunk Railway Company have agreed to carry persons attending this sale, from any Station on the Grand Trunk Main Line or its branches, to Brantford and return FOR ONE FARE AND ONE-THIRD.

The Sale will be closed in time to enable parties attending it to return home by the evening trains on the Great Western and Grand Trunk Railways, for all points.

Sale to Commence Precisely at Twelve Noon.

TERMS:—Approved note at six months or discount allowed for cash at the rate of eight per cent. per annum.

Cattle purchased at the sale, if desired, will be carefully placed on the cars at Brantford by Mr. Brown's men, according to the directions of purchasers, free of expense, but at the buyer's risk.

The proper Customs' entries, with U.S. Consul's certificate attached, will be made, if desired, for animals purchased by American buyers—so that they will pass into the United States free of duty and without detention. No charge will be made for this; but the cost of the Consul's certificate must be paid by the buyer.

G. T. STRICKLAND,
Auctioneer.

Bow Park, 1st September, 1874.

☞ Carriages will be at the Brantford Railway Stations on the day of Sale, on arrival of all Great Western and Grand Trunk trains, to drive purchasers to Bow Park; and carriages will also be furnished to convey them back from Bow Park to Brantford in time for the evening trains in all directions.

CONTENTS OF THIS NUMBER.

THE FIELD: PAGE

Fighting the Devil with Fire 361
Threshing and Stacking Wheat..... 361
An English Prize Farm. 361
How I Killed Thistles..... 362
Cleaning Carrot Seed. 362
Items..... 362

GRASSES AND FORAGE PLANTS.

Curing Corn Fodder 363
A Crop of Chess Hay..... 363
Experiments with Fertilizers on Grass..... 363
A Few Remarks on Turnip Cultivation..... 363
Sorrell..... 363
Securing the Buckwheat Crop..... 362
Items..... 363

AGRICULTURAL IMPLEMENTS:

Steam Cultivation..... 364
Endless Chain Tread Powers..... 364
Dull Mowing Knives..... 364
A Cement Roller..... 364
Items..... 364

HORTICULTURE:

THE ORCHARD:

Fruit Growing in the Ottawa Valley..... 365
Alkali for an Old Apple Tree 365
Cultivated and Grassy Orchards..... 365
Items..... 365

THE FRUIT GARDEN:

Growing Strawberry Plants in Pots..... 366
About Fruit..... 366
Experience of an Ohio Pear Grower..... 366
Items..... 366

THE VEGETABLE GARDEN:

A Normandy Vegetable Market..... 367
Surgery as Applied to Squash Vines 367
Moles in Cutting Beds..... 367
Big Cucumbers..... 367
Items..... 367

THE FLOWER GARDEN:

A Parlor Flower Box..... 367
Natural Arrangement of Bouquets..... 367
New View of Draining Flower Pots..... 367
Roses..... 367

THE DAIRY:

The Butter Trade..... 368
Patent Artificial Cheese 368

BREEDER AND GRAZIER:

Cost and Profit of Hay..... 369
Breeding Swine. 369
How to Judge of Wool..... 369
Items..... 369

POULTRY YARD:

Poultry Notes—No. 19 370
Ventilation for Poultry..... 370
Items..... 370

EDITORIAL:

Our Shows..... 371
Cheese Exhibitions..... 371
Our Climatic Changes all Bosh 371
The Hay Trade..... 371
German Emigration..... 371

AGRICULTURAL INTELLIGENCE:

The Provincial Exhibition. 372
Guelph Central Fair..... 375
Western New York Fair..... 376
Sale of the Duke of Devonshire's Short-horns. 377
Sale of Lord Bective's Short-horns 377
Items..... 377

MISCELLANEOUS:

Decrease of Farm Laborers in England 378
Fecundity of the Lower Animals..... 378
Experiments with Toads..... 378
Items..... 378
ADVERTISEMENTS, &c..... 380

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