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THE
CANADA FARMER

VOL. IV. No. 11. | TORONTO, CANADA, NOVEMBER 15, 1872. | NEW SERIES.

The Field.

Carbolic Acid For Farming

Some experiments made with this article by a few tanners, for the purpose of preventing decay, make it probable that further experiments in other directions, in the process of preparing hides for tanning, will bring it into prominent use in this industry The peculiar property of this acid is that of destroying the lower forms of animal and vegetable life, and thus preventing decay; it coagulates albumen and prevents fermentation and mildew, and, by stopping fermentation, will act to prevent the changing of tannic acid into gallic acid.

Carbolic acid is produced by distilling the coal tar of the gas works, and has found application in several industries, as in the manufacture of aniline colors, and for its superior disinfecting qualities, arising from the before-mentioned fact of being destructive to all lower forms of animal and vegetable life. There are various grades manufactured, the lowest being ten per cent., running up through successive distillations to the crystalized form. Four grades are used mostly to commerce, but for tanners' use, probably the best and most economical is the second grade, or sixty per cent., which sells at a wholesale at $1.75 per gallon. This admits of large dilution; at least one part to six hundred of water would be sufficiently strong for all practical purposes of the tanner. In diluting, it is best to first agitate, say, one gallon of acid with about forty or fifty gallons of warm water, and when thoroughly mixed pour in the balance of the six hundred gallons. In this proportion it is most valuable for the purpose of checking decay and destroying animal and vegetable life. As it is a poison, due care must be used in handling, as it acts as any other powerful acid when coming in contact with the skin. It is better and safer to use it largely diluted and allow the skins to remain immersed in the liquid for a few days than to use it in greater strength and only a short time, as, in the former case, the active property of the acid has an opportunity to effectually permeate the skin and thoroughly stop decay, while in the latter case it only acts on the outer portion, leaving the germs to grow again, as soon as the effects of the acid have worn off.

We have received many inquiries from tanners as to the proper method of using this article, and give the above as the best information we at present have on the subject. It must be remembered, however, that, if the acid is applied before the hides are unhaired, it will be next to impossible to afterward remove the hair, until the acid is completely washed out. It is only by the decay of the hide, and consequent loosening of the fibers at the roots of the hair, that the latter can be easily removed, but when this operation is completed, the action of the carbolic acid is rapid and complete in stopping any further decay and fermentation. So far as is at present known, the application of the acid does not at all interfere with the plumpness of the hide, nor does it at all injure the color of the leather, the evidence being, on the contrary, that it rather has a tendency to bleach and whiten the leather. It will, undoubtedly, also have an effect in preserving the sweetness of the tan liquors. *Shoe and Leather Reporter.*

Esparto Grass.

We wonder if any Canadian farmer has ever tried to cultivate Esparto grass. If not let us tell him that the Spaniards are making money rapidly by selling this grass to British paper manufacturers, who have largely adopted it in their manufacturers. So large is the demand for materials with which to manufacture the better class of paper that considerable quantities of Esparto grass are being imported to cities of the United States, notably Philadelphia, which is largely engaged in paper making. The quantity consumed by Great Britain is beginning to ..act considerable attention there. No less than five millions of dollars are said to have b.. paid by England last year for this grass; a.. in view of this heavy draw, and the certa..ty of its continuance, the British Governme.. are taking steps to provide for its exp..mental cultivation on a large scale as a.. ..crop. The plant, it seems, wants a str..g summer heat, and if this is all, we imagine that there are districts in the Dominion where the plant would thrive and bring in a handsome return to the cultivator. Possibly some enterprising farmer may think it advisable to make the experiment on a respectable scale.

Curing Fodder Corn.

A correspondent of the Boston Cultivator says he cures fodder corn successfully by cutting it on the morning of a fine day, binding it in small bundles in the afternoon, and then setting these bundles on each side of a horizontal pole upheld by crotches or stakes, running in a north and south direction. He makes the bundles two deep, and when this is done he puts another pole just over the tops of the bundles (sustaining it by stakes as before), and on the ridge pole he puts another row of bundles as a cap for the first two, half of each bundle on each side of the pole. This arrangement admits of a free circulation of air through the stalks, and gives both sides an equal chance for the sun's rays. He has practised this mode five years with entire success. The corn is grown in rows three or four feet apart, sown thickly, and is cut when nubbins begin to form.

This mode will do very well for small quantities of fodder, but where it is desired to cure several acres we think it would be found cheaper and more convenient to use wires instead of poles. Use stout wires, brace the end posts firmly as for a grape trellis, support the wire by stakes at needed distances, and it will greatly expedite the work, and all the materials may be used for many years.

Preparing the Land for Grass.

We are apt, very apt, to overlook the fact that land intended for grass should receive more thorough culture than any other, because for years while in grass, it has not the advantages of the plow and other implements to stir the soil, but must rest and pack and get more and more in a condition to keep out the air, and let in and pass off less readily the water. We should, therefore, thoroughly prepare the soil. Plow as deep as may be, and subsoil well; pulverize and enrich the land—enriching it will make it more loose and mellow, and keep it longer in that condition, as well as increase the yield. Such land will "catch" its seed, and if plentifully applied, will be certain under anything like favourable circumstances to form a thick set. A little top dressing, aided by the aftermath, which should never be fed close, will ensure good crops—two cuttings a year.

But let there be a cold, hard undersoil, and the seed put in in the usual way—little of it and on hard and reduced soil, without manure—what can be expected of it? Just what we see: light crops, getting lighter each year till it will hardly pay for harvesting Such land, when the plow turns it down, will be found to be hard. The sod amounts to but little, whereas, in properly treated land it will yield from sixty to seventy loads of manure per acre. A mellow seed-bed, deeply-loosened soil well enriched, plenty of seed sown and sown as early as possible—are the points to be secured in putting down grass ands.—*Rural World.*

Hops.

Hops have advanced owing to the demand being better than the supply cast. The very wise action of hop growers not crowding their produce into market all together is helping them out of the slough of despond into which they were getting. We note that prices have advanced from 25 to 30 cents, so that now they are quoted at 30 to 35 cents for all good lots grown either east or west. Well's Circular complains of a very light supply in New York, and indicates that the produce of the crop both in this country and abroad has been very much over-rated. The accounts of the foreign market are yet mixed. The quantity is not so great nor the quality so high as expected. Prices in London range from three pounds sterling per cwt. to seven pounds, or from 15 cents per pound in our currency to 37 cents. It will be seen there is no margin for importation. We note that hops are quoted by the French reports as worth 120 to 125 francs at Poperinghe and 130 to 155 francs at Nancy, and 250 to 255 francs at Bischwiller per 50 kilogrammes. This would make hops range from 28 to 45 cents per pound in the continental markets. So that foreign hops do not look to us as likely to compete with the American in our own markets.—*Michigan Farmer.*

Facts in Soiling.—What to Sow and How to grow it.

Mr. George E. Waring, the excellent manager of Ogden Farm, at Newport, R. I., lays down the following for general principles :

1st. The earliest abundant food will be secured by the use of winter rye.

2d. The best and most abundant food for the latter summer and earlier autumn time will be secured by the use of Indian corn.

An experiment was made last year by the officers of the Agricultural College of Pennsylvania to determine the amount of food per acre. Seed was planted May 15, at the rate of seven bushels per acre, one-half drilled, in drills two and a half feet apart, the other sown broadcast. On the 20th of August began cutting, and on the drilled part gathered 34,000 pounds or 17-44 tons per acre.

Hungarian grass is a quickly turned food for cattle. On the same farm three pecks were sown per acre on the 21st of May. August 2—seventy-three days after planting—it was gathered and dried, making 5,804 pounds of excellent bright hay, which the horses and cattle ate with a relish, liking it fully as well as they did the clover.

Does it Pay to Raise Oats.

I do not wish to discourage farmers in raising oats for the market, as long as it will pay to do so; but I think that the facts in the case will show that it not only does not pay in this country, at the present prices, but that the balance will be against the farmer.

We will say that a man sows ten acres and that it yields 40 bushels per acre, which will be at least an average crop for this section.

We will suppose that the breaking of ten acres will cost	$10 00
20 bushels of seed at 20 cents per bushel	4 00
Sowing seed	1 00
Harrowing 2 days	4 00
Cutting at 75 cents per acre	7 50
7 hands to bind and shock at $1.50 per day	10 50
Stacking 1 day, 2 waggons and 4 hands	12 00
Threshing 400 bushels at 2½ cents per bushel	10 00
8 hands to help thresh	12 00
We will say that a man will haul to market one load of fifty bushels per day ; it will therefore take him eight days to take it to market, which, at $3,00 per day will amount to	24 00
Total	$95 00

It will be seen that nothing has been allowed for rent of land, board of hands, &c. We will say that he will get for his oats when delivered 20 cents per bushel, which is 7½ cents more than they are selling for here at this time. This will give $80.00 against $95·00 He will have the straw besides ; but will this pay him the difference, $15.00, rent of land, board of hands, &c.

I make no suggestions, but merely mention these facts so that farmers may think the matter over and plant such crops as will be likely to yield the largest returns.

JOS. H. MITCHELL.

Tontzville, Kansas.

Shade or No Shade in Pastures.

Farmers have often, through the agricultural press and otherwise, been advised to plant trees in prairie pastures to make shade for stock. Now, if stock will put on more flesh in a pasture with shade than where there is none, then shade is desirable, otherwise, not so. Having for many years pastured where there was good shade, and for the past two seasons where there was none, and observed closely the habits of cattle and horses with regard to feeding, I have become satisfied that stock of any kind (except perhaps hogs) will thrive and do best where there is no shade at all, from the fact that without shade stock will feed several hours in the day that otherwise would be spent in the shade fighting flies. Let any one in doubt on this subject put horses and colts in pasture and allow them to run in and out of the stables as they choose. It will be found that they will quit their shelter scarcely at all between seven in the morning and five in the evening, and will grow poor on good pasture at this season of the year. On the other hand; if allowed no shade or shelter at all, they will thrive nearly as well in July and August as in May or October. The same will be found to apply to horned cattle and sheep, though, perhaps, the difference will not be so great. It may be considered cruel to deprive animals of so cheap an article as shade, but I think that they have a "good time" in pasture compared with our work teams, or the farmer himself, who works ten or twelve hours in the scorching sun, and knows but little, practically, about the comfort of shade.—*Prairie Farmer.*

The Scarcity of Farm Labour.

Farm work is suffering for lack of sufficient labourers. Not only is this true of Western New York, but of New England and the West. Our correspondence tells the same story from every locality; farm labour is scarce and wages high. Naturally we ask, in common with other farmers, why is this state of affairs? Why, if labour is so high, are prices of farm products produced by labour so low, comparatively? and is this condition of things likely to continue? There are considerations involved in these queries which are of great importance to the present and the future of the agricultural interest. The census shows that the population of towns is increasing in a more rapid ratio than that of the country, the consuming class faster than the producing, and the first thought would find in this the promise of remunerative prices for farm products.

To make farming largely profitable the farmer must bring more thought to his business. He must learn how to grow his crops most economically, and what are the most profitable uses for them. He must seek the best markets and take measures to lower rates of transportation. He must employ

more capital, and thus lessen the chances of failure. Grow no crops but good ones; large yields per acre and fewer acres under the plough, produce more wool, meat, butter and cheese, and in due time the profits of agriculture will compare favourably with those of any other business, as surely as it lies at the foundation of all. *American Rural Home.*

The English Crops.

The North British *Mail* gives a statement in relation to the grain crops from forty different points. The following extracts will give an idea of the state of the crops:

"An agriculturist of fifty years' standing describes the state of his wheat and corn as the worst in his experience. He believes that it will be neither fit for man nor beast. In the whole parish the wheat crop is nearly ruined. The sprouting is such that in certain places the sheaf is so intertwined that it does not require a band for support." "Wheat uncut is sprouting in the stalk." "Long continuance of wet weather has done fearful injury to the crops." "More disastrous harvest weather has not been experienced here for upwards of thirty years." "Many farmers declare that this year their farming will almost prove a total failure,' etc., etc.

Power of Recuperation in Land.

A rather remarkable instance in proof of this position, lately came to my knowledge.

A farmer residing about a hundred miles to the eastward of Toronto, sowed broom corn for sixteen consecutive years in the same ground, andthe last crop was better than the first.

The stalks were very tall, quite equal to any ordinary rank crop,*only* the brush, however, was taken off the land, the stalks were rolled down in the fall, and in the spring were all ploughed under, first, however, receiving a thorough harrowing, by which,—and the winter's decay—they were broken up into short pieces. Immediately after this ploughing, the land had each year been planted again with the same crops, and so far from seeming to have become poorer, my informant, who is perfectly reliable, states that the crop appeared to grow better and better each year, no manure having been used during the whole of the term above mentioned.

This thoroughly well established instance of land increasing in fertility, instead of decreasing, by cropping every year with the same crop, may be food for a most valuable investigation. There certainly is some part taken away of the crop which the land produces, although only a small portion, and the mass of corn stalks ploughed under is very great, still the principle is the same in all cases,and it has been a universally received opinion, that this well established fact can never occur, viz., "that land, if continuously sown with the same crop must become impoverished," unless the minerals abstracted are replaced. But in this instance they are *not* replaced in toto, although a large portion does again help to make a new crop, still one would imagine, if broom corn will do this, and replace all the requisites for a new crop, other things ought to do so also.

the recent treatises on the growth of the sugar beet, the same principle is found most distinctly to apply, and land on which the beet-root has been grown for many years *in succession* is richer this day, and produces better and heavier crops than it did when first sown.

As a rule, all leaves in the case of the beet crops are ploughed under, and where practicable, all the root refuse (except sugar and some potash) are each year returned to the soil. Extra manure is not required, and in thousands of cases is never used, the portions of the root remaining, after extracting the sugar, only being returned to the soil, to reproduce another crop. By chemical analysis, the sugar in a crop of wheat, supposing the starch all sacharized, would be about the same, or somewhat under the quantity of sugar produced and abstracted in a crop of beets; whilst on the one hand, the land gets richer by simply returning the refuse, (less the potash and sugar), and on the other hand. in the case of growing a crop of wheat, and returning to the land the straw and bran, it is well known the land would become poorer every year, *provided consecutive crops of wheat were grown*, and in case of the beet, there is a much greater subtraction of potash than is known to be contained in wheat straw, which in reality should not be counted as abstracted at all, as it always gets back on the land in one form or another. These are serious facts, and lead a thinking mind to ponder them deeply.

VECTIS.

Iowa.

The almost unlimited quantity of grain within the borders of our state this fall is something marvellous. Our oats crop will probably average as heavy as men were ever called upon to harvest and secure. We shall have immense quantities of wheat for export to less favoured regions. Of corn, the livliest imagination can hardly exceed the actual fact. We have millions of acres which will average fifty bushels per acre, not measured cobs and all in a half bushel, but measured in the waggon box, at 4,300 cubic inches to the bushel. In a day's ride it is hardly possible to find a field of poor corn. Of everything to eat there is plenty and to spare. Potatoes to freight the shipping of the world, perhaps. Garden vegetables till we scarcely know their worth, and apples on nearly all the trees which are poor enough to bear. Truly we should be a thankful people, for man is not often so highly favoured.—*Osceola Sentinel.*

A Private Drainage Fund.

To the Editor.

SIR.—I hasten to subscribe to an article from an Essex Farmer, published in your last weeks issue, on the Drainage question Farmers are indebted to that gentleman for bringing the subject before the public. I heartily endorse all he has said, I can enter into his feelings regarding these frog ponds and quagmires for they intersect my farm also. The heart sickens twice every year in spring and harvest at these smells. I am similarly circumstanced as the Essex Farmer having struggled hard and my farm cleared, and commenced stamping. I wrought too long among the Government Drains in Scotland to be a chopper, but I am death on stumps, and if I had the where-withal to drain the puddocks shouldn't croak on my farm. But I take courage, seeing that we have a practical farmer at the head of the Agricultural Department, a man who thoroughly understands the state of the country, and I believe interested in the welfare, and I flatter myself that this agitation over and somthing like equilibrium restored, he will devote his energies to this subject and establish a system of Drainage that will commend itself to the inhabitants of Ontario, and worthy of the name of McKellar.

AN OLD DRAINER.

Egremont.

THE FOREIGN HOP CROP.—The hop crop in England the present year is said to be remarkably fine, being large, heavy in quantity, and superb in quality. It is described as being the fifth largest crop of the century. The growth will average half a ton per acre. As 60,000 acres were cultivated, the yield will be, therefore, 30,000 tons, which is said o be an excess of 7,500 tons over the annual requirements of the brewing trade of the country. The Belgium hop prospects are also represented as being remarkably heavy: and at Nuremberg the crop will be from one-third to one-half more than last year. From Pleinfield, in the celebrated Spalt district, a good average produce is expected. In the lower Palatinate (Rhenish Bavaria) one-fifth more hops were grown the present year than in the last season. From Hanover, likewise, and indeed from almost all the hop-growing districts of Europe, alike favourable accounts are received. The German, French, and Belgian crops are represented as being of superior quality, the portion of brown or diseased hops being unusually small. The estimated value of this year's crop in England is $18,000,000. Although there is an increased consumption in Germany, France, and Belgium, there will be a considerable surplus for exportation in all those countries. In the United States the crop will not supply the home demand, although, according to the agricultural census, the crop is sevenfold what it was in 1850, the State of New York producing two-thirds of the whole amount; so that large importations from both England and the continent are anticipated.

Fallowing to Kill Weeds.

If there is a field on the farm which is so thoroughly infested with quack, Canada thistles, or other foul weeds, that its culture is unremunerative, or if its soil is hard, and needs exposure to the air and frosts to ameliorate it, then it is a suitable subject for the genuine fallowing process. This should begin early in the Fall with a thorough plowing, to be followed immediately by harrowing, to induce as rank and complete a growth of weeds as possible. The next step is a second plowing just previous to the setting in of Winter, but when the soil is dry and friable. The harrowing should be omitted after this second plowing, and the surface of the field should be left as rough as possible, so that the frost and air may penetrate the soil, and take effect on whatever roots there may be in it. This tillage will give the roots of the most vital weeds a set-back from which they will not easily recover. Next spring, when the ground becomes dry and in good condition to work, the field should be harrowed down smooth, and about the first of June another and final plowing given it. The cultivation subsequent to this must be done with the cultivator and harrow, and so frequently that no vegetation can struggle into growth. If the roots of quack abound near the surface, a strong-toothed rake should be employed to bring them into heaps where they may be burned. By raking and cultivating the surface to the depth of four or five inches, it can be completely cleared of roots, and a fine tilth given the entire top soil. Roots buried deeper than this will be smothered, and thus destroyed. An important point in this plan of tillage is, to do the work so thoroughly during the second season that no green blade can appear on the surface. In the Fall, the field will be in a find condition for a crop of Winter grain, and weeds will be effectually subdued.—*American Rural Home.*

Drills vs. Broadcast Seeders.

The Department of Agriculture has issued to its correspondents a circular asking information as to the comparative quantities of spring wheat sown Broadcast and Drilled; the comparative yield, etc. At this writing we cannot give any statistics on the subject, but the enquiry has brought to mind some interesting facts.

Broadcast sowing of small grains as formerly practised universally and still in common use in some localities—that is, sowing by hand from bag or basket—is almost unknown in the Northwest—Wisconsin, for instance. Thus a farmer who has resided in this county for a number of years tells us he has never seen but two pieces of grain so sown. In somewhat extensive travels during three years past, we remember not more than one case in which we saw seeding done in this manner. So too there is comparatively little sown by such machines as Cahoon's, which scatters the grain in much the same way as when sown by hand.

While this is true, it is also true that in the Northwest much the greater part of the spring wheat, as well as oats, barley, etc., is sown with the Broadcast Seeder (with which nine tenths of our readers are familiar, but of which it may be well to say, for the benefit of the one tenth, that it resembles the grain drill in general appearance, the grain being dropped on the surface of the ground and covered by the cultivator teeth, of various forms in different patents, which form a part of the implement).

The popularity of these Seeders is of comparatively recent date, and their general introduction has been surprisingly rapid. A leading dealer in Agricultural Implements in the Northwest—himself decidedly in favour of the Drill in comparison with the Seeder—states to us that he supposes there are ten Seeders in use in the Northwest generally to one Drill. It is a noteworthy fact that in some sections the Drills are decidedly the more popular. Thus in this, Dane, County more Drills than Seeders are used. Many of the friends of the Drills claim, with some appearance of having the facts on their side, that a reaction against the Seeders has commenced, and that farmers are beginning to again recognize the superior merits of the Drills, and they also claim that the popularity of the Seeders is largely to be accounted for by the love of new things and new kinds of machinery, and by the less cost of the Seeder, Drills generally selling for some 25 per cent. higher prices.

Some enthusiastic friends of the Drill claim very great advantages for it. Thus an intelligent farmer states to us that he estimates the average increase of the yield of wheat by the use of the Drill over the Seeder, at five bushels per acre. A general claim on the part of the friends of the Drill is that grain sown by it will do equally as well in any season, and in very dry seasons will do better than that sown by the Seeder.

Farm Work for November.

Some farmers are always behind hand in doing their work, and this month frequently finds them not at all prepared for its chilling blasts.

Buildings not in good order should be repaired without delay, all foul places cleansed thoroughly, and heavily whitewashed or sprinkled with lime.

Cellars under houses should be scrupulously cleansed, and, if possible to avoid it, should never be used for storing vegetables, as they do not add to the health of the family.

Animals should be studiously protected but only in thoroughly ventilated stables. Their food should be given four or five times during the twenty-four hours, so that none of it need be refused because it is "mussed" or soiled. Many farmers whose experience has been varied prefer this plan, thinking it more economical, and more servicable to the animals than feeding only two or three times a day. For horses and neat stock, place lumps of rock salt in the mangers. Food must be varied to suit the kind and condition of animals. He who would prosper as a stock breeder or dairyman, cannot learn too much of the animal economy. Comfortable stables save food, and very materially assist in maintaining animals in a good condition. Cleansing the hide and frequent rubbing will promote health. It has become quite a common practice with some farmers to curry and rub down their neat stock, and we trust it may become universal.

Keep *fattening animals* fully fed, but be careful to vary the food sufficiently to cause a good appetite.

Hogs should be fed on cooked or soaked corn, or corn meal, almost entirely towards the last days of their fattening. Throw lime and ashes, in small quantities, on the floors of the pens from time to time, and occasionally feed a little sulphur.

Young animals ought not to be made tender by too close housing—should be treated gently and with familiarity. *Steers and Colts* may thus be brought to a condition that will make it a very easy task to break them into the yoke or harness.

Sheds, at least thirty feet wide, with low posts, and opening into a yard on the sunny side, surrounded by buildings, or a high fence, are highly approved of for sheep and young stock. They thus have an opportunity to exercise in the open air and sunlight, retiring to a well littered protection at their pleasure. Care must be used in feeding, that the weaker animals may have fair play.

Manure making should be prosecuted with the utmost vigour. As long as the weather permits, occupy every spare hour in collecting muck, pond mud, leaves, sods, ditch scrapings, and organic deposits, to be thrown under cattle, in the hog pen, or manure yard. Recollect that manure is the floating capital of the farmer, and if benefit is to be derived from its use, care must be taken that it does not *float* off literally. Devote study and thought to this part of your farming, but do not spare the *muscle*, for much can be made by a proper manipulation and commingling of materials.

Top dressing, *ditches*, *drains* and *drainage* should be heeded as far as possible during this month.

Heavy land may be plowed, provided it is not so wet as to be sticky, and we should prefer the lap furrows, that a greater amount of surface be exposed to the frosts of winter, and the ease of filtration increased. By all means sub-soil plow in this month, if practicable, and get the coarser manures under for next year's hoed crops.

Light land, that is not wet, will be benefited by being rolled after plowing, and will be all the better if heavily mulched with coarse manure, leaves, straw, refuse hay, rushes, or any material that will keep the surface from blowing away.

Fruit should be carefully culled over, and all that is sound wiped dry, and laid away on shelves, in dark, cool rooms, or dry cellars — as uniform a temperature as possible being kept up. *Cut scions* for grafting, and pack away in sawdust in a good cellar until needed. Cuttings of currants, &c., may be set as long as the ground is open and friable.

Cellars and pits for vegetables need close watching, that more protection may be given when the cold weather begins in earnest. *Plants in cold* frames should get all the sun and air they can endure. *Spinach* and other crops left out should be protected with litter thickly laid on. *All roots* should be immediately gathered and stored in pits, except that portion of the *parsnip* crop intended for spring use, which will be better off in the ground, if standing water is not allowed on the beds. *Grape vines* should be carefully pruned—the Concord, Isabella, and Catawba not as closely as the finer sorts.—*Farm and Fireside.*

Stock Department.

Live Stock on the Farm.

From the Scottish Farmer 21st Oct.

CALVES

In rearing cattle for the butcher, it is essential to begin well from the first stage. If calves are poorly fed it will be difficult, if not actually impossible, to make up afterwards for the effect of stinting them of sufficient food. To rear calves well, and to keep on the "calf-flesh" afterwards, is of the utmost importance in rearing cattle. Where the dairy is not the principal object, the best mode of rearing calves, which are afterwards to be prepared for the butcher, not as veal calves, but as full grown fat beasts, is to allow the calves to run with their dams. Calves which are reared in this manner, thrive more rapidly, and are much less liable to disease than calves which are pail fed. When suckled by the cows the calves drink when they feel inclined, and only take what they require The milk obtained in this way is also in the best condition to nourish them Hence calves which are reared on their dams, or on nurses, have a "sappy" appearance which pail fed calves, however well attended to, seldom possess. On farms where dairy produce is a special object of manufacture, and also in the case of farms where there may not be convenience for allowing cows and their calves to run together, the latter must be hand-fed, and various substitutes resorted to in order to make up for the proportion of milk withdrawn from the calves to make butter or cheese. Even in such cases, however, the calf should be fed upon new milk for the first three weeks during which time it will consume about 6 quarts daily, given in three feeds. When skim milk is substituted for new milk, gruel made of linseed-meal is an excellent description of food to mix with the skim-milk; also a mixture of linseed-meal and bean-meal, equal parts of each, from ½ lb. to 1 lb. of the mixture being allowed for each calf per day, made into gruel. If the meal is made by grinding linseed cake, instead of pure flax seed, the mixture should be composed of three parts of linseed cake meal to one part of bean meal. Palm nut meal, upon which hot water has been poured, and allowed to stand covered up for some hours, is a kind of food upon which calves thrive well. They should also be accustomed to eat linseed cake, and at the end of three months when they are weaned, they should get each 1 lb of cake daily, which should be gradually increased, so that by the beginning of winter their daily ration of cake will amount to 2lb. each, at which rate it may continue all winter, or it may be mixed with crushed oats in equal parts. After the calves are a month or six weeks old, they should be allowed to run during the day, in a grass paddock, a certain amount of exercise being necessary to promote their health and growth. The cribs in which calves are kept should be perfectly dry, and well ventilated. Calves kept in damp, dirty cribs, and not allowed sufficient food or exercise, are liable to swellings in the joints, commonly called "joint evil." Hand fed calves, especially such as are fed chiefly on skim-milk, are apt to become affected with indigestion. The most fatal disease to which calves are liable is "black quarter," but for that disease, regular and liberal feeding on oil cake is almost a certain preventive.

YOUNG CATTLE.

During the first winter, as above mentioned, the daily allowance of cake must be continued, and along with this the young cattle will get two feeds of turnips daily, and fresh straw or hay. Young cattle thrive well on pulped roots mixed with cut straw The oil-cake and crushed oats may also be mixed with the pulped food. Pulping saves roots When the young cattle, in their second year are turned out to pasture, it is advisable to continue the allowance of cake. Cattle which have been reared in this way, will have as much growth when 18 months old, as others at double the age which have not been so well fed from the first. In saying this we refer, of course, to cattle of good description for food is simply wasted upon inferior beasts.

WINTERING CATTLE

upon straw and water, as is still practised by some farmers, and this system, or that of running them on grass day and night, throughout the winter and spring months, with little or nothing in the shape of food beyond what they can pick up, is a most expensive, because it is a most wasteful mode of rearing young stock.

FATTENING CATTLE.

Before putting up cattle to fatten in the stalls, it is advisable to lay down a few globe turnips each day on the grass for them. Cattle should be put up early in October, as cold, wet weather at that season of the year will cause them to lose some of the flesh they had acquired on the grass. When put up to fatten they must be accustomed gradually to the change of food, as an over liberal supply of turnips given at first will cause "scour," which will throw them back in condition. It is advisable at first to give them 2 or 3 lb daily of mixed bean and barley meal, along with cakes, as alternate foods with roots and hay. As the cattle become used to the food, the quantity should be increased; but it is not desirable that the daily allowance of turnips should exceed 112 lb., and it is better that the roots be pulped The food may be varied occasionally with advantage, and cotton cake, locusts, beans, palm nut meal, &c., substituted in part for oil-cake It is not so much the quantity of food which is given to a fattening bullock that promotes the laying on of flesh, as attention on the part of the feeder. The appetite of animals varies at different times, while some may naturally be delicate feeders, and others voracious consumers of food. These are points to which the feeder must carefully attend, and also to avoid surfeiting any animal with a more liberal supply of rich food than the animal can digest comfortably. A surfeit will inevitably throw the animal back in condition. The quantity of cake or meal which may be given as the bullock approaches maturity, varies according to circumstances. Some feeders do not give more than 3 or 4 lb., while others give 7 or 8 lb. daily. If more food of this kind is given than the animal can assimilate, the surplus passes away in the dung, but although the manure heap is enriched thereby, the benefit derived from that source is not sufficient to cover the waste of food, and it may also be said the waste of flesh, because the excess food given to one animal would go far in preparing another for market. That is a great agent in promoting the accumulation of flesh and fat, and animals which are kept dry and moderately warm so as not to excite great prespiration, eat less food, and thrive better than cattle which are exposed to cold. Of all the different modes in use of housing fattening cattle, we are quite satisfied that the box system is the best. Boxes require more house room than stalls, but the advantages gained by the use of boxes more than counterbalance any extra original cost incurred in their erection In connexion with the fattening of cattle it may be mentioned that grain of all kinds which has been injured by exposure to the weather may be turned to very good account by giving it to cattle. Even when grain has been sprouted in the sheaf, it is useful for this purpose.

Pigs Losing their Tails.

A correspondent of the *American Agriculturist* recommends that "the tails be greased when the pigs are born, and I will guarantee that they will not come off."—The editor of our contemporary adds:—This may be true, and at any rate so simple a preventive is worth trying, but we much doubt its efficacy in all cases. The trouble is caused by a ring, supposed to be of a fungoid character, grow round the base of the tail. If taken in time, before it has completely girdled the tail, its growth may be checked and the tail saved. But when the ring is once around the tail, it is almost impossible to save it. Carbolic soap and glycerine, with a little carbolic acid mixed with it—say one part of carbolic acid to ten parts of glycerine—is likely to prove as efficacious as any other remedy. We have generally depended on petroleum, and we have saved some tails, and some we have not. We have never lost a tail from a thorough-bred pig, but have lost a good many from cross-bred pigs and grades. The so-called Cheshires, or Jefferson County breed, seem to be particularly liable to lose their tails, and such is the case to some extent with the Yorkshires. The black pig, when thorough bred, are not, in our experience, affected with the disease.

The Heads of Animals.

Mr. Henry Corbet, an English writer of authority upon matters connected with live stock, says that a man may save himself a deal of money, trouble and dissappointment by making the head a first principle in establishing a herd, flock or stud. This is certainly putting great stress upon the heads of animals as a guide to their breeding qualities, but we are inclined to think it is none too forcibly stated. The head is, in fact, the index of intelligence, and as intelligence should be one of the first characteristics to breed for and as other desirable qualities are generally coupled with intelligence, it may be considered safe to give great weight to the appearance of the head in selecting animals for breeding purposes, or as representative animals of certain breeds. The head of an animal is, in fact, as Mr. Corbet justly says, "the main index to his purity of blood, strength of constitution and actual fitness for the service of which it is intended." Who would, in selecting a bull of the Short Horn breed, for instance chose one with a small, delicate "cowy" head? Or, on the other hand, who would select as a cow from which to breed, one with a large, coarse, sterry-looking head—a cow that has lost the very semblance of her sex from the preponderance of masculine qualities? We quote again from Mr. Corbet—in late a number of one of the English agricultural journals—as his words are directly to our purpose. "The shoulder no doubt, answers very much for shape, and symmetry, and frame, but the head answers for everything. If you go for breed, you look above all to the head; if your aim be style or fashion, you must seek this in the head, as nine times in ten that very accomodating phrase known as quality should prove itself by a good head. You get at the very purpose of an animal by a look at his head. The calm, placid countenance of a naturally thriving beast; the noble, masculine, well-defined features of a sire of any character; the several uses of a horse, the instincts of the dog, and the mere gluttony of the pig—how safely you may arrive at the conclusion by studying the head."

The characteristics of the several breeds of cattle, of sheep, of pigs, and the qualities of the horse, are safely determined by the head. As an illustration of this, take the head of the Jersey cow as an index of the breed to which she belongs. It is small, fine and tapering: the throat clean, the cheek small; the muzzle fine, and encircled by a light color: the nostrils high and open; the horns small and smooth; the ears small and thin, and of a deep orange color on the inside; the eye full and placid, and the whole appearance of the head graceful and fawnlike. We mention the Jersey first because there is no animal whose head tells more plainly of high breeding than this. The head of the improved Short Horn—the perfection of which is to be found in the female—is one embodying "a calm, meek, dignified expression, in itself a delightful study." Small, slightly dishing or concave; the eye full and bright; the muzzle fine and yellowish; forehead broad; horns wide at the base, short, spreading gracefully out and then turning upward or carving in; ear sizable and thin, and the neck full and well set into the shoulders and breast. We do not remember to have seen a better representative Short Horn head than that of Aurora, 2d, breed by Mr. White of Massachusetts, and now owned by Chas. Shaw, Esq., of Dexner, which is figured in the ninth volume of the American Short Horn Herd Book. The head of the Devon should be rather short, lean in flesh, forehead broad and head tapering gracefully to a fine, clean, yellow muzzle; the eye bright, lively and prominent; the horn upright, the neck on a level with the head and shoulders, and the whole expression gentle and intelligent. Beyond the color of the face, and the length and straightness of the horn, the good points in a Hereford bull's head, cannot differ much from those to be appreciated in other breeds. There should be the comfortable, good-tempered look in the countenance, the clean white eye, the light colored muzzle, and the good size in proportion to the other parts. A head either too large or too small, so much so as to be cut out of harmony must be regarded as a deformity in any animal.

Who does not place great reliance on the head of a horse as a text of his characteristics and intelligence—and who would not in selecting procure one with a handsome, well proportioned head and intelligent countenance, as a matter of highest importance? Let the ears be long, somewhat thin, and moderately open, with a gentle inclination at the points towards each other. Every movement of the ears has its meaning and by watching them one can generally predict the movements and disposition of the horse. Let the forehead be broad and bold; the eye, dark, bright and lively—a combination of spirit, sagacity and gentleness; but avoid the small, sunken eye. The nostrils should be square and open, and the lip thin, firm, and of moderate length—a thick, hanging lip is sure evidence of ill-breeding.

We might follow this subject to greater length, but have suggested sufficient for our purpose. It may be well, however to call the attention of our readers to the difference of the heads of the Leicester, the South Down and Merino sheep, as containing abundant evidence of the general points of difference in these several breeds, and of the heads of the Chester and the common kinds of swine as showing the excellence of the one over the other. To go still lower, perhaps, as the dog takes high rank as an intelligent if not a useful animal, the characteristics of each breed of dogs could be written by a study of their several heads.

We add a thought of some practical value. As it is the head of an animal that carries impression, and sets off its whole proportions—in deciding upon animals for exhibition purposes select those with well proportioned, finely pointed, intelligent heads. Such overcome many defects, and will go a long ways with a committee in determining their award.

Fatting Pigs.

Pork is low, so also is corn. At this season seven bushels of corn should produce a hundred pounds of pork, or if the pigs are running in a good clover pasture, three or four bushels of corn fed in addition to the clover should give them a hundred pounds in live weight. It is a great mistake not to give fattening pigs nearly or quite all the corn they will eat at this season while running in pasture.

In England there are about 40,000 acres of young oaks and other growing timber planted in inclosures by authority of acts of parliament, of which 10,000 were planted last year. Of the trees thus planted for navy purposes, none of them have attained much more than half of their full one hundred years' growth; the thinning necessary to make room for the ultimate crop to reach maturity, produces a large income.

Look over the country and it will be found that at the very least two-thirds of our intelligent, energetic farmers are well-to-do in this world's goods, that is, their farms are free from all encumbrances: they have money in bank; they have the best of horses and cattle on their places; their barns and granaries are well-stocked; and generally they are in most comfortable circumstances. Now these farmers are not more fortunate than others, but they are more wide-awake; they never permit an opportunity to make a bargain pass unimproved, and instead of loafing continually at the blacksmith's shop, or the cross-roads groceries, they are on their farms, either superintending improvements, directing the operations of hands, or reading the newspapers to keep themselves well-informed concerning the changes in the markets or the condition of affairs generally.

Take now, for instance, our merchants and grocers and leading men in other pursuits, and after closely examining into the condition of their affairs, it will be found that a clear percentage will be in favour of the industrious, well-informed farmer. There is a feverishness about "bills payable," and an anxiety how to replenish stocks without farther increasing the indebtedness with the farmer.

True, the reckless, improvident farmer may have the same anxieties; but we repeat, that among the systematic, active, wide-awake farmers, such troubles are not so common. Now this is a general dissertation, and individual instances may be brought to refute our conclusions, but we are speaking generally, and we finish with the expression of our opinion that *intelligent farming does pay.*—*Lexington Farmers' Journal.*

To Prevent Sows from Devouring their Young.

The Monthly Report of the Department of Agriculture contain the following: It is well known that sows not unfrequently attack and devour their own young; or if prevented from this, will not let down their milk, so that the young pigs necessarily die for want of nourishment When this state of things is not caused by a diseased condition of the uterus, it is said that the sow can be brought to terms by pouring a mixture of ten to twenty grains of spirits of camphor with one to three of tincture of opium, into the ear. The sow will immediately lie down on the side of the ear to which the application was made, and remain quiet for several hours in this position without interfering with her pigs; and on recovery from the stupor will have lost her irritability in regard to them. The experiment has been tried in Germany hundreds of times, according to one of the agricultural journals, without any injurious effects It is also said that the eating of pigs by the parent sow can be readily prevented by rubbing them all over with brandy, and making the same application about the nose of the sow herself

Best Feed for Milch Cows.

The following is from an Essay read before the Vermont Dairymen's Association, by Alexander Hyde, of Massachusetts:

But the circumstance that most affects the quality and quantity of the milk is the food The luxuriant and succulent grass of June produces a great flow of milk, but the per cent. of water in it is much above the average of 87. Take a cow from a green pasture and feed her on dry hay, and the quantity of milk will be greatly diminished, while the quality may be improved. Everything a cow eats affects her milk directly. We have great faith in cabbages as producing an abundance of rich milk, but unfortunately, the lady who presides over our household has keen senses, and detects in the milk the least flavour of cabbage or turnip. We have sometimes evaded detection by feeding cabbage leaves moderately at first and immediately after milking, but the increased quantity and quality of the milk, if not the taste, are apt to call out the sly question, "What are you feeding your cows on now?" Sweet corn fodder, we are confident, gives a richer milk than common corn. Indian meal all farmers agree, gives a rich milk, while buckwheat increases the per cent. of water more rapidly than it does the more valuable properties. Clover, cut green, greatly improves the quality of milk. Being a leguminous plant, it should add to its casein rather than to its butter. Pea vines, also leguminous, are extensively used at the South, where the grasses do not flourish, as food for cows, and are said to produce excellent milk. There can be no question but that grain cut before it goes to seed will produce more and better milk than after all its virtues have been spent in their legitimate purpose of producing seed after its kind. If the hay has been made from grass as dry and woody as oat straw, it may be benefited by being cut and moistened, but can never be restored to its original nutrition any more than the daughters of Tobias could rejuvenate their aged father by cutting him up and boiling him.

All the roots add to the flow of milk and improve its quality. They furnish both food and drink, being largely composed of water. The feeding of roots do not save as much hay as some suppose. They keep the animal in good health and appetite, and are valuable in their sanitary and manurial effects rather than as an economizer of hay. The increase of milk and manure is very manifest from the feeding of roots. Potatoes make the best of milk, but at present prices we can hardly afford to feed those of a merchantable size and quality. The small potatoes can be put to no better use than food for young stock and milch cows. They furnish much saline matter, thus adding to the specific gravity of milk and to the material for building up the frame work of the young animal. As an observing dairy woman once said to us, "Potatoes give body to milk."

It is cruel to tax cows in winter for milk and give them nothing but dry hay from which to manufacture it. If cut before maturity, this hay contains all the elements of milk, but it is dry fodder, and if it constitute the only food of the cow, day after day, for six months, there is a sameness about it which is not provocative of a good appetite. As men crave and need a variety of food, so do cows. A few beets, or turnips, or carrots should be fed to them each day, and the sleek coats of the animals and the improved quantity and quality of their milk will indicate their appreciation of these roots. One of the best and most economical kinds of feed for cows, both in summer and winter, is the bran of wheat and rye. The inorganic part of grain resides chiefly in the husk or bran, as may be seen by burning similar quantities of fine flour and bran. The ash of the latter, will, on the average, be six times that of the former; the ash of dry, fine flour being about one per cent., and that of bran six per cent. of the weight of the whole. Bran, therefore, though a dry-looking sort of fodder, is rich in those elements which form the frame work of animals, and Dr. Graham was doubtless correct when he advocated making bread from unbolted flour. Many dairymen practise putting a couple of quarts of wheat bran into six or eight quarts of whey, and feeding it to their cows night and morning, thereby improving their milk, their cows and their pastures. The improvement of the latter is specially manifest, as the bran restores to them the phosphorous, sulphur, potash, lime, soda, etc., of which our old pastures have become exhausted, these essential constituents of a good soil having been carried off in the bones of the animals and the grain and dairy products sold.

Value of Turnips as Food for Stock.

In a little pamphlet on "Turnips," recently published by David Landreth & Son, Philadelphia, the above subject is discussed as follows:—"The value of succulent food, in a hygienic or sanatory view, to man, and also to the animals which minister to his wants, need not be commented on. All who have paid attention to the subject agree in opinion as to its advantage, indeed absolute necessity, if the preservation of health be properly studied. The long winters of our country, which arrest vegetation, and oblige us to provide green food to be stored up in anticipation of the severer season, has necessarily induced inquiry and examination as to the class of vegetables which can be produced in greatest abundance, at least cost, with least exertion, in the shortest space of time, and least liability to failure under unfavourable atmospheric conditions, and also, as of primary importance, with a capacity for preservation for months with slight danger of decay. These qualities appear to be united in a remarkable degree in the turnip—hence its very general culture; and, as naturally follows, the importance of selecting the varieties which experience has pointed out as better adapted to geographical divisions and special purposes. In Great Britain the culture of bulbs, more especially the turnip (which we here include the *ruta baga*, or Swede, though not so classed in England) has assumed really gigantic importance; and it has been estimated by writers on political economy, years ago, when the turnip product was much below the present, that its annual value was equivalent to the sum represented by the interest on the national debt—no inconsiderable amount, as everybody knows. Until the culture of roots, as they are termed, was extended and enlarged in England, animal food was a luxury seldom within the reach of the operative classes, with whom vegetables and farinaceous compounds, not always of the best quality, were the reliable resources for sustenance. Now, meats in some shape are within reach of all—the poor factory operative, the industrious mechanic, and the wealthy landowner, alike participate; and this change has grown out of—not national prosperity or increased wages, though both are indirectly affected, but the greater breadth of land in root culture, which has so largely, immensely, it may be said, augmented the productive capacity of the acreage under plow, thus practically bringing food to every working man's door. Indian corn—with us the great meat producer, which has played so important a part in the civilization

of our country, enabling the hardy emigrant from the older settlements to wrest the wilderness from the savage, and overcome the forest—is not a product of Great Britain or any portion of the north of Europe; there only being known as an import from our country. In this particular, we have an advantage impossible to estimate; but, great as it is, it should not lessen our exertion to produce succulent food, which augments the value of the farinaceous. For many years we have, in our various publications, especially 'The Rural Regist· · and Almanac,' given expression to our conception of the value of roots as stock food. Our own working stock, at present numbering fifty-six head, and a small herd of Alderneys kept for the family dairy, we aim as regularly to supply with food of that character, whether it be turnips, mangolds, carrots, or beets, as with hay; and we should consider it most unfortunate if untoward events should deprive us of the ability thus to contribute to the health and vigour of our working force, or the secretion of rich milk, and correspondingly rich butter, as high coloured in winter as that from grass, and almost as well flavoured. That turnips singly and alone will secure health and strength, and rich milk, we are far from maintaining; but we do contend, that, in proper proportion, in suitable condition, at proper times, mixed with corn meal, shorts, oil cake, or other farinaceous food, they will produce invaluable results. To feed roots of any kind in cold stables, or, what may sometimes be seen, in the open air in inclement weather—the roots, perhaps, partially frozen—and expect favourable results, argues, to say the least want of reflection, and where we find people say, as we sometimes do, they 'can see no good in roots,' we are sure to find, on inquiry, that some of the obviously rational and necessary rules of procedure in feeding had been neglected or disregarded."

Value of Sheep.

The high price of wool this year, and the great demand for sheep or lambs for meat, has made many a farmer wish he had a flock of sheep. The price of wool for a few years back has been so low and fluctuating that it has led the farmers to kill off their sheep, and just the same results follow that have in years before; they find, when wool advances, they have no sheep on hand. We have advocated high prices for wool, advising the farmer if he had any and could afford to hold it, not to sell. Although there has been a little depression in the market, we still adhere to the view that the woollen mills during the coming season will be large buyers of domestic wools; and we notice the reports from foreign markets show great firmness abroad, arising from the same causes that prevail in this country—shortness of supply. Nor do we think, with the growth of business in our country, will the supply, for several years to come, exceed the demand for a medium grade of wools, which are the staples grown here.

The question of raising sheep for their meat is not an unimportant one; with the growth of the country the consumption of eatables increases and the favourite meat now, and that which brings the highest price, is lamb, and with an increasing interest in it, as the most wholesome and palatable of all meats, it is already getting so scarce and high that it has to be purchased only as a luxury by those who can afford it. We have spoken thus far of the demand of wool and mutton at a price that will pay largely for sheep-raising. Their value to the farm is not, perhaps, fully understood. It is an old proverb, "whenever the foot of the sheep touches the land it is turned into gold." Sheep will enrich land faster than any other animal. On the mountain pastures they are valuable in clearing up the land, freeing it from weeds, shrubs and briars, and bringing it to clover and nutritious grasses. They are easily raised and cared for both in summer and winter. The risk of loss by death is small, and if well managed, sheep will not die in debt to the owner. If it dies at birth it has cost nothing. If it dies the first year the wool and pelt is worth all it has cost up to that time.. Sheep husbandry has a value to make the land more profitable, more productive, at a less expenditure than any other animal kept on the farm.—*New England Homestead.*

British Agricultural Statistics.

The following table is just published by the Board of Trade of Great Britain, showing the extent of land in acres under the several crops specified:

	Wheat.	*Barley*	*Oats.*	*Potatoes.*	*Hops.*
1870....	3,500,543	2,371,739	2,763,360	597,661	60,594
1871...	3 571,894	2,385,783	2,715,707	627,691	60.030
1872....	3,599,158	2,916,235	2,705,645	564,083	61,929

The following live stock statistics are also given:

	Cattle,	*Sheep.*	*Pigs.*
1870..	5,403,317	28,397,589	2,171.138
1871.	5,337,750	27,119.569	2,499,602
1872............ ...	5,624,103	27,922,864	2,784,890

The foregoing figures do not include Ireland, where the returns are collected separately at Dublin The following is the official statement of the number of acres in the crops named for Ireland alone:

	Wheat.	*Barley.*	*Oats.*	*Potatoes.*
1871 ...	244,451	220,979	1 666,156	1 058,434
1872........	[illegible]	[illegible]	1,621,513	991,802

LIVE STOCK IN IRELAND.

	Horses.	*Cattle.*	*Sheep*	*Pigs*
1870 ..	532,677	3,760,912	4 336 884	1,461,215
1871	538,095	3,976,372	4,233,135	1.621,423
1872..	540,745	4,057,153	4,262,117	1,385,580

The general summary, including all crops returned, together with those above quoted, as of leading importance, shows an aggregate decrease in the acres of land under crops in Ireland, in 1872 to be 134,915 acres, as compared with 1871, this decrease being divided as follows:

Cereal crops	33,361	68,028 acres.
Flax	34,667	
Green Crops	37,773	66,887 acres.
Meadow and Clover...	29,114	

A parallel has been drawn between the prices obtained at the Winterfold sale of *Bates* Shorthorns, and at the Beeston sale of *Booth* Shorthorns earlier in the season—both occasions of unprecedented success in their way, and therefore especially likely to provoke such a comparison. The result is sent us by an English correspondent and runs as follows:

WINTERFOLD SALE.

2 Duke Bulls sold for..............		£2,583 16
1 Oxford cow do		945 0
9 Lallys, average ..	£406 0 0......	7,654 0
15 Wild Eyes..............	306 5 0......	4,593 16
1 Waterloo sold for		278 5
3 Kirklevingtons.........	234 10 0 .. .	703 10
3 Surmises	222 12 0......	667 16
5 Blanches	138 16 2... ..	694 1
39 head, including 3 calves with their dams........ ..	....£356 18 4.	£19 919 17

BEESTON SALE.

21 Mantalinis	£247 7 0......	£5,194 7
18 Fames	142 9 0......	2,564 2
39 head including 4 calves with their dams	...£198 18 8......	£7,758 9

Winterfold average	£356 18 4	Total..£19 919 17
Beeston do	198 18 8	do .. 7,758 7
Difference in favour of Winterfold...	£157 19 8 ..	..£6 ?1 ?

Intestinal Obstruction.

Another singular case of obstruction of the bowels has just come under my notice nearly similar to the one I informed you of just three months ago. I was called on the night of the 20th ult. to see a filly 15 months old, belonging to Mr. Thorburne, farmer, Oneida, Haldimand Co., Ont. I arrived at the farm where the animal was at 9 p.m., found the colt standing with her head drooping, her lips hanging pendulous and a waterly discharge from the mouth. The extremities deathly cold, respiration short and quick. Pulse imperceptible at the jaw. Cold and warm sweats alternately; and it was evident to me that the case would terminate fatally. I told the owner I could not do anything for her relief. He was, however, anxious that a trial should be made. He asked me to give her something. I gave her linseed oil, tincture opium spirits of ether nitre, and carbonate of ammonia; she continued very restless and died before twelve o'clock. When the abdomen was opened there was at once seen a noose on the last portion of the *ileum* drawn together with a degree of tightness scarcely credible.

I attribute the above entanglement to spasms of colic to inflamation of the bowels during the violence with which he rolls and throws himself about, or from leaping etc. However, I leave the readers of your wide spread journal to form their own conclusions, but should like well to hear the opinion of the profession on the above subject.

J. GARDINER, V.S.

Caledonia.

Sheaf Oats for Forage.

In answer to the inquiry, "What shall we grow in the place of corn fodder?" I would suggest the sowing of oats pretty thickly, and cutting when first in the milk, so as to have them saved as green and full as possible; store them under cover, and it will be found that more good food can be raised to the acre than of any other known grain or grass. That oat straw is of great value has long been proved, and allowed to be of nearly equal value to hay when cut green—adding to its grain, say fifty bushels to the acre, would give nearly a ton of the best of feed, on which not only does young stock grow thrifty and large, and the condition of work horses improve, but with bran or meal it is one of the very best things to feed to cows for milk or butter. Having a certain amount of milk to supply daily last fall, I used every means to keep up the quantity and quality, and tried almost every variety of feed. I found positive evidence that corn fodder was the worst of all, even at no cost, while sheaves of oats, cut green, were a cheap feed at forty cents a dozen bushels of average size. The corn fodder was good, full grown, and well cured, but I would not feed it to cows I wanted a good supply of milk from, if I could get it for nothing. The only feed I found superior to oats was clover, cut in first bloom and well cured, with four ears of corn and four quarts of bran once a day. On this a fine supply of butter may be looked for, and a cow to do her very best. It may also be said in favour of oats, that they are easy to grow, nice to handle, and the most wholesome and nutritious food for stock, poultry and hogs included; are early harvested, and the land in good condition for clover, which should follow.—*Colonial Farmer.*

How to Fatten a Horse.

To fatten a horse that has fallen off in flesh is sometimes a tedious business—indeed, the work of months. The following suggestions to accomplish it, however, though without paternity, looks to us as wise and to the purpose: Many good horses devour large quantities of grain and hay and still continue thin and poor; the food eaten is not properly assimilated. If the usual food has been unground grain and hay, nothing but a change will affect any desirable alteration in the appearance of the animal. In case oatmeal cannot be obtained readily, mingle a bushel of flax-seed with a bushel of barley, one of oats and another bushel of Indian corn, and get it be ground into a fine meal. This will be a fair proportion for all his food. Or the meal, or the barley, oats and corn, in equal quantities, may first be procured and one-fourth part of oil-cake mingled with it, when the meal is sprinkled on cut food. Feed two or three quarts of the mixture two or three times daily, mingled with a peck of cut hay and straw. If the horse will eat that greedily, let the quantity be gradually increased until he will eat four or six quarts at every feeding, three times a day. So long as the animal will eat this allowance, the quantity may be increased a little every day. Avoid the practice of allowing a horse to stand at a rack well filled with hay. In order to fatten a horse that has run down in flesh, the groom should be very particular to feed the animal no more than he will eat up clean and lick his manger for more.—*Germantown Telegraph.*

Keeping Old Sheep.

About one half of the farmers who keep sheep manage to have a lot of old run down ewes every fall which either sell at a trifle for pelters or die during the winter.

This is bad economy, to say the least, and should not be tolerated, and by a little timely forethought might be greatly remedied or entirely avoided.

Now is the time to attend to this matter. Look over your flock and select out all such as do not seem to be doing right, and put them by themselves on as good pasture as can be afforded, and when it begins to fail or has been touched by the early frosts, give a little grain, no matter what sort, and by degrees increase it, so that by the time winter sets in they will be in good condition for winter feeding, and if regularly cared for, will be fit for the butcher by early spring.

Sheep should never be kept until they lose their teeth; a very little observation and practice will enable any person to tell their age by the front teeth; and for the benefit of those not posted in this art, we will give a description of the teeth at the different stages of their growth and decline, so that all may learn, as we once heard of a person who went to buy a flock of sheep, and pronounced them all too old from the fact of having no teeth in their upper front jaw. Perhaps he has learned before this that they never had.

A full grown sheep has thirty-two teeth—eight incisors in the lower front jaw, and six molars in each side on the upper and lower jaw. The lamb at birth has two incisors passing through the gums. When about a month old, it has eight comparatively short, narrow ones. At about a year old, sometimes a little more, the central or "lamb teeth" are shed and replaced by two broad teeth. The lamb teeth continue to be shed annually and replaced by broad teeth, until the sheep has eight incisors of second growth, when it is full mouthed, which is at the age of four years.

At six years old the incisors generally begin to diminish in breadth and lose their fan-like shape. At seven they become long and narrow, stand about perpendicular with respect to each other and have lost their round, cutting edge and so continue to diminish until at about the age of ten years they become loose and begin to drop out.

So long as a sheep is healthy it can be fatted, but it is not good policy to keep them until they become too old, as it has a tendency to run down the flock and give it a rakish appearance.

Therefore every farmer should look carefully over his flock early every fall, and select out such as cannot be kept longer with profit.—*American Stock Journal*

At a recent exhibition of the Royal Agricultural Society, Cardiff, Wales, an eight-horse portable engine, made by Clayton and Shuttleworth, worked for five hours under a consumption of 2.92 lbs. of coal per horse power per hour—an unparalled result for a non-condensing engine.

The Dairy.

Summer Milkroom

Level the ground in some place where the soil is either perfectly dry or where a drain can be made to carry off all water. If a drain is made, a trap must be put in to prevent access of air. Bed the sills of the building in the soil or on a tight brick or stone foundation. Make double walls eight to twelve inches apart, either air-tight or filled with porous dry material, as dry tan bark, char coal dust, or sawdust. Two apartments should be made with double partition and a door between them, the inner one for ice, the outer one for milk. In the milkroom there may be gauze windows with shutters to close out the sun, and a single outside door is sufficient, which may have a grated window to admit air. There should be a ventilator in the roof and a door in the gable end of the ice apartment through which ice may be passed. When ice is put in, a foot of sawdust should be put on the bottom of the house and the ice piled in, a foot space being left around it to be packed in with sawdust; when the ice is all in it should be covered with two feet of sawdust and the gable door left open if on the north side, where it ought to be, and the ventilator in the roof must also be open. As the ice is placed up, boards may be piled across the doorway on the inside to prevent the sawdust from falling out, and the door should open outward; thus a space would be left between the door and the boards, equal to the thickness of the wall. A ventilator may be made over the door dividing the apartments from each other, or the partition may be made up to the plates only, leaving the rest open. There is no need to take any care about keeping the upper part close; there cannot be too much ventilation there, but there must be none at the bottom. There the house must be absolutely air-tight, if possible.—*New York Tribune.*

Churning.

During the process of churning, a certain uniformity of temperature must be observed, or the butter will be soft and spongy, instead of being firm and compact. The agitation, also, of the cream should be regular—neither too quick nor too slow. If the agitation is too quick, the butter will make and unmake itself before the churner is aware of it, as too rapid motion induces fermentation, which, when it has reached a certain point, is entirely destructive of anything like the possibility of making even moderately good or well tasting butter. If, on the other hand, the motion be too slow, the agitators in the churn fail to produce the desired separation of the component parts of the cream, and the consequence is, that after a good deal of time spent in lazy action, the churner is just as far from his butter as he was at the beginning of his labours. The best temperature for the cream in churning, is from fifty to sixty degrees.—*Willard's Dairy Husbandry.*

Making Butter

It is the scrupulous neatness in washing milk pails and pans in the management of the cream, in churning and packing butter that secures an article that will pass for prime gilt-edged which always commands a remunerative price. I wish to impress on those butter producers who always complain of low prices, the eminent importance of observing only a few things which will enable them to make an article which may be forwarded to any of our fashionable hotels, where every pound will command the highest price.—1 See that every milk pail, pan churn and butter-bowl is cleansed with boiling hot water every time it is used.—2. See that the udders of the cow and the hands of the milkers are as clean as pure water will make them, before an atom of milk is drawn.—3. Provide a neat and clean place for the pans while the cream is rising, where the pure breeze from the green fields may blow into one window over the cream and out at an opposite opening. Good butter can never be made in a filthy apartment, where there is offensive effluvia arising from anything, no matter what.—4. Cream ought to be churned every day; yet, if one can provide a clean corner in a cellar or milk-room clean and cool, and keep the pail on a clean piece of flagstone, he can make superior butter by churning twice per week, providing the temperature of the cream is maintained from day to day about 60 degrees of Fahrenheit.—5 Always skim the milk soon after the cream has risen. Thousands of barrels of cream are ruined for making gilt-edged butter by not skimming the milk soon after all the cream has risen. The sooner the cream is removed after it has risen, the better the butter will be. Milk which should be skimmed at evening is frequently left till the morning, when the cream will be ripened to such an extent that gilt-edged butter cannot be made from it at all, neither will it make as many pounds as if it had been skimmed at the proper time.—6. Let the churning be done by a person whose hands and clothes are as clean and sweet as a blossom of red clover; and let the churning be continued until the butter has come. It is ruinous to butter to put cream in the churn, as is sometimes done, and churn rapidly for a minute or two every hour of the day, then in the evening all take hold in turn, and keep the cream dashing and splashing until midnight. If the cream is properly managed, butter will always come beautifully in less than half an hour.—7. The butter should be worked and thoroughly salted soon after it is churned. There is but little danger of salting too much. One ounce per pound is not enough for butter that is to be shipped any considerable distance. It is ruinous to the grain of butter to throw it into a dish pan and knead it with the hands. The best instrument for working out the buttermilk is anything that will cut deep gashes in the butter, into which the buttermilk will flow. The next day after churning the butter should be worked again, and packed. A great many persons continue to work and knead their butter to its great injury after the buttermilk is removed, thinking that all the "crystal tear drops" which are not butter milk must be worked out. 8. Thousands of tubs and firkins are received in New York market containing what was once prime gilt-edged butter, but which was spoiled by being packed before the tubs had been prepared by being soaked in brine. For the sake of saving three cents worth of salt for preparing a strong brine in which to soak a firkin two or three days, many a frugal housewife has been obliged to accept half the price of prime butter, simply because the staves were not saturated with brine before the butter was packed.—*Exchange.*

Two Cents a Quart for Milk.

From the American Agriculturist

Mr George Geddes, in a communication to the *Tribune*, says that farmers generally would be better to sell their milk, as they first strain it, for two cents per quart than to make it into butter and cheese; that when they do so convert it they get only that price, losing their labour in the dairy. It is bad enough to say this, but Mr Geddes clinches the nail by proving it—which is worse. These are his figures: It takes 14 quarts of milk to make a pound of butter, and a pound of butter is worth, in New York, only an average price of less than 22 cents per pound; 14 quarts of milk make three pounds of cheese, worth at the present an average price of 9⅜ cents per pound. This is not a cheerful computation, but it is one which the "average farmer" must needs accept, and it indicates very clearly that if he hopes for any brilliant success he must in some way get above the average, and a good deal above it.

It is estimated by Mr Willard that the average annual produce of the dairy cows of America is either 100 lbs. of butter or 360 lbs. of cheese, representing an average annual produce of say about 1,500 quarts of milk, bringing, at 2c. per quart, $30. So low an average as this must cover an enormous number of very poor cows, kept by farmers who are, in intelligence and enterprise, very far below those who support agricultural papers, and it would be unfair to address any argument to the readers of the *Agriculturist* based on the practice of this class.

So far as we can judge those who are known by their neighbours as good farmers—who are very much above the average of their locality—usually get a yearly yield, taking one cow with another, of about 2,250 quarts of milk. This, if made into butter, brings in $45, and the skimmed milk and buttermilk are worth enough to pay a fair compensation for the labour of the dairy. As they are kept, probably 1½ acre of meadow and two acres of pasture will support the cow throughout the year. The return, then, is equal to $12,85 per acre. It enables a thrifty man (with a 100-acre farm), who raises his own supply of meat and vegetables, to maintain a family decently, to lay by a trifle each year, and to die with the soothing consciousness that he has done his duty. He has worked hard, has kept the wolf from the door, has educated his family better than he was educated himself, has sent two strapping boys into the world to be something else than farmers, and has settled the duller on the farm, where he, in his turn, will pass an industrious and faithful life in making both ends meet—or lay by just a little.

Dairying is as good a branch of farming as we can adopt. Let us stick to it. Brilliant success in its prosecution demands three conditions: 1st, a high price for butter (or cheese); 2nd, a fair yield of milk from each and every cow; 3rd, a large percentage of butter from a given quantity of milk. Never mind "average" men now—we are talking about *brilliant* men, men whose success will be worth more in helping others to improve than would all the preaching we could do in a lifetime. We base our proposition on the fact that *really* fine butter will never lack a market at an extra price. Not fine this week and week after next, and pretty good at some other time, but sure to be A 1 fifty-two weeks of the year. No influence that can be brought to bear will secure an increase of this sort of butter so rapid as the increase of the demand for it. Any dairy with a fixed reputation for such butter is *sure* of at least 44c. per pound over all expenses of sale. This raises the price of the milk to four cents per quart instead of two, and the yield to $25.70 per acre. How much better than this may be done depends on the man. Ogden Farm gets 90c., Darlington gets $1, Sergent gets $1.15—and every one of these earns it by the quality *and the uniformity* of his product. A hundred women who read this will say their butter is as good as either of the above can produce. To ninety-nine of them we say: "You are entirely mistaken; you have no idea what really good butter is, and until you find out you must not wonder at your poor returns."

The yield of milk per cow is no less important than the method of manufacture. It takes so many pounds of food to maintain the life of so many pounds of cow—whether she gives five quarts or twenty-five. The profit comes from her ability to use still more pounds of food and convert it into milk. Any man who has a *genius* for dairying will go through his herd and draft out all the second-class cows he has, and sell them for the best price he can get—and then buy as many *first-class* cows as he can afford. If any one of our readers fails to see the point of this without argument, he is not the stuff from which the brilliant dairyman is to be made; he will have to wait until some brighter neighbour sets him an example—by establishing a herd that will produce 3,000 quarts

per head and raise the average returns to $33.93 per acre. Then will follow the attention to quality as well as to quantity. Instead of 14 quarts of milk to the pound of butter, a careful selection of cows for butter production will secure a pound of butter from 10 quarts of milk—averaging from his whole herd 300 lbs. of butter, bringing a return (at 44c.) of $132 per cow, or $37.71 per acre.

In support of the above, we would state that we know now a herd of under-sized cows which produce, in butter alone, an annual average of over $150, and what has been done once can be done again.

Butter Trade.

Few people have a just idea of the immense amount of capital in the butter trade According to statistics, the dairy product of the United States aggregate in value $600,000,000 annually. From official sources the total sales of dairy products in the United States for 1870 from 8,935,337 cows, was:—Butter, 514,082,683 lbs, at an average of30c. per lb, or $171,274,236; cheese, 53,492,253 lbs exclusive of factory product, statistics of which are not at hand, at an average of 45c. per lb, 802,383,29; milk, 235,508,599 gallons at an average of 30c. per gallon, or $70,655,878, making a grand total of $242,819,488. This is exclusive of the enormous amount consumed by producers that cannot be reached, as it goes into consumption without sales or account, and can only be estimated.

The *London Milk Journal* says:—In England, the system of associated dairies steadily gains ground, and butter factories on this principle are being opened. The quality also of the butter is steadily improving, and bids fair to rival that produced in Holstein and Mecklenburg, which now stands first in that market.

Poultry Yard.

Kerosene for Henneries.

Where lice are troublesome in a hennery, the use of kerosene will be found to answer an excellent purpose. If necessary, get a small watering pot and sprinkle it everywhere. We know of its being used in this way, and with complete success. It was also applied to the fowls by rubbing under the wings and among the feathers on the back of the neck, and the pests were effectually "cleaned out," without apparent harm to the fowls. For small chickens rubbed lightly with a feather about the head and on the neck, it is admirable, and it is there where lice can generally be found if they exist anywhere about the flock. One application of this sort will suffice for many weeks.

Careful observers will have noticed that there are several breeds of hen lice to contend against. The species that attack sitting hens in hot weather are very small, very active in their motions, and multitudinous in numbers. They will sometimes drive the hens from their nests, and become so numerous about the hennery that visitors cannot enter without carrying off more or less on their persons. Their presence will be indicated by a delicate crawling sensation on the hands, the neck, or the body. Cracks and holes about the building will harbour millions of them at such times. For such a house kerosene is the remedy. Apply it liberally from top to bottom, and if one application does not completely remove them, apply a second time. In applying to the chickens and fowls, be careful not to get any in the mouth or eyes; it may not prove fatal, but it will do no good. It evidently does not make small hickens feel lively, but it will not harm them seriously if they are well housed, or can get all the warmth they require.

We have not yet tried it in hen's nests, but have no doubt that if sprinkled through the hay or straw of which the nest is formed, it will answer a better purpose than the sulphur, or ashes in the bottom. It will positively kill the vermin harbouring in the nests, while it is evident that dry sulphur and ashes are only disagreeable. Of course the effect of a single application will not last always, but one or two applications a year will probably be found to be sufficient, at least in henneries whose owners are not frightfully negligent.

The lice found on the heads and necks of young chickens are very large compared with those infesting the nests of sitting hens; and we do not remember to have seen them except on fowls. The touch of a small amount of kerosene infuses wondrous activity among them, while a good saturation evidently paralyzes. Nothing but their blighted remains will be found one day after a good application of kerosene.—*Country Gentleman.*

A Model Hennery.

This is a plan originated by Isaac Van-Winkle, of Greenville, New Jersey, and is described as follows:

"The building is nearly seventy five feet long, thirteen feet high and twelve feet wide. It is built of wood, roof shingled. To the highest pitch of the roof it is thirteen feet. The elevation or height from the ground or foundation in front is four feet, which cuts a twelve foot board into three pieces, the length or pitch of the roof, in front, is twelve feet—just the length of one board, saving a few inches of a ragged end; the pitch of the rear roof is six feet, and the height of the building from the ground to the base of the roof is just six feet, which cuts a twelve foot board into two pieces. The ground plan and frame-work are planned on the same principles of economy of timber. By this plan no timber is wasted, as it all cuts out clean; there is also a great saving of labour. The foundation of the building rests on cedar posts set four feet into the ground, to prevent action of the frost in the winter and spring. These are regarded very much better than brick or stone piers. The house contains eight pens, each of which will accommodate from twenty-five to thirty fowls; each pen is nine feet long and eight feet wide. All the pens are divided off by wire partitions of one inch mesh. Each pen has a glass window on the southern front of the house, extending from the gutter to within one foot of the apex of the roof, fixed in permanently with French glass lapping over each other, after the fashion of hot bed sashes; they are about eleven by three feet. Each pen is entered by a wire door six feet high; from the hallway, which is three feet wide; and these doors are carefully fastened with brass padlocks.

The house is put together with match boards, and the grooves of the boards are filled in with white lead and then driven together, so as to make the joints impervious to cold or wet. On the rear side of the house there are four scuttles or ventilators, two by two feet placed equidistant from each other, and to these are attached iron rods which fit into a slide with a screw, so that they can be raised to any height. These are raised, according to the weather, every morning to let off the foul air. Each pen has a ventilator besides the trap door at the bottom, same size, which communicates with the pens and runs. These lower ventilators are only used in very hot weather, to allow a free circulation through the building, and in summer each pen is shaded from the extreme rays of the sun by thick shades fastened upon the inside, so that the inside of the house is cooler than the outside.

The dropping boards extend the whole width of the pen, and are about two feet wide and sixteen inches from the floor; the roosts are about seven inches above and over this board. They are three inches wide and crescent-shaped, on top, so that the fowls can rest a considerable part of their bodies on the perches. Under these dropping boards are the nest boxes, where the fowls lay, and are shaded and secluded. The feeding and drinking troughs are made of galvanized iron, and are hung with hooks on eyes, so that they can be easily removed when they require cleaning. One can stand at one end of this long house and see all the chickens on their roosts. By seeing each other in this way the fowls are made companionable, and are saved many a ferocious fight; at the same time each kind is kept separated from the other. Each pen has a run thirty-three by twelve and fifteen feet; these runs are separated by wire fences twelve feet high, with meshes of two inches. Outside of these small runs is a large run of half an acre, and on the rear are other runs of about an acre, all of grass, so that four or

five kinds can be out at large at a time in these large runs, and into which they are all let out by turns.

The house is surrounded with a drain which carries off all the water and moisture, and prevents damp[illegible]. Inside, the house is cemented all through; and these cemented floors are covered with gravel about two inches deep. The house is heated in the cold weather just enough to keep water from freezing, as Mr. Van-Winkle is opposed to much artificial heat, and to forcing fowls to lay. At the north end is a small house or shed to protect the hens from the north winds, and the entrance is by the south, through the shed which is used to keep his feed close at hand.

The plan of this hennery is remarkable for its simplicity and hygienic arrangement. The cost of the labour and material was under five hundred dollar[illegible] The house is cleaned out every day. W[illegible] there in the hottest of last summer w[illegible], and [illegible] smelled just as sweet as outside: we could not discover the slightest taint to the air inside."

Sulphur for Hens' Nests.

A writer in the *Country Gentleman* says My experience is against the use of sulphur in nests. I have found thousands of small hen mites in immediate contact with it especially when eggs have been broke[illegible]. For hen houses and roosts nothing is so [illegible] boiling water, fresh white-wash, hot, [illegible] one. Smoke from sulphur will not a[illegible] any. A little kerosene is the best [illegible] nests."

Now, Mr. Editor, let me [illegible] y experience. I set two hens at the [illegible] each in an a box which had previously [illegible] ar a hen roost. As I removed the boxes [illegible] hens to an apartment where no layers could get at them, and placed plenty of food and water within reach of the sitters, I did not pay any attention to them for ten or twelve days, when, one morning, I found one hen dead upon her nest, and literally covered with the small "mites." The other hen had left her nest, and was evidently getting ready to die, for she trembled all over; and stood with eyes closed. On examination she was covered with a horible swarm of vermin, every part of her feathers being alive with the disgusting creatures, and the nest and eggs she had left were covered also Now, I said to myself, here is a chance to learn something. I will find out whether *sulphur will kill lice*, anyhow, whether I lose the hen or not So I sifted the finely powdered sulphur all over her, and "rubbed it in" into the bargain. Eight hours after I paid her a visit. She appeared just as well and lively as ever I caught her, and the most careful examination could not detect the slightest trace of a single creeping "critter," little or big Before the application of the sulphur, she was so near dead as to not make any effort to [illegible] shake her feathers. She was kept during the whole time, both before and after the application of the sulphur, in a room where there was no chance of dusting, so that the riddance of the vermin could be ascribed to nothing but the sulphur.

The correspondent alluded to does not state how long the "mites" lived in contact with sulphur. It is well known that this substance is deadly to other vermin. For instance, the ailment called the itch in the human species is caused by a microscopical parasite hat sulphur kills. Mr. Geyelin, in his celebrated treatise on poultry breeding, recommends sulphur as a specific for poultry parasites. We wish others would give their experience on this point through these columns. —*Poultry World.*

A writer in the *Poultry World* says his plan for curing hens of a desire to sit, is to put them in an open yard, where there are no [illegible] or roosting places, and differing as much as possible in appearance from their regular quarters and feed them liberally with soft feed made rather hot with cayenne; give them plenty of cooked meat and all the milk they will drink.

Few people know to what perfection the art of sending dispatches by carrier-pigeon was brought during the siege of Paris At first the dispatches were written on the thinnest of tissue paper in the smallest possible han[illegible]. Then microscopic photography succeeded in greatly reducing the bulk, and finally, by first printing and then photographing the dispatches, not on ordinary photographic paper, but on films of collodion, only one tenth the thickness of tissue paper, the besieged were able to inclose in a single quill [illegible] which, when printed, covered fifteen thousand book pages.

Entomology.

Prizes for Injurious Insects.

We note that the Royal Horticultural Society, England, offers a prize of fifty dollars for a collection of British insects injurious to some one order of plant used for food, such as cruciferæ (cabbage tribe), or the leguminosæ, (bean tribe), &c.—the collector to be at liberty to select such tribe of plants as he chooses. The insects to be exhibited in their various stages of development, accompanied by specimens, models, or drawings of the injuries caused by them.

This plan should be adopted, with some modifications, by our Agricultural and Arts Association. Instead of offering a prize for a collection of Canadian insects injurious to some order of our food plants, they should offer a liberal prize for the best essay on all the insects found in Canada preying upon or injuring any class of plants used for food, including our several kinds of fruit trees —such essay to be illustrated by accurate drawings of the several insects in all their various stages of development, with illustrations of the injuries caused by them—the essay not only to give the history of the life of these insects, including their mode of injuring the plants or fruit, but also the best known methods of combating or destroying them, and so lessening their ravages.

The prize offered should be large enough to enlist the best entomological talent in the Province. After the prize has been awarded, the Association should cause accurate colored engravings to be made of all these insects in their several stages, and cause the same to be printed and scattered among the farmers of Ontario.

Such an essay would be exceedingly valuable, and the means of saving many times its cost to the Province; much more valuable than the collection of insects which can be seen only by a few.

The Enemies of our Insect Pests.

The rarity in Europe of those insect pests which destroy our fruit and defoliate our trees is due principally to the Geometric Spider, which in that country is very abundant, covering every tree, shrub, and fence with his ingeniously constructed net, giving to the landscape on a dewy morning the rather unpoetic appearance as if a gigantic washing of dirty linen was spread out to dry.

Of course birds aid greatly in the suppression of diurnal insects, but our greatest enemies are the nocturnal varieties which include the vast family of moths; it is these that the spider alone can manage, as may be perceived by the vast quantity of their remains found in his net.

A variety of this little animal is sometimes to be met with in this country, but it is very rare and appears to be smaller in size; therefore, we cannot expect much aid from it, and for the present we must content ourselves by using artificial means to keep our insect enemies in check.

I may suggest, for the consideration of the entomologists of Canada and the United States, that as the Codlin Moth, which is a native of Europe, has been thoroughly acclimatized here at a national expense, I do not see why its natural enemy should not succeed as well.

SIMON ROY.

The Committee of the National Labourers' Union have resolved to promote emigration among the men in Dorsetshire in consequence of a report that several farmers in that county are endeavouring to "compel" their labourers to enter into annual engagements at from 8s to 1 s per week.

Horticulture.

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

The Vegetable Garden.

Because the Winter is near at hand it is not best to forget that garden vegetables will be wanted next Spring and Summer. Everything that can be done this Fall to lighten next Spring's work will be so much gain; besides, there are other advantages in addition to that of saving time and labour. The garden plot, if manured and plowed this Fall, will be in a better condition for the reception of seeds next Spring than if this operation is delayed until planting time. The rains and frosts of Winter aid in the disintegration of the soil and spread of the liquid portion of the manure, and when again stirred in Spring it will be of a more homogeneous nature than if hurriedly plowed and planted in the usual manner of treating farmers' gardens.

Double Geranium "Jewel."

"D. Deal," in the *Journal of Horticulture*, says, that on a recent visit to Stamford he was at Mr. Laxton's garden, now famous for the successful results of his hybridising, and there came to the conclusion that the most remarkable gain in doubles is the one named JEWEL. The great charm of this flower is the ramarkably double form of each pip. Mr. Laxton compares it to a miniature senateur vaisse rose. It will be of great value for button-hole bouquets. The habit of the plant is dwarf, and it blooms very freely. The Royal Horticultural Society awarded it a first class certificate.

Keeping Apples.

Gather the apples before they become over-ripe, and put them in a cool building till the freezing weather of winter begins. An outhouse facing the north, and well ventilated, answers a good purpose. If stored at once in the cellar, they will be too warm and damp for several weeks, and will decay much sooner and more rapidly than if kept dry and cool in the manner indicated. We have sometimes found a difference of two months in the period of keeping by the two methods. If packed and headed up in barrels, they keep better than in bins, being protected from the changes of air and of temperature. But as they cannot be seen in the barrels, they sometimes decay badly before the decay is discovered. For small quantities we therefore prefer shallow bins, placed one above another in the middle of the cellar, with a passage all around. Keep thermometer in the cellar, and ventilate it nearly down to freezing. Pick over the apples occasionally, and remove all decayed ones, disturbing them as little as possible. Bins with lids or drawers protect from air and light, and constitute the most perfect way to keep them for daily use.—*Country Gentleman.*

Address of the President of the Fruit Growers' Association of Ontario, read before the Annual Meeting, held in the City of Hamilton, on the 24th of September, 1872.

THE PRESIDENT'S ADDRESS FOR 1872.

The year of grace 1872 will always remain a notable era, in the history of the Fruit Growers' Association of Ontario—memorable in its annals as the year on which, from small beginnings, it has increased to over 1000 members. The onward march of the Society's progress has been somewhat remarkable, and can only be accounted for on the faith the public have in the excellence of its aims. We are perfectly pursuaded that had last year's report been in the hands of our membership in December or January, our list would have amounted to-day to not less than two thousand members.

There is, however, a good time coming, and the forecasting we made in our last annual address, that our interests and aims were only second to the agricultural interests of our Province, will yet be realized. Our Society is becoming a power in the land—a power for good. This power for good has been evoked by the admirable direction of the affairs of the Association by those more immediately connected with its government. I should certainly fail of my duty, in being permitted to have the honor of addressing you, did I not particularize the names of Saunders, Beadle, Mills, Holton, Arnold, Bennett, Leslie, and Allen—gentlemen who have been always indefatigable in advancing the best interests of our Society. Indeed, the serious labor entailed upon our Secretary by our very success, must sooner or later engage the deliberation of the Association. The amount of duty which he has discharged during the past year is something enormous. His correspondence alone would almost keep an amanuensis employed.

In speaking of the efforts put forth by the Association as telling upon the Province, evidenced by the large increase of membership, we are strongly of the opinion that much sympathy has been felt for and exhibited by the public towards the Society from the fact that our funds are economically managed, and from a large amount of money being disbursed at the lowest amount of expense to the Society. The mode, too, of expenditure has something to do with our palpable popularity—in fact, we have taken the country by storm through our liberality. The return of the fee for membership, in the shape of fruit trees for trial, the benefits being thus secured both to the member himself and to the country, has had much to do with our prosperity. The past direction which this outlay has taken ought to be followed up in the future, and every available means taken to educate our people, not only in a taste for good fruit, but also in the knowledge of good fruit trees. This distribution of trees in the past has produced wonderful results, and we believe that if the Directors exhibit the care and prudence in the future which have characterized the distribution of fruit trees, vines and small fruits, in the past, more important results will follow. The record of this course of action in the past of our Society will stand present and future testing, both by the published testimonies of successful trial of these fruit trees, and by the wide-spread, beneficent influence which the distribution of trees has exerted.

Next in importance to the distribution of fruit trees in benefiting our Society, has been the holding of meetings of our Association at different localities throughout the Province. We noted from our own experience these benefits as displayed at Goderich last year. Similar good has been effected by the successful meeting at Guelph in July last. We question if we have had anywhere a more spirited meeting than at Guelph—whether you take into account the lively devotion to horticultural matters by the inhabitants of the town, or the large amount of valuable experimental knowledge communicated to the Society by fruit growers from the surrounding country. It is no disparagement to the fruit growers at Guelph, to say that the meeting of the Society was *needed*. We observe that the cherries exhibited at their Horticultural Show were divided into two classes, red and white, the names of either class being unattached! We imagine, too, that we, I mean the older members of the Association, learned also important lessons. For instance, that there ought to be a choice of similar varieties of trees for distribution, inasmuch as the tenderer varieties, of the same sorts, will not succeed in more northern latitudes of our Province.

In the same direction for advancing the interests of our Association has been the illumination of our reports with plates of the fruits of our distributed trees. This in the course of years will form a valuable record. To those of us who mingle much with amateur fruit growers, the increased interest evoked by our colored plates must have struck us with great astonishment. Some of us incurred no little obloquy from the parties to whom we recently mailed our Report, when we could not furnish them with the colored engraving.

By these foregoing and similar means will we keep the ball rolling. It is the duty, and ought to be the happiness of all our members to set their brains to steep, to devise the

best means for the advancement of our Association—to use the language of a friend of mine, "Brains, Sir, there's nothing like brains.

This remark reminds me [illegible] of my deficiency and of my duty—of my deficiency in being unable to enlighten or what the intellect of any one of the intelligent fruit growers here present, and of my duty, that I ought to present, on such an occasion as our annual gathering, inferences and deductions drawn from our horticultural experience. My experience is [illegible], my acquaintance with the general principles of our science so meagre, and my knowledge to use the rules of our art so inferior, that I must endeavor to give [illegible] my success in pear culture the varieties which I cultivate and my mode of cultivation.

In my first [illegible] the good fortune to stumble on the grand, first principle of fruit production I refer to a dry soil Before I planted a tree, I thoroughly trenched and drained my lot My trenching was to the depth of three feet fully, and then I placed the rich top soil in the bottom, trusting to after enriching to prepare the [illegible] for the [illegible] tion and nourishment of the tree. Sufficient stress cannot be [illegible] the thorough drainage of the fruit farm. To say that is it an essential is hardly saying enough Draining is a first essential, labor and skill would be thrown away without thorough draining. Draining we regard as much a requisite for fruit culture as shelter is to animals from the inclemency of the seasons. It brings the condition of the soil into similar conditions with those of the atmosphere, and thus conduces to the health and productiveness of the plant. In addition to good drainage, it so happened that the contour of my lot required a large amount of filling up, almost six or seven feet in some places. On this artificial embankment many of my pears were planted, and all of them have done well. They seem to luxuriate in the depth and warmth of the virgin soil of which it was composed.

My choice of trees, at first, depended much on those with whom I came in contact—I might with truth say, entirely depended on the advice of friends The Seckel, Louise Bonne de Jersey, Glout Morceau, White Doyenne, Steven's Genesee, Passe Colmar, Napoleon, and Beurre Diel, were first attempted If successful culture in any way depends on taking prizes, I may be said to have been a successful grower. I wish to speak, however, of the relative merit of these and other varieties. We are of opinion, after years of cultivation, that the Seckel is ranked much too high. Its diminutive size will always prove a great drawback to its commercial value This is proved by its past and present market price in Boston, New York, and Philadelphia It can never compare in value to the Clairgeau Bartlett, or even Winter Nelis. It is said, I have often heard it repeated, that the Beurre Clairgeau brings from five-and-twenty to thirty dollars in the Boston and more southern markets. We question if Seckel would bring more than the [illegible]. Flavor, exquisite flavor, it certainly has, indisputably so, but flavor counts [illegible] and before size in a market point of view. No, we have for many years greatly preferred the Flemish Beauty to the Seckel, and we do not despair to see it yet adopted by pear growers as the standard of excellence. Whether one takes into account its size, shape, excellence of flavor, freedom from grittiness, or the hardiness of the tree, it claims pre-eminence over the Seckel! It thrives and bears well at Hull, opposite Ottawa, and even further north. The shape and quality of the fruit, and singularly [illegible] the symmetry of the tree render it all that could be desired. In fact, it has all the characteristics of a good tree,—health and hardiness, fertility, vigor of growth, and persistency of foliage. We are at a loss to mention a tree or a fruit that commends itself more to the fruit grower.

The Louise Bonne de Jersey is scarcely second to the Flemish Beauty. It grows, perhaps, over a more extended area than the latter does In every part of the southern section of the Province of Ontario it does well. With us in the neighborhood of Hamilton, it is most prolific and thrifty. Perhaps for a profitable market pear there are few or none to beat it. When the fruit is thinned out it arrives at a commendable size. The only fault of the tree is, that it is apt to overbear—it requires constant thinning out, and will under these bear profusely every year. This quality tends to commend the Louise Bonne de Jersey, as quite a number of varieties bear well only every alternate year. On the whole, as a profitable pear both for the amateur and the professional, perhaps there is no one pear equal to the Louise Bonne.

The White Doyenne, though highly and justly esteemed, has never been a pet and favorite in our estimation. Its congener, the Gray, is a pear which we much prefer, but which is not much known, and therefore less cultivated. We raise splendid White Doyenne, but better Gray; in fact, with us it is almost preferred to the Sheldon, which is sometimes apt to be deformed in shape — the Gray Doyenne seldom or never. We are aware that the White Doyenne has much money in it to reward the cultivator—it is a valuable pear. Some years, however, we have had it crack, and even get greatly knarled. This latter fault is a great drawback, when rent and livelihood depend on the excellence and beauty of the fruit.

The Glout Morceau is an A. I. fruit, but enjoys the unenviable notoriety of having a great many drawbacks to its excellence. It knarls, and is full of gritty knots, and is seldom, very seldom, free from them. When perfect, it is excellent, the flesh buttery, piquant, and juicy. Our experience of the tree is, that on stiff clay soil "it blights," as much if not more than any other variety of pear. I have only one tree left of this variety that has not fire-blighted. The most beautiful pyramid in my garden blighted this year, full of fruit, and in early spring giving every indication of health and fertility. We have found that, owing to its knotty and knarled appearance, it does not attract buyers—rather does it repel them. One year out of five it may bear a crop of fair excellent fruit; the estimate is not understated.

The Steven's Genesee is not worth cultivation. It is true that it bears large, showy fruit, but it is a poor keeper, and its fruitfulness is very uncertain. It is apt to be wormy with me, and I never had much satisfaction in its cultivation. I am now gradually topping over this variety with better sorts—by a kind of bud-grafting, brought to my notice by my friend Mr. Peter Murray, lately of Taymouth, Scotland.

The Passe Colmar has many of the bad habits of the Glout Morceau. It "blights" badly, and early. At times it grows enormous fruit, in fact. abnormal. In such a case the excellence of the fruit is undoubted. Allowing every man to enjoy his own individual taste, I am ready to declare in reference to mine, that I know of few pears that in point of quality can compare to the Passe Colmar. Luscious it is, and that term scarcely adequately describes it when fully grown and fully ripe. To add that it is an ugly, ill shaped pear, is only the truth, although it costs me a little qualm of conscience to say this of one of my pets.

"Napoleon" is only a third-rate pear; perhaps by saying *that*, I am ranking it too high. It is pretty enough when well grown; in some years, especially of sunshine, the flavor is not so bad, but as a general rule, it is a poor watery pear.

The same cannot be said of the Beurre Diel. It is a first-rate pear, considering size, shape, flavor, and fruitfulness. It is really a prolific grower, and grows to an enormous size. I have grown them so large. that a tyro would have mistaken them for the Duchess. They do well, both as dwarf and standard. The fruit, however, is larger, and we think, better on the dwarf than on its own stock. On its own stock, it is an enormous cropper, the fruit fair and unknarled, of medium size, and exquisite symmetry.

My second pear list was more my own choice, if I may be allowed the expression. Here I cannot resist the impulse to say how fruit growing increases the desire to excel others, and to enlarge the number under cultivation. My desire for new varieties soon grew into a passion, and I fear I broke the last commandment, as often as I saw my neighbor have a showy pear or a large dunghill. My next addition of twenty-five trees only whetted my appetite for more. A few of my new varieties were, Onandago, Madeleine, Easter

Beurre, Theodore Van Mons, Henry IV., Duchess d'Angouleme, Gray Doyenne, Bartlett, Belle Angevine, Ambrosie, Beurre d'Anjou, Bergamotte Cadette, Dearborn's Seedling. Brandyurne, Osebano, Winter Nelis, Rostiezer, Belle Lucrative, William's Bon Chretien, Vicar of Winkfield, Beurre d'Amaulis, Laurence, Sheldon, and a few duplicates of the few I had.

My experience of the Madeleine is that it blights so badly that it is worthless as a variety for market purposes. I have succeeded in raising a few good samples of this fruit by triple working. At present there is no symptom of fire blight on my grafts, though I have had it more or less all around. The Elliot's Early, we are persuaded, will take the place of both the Madeleine and Doyenne d'Ete. This pear, which was originally raised by Judge Elliot of Michigan, in the neighborhood of Amherstburg, was introduced to public notice by Mr. James Dougall of Windsor, to whom the fruit growers of our Province owe a deep debt of gratitude for his persevering efforts in introducing new and foreign varieties of pears into Canada. The Elliot's Early commended itself greatly to the Committee on Seedling Fruits—a report of which Committee has already appeared in the CANADA FARMER. In passing, we may mention that Mr. Simon Roy, of Berlin, raised some beautiful specimens of this fruit this fall.

The Onandago, or Swan's Orange, as it is called, thrives superbly well at Hamilton, and does well on clay soils. To those who are fond of a subacid fruit, there are few pears that can compare with the Onandago. Its superb size and beautiful golden color commend it to the amateur, though it must be admitted that not a few are not partial to it on account of its tartness

The Easter Beurre is a noble pear. With me it retains its monkish excellence, and I am as ready to crack it up as any Churchman of the olden time. Perhaps, too, the season of the year at which it ripens has something to do with the esteem in which we hold this pear. It helps to grace the table at Christmas and New Year's times, and association with the pleasant has much to do with our likes and dislikes. For flavor and butteriness it is scarcely to be excelled. Its name indicates its time of ripening in March and April. I have kept it in good condition to the twenty-fourth of May. It has a tendency to grit, but a plentiful supply of leeched ashes, as a top-dressing, will go far to remedy such tendency, and to give it a color on the cheek which is really superb. It is a pear which is indispensable in almost any collection.

The Theodore Van Mons is a light green, showy, pretty pear; I could scarcely call it first-rate. Henry IV. is to our liking, and is almost equal to the Seckel when carefully kept and well ripened.

The Duchess d'Angouleme is a mighty favorite with most pear growers. We must have and express our "own *think*" on this pear. We consider it very variable, and under some conditions an uncertain bearer Let the spring be cold and damp, and the fruit will be sparse and scarce, and knarled and knotty. In fact, in some years and these at no distant interval, it completely "damps" off, or rather, I ought to say dries off, just at the time when there is every prospect of its setting well. It is a pear that is very disappointing to an anxious cultivator, and yet withal it is a valuable pear. For size, and flavor, and excellence when well grown, it can hardly be beat.

The next pear that comes under our notice is a great favorite of ours, and would be with all fruit growers if they only knew its excellence. I refer to the Gray Doyenne. It is infinitely superior to its consener, the white. For beauty on the dessert dish it can scarcely be excelled. Its deep and entire russet gives it a *distingue* appearance, which at once catches and captivates the eye of the amateur. We long for the time when it will come into general cultivation. The drawback, and drawback it has, is, that you can get plenty of fruit but only a small modicum of wood. Grafted on a strong grower such as the Buffam, it does well.

Our and everybody's favorite, the Bartlett, needs no commendation of ours. We should like to see our fruit growers unanimously give this old and well-known variety its former name. "William's Bon Chretien." On the continent of Europe, and in England, it is all but universally known under this designation.

The Ambrosie is not worth cultivation—it is positively worthless; like many other things, it is more showy than good. I have topped my trees of this variety with more profitable sorts.

Beurre d'Anjou is so well known, that it is unnecessary further to allude to this variety than to say that it is Marshall Wilder's favorite pear. Its distribution among our members will bear a narrow inspection—the reports already received speak well of its undoubted excellence.

The Bergamotte Cadette and Dearborn's Seedling may go well together. We do not and cannot esteem either variety. Dearborn's Seedling has acquired an undue reputation. A different statement must be made of the Brandyurne. To our taste it is one of the best of pears. When eaten just when ripe, it is something delicious—a day after it is ready it assumes a bitter acid, which renders it very disagreeable. It is a fine, large, showy and beautifully marked fruit when grown in the sunshine. It is not much known—the tree is a beautiful upright grower, foliage very green and close, and as a pyramid cannot be excelled by any other pear tree known to me.

The Osebano is a pretty little well flavored pear, but is not such a favorite with me as with my friend Mr. Saunders of London, on whose farm it does well. It unfortunately happens that the tree often gives way just when you might expect a plentiful supply of fruit—you nurse it through the trials of infancy, and just get it to maturity, as is thought, when suddenly it gives way, and bears the bitter fruit of disappointment.

The Winter Nelis is a superb pear—it needs no recommendation. Our Association should hold out a prize for any grower who would infuse a little bone and sinew into the branches, and to any reformer who would straighten out the boughs

Few early pears can equal the Rostiezer. It is prolific juicy, rich, and on the whole, a pear not to be despised. It will amply repay cultivation. There is money in it for the market. It comes in early, and although the fruit is small, it commands a good price.

The Belle Lucrative, or, as it is familiarly known, the Fondante d'Automne, like all the family of the *Fondantes*, is a splendid pear. Before we made the acquaintance of the relatives of the Belle, we were quite pleased to rejoice in her smiles; but having tasted the excellence of the Fondante de Malines, and even of the Fondante de Comice, we cannot but give them the preference.

The Belle Lucrative is good, excellent, the Fondante de Malins better. The tree is a better grower. the fruit is better flavored, the size of the fruit is larger.

That old variety, representative of a long-faced class of worthies—the Vicar—is like many worthy clergymen, a hard nut to crack. Few people know *when* or *how* to treat him well. His excellence is often never seen—the more the pity. The Vicar should be laid and kept in a cool dry room, barrelled up is a good plan, and laid on its side, and then when the March winds begin to remind us of buds and spring, wrap him up close in flannel, or in a paper bag, and keep him in the dining-room from six to eight days according to the warmth, and then he will yield such a flavor and rich repast, as will give satisfaction to and call forth the praise of the most fastidious.

We have fruited the Beurre d'Amaulis, and can conscientiously say that this fruit is far too little known. The beauty of the pear, its size, its rich mellow flesh, freedom from grit, should long ere now have commended it for general cultivation. When properly pruned, which is to leave it with long Dominie Sampson-like arms, it bears bead-like strings of lovely fruit, which amply repay both the amateur and the producer for the market.

The Laurence is among the best, if not the very best pear for winter use. We know few pears that are better and more luscious at New-Year than this fruit. It keeps well, carries well, and deserves to be universally cultivated. The tree on its own stock grows luxuriantly, but the fruit is apt to spot, as if the rain had an affinity for its bright light beautiful green skin. On the dwarf it attains to a fine size, and as we

think, to a good flavor It is one of the best winter pears in this locality. Perhaps it reaches its greatest excellence in the Niagara District, luxuriating as it does in the fine rich alluvial deposits in the neighborhood of the Niagara River.

We have fruited the Verzonzier and have found it perfectly hardy in its wood in the severest seasons. The fruit is large and handsome the tree an upright grower, and very thrifty

The Williermoz is a large handsome pear, and is too little known and cultivated. It is a valuable winter variety, and amply repays the care of the pear cultivator The blight sometimes takes this tree generally on the trunk and leading branches, while the remainder of the tree appears to be good and the fruit good

We desire to make mention of rather a remarkable pear tree, viz., the Beurre Navez To those of you who are not acquainted with this pear, my description may seem rather a gent It is really well described as "a bag of juice." It is, however, not only juicy but rich in flavor, and of excellent quality Mr. James Dougall was the first who brought this excellent pear to my notice,—it is in all respects a superb pear

The Beurre Millet is the most remarkable pear in my collection. It is more highly colored, of a deep mauve, than any other pear known to me. What is said of the color may with equal truth be said of the flavor. I prefer it to the Seckel, which is indeed making a strong assertion. The appearance of this pear, just like the diminutive appearance of the Seckel, tells sadly against its many excellences.

Another pear demands a passing word, it is the Beurre Superfine. A sample from my garden may be seen in the collection at the palace grounds, entered for the $50 prize. The fruit is something beautiful, and *three* varieties, or three variations in color and shape, may be gathered from the same tree. These are on the table for the inspection of the Association. Highly colored, it has the brightest green spots interspersed amid the russet. The tree, which I got from Mr Holton, Hamilton, may be said to lean to the tender side. In Hamilton and neighborhood it does well, though apt to blacken for a quarter of an inch some years after it has been early pruned. This pear and the Beurre Bosc stand much in the same relationship as regards hardiness. Neither of them are entirely hardy, and yet both trees afford the best of fruit. The Beurre Bosc is rapidly growing into favor. Its peculiar peary form, russet color, and great excellence constitute an ideal pear. It is one of the finest pears grown in all respects. It is not blighted with me, it is a little late in coming into bearing. We know of few pears that will stand comparison with it. Its very color and shape have a charm. Deep russet, and inclining to the Vicar class in shape, though it has its own peculiar form. it yet strikes even a stranger to it as singularly peary. We know that the fruit is persistent, and notwithstanding the great weight of the pear hangs well on the tree. We can heartily recommend the Beurre Bosc for cultivation in the more temperate districts of our Province. As a market variety, we know of few equal to it Indeed there is a vast deal of money to be made out of it. We are aware that it is finding its way into general public favor. If any appear for sale in our market, they are quickly bespoken at any price the seller may demand.

The Summer Franc Real is also a pretty looking pear, but has the same drawback as the Beurre Bosc and Beurre Superfine. It kills back with the frost after early pruning in cold weather, and has a tendency to premature dropping of leaf-bught. The flavor and round appearance of the fruit commends it to the amateur, but as a variety for general cultivation, we could not recommend it

We have fruited and tasted the Beurre Langlier, and are impressed with its good qualities As a winter variety, we know of few better It is indeed not so large as some other winter varieties, but it attains to a good size. the fairness of the fruit being little subject to insect pests, and its really good flavor is rapidly bringing it into notice. It is well worthy of cultivation.

The Soldat Labourcur is a fine showy pear, but lacks persistency, and is apt to fall from the tree. A slight breeze is sure to bring the fruit down, and as it gets nearer to maturity the greater the tendency to fall off. It is of a peculiar dirty yellow color, apt to russet in spots here and there on the shady side, and is by no means a prepossessing pear.

This cannot be said of the Delices de Hardenport. This pear has a very bright and beautiful appearance, acquiring in the sun a perfectly red cheek. It is a prettily shaped pear, good to eat when ripened well, and the flavor is excellent.

The Ananas d'Ete is a pear too little known, and therefore too little cultivated. Thanks, however, to our reported discussions, the pear is gradually coming into notice. It has many good qualities. We believe it to be little inferior to the Bartlett, near whose season of ripening it comes to perfection. Its showy appearance renders it an object of attraction to the enthusiastic amateur. When pulled early and properly ripened in the house. the flesh and flavor are all that could be desired. We have never yet seen a gritty specimen.

A pear rapidly becoming an object of favor is the Beurre de Noel. We presume, from our moderate acquaintance with French, that the Beurre de Noel means the Christmas Beurre. It is a thrifty prolific grower. From six to ten generally grow upon a branch together, and notwithstanding the number on the cluster, they often attain to a good size. As a market variety we question if the Beurre de Noel has a successful competitor. It bears prolifically, and bears every year.

The St. Ghislani is a recherche pear. For amateur growers it has always seemed to me a model pear It has a property, in an eminent degree, which I think the French call *fraiche*. It requires to be tasted to be understood. This pear ripens about the middle of September, and is a valuable early autumn pear. It is too tender to bear transportation,—marks easily; as a fancy fruit, it cannot be excelled for the brilliancy of its coloring and the crispness of its flesh.

This year, for the first time, we have samples of the Beurre de Beaumont. I will submit this pear to the taste of our Committee on New Fruits. It also appears in the collection for the $50 prize. It is a small roundish speckled pear, dotted with minute whitish spots.

I may be allowed to mention the Kingsessing, an excellent American variety. We have found that its keeping qualities are not first-rate,—it soon disappears, when once it has ripened.

It is premature to speak of the Goodale, though we have tasted it. Our experience of the tree is encouraging. With me it is perfectly hardy. I grow it on its own stock, and also on the quince. On its own stock, it is a very free grower and perfectly hardy.

Clapp's Favorite in its wood and growth might almost be mistaken for the Flemish Beauty. The wood is stronger, the stalk of the leaf firmer—in other respects, the color of the bark, and the habit of the tree is not unlike that of the Flemish Beauty. Its fruit steadily advances in public favor—it is a favorite.

The Josephine de Malines, and the Baron de Mello may be placed as pairs. The excellence of the one may be justly ascribed to the other. The Josephine de Malines bears beautiful fruit. In point of excellence we fail to draw any distinction between it and the Beurre d'Amaulis. The shape and flavor of the fruit are not very unlike—both are excellent pears. We are inclined to place them both in the front rank.

Another highly-flavored and excellent pear for amateur cultivation is the Duchess de Berri d'Ete, Every year as my trees get older, the fruit improves with me. When fully ripe, it has a most rich piquant flavor. A friend of mine, and a good judge in pears, wrote me the other day that it was not far behind the Seckel. But for a gritty tendency, it would rank high. Its astringent strong subacid flavor prevents it being a favorite with some.

Among the pears which I cultivate, few can compare with the Duchess d'Orleans, or, as it is generally known among pear growers, the Beurre St. Nicolas. As a market variety it stands among the foremost. It has a most taking appearance—a bright ruddy cheek

where exposed to the sun, with a shade of the most delicate pale yellow where protected by the leaves. Its flavor is something delicious, and its size is not very far short of a large Louise Bonne de Jersey We strongly recommend this pear for general cultivation.

The Grashn is a very superior fruit. It was first brought to my notice by Mr. James Dougall of Windsor. At Windsor it grows superbly well, and attains to a great size and beauty. It does well with me. The specimens which I have raised have been splendid. To have it ripened up to perfection, it must be kept in a close drawer, or what is better, placed in a paper bag. It attains its greatest richness about the first and second week in October. We cannot too highly recommend this admirable pear.

The Triomphe de Jodoigne is the next pear to which we desire to turn your attention. The fruit is very large and handsome. We say *very large*. We have fruited it, and when on the tree, it attracts the attention of every passer by. It is a strong luxuriant grower, with an amazing thick leaf. The fruit is superb to eat. When ripened up it is a triumphant pear. We rank it very highly in our collection. It deserves general cultivation, and owing to its hardiness and vigor will prove a great benefit to pear growers.

Elsewhere we have stated our opinion of the Madam Eliza. We have not changed that good opinion. It is of the Vicar class of pears, is a long and good keeper, large size, and of excellent flavor. It is good till the middle of November, and with care can be kept even later.

Some years ago we exhibited the d'Amaulis panache. It is rather a remarkable pear Its beauty consists not only in all the excellence of its congener the Beurre d'Amaulis, but also in the marvellous beauty of its skin, being singularly striped with bands of green and yellow. It is a rampant grower, and the wood is as beautifully marked as the fruit.

The Vicompte de Spoelberg is a luscious pear. Its shape is not unlike the Passe Colmar, its flavor rich, and the pear very juicy. It has a singularly sprightly flavor, and is a pear only to be known to be highly esteemed.

Among the finest of the sorts which I cultivate is the Fleur de Niege—a pear of singular excellence and beauty. It will amply repay a generous cultivation with abundance of fair fruit.

We cultivate quite a number of other varieties, but we are not aware that any of the remainder attain to greater excellence than those already particularized. Some are of rare excellence, such as the Beurre Gris d'Hiver Nouveau, Nouveau Poiteau, Doyenne d'Hiver, Paradise d'Antonine, Ott, Supreme de Guimper, Kirklandt, and Rousselet de Stutgardt, Beurre Komig, Blanc Perne, General Todleben, Prevost, Marechal de la Cour, and a few others.

The judgment which has been formed, and here expressed, is not unlikely to be modified in the experience of others, owing to difference in soil and climate. The pear grower, however, may depend on the accuracy of my description so far as I have been able to express myself with decision. We have thought it best not to mix up new varieties with the old.

A new variety that has fruited in my garden during the summer, is the 'General Nigley." The fruit in shape is not unlike that of the Summer Franc Real, firmer, however, in the flesh, and where exposed to the sun, very highly colored with a deep dull red.

The importance of introducing new varieties was very early in the history of our Society, seen by Mr Holton of Hamilton, who suggested the giving of a prize for their production.

We continue to foster the introduction of new varieties, not only of the pear, but of the apple, crab, plum, grape, peach, strawberry, and other small fruits. Nobody can overestimate this important branch of the efforts and aims of our Society. We are persuaded from the rapid march of horticultural progress of late, that better fruits than we now possess are not only probable but possible During the last year Mr. Dougall, Windsor, has forwarded to your committee a seedling cherry and a seedling pear, both fruits of superior excellence. Mr. Simon Roy, Berlin, sent the same pear as Mr. Dougall had done Reports on these fruits have been forwarded to the CANADA FARMER by the Committee Mr. Glass of Guelph has raised a beautiful plum, which perhaps the Association would do well to disseminate.

Mrs. Colbeck of Hamilton has raised a superb seedling peach, of great beauty, flavor, and size —Mr. R. C. Cooper of Hamilton, a very superior seedling plum. And thus the interest in our Society keeps growing. Every effort stimulates to observation and action. There are many seedlings scattered through our orchards, which only require to be brought into notice to ensure cultivation. Since we commenced to prepare for addressing you, we have had our attention directed to a remarkable seedling shown at the present exhibition by Mr. Brooking, Dundas. It is not unlikely to carry off Mr. Holton's suggested prize.

I feel that I have trespassed on your time and patience. I cannot retire from the important office to which your favor has raised me without most heartily thanking the members of the Fruit Growers' Association of Ontario, for the unfailing kindness and forbearance which they have exhibited towards me during the lengthened period in which I have presided over their affairs I have striven, I know, to do all I could for your interests, but it is not very much one called on to discharge other and more important duties can do for the members of a Society, every member of which, it may be, surpasses your President in the perfect knowledge of some one branch of our cherished culture. This remark reminds me very forcibly of your courtesy. On retiring from your honored chair, I would respectfully suggest to the Association, perhaps not the least valuable of my suggestions, that their choice for my success could or not better fall on any one than on some gentleman who has leisure to devote to your interests, and that deep love of horticulture, which will render any burden in the discharge of duty an abiding pleasure.

I will ever look back with fond remembrance to the happy and uniformly harmonious meetings which have characterised all our intercourse. The earnest desire of your retiring President is, that the same kindly feelings of love and affection which have marked the Society's existence in the past, may continue to mark the proceedings of our Association in the future, that a spirit of honest and earnest rivalry may so embue each of us, that our individual and single purpose may be to best advance our common interest.

Year after year reminds us of the ingathering of the fruits of autumn, and also of the Providential ingathering of the spirits of men, and of our members into the Lord's Garner. An eminent member of our Society, himself the son of a most prominent member, and one of the founders of our Association, has passed away from us. I refer to Mr. William Craigie, Barrister, of this city. May such and similar lessons come home to each of us, and urge us to "do with all our might those things that our hands find to do." And when at last the chain of friendship which has bound so many of us together in labor and in love shall be broken; when the last link shall be sundered and the fruits of this world shall delight us no more; when the culture, training, and sorrows of earth shall culminate in the purity, perfection, and bliss of heaven, may we all sit down together at the feast of immortal fruits—

"Where Gilead's balm in its freshness shall flow,
O'er the wounds which the pruning-knife gave us below"

ROBERT BURNET,
PRESIDENT,
F. G. A. of Ontario.
Hamilton, 24th Sep., 1872.

Hedgerow Fruits.

The planting of fruit-trees in hedgerows has been frequently recommended in these pages, but as yet it has not been carried out to any considerable extent. The other day, when in the North Riding of Yorkshire, I had an opportunity of seeing what can be done in this direction, for the hedgerows of the farm of a very enterprising agriculturist are mostly planted with apple, pear, and plum trees, which now yield a very good return. The fields are large, and the hedges which intersect them are chiefly formed of white thorn, and kept down to about four

feet, and do not exceed two feet in width. The fruit trees are planted in the hedges at a distance of about fifty feet apart, and although they have now rather large heads they do not materialy interfere with the crops. They certainly do less injury than the old pollard oaks and elms so common to hedgerows, are quite as picturesque, and, moreover, yield a profitable return. This year the crops of both apples and pears have been exceedingly light, but I can well understand by the appearance of the trees that in the majority of the seasons they bear heavy crops. It is worthy of mention that the choicer kinds only, which can be kept until midwinter, when fruit generally fetches a fair price, have been planted. The fears entertained by some people, when the subject was mooted a few years since, that it would encourage dishonest habits amongst the boys of the village, by placing them under temptations they would be unable to resist, have turned out to be groundless. Of course, now and then a few apples and pears are taken by the boys, but my friend assured me that the loss during the season was not worth mentioning. In fact, I was assured that the losses from the hedgerow trees were not greater than from those in the orchards.—*The Gardener's Magazine.*

Fall Planting of Seeds.

Those who have no hot-beds will find it advantageous to sow many vegetable seeds in Autumn. Lettuce, if sown now, and then given a slight protection by covering with hay or straw, will come forward very rapidly in Spring, and be in a condition for the table weeks before that sown next Spring. Every person who has a garden must have noticed that self-sown tomatoes come forward much earlier than those sown in the usual way in the open ground; and we have known them to give ripe fruit as early as plants started in a hot-bed. Few persons, however, seem to think that tomato seeds can be sown advantageously in Autumn, but the plan is perfectly practicable and should be tried by those who have no other way of obtaining early plants. The seeds should not be sown until the soil has become so cool that no growth will occur before Winter; then cover the entire surface of the seed-bed with coarse manure to the depth of one or two inches, a part of which may be removed in Spring. A warm, protected situation should be selected for the purpose.

Spinach for early Spring use may be sown now, and in the richest soil at command. When the ground begins to freeze, cover the plants at least two inches deep with dry, clean straw. If the weather should be favourable a portion of the plants will grow large enough for use during Winter, or as soon as they can be obtained in Spring

Horse-radish roots that will be wanted for use next Winter should be lifted before the ground begins to freeze, and stored in sand where they can be reached when wanted. All the small crowns and side shoots, not large enough for use, may be planted again this Fall.

Cabbage and cauliflowers for an early supply next season should be started now; and when the plants cease growing, lift and set in cold frames. The plants during Winter should be kept so cool that they will not grow, and be given light and air every warm day. They will withstand a pretty hard freeze without injury. Next Spring they are to be planted out the same as the late sorts.

Asparagus beds may be made this Fall, and the plants set out. Fall-planted roots will make a better growth next year than if the operation is delayed until next Spring. Those who have raised asparagus plants from seed sown in Spring know that they are very slow in making their appearance, and the chances are that one has to fight Summer weeds or see his plants smothered when not more than two or three inches high. But by sowing the seed in the Fall, in good, rich ground, the plants will get such a start in Spring before the rapid growing weeds appear, that keeping them clean is comparatively an easy task.

Those who have vegetable gardens may find plenty to do in them at this season, preparatory for Spring operations; and it is not best to wait until the last hour has arrived before making a beginning.—*Rural New Yorker.*

Black-Knot on the Plum.

The excrescence usually known as black-knot on the plum tree is the effect of internal decay, occasioned either by constitutional debility or injury by frost, the knots being the effort of nature to throw off diseased matter from within, as you will find on examination that they connect with the centre. Many of our forest trees exhibit the same appearance, viz., the pine, black ash, arbor vitæ, cherry, and maple, and it is a certain indication, when visible, that the tree is rotten within. This fact is well understood by lumbermen.

The plum tree, when planted on unsuitable soil, is subject to a more rapid state of internal decay, hence a greater effusion of black-knot. I may safely state that I never found a thoroughly healthy wooded plum tree in all my experience in this country.

It does look rather philosophical to apply a fungoid origin to the disease, but it is not consistent with practical observation. The excrescence, however, when passing a state of fermentation, becomes the recipient of fungus spores, as these are always present in the atmosphere to fasten on all organic matter undergoing decomposition.

SIMON ROY.

Agricultural College.

We sincerely trust that the Government will well consider and weigh the matter before they finally settle upon their board of management and the officials for the college; and on this point we would quote an extract from a late number of the "Maine Farmer," in which the Maine Agricultural College is alluded to:—

"A correspondent of the "Maine Farmer" asserts that 'of the whole board of managers, one possibly may be a farmer, while there are two lawyers, a merchant, a lumberman, and a United States official; men not identified with, or even practically interested in agriculture, who have the supervision and management of that school at Orono, wherein farmers' sons are to be taught "what *they* know about farming." The tendency of the whole matter is, as ex-Gov. Chamberlain predicted, that the college would drift out of agriculture into literature.'"

Grape Growers' Maxims.

1. Prepare the ground in fall; plant in spring.
2. Give the vine plenty of manure, old and well decomposed; for fresh manure excites growth, but it does not mature it.
3. Luxuriant growth does not always insure fruit.
4. Dig deep, but plant shallow.
5. Young vines produce beautiful fruit, but old vines produce the richest.
6. Prune in autumn to insure growth, but in the spring to promote fruitfulness.
7. Plant your vines before you put up trellises.
8. Vines, like old soldiers, should have good arms.
9. Prune spurs to one well developed bud; for the nearer the old wood the higher flavored the fruit.
10. Those who prune long must soon climb.
11. Vine leaves love the sun, fruit the shade.
12. Every leaf has a bud at its base, and either a bunch of fruit or a tendril opposite to it.
13. A tendril is an abortive fruit bunch—a bunch of fruit a productive tendril.
14. A bunch of grapes without a healthy leaf opposite, is like a ship at sea without a rudder - it can't come to port.
15. Laterals are like politicians; if not checked they are the worst of thieves.
16. Good grapes are like gold—no one has enough.
17. The earliest grape will keep the longest—for that which is fully matured is easily preserved.
18. Grape eaters are long livers.
19. Hybrids are not always high bred.
20. He who buys the new and untried varieties should remember that the seller's maxim is—Let the buyer look out for himself.—*Rural American.*

Experience with a Cold Grapery.

THIRD YEAR.

The first of April the vines were uncovered and washed with a mixture of soft soap, sulphur, and warm water, to clean and soften the bark. The borders were then cleaned and forked over, and watered with liquid from the barnyard. As I uncovered the vines sooner than usual, and fearing there might be some cold, frosty nights, I put in the house a common coal stove, to be ready, if occasion should require it, to guard against frost. The vines were fastened to the lower wire, leaving the upper part swinging in the form of an arch, which causes the buds to burst more uniformly than if fastened directly in their place.

In a few days the buds commenced swelling, and burst strong and evenly. The top ventilators were kept open in fair weather, never letting the temperature get over 80°, until the vines had made two or three inches of growth, when they were fastened to the wires, and the temperature gradually increased to 100°, in the middle of bright, sunny days. The vines were syringed every warm day, until they commenced blossoming, when it was withheld. As the blossoms expanded, I went over the house every morning and gave the bunches a slight shake with the finger, to assist in distributing the pollen, and thus enable the grapes to set with more certainty. After blossoming was over, the vines were thoroughly syringed, to clean off any portion of the flowers which might cling to the bunches. As there were many more bunches on the vines than they ought to bear, I took off all but 12 or 15 from each vine on the front border, and from 10 to 12 on the back vines, leaving of the largest and handsomest bunches one on a spur. As the house was quite moist, with a good degree of heat, the berries swelled rapidly. The bunches were thinned twice during the season, taking about half from each bunch when they commenced ripening; if I had taken out more, the berries would have grown some larger. The grapes commenced coloring by the middle of August, and by the second week or on the 10th of September, the grapes on the White Frontignan vine and the Chasselas Fontainebleau were ripe; the rest, being Black Hamburgs, were not fully ripe till October. The treatment of the vines this season was the same as last year, though from a half dozen of the Hamburg vines I have raised strong canes to fruit next year, cutting out the old ones to the base of the new cane, at the fall pruning. Aside from these six, the rest of the vines are pruned on the common spur system.

I have not had any trouble with mildew, or the other diseases common to grapes raised under glass, though, as the vines grow older, I do not always expect to be as fortunate as now. Perhaps my taking the precaution to scatter flour of sulphur on the borders, in July, may be one great reason of my being entirely exempted. After the frost had bitten the leaves in November, the vines were taken down, pruned, laid on the borders, and covered as last year.

I find, on referring to account with grapery, the cost of the house and fixtures, with vines, all planted, to be $160; care of house for 1862 3-4, $100; widening front border in 1863, $19; total cost to this time, $270. I have received for tomato plants raised in house, $55; grapes in 1863, $25; grapes in 1864, 350 lbs., $150; grape vines, 1864, $50; total, $280.

After the third year the vines have had the same treatment as on that year, though, being stronger, were allowed to mature heavier crops.

After the vines are pruned in the fall, I usually spread a coat of manure over the borders for the twofold purpose of protecting them from the severest freezing, and that the strength of the manure may leach into the soil during the winter, and with the addition of a coat of ashes and air-slacked lime, is dug into the borders in the spring. And just before the grapes commence to color, I give the borders a thorough watering with liquid manure, being careful not to have it too strong.

With the above treatment, my views have never failed to produce good crops of large well colored grapes, the bunches weighing from one-half to two pounds each, and have always brought the highest market prices at wholesale, from 40 cents up to 75 cents a lb.

The amount received for grapes has been from $100 to $200 a year, besides what we have used and given to friends.

The expense of taking care of the house has been much less since the first three years, as we have wholly discontinued syringing, and have allowed the ventilators to remain unclosed from spring till fall.

I also have used the house to raise early cabbage, lettuce and tomato plants, and have usually sold from $100 to $200 worth of those plants a year.—*A. Low, in Fruit Recorder.*

The Purple-leaf Birch.

Ed André writes to l'Illustration Horticole that while at the Horticultural Exhibition at Orleans, he saw some forty plants of a beautiful variety of the common white birch of Europe, the leaves of which were completely purple or purple-black, like the purple-leaf beech. It was found in a bed of seedlings by a Mr. Dubois, an old hand of the firm of Transon Brothers. Noticing the peculiarity in the color of the foliage, he took scions from it and grafted them upon the young stocks of the common birch, so that now he has some sixty plants of one and two years of age. He thinks this new leaf-color in the birch will prove to be a great acquisition, that it succeeds in the poorest soils, at the same time preserving all the strength and rural beauty of the original type. The birches are also among our most hardy trees, and it will doubtless thrive throughout Canada.

Raising Cucumbers for the Pickle Market.

Many farmers are deterred from raising this crop, because they fear that it requires a particular soil; but there are but few farmers who have not some land suitable for growing the crop profitably. New land is the very best, being free from weeds, and needing no manure. The ground must be well drained, so that no water can stand on it. The best time to plow the land is from the 1st to the 10th of June, just before planting. This does away with the first crop of weeds, and gives the vines a good start before the second crop of weeds comes on. Plant your seed from the 10th to the 15th of June. By this time the striped bugs—the vine's worst enemy—are usually gone.

Plow in narrow land, about 12 feet wide, and in such a manner as to throw it as high as possible in the centre, and leave the dead furrows as deep as you can, for draining off the water. After harrowing well, plow out your dead furrows well, and if you intend manuring the crop, use the one-horse plow, and make a furrow about three inches deep in the middle of the land, and put about a pint of well rotted manure every three feet. Then plow a furrow the same depth, three feet each side of the first one, and drop the manure every six feet in the side rows. Then you are ready to plant your seed.

Cover the manure two inches deep, and plant your seed over it, covering them one inch deep. When you plant the side furrows, plow so as to throw the soil always to the centre of the land. Use from seven to ten seeds to a hill, by which you will use about one and a-half pounds of seed per acre. By planting in this way you leave plenty of room for the pickers to get at the vines, and at the same time it allows the vines to grow and run together, which keeps them from blowing into winrows, which is often the case when planted six feet apart.

When hoeing, thin them out, leaving four of the best plants in a hill; when there are but two, plant more seed. Hill up the vines as much as you can when hoeing. Those having plenty of manure can use it broadcast. Manuring in the hill will use only one-tenth of the amount otherwise requisite, and at the same time is equally beneficial.

One hand can attend to picking two acres, by picking all the time, and should pick from seven to ten bushels per day. I had my crop picked thus, and paid 12½ cents per bushel. Use baskets for picking in, and have the cucumbers salted as soon as possible after being picked. Do not cut the cucumbers from the vines, but break them from the stem with the forefinger and thumb, close up to the cucumber.

One acre of good land will yield 100,000, and often 150,000, and are worth $1.50 per 1,000, in size from two to four inches in length, in brine

The best varieties of cucumbers for pickles are the Short Green and Early Frame.—*Cor. Western Rural.*

Correspondence.

Farming in Cape Breton.

(*To the Editor.*)

We are just now endeavouring to repair the damage done by the fearful storm of Sunday evening last—fences levelled, trees uprooted, barns and houses unroofed and demolished. No such storm has been for many years, if ever; but I suppose more detailed accounts will have reached you ere you receive this. Upon the whole, our crops are good, with the exception of fall wheat, which winter killed. It is not safe to sow much of this grain unless well sheltered, and the precaution of top-dressing with straw, &c., is taken. Farmers, hereabouts, are sowing more rye, not for the grain alone but the straw, which is in good demand, and commands a high price from the paper makers.

The Colorado potato bug has made its appearance here this season, but not in great numbers. The latter rain has benefited potatoes greatly, the tops of which are still quite green, late varieties. I hope the subject of tree-planting for fuel and otherwise will receive attention, and be discussed by farmers' clubs and otherwise.

Is there any hardy shrub that would pay to grow for fuel (quick grower)?

Please inform whether the Screw Stump Machine is well adapted for the work. Can you recommend it or any of similar pattern?

Yours respectfully,

JOHN S. BONTILLIER.

Sydney, Oct. 7th, 1872

Hops in England.

Borough, Aug. 19.—Under the influence of the warm, forcing weather of the past week, the hops have made some progress; but the low temperature prevailing at nights, has checked the plant on exposed situations. as a rule, the season will be unusually late, being generally considered that picking will not be possible before the end of the nextfortnight, and then only the early sorts can be operated upon. The reports to hand from the east parts of mid Kent are good; but advice from the Weald are not so favourable where the bine is lousey and under poled, hops are becoming affected with mould. The reports from Worcester are still of the most discouraging character. It is computed that the duty upon the yield will be between £256,000 and £300,000; the latter figures will certainly not be exceeded. There is a good consumptive demand at market, yearlings being much inquired after.

Hardy Grapes at Lindsay.

To the Editor.

Sir,—As far as my experience goes, I find the following open air grapes the earliest and best I have out of twenty-two varieties:—They are, Israella, Delaware, Adirondac, Eumelan, Ives Seedling, Allan's Hybrid Rogers No 3, Hartford Prolific, Creveling, and Telegraph.

Yours respectfully,

JOHN KNOWLSON.

Short-Horn Stock—Correction.

To the Editor.

Sir, Having been in the Western States exhibiting stock during the Provincial Exhibition held at Hamilton, on my return, I read with much pleasure your very interesting report of the same. I wish, however, to correct an error in the report respecting the fine short-horn yearling heifer, "*Crimson Rosebud*," the property of John Snell & Sons. She was not sired by "Louden Duke," as reported but by the short-horn bull, "Prince Imperial," bred by Hon. David Christie, and which I am now using with my herd.

Yours, &c.,

JOHN R. CRAIG.

Green Grove Farm,
Edmonton, Nov. 9, 1872.

The Canada Farmer,

TORONTO, CANADA, NOV. 15, 1872.

The Prevailing Epizootic amongst Horses.

For the past month the community generally have been been somewhat excited and alarmed about the prevailing disease amongst horses, which has extended over the greater part of Canada, and is now fast spreading over the United States. The American papers of the past week contain very full accounts of what they call the Canada Horse Disease, and give Canada the credit of being the means of spreading the infection. As we have several times already mentioned through the columns of The Globe, the prevalent disease first appeared in Toronto and surrounding country about the end of September, and it gradually continued to extend in every direction, attacking all kinds of horses, old and young, in good condition or in poor: almost every animal being affected to a greater or less extent.

The disease is of the nature of catarrhal fever, of an epizootic character; probably dependent upon some atmospheric influence, as is shown by its simultaneous appearance over a very large extent of country. We have no hesitation in stating that at least two-thirds of the horses in the city of Toronto became affected in the course of forty-eight hours, which goes far to show that it is the result of other influences than direct contagion. Some of the New York papers incline to favour the belief that the disease was propagated there through the medium of infected animals brought direct from Canada. Our experience of the disease, however, tends to confirm our opinion that it altogether results from atmospheric causes. The premonitory symptoms of this complaint are dullness, a staring coat, and slightly impaired appetite; the mucous membrane of the nose is of a pale leaden-coloured hue; a watery discharge takes place from the nostrils, which speedily alters in colour and character, becoming thicker, and of a yellowish-white colour. A microscopical examination of the discharge shows it to contain vegetable fungi. The circulation is affected, producing a weak but quickened pulse; the throat and bronchial tubes are often involved, giving rise to a severe hacking cough, which is very easily excited by gentle pressure upon the larynx, the legs and ears are unusually cold, and the breathing is slightly increased in all cases, but in some it is laboured and severe. This is especially the case in horses that have been previously afflicted with chronic disease of the respiratory organs. In several cases the appetite is greatly impaired, whilst in ordinary cases it is but little affected. The mouth is hot, and the membrane of the nose, as the disease advances, becomes reddened. The discharge from the nostrils tends to collect around the openings to a very great extent. There is frequently great nervous prostration, easily shown by the languid appearance of the animal, and his unsteady sluggish action when walking out.

Simple catarrh in the horse is very apt to extend and implicate the lungs, if an animal is overworked or exposed, and this predisposing tendency is greatly increased in this epizootic; therefore, when affected animals are exposed to vitiating influences of any kind, — as impure air, which suffering horses have often to breathe in close, ill-ventilated stables, — exposure or severe and continued work, the lungs and their coverings speedily become affected,

thereby producing very alarming and more dangerous symptoms.

The indications of the lungs becoming seriously affected are very plain. The horse shivers or trembles, the breathing is increased and laboured, the ears, legs, and body are cold, the mouth extremely hot, the abdominal muscles are brought into increased action, producing a quickened lifting of the flanks. A gurgling sound is noticed in the throat, and the ear, applied to the front or sides of the chest, can readily detect the altered respiration.

When disease is fairly established in the lungs the patient seldom lies down but stands persistently; the breathing continues to increase; and, in cases that are likely to terminate fatally, the pulse becomes weaker and weaker, the breathing still more rapid, causing a flapping of the nostrils; the eye becomes dull and of a glassy hue; the poor sufferer still continues in the standing posture; and, as death approaches, he may lie down for a few minutes, look round to his heaving sides, and quickly get upon his feet again, will stagger around in his box, and after a few convulsive efforts, he falls to rise no more The prevailing epizootic, although it must have proved of considerable loss and annoyance to horse owners and the community generally, from animals being unfit to do their ordinary work in a proper manner, yet has not been attended with a very great fatality. It will run a certain course, and, so far as we have had an opportunity of judging, it takes from ten to thirty days, according to the severity of the attack, before an animal completely recovers. It is a matter of great satisfaction to the public that we are able to state that two-thirds of the horses in this city are on a fair way to recovery; and so far, as we ventured to predict at the ontbreak of the disease, the percentage of deaths has been very small indeed where ordinary care and rational treatment were adopted.

In nearly every case that proved fatal the immediate cause of death was either acute congestion or inflammation of the lungs, which had been brought on by continued over-work or some other irritating influence. In one or two cases, when death suddenly occurred after over-work, a *post-mortem* examination plainly revealed the fact that acute congestion of the lungs was the immediate cause. We find also that with a great many horses that apparently experienced a very light attack, and were kept doing hard work, their legs became very much swollen, the swelling frequently extending under the belly and between the fore legs. This œdematous condition in some cases is so great that the patient can only move with the greatest pain and difficulty; and, if he lies down, is unable to rise without assistance.

We shall very briefly notice the general course of treatment which ought to be adopted for the relief and comfort of the suffering animals. As in all diseases affecting the respiratory organs of the horse, it is of the greatest importance to allow pure air, we consider that cleanliness, comfortable and well-ventilated stables or boxes may be put first on the list of remedial agents as they are of the greatest benefit in causing a mitigation of the symptoms and in hastening the period of convalescence.

Through necessity suffering animals in many instances have to be kept at work, and in many cases a little moderate work does not appear to be very injurious; in fact we think it is better to have horses doing gentle work than standing in an impure atmosphere; and in nearly all cases it is advisable to give a little walking exercise daily. The food should be of a description that is nourishing and easily digested, as moderate quantities of boiled oats, barley, &c., or carrots in small quantities. Cold water should also be freely allowed. As to the medicinal remedies, febrifuge medicines should be administered for a few days. Potassium and sodium appear to have an excellent effect. Where great weakness is present, endeavour to support the strength by the careful use of stimulants, as beer, wine, &c. The severe breathing may be considerably relieved by the application of mustard, or other mild embrocation, to the throat and windpipe. In all cases we cannot too strongly recommend good nursing, with moderate clothing for the body, which should be regulated according to the temperature. Hand rubbing and bandaging of the legs are also beneficial in restoring the impaired circulation. The nostrils should be sponged out several times a day with tepid water. In all cases it is desirable to use disinfectants freely.

Fall and Winter Food for Cows.

A very intelligent and respected friend informs me that lately he has grown a large quantity of "horse tooth" corn, for fodder for his cows; not only for summer feed, but also for winter consumption.

He describes the yield in his case as from three to four tons an acre, of dry fodder. I expressed surprise at the quantity, and in course of conversation enquired how he sowed it, and treated it through the summer. He politely stated he had been accustomed to grow it for many years, and had tried sowing it both broad cast and in drills, but finally much preferred drills. These he makes about two feet apart, and sows about two bushels of seed an acre, scattering it along each drill.

He prefers thick to thin seeding, as producing smaller and finer stalks; last year he sowed six pecks, but found the plants too thin and consequently the stalks too large.

This year he sowed about eight pecks to an acre, and his stalks were much smaller, and although not so large, were thicker on the ground, and formed much better cattle food.

About September he cuts the green corn, with a mowing machine, and piles it up in the field in small stooks, made by placing two broom handles, through a light piece of cedar in holes bored near the upper end, at right angles to each other, this was formed into a kind of sharp stake about five feet long, with the two broom sticks projecting about half their length each way. The stake was pitched into the earth where the stook was intended to be made, and four large double armfulls of stalks, were laid, one on each projecting end of the broom stick. This balanced the pile, as more were added. When completed, the broom stick and stake were withdrawn, and the tops of the corn twisted somewhat together so as to resist wind pressure. My friend preferred hauling the green corn home at once, and making the stooks in the paddock adjoining the barn, and using them as dry fodder from this source.

He had tried stacking the stalks, both in barn and stacks, but found it almost impossible to cure them sufficiently to avoid mouldiness.

The cows prefer this food so prepared to hay, and when cut up into half inch lengths, moistened, and mixed with a small quantity of meal, it proved most excellent fat forming food.

This gentleman grows his supply from about eight acres of drained swamp, the soil of which is a deep black mould, now of course a swamp no longer. All the draining it ever had was by an open drain dug the whole length, and again across, in the form of about four equal divisions of the swamp, care having been taken to deepen the outfall as much as possible, and also to avoid ploughing over the ditches when working the land. He estimates this swamp to be worth three times as much as any other portion of his excellent land. It has now been sown to corn for fodder six consecutive years, and the crop is better each year than the preceding.

A swamp so treated, belonging to a neighbor, has already borne twelve crops of corn for fodder, and this instance of success caused my friend to turn his marsh into the same useful piece of producing land.

I do not suppose all swamps or marshy lands would do as well, as certainly all are not equally fertile, and in utilizing such soils care should always be taken to intercept the water at the very spring head, or source. If it is allowed to percolate through the soil for many rods, *before* being conveyed away by the ditch, the draining is most inefficiently done, and the soil always kept wet and cold, so long as there is any water from the spring to materially affect it. Attention to these details constitute the most valuable part of draining lands, it being manifest that water, from its capillary attraction, has a great tendency to ascend to the surface in its progress from the spring head to the drain. VECTIS.

Fruit Lessons of the Guelph Exhibition.

There is often much to be learned in regard to the fruit producing capacities of the various sections of the Province by a careful inspection of the fruits exhibited at our autumn shows. It has been the writer's privilege to have an opportunity of making a minute inspection of the fruit displayed at the late Central Exhibition in Guelph, and we shall endeavour to give the readers of the *Canada Farmer* the benefit of the lessons which we received on that occasion.

Taking a general survey of the prizes awarded in APPLES, it was evident that on the whole the fruit grown in the old Niagara District was yet able to maintain that position in the front rank which was long ago by common consent awarded to it. Of some sixty-one prizes for apples of which we made note, twenty-one were awarded to fruit from Niagara, seven to apples from Hamilton, four to those from Brantford, and five to samples from Normandale, leaving twenty-four to the samples brought from Guelph and adjacent country. Of the first prizes eight were awarded to apples from Niagara, six to those from Guelph and vicinity, three to samples from Hamilton, as many to those from Normandale, and one to apples from Brantford.

Yet it must not be inferred from this that the apples grown in the neighbourhood of Guelph were not of fine size and handsome appearance, fruit generally that would sell readily in our best fruit markets. A more careful inspection of the varieties shown in the collections would shew that the decision of the judges was not always based upon size and external appearance, but that the known quality of the several sorts had much to do with their verdict. Some otherwise fine collections were sadly marred by the presence of such sorts as the *Cabashea*, sometimes known as *Twenty Ounce Pippin*, of which our standard authorities speak as being "coarse" and "poor." Sometimes too the varities were wrongly named, and as the rule required that the specimens should be correctly named, samples that were otherwise meritorious, could not receive a prize. The effect of such competition will be most highly beneficial, if it leads our fruit growers to throw out all "poor," "coarse" sorts, no matter how great their size, and cultivate only those of great excellence

In the competition for the best dozen of any given variety, it was very interesting to notice how different sorts seemed to thrive in the several localities represented. Take the *Snow Apple* as an illustration. The samples from Niagara did not receive any prize, those from Guelph taking the first, from Hamilton the second, and those from Brantford the third. And this is just what was to be expected of this variety. It is known to be fairest and finest flavoured when grown in the cooler portions of the Province. Again, the finest samples of the *St. Lawrence* were from Eramosa, and those which received the second and third prizes were all from Guelph. The first prize in *Duchess of Oldenburg* was given to a dozen from Niagara, while the second and third prizes again came from Guelph. The first prize *Greenstein* came from Niagara, the second from Guelph. These facts indicate that these varieties may be grown in great perfection in a very large part of the Province. Again, the *Blenheim Pippin*, which has been widely disseminated under the name of Hubbardston's Nonsuch, also takes a wide range; for the first prize samples came from Normandale, on the shore of Lake Erie, and the second from Guelph. If size and beauty of appearance are criterions of excellence in the *Ribston Pippin*, it would seem to prefer the warmer parts of Ontario, for the first prize sample came from Niagara, the second from Hamilton, and the third from Normandale. The *Rhode Island Greening* and *Baldwin* seem to attain their finest development in the southern part, for of the first sort the best came from Normandale, the second from Hamilton, and the third from Niagara, and of the Baldwin the first prize came from Hamilton, and the second and third from Niagara. The *Alexander*, on the other hand, takes its place with the St. Lawrence, and manifests its preference for the cooler climate, Guelph and Eramosa taking all the prizes in this variety. It is very gratifying to see that the best of all the winter dessert apples, the *Pomme Grise d'Or*, or Swayzie Pomme Grise, promises to be valuable over a very wide extent of country. Although supposed to have originated on the banks of the Niagara River, on the occasion of this exhibition the finest samples were not produced from the neighbourhood of its origin, but grown in Guelph, while those shown from Niagara were compelled to take a lower place. The Fruit Growers' Association of Ontario have already given notice of their intention to distribute this variety among its members in the spring of 1875, and we can most warmly congratulate those of them who do not already possess it, on the acquisition of a fruit of such surpassing excellence and giving every prospect of being so well adapted to their climate.

In *Rorbury* and *Golden Russets* the first and second best came from Niagara, and the third from Guelph. The best *Northern Spys* were from Normandale, the second from Eden Mills, on the borders of Halton and Wellington, and the third from Waterloo; while in *King of Tompkin's County* the order is nearly reversed, the best being from Guelph, the second from Brantford, and the third from Normandale.

Enough has now been said to show those interested in these matters where the several varieties of our leading sorts of apples may be expected to attain their fairest proportions and finest appearance, at least so far as the Guelph Central Exhibition throws any light on this subject. These facts are of value to those intending to plant for market, and may be considered with advantage by those dealers in fruit who wish to buy the finest samples of the several varieties.

We leave to another occasion the consideration of the lessons in pears and grapes which seem to be taught by this Exhibition.

No. II.

It is quite evident that the cultivation of PEARS has either not received that attention from the Fruit Growers of the Central District that exists in the Niagara District, or there is a difficulty in the climate or soil around Guelph which is not felt between Lake Erie and Ontario. Out of thirty-four (34) prizes given for pears, twenty were awarded to fruit from Niagara, five to samples from Guelph, four to those from West Flamboro', four came from Dundas, and one from Berlin. In the collections of twelve and of six varieties, the first and second prizes were given to fruit from Niagara and the third to that grown at Guelph Yet when we go from the collections of varieties and study the prizes given for the best samples of single varieties, we find Guelph taking the second prize in Bartlett Pears, West Flamboro' the first, and Niagara the third; hence we infer that if the Bartlett Pear at Guelph is superior to that from Niagara, there can be nothing in the climate or soil of Guelph which need prevent her people from raising very fine pears. The best Bartletts, White Doyuune, and Vicar of Winkfield came from West Flamboro', the best Flemish Beauty from Dundas, the best Beune Chairgeau, Duchess d'Angoulemc, Bucne Bose, Belle Lucrative, Seckel, and Glout Morceau, came from Niagara.

We noticed that the judges threw out a number of plates of pears because the rule requiring them to be correctly named had not been observed, and from this we are led to the conclusion that sufficient attention has not been yet paid to the pear to enable the growers about Guelph to determine the true name of the variety they are growing, and that it is yet too early in the history of pear culture in that region to decide how well the several sorts will flourish there. We look to such men as Elliott in Guelph, Roy at Berlin, and Caldwell at Galt, to grow

with care the several varieties of pear in this district and giving to their countrymen the benefit of their experience, establish the pear culture of this region upon a sound and satisfactory basis.

When we come to PLUMS the prestige of the Niagara District is completely broken, and Guelph and vicinity reign supreme in the collection of Plums Guelph took the first and second prizes, and Eramosa the third. In Dessert Plums, Guelph carried off all the prizes and in cooking Plums the first and second prizes were given to samples from Guelph, and the third to fruit from Eramosa.

In GRAPES grown in the open air the prizes were carried off mainly by samples from Hamilton and Toronto. This fact however by no means proves that fine grapes *can not* be grown in the open air about Guelph, but that less attention has been given to this fruit, for there were some fine grapes shewn by Guelph growers. It can hardly be possible that Guelph is less favourably located for grape growing in the open air than Toronto, hence we infer that more attention given to the selection of suitable varieties, and perhaps just a little more attention to the art of growing them, will enable growers at Guelph to shew as fine grapes as can be grown about Toronto.

As for PEACHES, no one expects to see very fine samples raised in open air at Guelph, and therefore it is no matter of surprise to find that the samples of this fruit came from the Niagara District.

In looking over the entire collections of fruit presented at this exhibition one feels well satisfied with the fruit productions of our Province, and feels that if we may not sit down in peace and plenty under our own Vine and Fig-tree, we may very willingly exchange the Fig-tree for the more useful Apple, and be content with the goodly land wherein we dwell.

A Drive Through the West of Ontario.

Now and then I take a long drive through the country, sometimes north, sometimes east, but more generally to the westward. This time my course was towards Goderich: *All* I saw I could not for one moment pretend to describe; but I saw some things that struck me very forcibly. These were the greatly improved condition of those farmers with whose circumstances I had been previously well acquainted. Formerly, and at my last visit, these men, in very many cases, had "poor conveyances, or none, poor horse teams and, often only oxen, almost always old log houses," and log barns, and, with few exceptions, very poor fences. Now the case is most materially altered for the better, and I am pleased to be able to record, that in a vast number of cases these men have good, and even handsome buggies, and occasionally good double-seated waggons, drawn by fine horses, with good substantial and even ornamental harness. These have replaced the old team, and the log barns are gradually ceasing to exist as such, but are degraded into cattle sheds.

Good substantial frame barns are now seen in every direction. There are still occasionally seen some old log houses that are inhabited, a memento of former "raisings" and beginning in the bush. But very often these stand close by good frame or brick edifices that are well and comfortably furnished.

There is, however, still a great want of the orderly, tidy door yard, neat and well cultivated garden, whose well fenced condition in town localities adds so much to the appearance of the homestead. There are, it is true, some ornamental trees planted, but unfortunately their "name is (*not*) legion," nor are they as a rule well taken care of: still great amendment in general appearance, in comparison as they were seen five years since, is very apparent. There is, however, plenty of room yet for household improvement. One thing I, as a musical family man, was very well pleased with; I occasionally saw and often heard the sound of pianos, and these often well played. They were not the old refuse of cities that had found their way into the auction room, to make way for others of more modern construction, and thence to the country where it used to be customary to say of all such articles, "Oh, send them to auction; some farmer will buy them, they will go to the country." Now our farmers know better, and they only buy good overstrung handsome Canadian manufactured instruments, warranted for five years: and they are occasionally visited by the travellers of our large Kingston, Montreal, or Toronto manufactories, who having sold and warranted the article, are quite interested in its welfare. Not so, however, when our farm house is ornamented with imported American surplus stock, almost always bought at auction. All the inferior instruments that cannot be sold at home are brought here and disposed of for what they will fetch in this manner. These instruments really to the unpractised eye look well, and are often, it is true, warranted for years; but I should like well to understand how such a warrantee can ever be pressed, as against American manufacturers. No farmer could do so with any chance of success; hence the only safety to farmers lies in using the Canadian manufactured article. These makers have a reputation to lose, and are always accessible, and to them one action-at-law for the sale of an inferior, improperly built instrument, would for a time stop all their sales in that neighbourhood.

One or two of my old friends stated to me, that their girls had seen so many notices of pianos of Canadian manufacture, supplied on easy terms and reasonable prices, and "Pater familias" had had the want of such so dinned into his ears by the girls and their mother, that in self-defence he had been obliged to buy them, although they were as yet partially unpaid for. To meet this difficulty the girls had appropriated certain earnings of the dairy and sale of young stock, destined to meet the future and remaining liability.

A sensible mother remarked to me "Father has saved ever so much money at different times to pay on account for our boys' farm and to buy new agricultural machines, and the girls have worked every bit as hard, but in a different way, and have proved quite as necessary to the welfare of the family, and they ought to have some chance as well as the boys." And the old lady was right, "the girls ought to have some chance." Their fortunes are generally "made or marred" between the age of 16 and 26, and everything that can be done for them during these flying ten years should be done to raise their standard in society, and by education to qualify them, when they become wives and mothers, so also to educate and bring up their daughters; and amongst the rest "music" ought to be introduced and a good modern piano procured for them. And why not as well as build new homes, new fences, buy modern implements, and fine horses and buggies? All these things are nice and quite needful, but not one whit more essential than some improvement in the farm household, and especially in the education of the girls.

It is a great and serious mistake that numbers of uneducated people, especially farmers, fall into, namely, That to educate girls will unfit them to attend to and excel in household work; that it will cause them to neglect to make the dairy profitable, and generally destroy them as farmers' wives. It is, I say, a great mistake, and the reverse is the fact, as will be seen and proved by trying the experiment, and at the same time rendering the females of a family happy and contented.

Railway Embankments as Vineyards.

A writer in the *Gardeners' Chronicle*, who has long lamented that railway embankments should lie waste, comes forward to advocate their more general cultivation. The sloping side of a railway embankment, well sunned and well sheltered, cannot fail to catch the eye of a gardener as a spot on which to grow the choicest fruits and vegetables. There are miles on miles of embankment, especially in the South and West of England, where vines would flourish and grapes ripen, while ordinary wall fruit, supported on trellises, would be in a capital situation. Green figs too, the cultivation of which is now so much neglected, could not have a better place for growing than on the side of a sunny embankment. And as for cucumbers, vegetable marrows, tomatoes, peas, and scarlet runners, no demonstration is required to show how their growth on such situations would lead to an early and an abundant supply in the market. And for facility in getting the produce to London, could anything better be asked than that the produce should be grown within a few feet of the railway metals?

Agricultural Intelligence.

First Union Show for West Northumberland.

The first Union Show for West Northumberland, and the townships of Hamilton and Haldimand, was held in the new show grounds, Cobourg, on the 15th and 16th October, and was on the whole successful.

There was a good show of Durham cattle. Mr. George Isaacs of Haldimand Plains showed some fine heifers of this breed, imported from Scotland this season, besides these, Messrs. Defoe, Westington, Campbell, Walker, Hinman, Beatty, & . showed in this department.

The Ayrshires were also a good show, larger than usual; this breed (owing to our cheese factories) is spreading in this section; Messrs Wright, Pratt, Newton, Wade, Rogers, and others had their stocks represented by specimens more or less numerous.

The Galloways and Devons were out in about the usual numbers; not many of either class, but of fair quality; there was a good display of grade cattle, principally Durham grades.

There was a capital show of long woolled sheep, from the flocks of Messrs. Lean, Elliot, Harper, Reynolds, Pratt, Cullis, Cook, and others. The judges had no small task to decide which was best.

The Leicester and short wool classes were about the usual numbers and quality.

Pigs a fair show, fully as many as usual They are rather troublesome stock to take to a show, so that few care to take them out

The show of poultry was good, some fine geese, ducks and turkeys, with large, small, and common fowls, being shown.

The show of grain and seeds, roots, domestic manufactures, dairy products, ladies department, including all the various varieties of home productions, that are usually brought to our shows, besides the carriages and most of the other implements, were shown in the Drill Shed, which, ample as it is, was filled to nearly its utmost capacity.

The grain and seeds were all that could be desired for quality, and in most classes there was a large quantity.

Most of the roots shown would have been hard to beat anywhere. They were certainly a credit to the farmers producing them Of potatoes there was a large and uncommonly fine display; there was 46 bushel lots shown (besides 7 lots of early potatoes, and 6 lots for varieties). Some of them were so large that we heard parties offer to bet that all the potatoes in some of the bushels would average a pound weight apiece: there was some 27 lots of turnips, all of them good, some of them remarkably large and fine: (a single one shown with the tops on weighed 26 lbs) There was a large show of mangels and beets, some 35 lots in all, all of them large and good, far surpassing in quality, and fully equalling in quantity those shown at the late Provincial Exhibition at Hamilton

In fruit the show was not as large as usual as it is a very poor *fruit* year round here this season. Still some very fine specimens of apples, pears, plums, grapes, &c., were shown.

The show of farm implements and carriages was far larger and more varied than any we have ever had. Some very handsome buggies from Peterboro', (for exhibition only) were shown, several of which were sold to go to Toronto. Some very handsome buggies were shown by a local maker from Vernonville Some excellent farm waggons were shown from Otonabi and Roseneath, besides those exhibited by local makers: some of them appeared to us to be rather finely adorned with painted pictures for ordinary farm use.

The weather was very unfavorable the first day, which doubtless prevented many from being present.

The Potato Blight in England.

Dr Kidd has spoken out boldly relative to the potato disease, which is bidding fair to become a national calamity, not only in the destruction, to an enormous extent, of our supplies for next winter, but in its influence on the crop of 1873 After pointing out the fallacies of the various remedies which have at times been prescribed, Dr Kidd remarks.—

"It strikes me that there is no virus or disease, or error of thunderstorms, but that the "plant has been over-cultivated, and the farmer who will go back to plain seedlings and "plant the potato early, will escape much of the "blight. The natural rotation of crops three "or five, or what else the farmer knows is best "is done away with in too many places, and "what lands turned into permanent grass "have given up the potato to inferior land. "Seedlings are got from the berries, of course "of the potato blossom. They are rather "waterish at first, but by cultivation, as nature in her wonderful way stores up starch "for the germ, they become dry and mealy, "with more vitality. This vitality is what "the plant wants; there is too much starch in "the 'sets' now planted, the power of assimilating or ripening the sap in its return from "the leaf and forming fluid starch or cambium "is diminished. The black 'spot' on the leaf "is probably the effect, not the cause of the "disaster. The general upshot of what one "can make out among farmers is clearly towards earlier and better planting of the good "old tubers, more science or system as to rotation of this and other crops; less science "of the starch grating or beanstalk kind, "which would upset crop rotation, and trust "to no crops but more cattle, and to potatoes "got out of any worthless patch at haphazard. "The potato rather, in a physiological sense, "requires as nice soil and management as a "tulip bulb. We know what a half-boiled "bulb of a tulip would turn out; so of our present scrofulous potato plants or 'sets.'"

The very early kinds of kidney potatoes have, to a very great extent, escaped the disease; and although seed of these will be scarce next spring, still there will be a moderate supply. Of the later kinds, on which we depend for our supplies from September until May next, the stock is so extremely limited that the demand will be in excess of the supply, and seed must be scarce and dear for next year's use. It therefore behoves us all to be very careful, and waste nothing which is sound; saving from the pig tubs even the small sound tubers which generally find their way there, and carefully storing them for seed in case of necessity.

Careful storing for Seed is a subject of deep importance; on which I desire to say a few words In many districts of Yorkshire, Lancashire, and other counties, especially where local flower shows exist, cottagers, as a rule, hold back a few seed potatoes' which they place in shallow boxes, with one end of the tuber upwards; and these are exposed to the air or kept in some cool place, but preserved from frost. These are allowed to "sprout" slowly in the spring, and are planted with short sturdy shoots attached to them This plan is also adopted in many private gardens, especially when there is accommodation in the form of sheds, spare shelves in the fruit room, or under a dry stage of a greenhouse.

It is not so easy for farmers who plant extensively to adopt this plan, but it a question for their consideration whether it would not pay them to give their earnest attention to this subject. The present system of storing *seed* potatoes in pits is a fatal mistake, if they are allowed to remain there after the end of January, or early in February, and has been one of the chief causes of the fatalities attending the potato crop.

I will take as an instance the winter and early spring of this year, when the weather was very mild generally, and potatoes grew very early in the pits. In a great number of cases the potatoes had sprouted so much that the sprouts were torn away from the tubers, certainly once, and in some instances more than once. The same thing occurred when large quantities of potatoes were stored in heaps under cover; this sweating and premature formation of sprouts, and their destruction, tending to weaken the constitution of the tuber, and causing the "blindness" which we often meet with in fields and gardens. I know of instances when sound potatoes encountered this treatment, and where some of those, sold for seed to amateurs, resulting in from 25 to 40 per cent. of "blindness," that is, failure of the tuber to reproduce itself. I maintain that the storage of our seed potatoes is a question

very of great importance; and, in my opinion, we may trace to the improper storage of seed tubers one of the causes why the disease has made so much headway. This has been going on year after year, and is a mistake.

Growers on an extensive scale may ask—How are we to store seed for a large quantity of ground, if we adopt this plan? I think that difficulty is easily overcome, as several means for effectually storing seed tubers present themselves, such as utilizing spare space in out buildings, or the erection of potato seed sheds, which can be readily done by using fern, heather, sods, or any available materials for the sides, and thatching the roof with straw, reeds, heath, or any waste material, and putting in here and there an old sash for light and ventilation, of course having doors at the ends also for thorough ventilation. One thing is a certainty; it is as much to our interest to look after our potato crops and prevent disease as it is to expensively house our cattle and prevent disease in them; and it behoves us to be up and doing, and to set our brains to work on what is best to be done.

Another primary cause of failure is to be found in the persistency with which, in so many cases, we plant potatoes year after year in the same ground; in other cases, with only a short interval between the crops of this tuber. We go on year after year manuring for the same purpose, but never supplying the best of all the manures nature has given us—*a change of good fresh unused soil.* Farmers have it in their power to do this, and probably do change their potato land frequently. There can be no question about the advisability of *deep digging* or *deep ploughing* for this crop, in dry situations as well as wet, but especially in the latter. It is most desirable that the potato should be relieved from a superabundance of moisture; hence the necessity for providing every available means of relieving the ground as speedily as possible from an excess of moisture. I have a strong conviction that unless this is done, the potato, when just about arriving at maturity, is unable to take up such a great amount of moisture at the root, and that rapid root decay sets in. Does this root decay pass to the tuber, and through the cellular tissues of the haulm to the foliage, where it manifests itself in the spot so familiar to us? I venture to think so, and that disease springs first from a disorganization of the roots, arising from too much moisture there at the period I speak of. I have founded this impression on observing for years past that the disease does not make headway, only after much wet, followed by close moist weather. I therefore regard drainage as imperative; and the drier the surface can be kept, and the more air and light that can be admitted, so much the better.—*William Dean*

The prolific hop crop this year has enabled the hop-pickers to earn unusually high wages, and in consequence they have been holding high carnival.

British Traffic in Agricultural Commodities.

From the London C. G. Magazine

The Trade and Navigation Accounts for the month and eight months ended August, show a considerable falling off in the imports of live stock in both periods, but more conspicuously so in the extended term. Taking oxen, bulls and cows together, we find that in the first two-thirds of this year, we received only 91,549 as against 127,935 in the corresponding term of last. For this year's imports, so far, we have disbursed £1,653,585, which is at the rate of £18 1s. per head; last year in the like period we expended £2,087,465, or about £16 0s. per head, so that the value of every beast has been enhanced £1 15s. in the course of the year. No doubt the superior quality of the beasts, particularly in the case of those coming from Oporto, has a good deal to do with the rise, but still prices have risen *per se* very considerably. In the course of the eight months the receipts of calves diminished from 29,874 to 27,129, and the money we paid for them this year was £91,454 as against £103,779 in the corresponding period of last. The decrease in sheep amounts to upwards of 23,000 head, the figures for 1871 being 595,867, and up to the end of last August 572,482. But the decrease in numbers brought enhanced prices, as we actually paid more this year than last, viz., £1,142,222 as against £1,117,361, a difference of about 2s. 6d. per head. We paid last year only £1 17s. 4d., while this year on the average each foreign sheep cost us £1 19s. 10d. There was a tremendous falling off in swine in the course of the eight months, the numbers received being only 10,388 to compare with 61,590, and the sum we paid only £33,965 as against £211,352. The total amount we paid for live stock up to the end of August this year was £2,921,116; last year in the same period we expended £3,519,920.

We have imported no less than 97,200 cwts. of bacon during the month, which amount, to compare with the corresponding period of 1871 and the preceding year, shows a steady increase. During the eight months of the year which have passed, our consignments of this article from abroad cost us £2,946,132, as against £1,702,786, which we paid in the like term of 1871. For beef, salted or fresh, or slightly salted, we are debited with £12,220 during August, which set against the same month of last year, exhibits an increase of over £2,000. On the longer period of the present year, however, there is a marked falling off in the amount paid in comparison with that disbursed in 1871, the figures being £293,927 and £464,803. Of meat unenumerated in either of the headings mentioned, our supplies have been considerably augmented during the month, while in the eight months we paid £639,841, as against £405,637 in the longer period of last year. It is pleasing to remark that this increased supply is chiefly made up by the excellent preserved meat which we receive from our Australian colonies. The total amount we have expended during the past eight months for pork, salted or fresh beef, and preserved or salted beef and mutton, was £3,879,960, while in the same eight months of 1871 the disbursement was £2,573,226.

Our receipts of pork during the past month amounted to 6,241 cwt., a somewhat lighter supply than that of August, 1871. It would appear that we are becoming less dependent upon the foreigner for our pork, inasmuch as the sum we have paid out since the opening of the year - £361,706—is less by £211,742 than the expenditure under this head in the corresponding period of last year.

The amounts set against poultry and game as received from abroad still continue much higher than could be wished for. In August we paid £6 62, an increase of £1,423 on the sum we were debited with in the same month of last year. Under this head we have paid £88,567 in the longer term, while in the first eight months of 1871 £70,908 is the recorded amount.

Our supply of foreign eggs seems to become larger and larger every month. Last month we imparted 341,451, "great hundreds," which is a perceptible increase on the number in the same month of last year. Since the opening of the present year we have been in receipt of 3,540,800 "great hundreds," costing us £1,377,953. The sum paid last year in the like period was only £897,887. Butter has fallen off slightly in the month, while on the other hand cheese has increased in bulk in about the same ratio. In the eight months, putting both commodities together, we have paid £5,748,598, while in the same period of 1871 the total reached £6,556,944. Altogether, for dairy produce we have disbursed £7,126,551 to foreign farmers for the last eight months, the sum up to the end of August last year amounting to £7,344,831.

Both in the month and longer term our receipts of corn from abroad have been shorter as compared with either period last year. Barley, during August, came to hand in lesser quantities, but the figures set against the eight months of this year are nearly double those recorded up to the end of August 1871. Oats, likewise, have fallen off in the month, but in the long period there is more than a million cwt. this year in excess of last year's supply. Peas have appreciably increased both in the month and eight months, while beans are shorter in August, but show an augmentation since January. Indian corn or maize has been much heavier in bulk in both periods, but the importations of wheat, meal, and flour have declined both in the month and eight months. Since the opening of the present year our importations of grain have amounted to a money value of £28,575,103, while from January to the end of August in 1871 the total was £25,407,760.

The following tables give the quantities of

the several kinds of cereals, &c., the names of the countries from which they were imported, and the values for the past eight months as compared with the corresponding period of last year :—

QUANTITIES.

Wheat.	Eight Months ended August 31, 1871 Cwt.	Eight Months ended August 31, 1872. Cwt.
Russia	9,668,527	11,468,760
Denmark	51,013	128,932
Germany	1,072,929	2,272,093
France	74 00[illegible]	333,123
Austrian Territories	227,701	41,962
Turkey, Wallachia, and Moldavia	1,198,091	661,264
Egypt	257,186	1,582 352
United States	[illegible]	4,67[illegible],105
Chili	291 901	1 003 454
British North America	1,010,511	456,019
Other Countries	488,326	843,178
Total	23,191,897	23,160,211

VALUE.

Russia	£5,748,476	£6,073,088
Denmark	22 [illegible]	84,949
Germany	1,290 404	1,512,169
France	37,787	107,653
Austrian Territories	146,435	25,074
Turkey, Wallachia, and Moldavia	620,858	353 676
Egypt	137,385	786,341
United States	4,985,640	2,816,575
Chili	180 110	849,131
British North America	926,215	195,214
Other Countries	284,570	557,903
Total	£13,744,940	£13,951,603

QUANTITIES.

	Eight Months ended August 31, 1871. Cwt.	Eight Months ended August 31, 1872. Cwt.
Barley	4,880,162	8 347,612
Oats	6,837,534	7,920,861
Peas	688,403	702,818
Beans	1,678,129	2,012 289
Indian Corn or Maize	9,616,218	15,490,884

VALUE.

Barley	£1,884,269	£3 205 631
Oats	2,642,560	2,867,600
Peas	250 224	298 492
Beans	787,079	801,211
Indian Corn or Maize	3,702,884	5,530,183

QUANTITIES.

Wheat Meal, and Flour	Eight Months ended August 31, 1871. Cwt.	Eight Months ended August 31, 1872. Cwt.
Germany	601,008	619,816
France	12,050	369,082
United States	1,422 068	301,240
British North America	190 965	104,491
Other Countries	559,790	666,729
Total	2,784,276	2,061,957

VALUE.

Germany	£663 374	£560,923
France	10,964	343,024
United States	1,153,877	259,487
British North America	146,080	143,075
Other Countries	541,900	615 574
Total	£2,415,195	£1 910,886

As regards manurial substances, we notice an augmented importation of guano last month in comparison with the corresponding period of last year, the respective amounts being 10.360 and 6225 tons. During the eight months, however, we have received only about half the supply we did last year; and the cost of this year's receipts came to £737,455, while those of the preceding year were valued at £1,691,654. As a fertilizer bones seem to be gaining favour among farmers, the importations from abroad, both during the long and short period of this year, being in excess of that of last. We have disbursed £471,634 under this head during the past eight months, which is an increase of £82 991 on the amount expended in the corresponding period of 1871. Nitrate of soda has been imported in larger quantities, both in the month and eight months. We have paid £860,223 this year for that fertilizer, while last year the total sum spent was £755,722.

During the month our importations of potatoes have been greater than in August last year, and on the longer period the same fact is observable. Since January our foreign supplies of this root have taken £364 470 out of our pockets, while last year in the same period we only spent £425 521 under this head.

Oil-seed cake seems to be falling off, as in both periods our receipts have been shorter this year than last. Cotton-seed, on the other hand, has increased both in the month and eight months, the price paid for this commodity during the latter term being £1 232 948, as compared with £1,195,770 in 1871. Rape-seed has decreased considerably, both on the month and eight months.

Coming to wool, we note an appreciable falling off in our importations during the month, principally in our European supply. On the eight months there have been lighter arrivals also, as will be seen from the following tables, which shew the countries from whence they come and the quantities and values since January last :—

QUANTITIES.

Wool, Sheep and Lambs	Eight Months ended August 31, 1871. lb	Eight Months ended August 31, 1872. lb
From Countries in Europe	25,209,970	25,923,761
" British Possessions in South Africa	22 882 608	21 657 149
" British India	15,152,8[illegible]7	15,295,177
" Australia	165,428,955	161,641,463
" Other Countries	22,199,177	26,732,470
Total	256,773,587	250,850,013

VALUE.

From Countries in Europe	£1,520,983	£1,451,578
" British Possessions in South Africa	1,158,719	1 395,211
" British India	531,859	677,068
" Australia	9,847,941	10,067,018
" Other Countries	814,143	£1,274,933
Total	£13,876,645	£14,865,803

Our exports of agricultural commodities during the month have been of an extremely meagre character. Butter and cheese each shew a falling off both in the short and long periods, our money receipts for both, since the beginning of the year, being £243,282, to compare with £273,014 in the corresponding period of 1871.

During August we only exported 322 horses, of which number 207 went to France. In the same month last year, 776 left England. Since January we have exported 2,210 of these animals, for which we received £121,487, or about an average of £54 per horse. Last year, up to the 31st of August, we exported 5764 specimens of the equine breed, for which were paid £212,102, or an average price of about £36 per head.

The estate of New Belses and Rawflat has been sold for £34,200, to the Marquis of Lothian.

British Food Supplies.

From the London Country Gentleman's Magazine

Deep cultivation by steam, hedge-rows, fostering rabbits and destructive birds, uprooted, and table-cloth plots of ground transformed into 40-acre fields, would, according to Lord Dunmore, assure an addition of from £28,000,000 to £37,000,000 per annum of food to the community. These operations, carefully preformed, would enable us to live much more independent of corn and stock from abroad than we can at present. We are indebted to the foreigner for these commodities to the extent of £44,714,000 a-year, and under the conditions set forth by Lord Dunmore, he calculates that we should only have to pay from about a third to a sixth of that sum.

Lord Dunmore has gone very minutely into his calculations, and the probabilities, in absence of actual test, are in favour of their accuracy. The advantages of steam-ploughing his Lordship does certainly not overrate. A six-furrow plough can turn over about as much in a day as two dozen horses and at two-thirds of the cost. Then the shares can be made to penetrate the ground to a much greater depth than ploughing can be accomplished by horses. Then, again, steam being so much speedier than horses, can be taken advantage of over a greater breadth of land in the autumn than horses can be. It does its work at the proper time in September, when the land is dry and the sun hot enough to kill the weeds which have been uprooted by the cultivator. The steam plough makes level the surface of the land. Ridges and furrows disappear before its operation, and so the path is made straight and easy for the reaping machine, thus effecting a great saving in the cutting of crops. Another matter of importance in connection with the application of steam to the cultivation of the soil, which Lord Dunmore appears to have overlooked, is the fact that the treading of the horses' feet is done away with. No sodden hoof-prints are left upon the ground to the detriment of the seeds therein deposited. In fact, in every particular, steam surpasses horse-power in the way of culture, and the cost of the better work it does is much smaller.

Lord Dunmore estimates that by the grubbing out of hedge-rows the amount of land reclaimed, as it were, would be about an acre in every forty, which, say on a 200-acre farm, would be 5 acres. Supposing this land to yield 4 qrs. of corn per acre at £2 per qr., we should have an increase of £40 per annum, or, in the case of a 21 years' lease, a gain of £840.

To prove that by the use of steam instead of horses in agriculture we should effect an immense amount of saving, Lord Dunmore adduces an elaborate array of figures regarding our home-grown produce, dividing this into two heads, "breadstuffs" and "live

stock." His lordship takes the year 1871 for his basis. He says (we take a summary of his figures from the *Times*)—"Wheat at "3 quarters per acre, and deducting seed, "yielded 10,903,162 quarters, worth, at 47s., "£24,658,430; barley, at 4 quarters per "acre, and deducting seed, yielded 9,467,860 "quarters, worth, at 34s. 6d., £16,232,058; "oats, at 4 quarters per acre, and deducting "seed, yielded 15,448,656 quarters, which, "at 23s., were worth £17,765,839. But "taking three-fourths as consumed by "horses, there was left £4,441,462-worth as "food for the people. Rye, at 4 quarters per "acre, and deducting seed, yielded 306,888 "quarters, worth, at 35s., £537,054; so that "the total value of the home-grown cereals "directly furnishing human food (bread, "beer, &c.) was, according to this estimate, "£45,909,504. From this sum must be "deducted the exports—namely, £1,878,452-"worth of barley as malt or beer, £543,597 "worth of wheat, £163,197-worth of flour, "and £429,272-worth of other corn. Potatoes, reckoned at 6 tons per acre, and £4 "per ton, gave a value of £40,651,800. Green "crops, as mangolds, turnips, &c., at 10 tons "per acre, and £1 per ton, were worth "£35,000,000; and taking half these crops "as furnishing food to the people indirectly, "as milk, butter, cheese, and meat (the other "half going to maintain the breeding stock "of the country), the value of food from root "crops is set down at £17,500,000. Adding "£5 000,000 for peas and beans, Lord Dun-"more considers that the total value of our "cereal and green crops available for con-"sumption by the population of the United "Kingdom, is £106,106,786."

With regard to live-stock, Lord Dunmore reckons that one-third of the total number of cattle is annually slaughtered, the value per head being £20. This gives a consumption of beef equal to £62 306,100. Of the whole stock of sheep, one-half are yearly made into meat, worth, at £2 per head, £31,403,500. Of pigs, two-thirds are slaughtered, worth, at £2 per head, £5,515,488. From the total of £99,227,088 must be deducted £888,143-worth of exports, leaving the value of the live stock annually butchered, £98,338,945. Thus, the value of our available home-grown food, "breadstuffs," and "live-stock" together, was in 1871 £204,445,731; and, reckoning the value of the imports in the year at £44, 714,289, and the requirements of the nation amounted to a value of £249,160,020. The writer says:—

"The home supply, therefore, falls short "of the requirements by £44,714,289; or, in "plain language, we grow at home enough "for 22,000,000 people only, and yet we have "31,000,000 to supply. Can we find a remedy "for this deficit, and thus render ourselves "independent of these foreign importations? "We might surely find a partial remedy, at "any rate, if not an entire one; and it is "to deep cultivation by steam and the util-"ization of sewage, that we must look as our "two most important auxiliaries. The gen-"eral introduction of steam cultivation "would make a very material increase in our "home products, as we know by practical "experience that steam culture increases the "produce of the land to the extent of one "fourth, some people say to one-third. "But, allowing only for the partial introduc-"tion of steam, and allowing that half the "arable land in Great Britain which is now "worked by animal power were cultivated "by steam, it would give an annual increase "of £7,000,000 of home grown food in "cereals alone; and as deep cultivation by "steam has a more powerful influence in in-"creasing the root than the cereal crop, we "may estimate that if half the land under "green crop were worked by steam, it would "give us an increase of £12,000,000 worth of "food, which would come indirectly to the "people through cattle, as meat, butter, &c."

Lord Dunmore sets down the amount of produce consumed by each person to be £8 per annum. If, therefore, the home produce was augmented to the extent of £19,000,000, it would be equivalent to the support of 2,375,000 more people. Then there is the saving to be effected by the food of horses, which steam would enable farmers to dispense with. His lordship calculates that 1,300,000 horses are engaged solely in agricultural labour, and these on the average cost £35 each annually. "There are 329,-950 farms in Great Britain. If steam cultivation became the rule, instead of the exception, there is no doubt that there would be made a reduction on an average of at least one horse per farm, which would save £18,548,250-worth of food. But even supposing that the average reduction was one horse to every two farms, there would be a saving of £9,009,000. The result would be that in augmentation of produce and saving of horse keep, we should increase our available home supply of human food by a value of £28,000,000 or perhaps £37,000,000, and thus dispense with a large portion of the £44,714,000-worth of imports which we now depend on.

Imported Horse.

Mr. George Cockburn, Baltimore, has just returned from a visit to Scotland, bringing with him the Stallion "Young Conqueror," who took the first prize in his class (two-year olds) at the late Highland Agricultural Society's show, at Kelso. Young Conqueror is a fine large bay horse with one white hind foot, and a small white stripe on his face; he is of the famed Clydesdale breed, and was bred by Mr. Smith, of Huntley, Scotland. This horse is, we believe, entered for the Provincial Exhibition, at Hamilton, so that admirers of this breed of horses will have an opportunity of seeing him there. We wish the enterprising owner every success with his purchase, and trust that he will yet be amply remunerated for his large outlay and great risk.

Notes from the South of Ireland.

The year will undoubtedly be set down [illegible] badly had one by farmers. In fact, [illegible] may be set down at the head of [illegible] Black List.' Those trustworthy [illegible] "the oldest inhabitants," declare they never saw the like. We had a wet spring, a wetter summer, and the wettest autumn on record. The hay, a small quantity of which still remains uncut, has been damaged a great deal. The potato crop has gone altogether, or nearly so. It had a very fine appearance until the 25th ult., when we experienced a furious thunderstorm, which was followed by a week's incessant rain. This, besides laying cornfields wholesale and damaging hay in an awful manner, finished the potato crop.

You could not now "for love or money" get a single green stalk. They are all withered or burned up, and the potatoes are entirely unfit for human food.

The wheat is a good crop, and as a large breadth was grown, the loss of the potato will not be so much felt as it would have been otherwise. Oats are a middling crop, and turnips and mangolds are doing exceedingly well. Only a small quantity of flax was sown.

This has also been a bad year for butter, it scarcely running to 112s. per cwt. in the Cork market. In fact, unless for dry stock alone, it is an unprecedentedly bad year for farmers.

Foot and mouth disease has broken out in a few isolated instances throughout the country. I have heard of one or two cases near Waterford, one case near Killarney, and one case near Dromcolloher, County Limerick. You will see from this it is only a trifle, scarcely worth noting,

A fuel famine is also imminent. Coal, which in other years was bought at 16s., is now 33s. per ton; and, in consequence of the extreme wet, it was impossible to get enough of turf dry. "Necessity is the mother of invention," we are told, and I suppose this is true, for the dearth of peat is now the principal topic in all our newspapers. Alderman Edward Purdon has offered the splendid prize of £100, open to all comers, to the inventor of "the best method of utilising our peat resources."

The Harvest in Scotland.

According to the *Scotsman*, the harvest in Scotland is the wettest and most disastrous that has been known since the year 1816, when what were known as the Meal Riots took place. The heavy and continued fall of rain during the second week of September drenched the sheaves, and wet the grain throughout which is, in many cases, an irreparable mischief. A good many samples of oats and wheat, as well as of barley, have been shown in Edinburgh Corn Exchange

during the first three weeks; but, when compared with grain of the 1871 crop, they exhibit an astonishing and deplorable deterioration, but even that does not show the full damage done to the crop, because all the grains that had seriously sprouted had been taken out of the samples by means of screens and riddles. The worst fears regarding the potato crop have been realized. As an illustration of the extent of the failure of the crop, it is stated that in ordinary years a stout man, with three assistants (two women and a boy), could easily raise and weigh ready for market eight bolls, or thirty-two cwt. potatoes every day. For the last fort night it has taken a very active man and three assistants to one and a half bolls, or six cwt., of sound, and three bolls, or twelve cwt., of diseased potatoes per day. It is bad news for the winter.

Prices of Cart-Horses in England.

Perhaps many of your readers would like to hear of the prices working cart-horses sell for in England. I yesterday attended, in Liverpool, the sale of forty-nine such horses. They were the property of the late Mr. Tipping, an extensive "cartowner," who did an extensive business as such on the Liverpool docks. The stock consisted, with one exception, of geldings and mares, and were bought for workers. Mr. Tipping died a few weeks since, and the sale was entirely without reserve by order of the administrators of his estate. The average price of the forty-nine horses sold was $335 per head.

The whole lot were in fine order, and of great size. They would average seventeen hands in height, and probably 2,000 pounds each in weight; and a finer collection of sound, great, muscular horses, just from hard work, have probably never been collected at one sale. Almost every one of them showed fine style and action.

It is especially worthy of notice that the above were not fancy prices for breeding animals (nearly all of them were geldings), but every horse was purchased for work. Another item should also be noted. With horses at such prices, drayage is done in Liverpool for one-third the price that it is in New York, and is at that a very good business. Any two of the above horses could draw ten or twelve tons along the streets of Liverpool with ease.—*Jno. W. Cryer, in Turf.*

Every few days there is some new evidence that nearly every useful product can be found or can be raised within the boundaries of the United States. The mesquite gum of western Texas is almost identical with gum Arabic, and during the past year has become an article of export, some 12,000 pounds having been gathered in Bexar county, and as much more between that and the coast. This gum exudes from the stem and branches of a mimosa, several species of which grows in Texas, New-Mexico and Arizona.

Useful Memoranda for Farmers.

The following memoranda farmers will thank us for recalling to their recollection at the present time when the contents of the dung-heap and the liquid manure tanks are matters of essential interest. Such tables obviate the necessity of guessing and the trouble of actual weighing and measuring.

To estimate the contents of dung-heaps. Multiply the mean area by the mean depth, the quotient will be solid contents in cubic yards.

Note.—The mean area of a heap is found by adding to the area of the base half the area of the top. The mean depth is the average of various depths; this being found by dividing the sum of the several depths by the number.

To find the contents of various forms of dung-heaps.—Where the form is that as shewn in the diagram—fig 1 being the end and fig. 2 the side view—measure the height

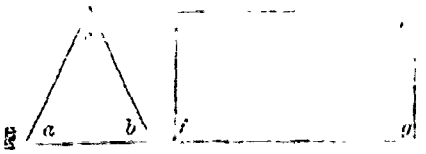

Fig. 1. Fig. 2.

from *e* to *f*, and half of the base *a b*, which multiply by *e f* and the quotient by the length *f g*.

Where the form is that shewn in the diagram, of which fig. 3 is the side and fig. 4

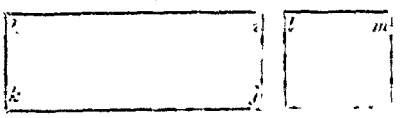

Fig. 3. Fig. 4

the end view, multiply the length *i k* by the height *i k* and the breadth *l m*, the result will be the number of cubic yards in the heap.

Note.—A cubic yard weighs from 15 to 20 cwt. Fifteen to twenty tons may be lifted by a labourer into a cart per day.

Quantity of Liquid Manure contained in Tanks 10 feet deep in different diameters.

Dia of Tank Ft.	In.	Quantity in Gals.	Total Cost.	
6	10	2.269	£8	6 2
9	8	4.538	12	4 0
11	10	6.807	15	17 4
13	8	9.076	19	7 0
15	3	11.345	22	5 4
16	8	13.614	25	3 6
18	0	15.883	27	17 0
19	4	18.152	30	16 3
20	5	20.421	33	15 0
21	7	22.690	36	3 0

To Calculate the Contents of Cisterns.—A simple rule to determine the contents of a cistern, circular in form, and of equal size top and bottom, is the following:—Find the depth and diameter, and multiply the square by the decimal .0034, which will find the quantity in gallons for one inch in depth. Multiply this by the depth, and divide by 31½, and the result will be the number of barrels the cistern will hold. For each foot in depth the number of barrels answering to the different diameters are—

For 5 feet diameter	-	4.66	barrels.
" 6 " "	-	6.71	"
" 7 " "	-	9.13	"
" 8 " "	-	11.93	"
" 9 " "	-	15.10	"
" 10 " "	-	18.65	"

By the rule above given the contents of barnyard cisterns and manure tanks may be easily calculated for any size whatever.

Determining the Size of Cisterns for Rain Water.—The size of cisterns should vary according to their intended use. If they are to furnish a daily supply of water, they need not be so large as for keeping supplies for summer only. The average depth of rain which falls in this latitude, although varying considerably with season and locality, rarely exceeds 7 inches for two months. The size of the cistern, therefore, we daily use need never exceed that of a body of water on the whole roof of the building 7 inches deep. To ascertain the amount of this, multiply the length by the breadth of the building, reduce this to inches, and divide the product by 231, and the quotient will be gallons for each inch of depth. Multiplying by 7 will give the full amount for two months' rain falling upon the roof; divide by 31½, the quotient will be barrels. This will be about fourteen barrels for every surface of roof 10 feet square, when measured horizontally; therefore, a cistern for a barn 30 by 40 feet should hold 168 barrels—that is, as large as one 10 feet in diameter and 9 feet deep. Such a cistern would supply, with only 30 inches of rain yearly, no less than 630 barrels, or nearly two a day. Cisterns intended only for drawing from in times of drought, to hold all the water that may fall, should be about three times the preceding capacity.

Scottish and English Rural Affairs.

The weather still continues very changeable. For several days frost has prevailed more or less. Less rain, however, has fallen than during the preceding week. Yesterday afternoon the frost gave way, and late in the evening rain commenced to fall, which continued up till eight o'clock this morning. To-day the sky is obscured, and there are other indications of more rain. Heavy floods were experienced at the close of last week in the north of Scotland, and heavy floods occurred on Sunday in Yorkshire, owing to the melting of the snow in the high-lying districts of that extensive county. The changeable weather has retarded the ingathering of the corn crops, and harvest is not yet completed in the upland districts. The lifting and storing of potatoes, where undertaken, is proceeding slowly, owing in some measure to the saturated state of the ground, and in many districts owing to the scarcity of field workers. The price of potatoes is falling owing to the arrival of potatoes from the Continent both in England and Scotland. Where threshing has been attempted, the general inferiority of the corn crops has become every day more apparent, both as regards the acreable yield and the quality of the grain. Turnips are not improving, and as regards Scotland, not more than half an average crop is calculated upon, alike in Aberdeenshire and the south-eastern counties. The price of store stock is still falling, sheep being more difficult of sale than cattle. This is partly attributable to the general prevalence of foot-and-mouth disease. In England the fall of store stock is not so marked as in Scotland, there being a much better prospect of a turnip crop in the midland and south-east counties. Both fat cattle and sheep are very scarce, and high prices still rule for the best qualities.—*N. B. Agriculturist 16th Oct.*

An Iowa Agricultural college library, at Ames, numbers 2,400 volumes, the collection of which began in 1870.

A set of paper car wheels on one of the Pulman cars running to Jersey City have run over 160,000 miles of track, and worn out entirely one set of steel tires, which have been replaced. The ordinary wheels, it is said, will only run 60,000 miles.

CATTLE DISEASE IN ENGLAND.—In one single county in England, that of Norfolk, there were in August last at one time, according to a statement in the *Farmer's Chronicle*, ten thousand cases of disease in cattle and fifty thousand cases of similar disease in sheep, and the sheep are found to be equally subject to this complaint (*epizootic aphtha*) as horned stock.

An agricultural writer says: "Ammonia once absorbed by straw or earth, will never escape the stable, unless fermentation takes place. The smoke of the horse-stable is the smoke of your burning fortune, though you whistle over it." This may be true, literally, except as to the last phrase—there is not one farmer in a score who "whistles."

ARMY WORM.—The Yoto, California, Mail, says:—"We understand that the army worms have made their appearance in full force in several of the vineyards in this vicinity, and in one instance, have destroyed six acres of bearing vines. The proprietors of the vineyards attacked have succeeded, however, in heading off these destructive creatures by the application of running water through the vineyards. These worms have also made sad havoc with some of the alfalfa lots near town."

GUANO DEPOSIT OF PERU.—Harry Meiggs the great railroad operator of South America, has discovered, on the main-land of the west coast of Peru, the most immense deposit of guano ever seen anywhere. This deposit is said to extend for many miles along the coast and reach far inland. The Chincha Islands have heretofore been considered the richest in guano production but this last discovery shows conclusively that this is of much better quality and much easier to handle than the former. Millions upon millions of tons can be dug cheaply and transported to all parts of the world at a much lower figure than heretofore. This valuable fertilizer will no doubt be used much more exclusively in this country, as well as Europe, as the price at which it can be furnished will place it within the reach of all.

The great prostration of horseflesh in New York, and the pressing necessity for transportation, have brought oxen to the front. It is not usual that we see yoked cattle in the streets of the metropolis; but this is an extraordinary occasion, and so the sight has now become common. The patient ox trudges up Broadway with the same equanimity of temper that he picks his way through country lanes. We are duly thankful to the ox for service in the time of need, still the fact is clearer than ever that he is a little too slow for the bustling city.—*New York Turf.*

Poetry.

LIVING ON A FARM.

By R PATERSON

How brightly through the mist of years,
My quiet country home appears'
My father, busy all the day
In ploughing corn, or raking hay;
My mother, moving with delight
Among her milk-pans, silver bright;
We children, just from school set free,
Filling the garden with our glee;
The blood of life was flowing warm
When I was living on a farm.

I hear the sweet church-going bell
As o'er the fields its music fell.
I see the country neighbours round
Gathering 'neath the pleasant sound,
They stop awhile beside the door,
To talk the homely matters o'er-
The springing corn, the ripening grain
And "how we need a little rain"
"A little sun would do no harm,
We want good weather for the farm."

When autumn came, what joy to see
The gathering of the [illegible]
To hear the voices, keeping [illegible]
Of girls and boys beneath [illegible] moon,
To mark the golden corn-ears bright
More golden in the yellow light!
Since I have learned the ways of men,
I often turn to these again,
And feel life wore its highest charm,
When I was living on a farm.

The Views of Mr. Punch on The Great Meat Question in England.

THE [illegible]

Once mighty roast beef was the Englishman's food,
It has now grown so dear that it's nearly tabooed
But Australian beef, potted, [illegible] and is good
O, the [illegible] of Australia!
And O the A[illegible]n boiled bee[f]

It is capital cold; it is ex[illegible]
And if a large number of [illegible]
'Twill greatly assist you [illegible]
O, the b[illegible]

First rate is Australian mutt[on] [illegible]
For curries, and rissoles, and pudding [illegible]
The thrifty good housewife no butcher's meat buys.
O, the boiled beef, &c.

It will make you a hash that is fit for a king,
And the young ones all like it and that's a great thing,
So Paterfamilias it causes to sing
O, the boiled beef, &c.

For the small boys and girls eat the fat with the lean,
Don't leave underdone, but their plates nicely clean—
Where pigs are not kept which helps make all serene.
O, the the boiled beef, &c.

Australian meat from the bone being free,
The more economical needs must it be.
As there are no joints there's no carving, you see.
O, the boiled beef, &c.

The flesh pots of Egypt were once in high fame;
Australian flesh pots have more than the same.
Old England's roast beef is now rivalled in name.
O, the boiled beef, &c.

The privileged victims, who income tax pay,
Whose earnings precarious are taken away,
While ceasing to deal with a Butcher can say
O, the boiled beef, &c.

'Tis true that your servants, fastidious and fine,
Australian meat in their folly decline.
O skilligolee they hereafter may dine
O, the boiled beef, &c.

Now pour out the wine which we could not afford
Except for Antipodes' meat on the board.
Its inventor's good [illegible] whilst my helping's encored
O, the boiled beef, &c.

Miscellaneous.

The History of Tiptree Hall.

In order to remove agitation, excitement, and divergence of opinion as regards the history of this farm, I will simply state the facts, and leave readers to draw their own conclusions. The farm, when I bought it, was known as Sadler's Farm, because a very worthy farmer of that name had occupied it originally for many years. Its name in the deeds was Bigmore's Farm. It was never called a Hall until I so named it, after rebuilding the whole of the premises on a new site. My original purchase was 128 acres and some poles, for £3,150, or a fraction under £24 per acre. I bought it in 1841, of a respectable land agent, who once farmed it himself, and it was considered a reasonable price. The tenant then in possession paid £150 per annum rent for it. The great and small tithes were commuted (fortunately, just before I made my improvments) at 5s. per acre. The farmhouse was an ancient whitewashed lath-and-plaster building; the bed-rooms were in the roof, lofty in the centre, and coming down at the eaves to about 18 inches, as near as I can remember. The old thatched farm-buildings were detached from each other, and the north east or any other wind had free passage between them. In fact, it was just such a piece of antiquity as one too frequently sees in this and other counties. The land was undrained, the fields and open ditches numerous, and of various and irregular shapes, as are at this moment most of the fields in Essex. There was a bog (unsafe for man or beast) called the Wabbings, and a winding road down from Potter Row Lane to the premises having a great hedge and ditch on each side with trees. By-the-bye, I paid £100 for the timber on the farm. There were sundry odd pieces of waste, which I enclosed. I removed altogether about 3½ miles of fences, and filled in ditches, and have now 60 acres in one enclosure, and 42 in another, without a tree but I have a shrubbery of some two acres for the birds to breed in. I have no doubt that in favourable seasons respectable crops were grown on the limited area available for cereals, but a wet season must have been disastrous, for when I first visited the farm, in September, 1842, on a wet day, with my old friend Dean (now hearty at 87), the light land was swampy, and the heavy as loving as birdlime, but as slippery as butter. The men assured me that some of the wheat crops that year yielded only about 1½ to 2 quarters per acre; and, judging by the weak stubble and paucity of stacks, I can easily believe it. Now, owing to my deep drainage, the light land is always dry and workable, and the bog especially so; and I send down to my neighbours for many miles about 40 to 45 gallons of pure water each minute—summer and winter—more in

the latter. The late medical man of the district used, jocularly, to say that I had spoiled all his best cases of fever down that line of brook. Any one who will take the trouble to inquire of some of the old men on our heath about the comparative condition and yield of this farm now and formerly will soon arrive at a satisfactory conclusion. Finding the old buildings too tender for substantial repair, and otherwise unsuitable, I cleared the lot away—a very easy task—and erected a new house and homestead on higher ground, for when I first visited the farm I noticed a heap of peas growing from damp in what had been the bedroom. In fact the bailiff there lost his wife and several children from fever in a short space of time. In our new buildings health for man and beast for thirty years has been the order of the day. Some land adjoining, which I subsequently purchased, was enclosed from the heath about 90 years ago. Now comes the great fox question. Foxes often come into this neighbourhood, and one Saturday afternoon some years ago a brace of them killed 17 turkeys on an adjoining farm while the farmer was at market, and buried many of them in the dung-heaps, which were then spread on the fields. A few years ago a hard run vixen fox ran into a drain near my gate. It was a very cold day (Tiptree nipper), so I invited the hunters (about 30) to refresh themselves, and they speedily cleared out all mine and my bailiff's bread and cheese, but the sherry held out. This led to my fixing a day for a general meet here and a champagne breakfast, when 150 red coats made their appearance on a bright day, and had good sport. A pretty sight it was, and I hope the manly sport of fox hunting will never leave us. When the said thirty drank my health and gave the view halloo! the hounds, finding the hall door ajar, rushed into the drawing room, to the dismay of the hunters, who feared their dashing through the plate glass windows, but I tranquillised them by my knowledge and assurance that plate-glass, if stout, is dog-proof. I can readily believe that Mr. Smythies' father (who by-the-bye was one of the best judges of cattle in England) did make the remark, "that Tip-tree Heath was too poor to hold the scent of a fox," for despite all that unfriendly critics may say or desire to the contrary, it has always had a bad name, and is spoken of contemptuously as poor cold Tip-tree Heath, and sometimes "Tip-tree Heath, God help you!" Its natural growth is of furze, broom, and ferns, which come spontaneously where I happen to leave a spot uncultivated, and furze fences thrive luxuriantly. Still there is no doubt that the land, like most other common land, is improvable, as proved by my crops, and only requires drainage, deeper cultivation, and plenty of good manure, made by fattening stock. On one of these fields I grew in 1868, eight quarters of white wheat per acre, and realised from the corn and straw £28 per acre, or £4 more than I paid for the fee-simple; and in 1869 the same field yielded 7½ qrs of Rivett wheat. In 1870, 39 tons of mangel, and in 1871, 5qrs. of red wheat per acre; and it has now a promising growing crop of beans, to be followed by wheat. Other fields have often yielded 7 qrs. of wheat per acre. The moral I draw from my farm operations is that example, good or bad, has after a time, its influence. Thirty years ago I was pronounced to be somebody not very sensible, but now I can compliment many of my neighbours upon having adopted the very plans they once condemned. It is really gratifying and almost surprising to see what a change has come over the scene in this immediate neighbourhood. Huge fences, green lanes, trees, &c., departed; land drained, clean cultivation, roads improved, new cottages and farm buildings. Even Mr. Mechi's 15 feet extravagant 25s. iron sheep-hurdles (in wear 28 years) are now "the order of the day," one firm in Colchester selling 100 weekly. I was the first who introduced hereabout "that 'ere Huano" (guano), as some of the natives called it, and who did not then believe that a mere "pepper'ing" could do the land any good—nothing like "solid muck." Well, it is a pleasant thing, a very pleasant thing, to meet one's neighbours with smiling faces, and a tacit admission that one has done some good; but our labourers, who know what agricultural improvement means, and what it has done for them and their families, express to me, and I know, feel a deep sentiment of gratitude for the change that has taken place in their condition in this neighbourhood within the last 30 years. It is natural that there should be some jealousy and dislike on the part of those who don't believe in modern changes, but cling affectionately to "good old times." They should, however, try to reconcile and adapt themselves to this steam age, for the bubbling kettle has upset and deranged many a comfortable old prejudice or attachment, and made many people angry; but millions have received, and will continue to receive, its comforts and advantages. It is not possible to please everybody, and I never expected to do so. The people of England want more bread meat, and other consumables, and as the land of England is neither half-farmed nor half-capitalled, by landowner or by tenant, there must and will be great changes and improvements. Observation and experience have taught me, especially in this neighbourhood, that the grand remedy for this uncomfortable state of things is frequent change of ownership, by which means new sentiments and new additonal capital flow into agricultural Improvement. Therefore I am decidedly opposed to fixity of tenure by the laws of entail and primogeniture.—J. J. Mechi.

This season has been a very fatal one for fine stock; more valuable stallions and blooded ones have died in the past four months than for some years past.

Wool.

The reports from the eastern wool markets indicate a firmer and better feeling in wool among the dealers. The Boston papers say that stocks of choice wools are very small and light there, and that manufacturers are only coming in and buying what will supply their immediate wants. If this is the state of trade so early in the season, the holders of wool need feel but little alarm in regard to the demand which will be made for their stock during the remainder of the year. There is no pressure of wool on the market; remain firm and quiet till the money stringency is over and business quiets down after the close of navigation. There is much less talk of prices being too high than there has been. Generally prices are stronger; the *Economist* says "domestic fleeces are found to be extremely scarce, or rather not in stock at all, at what may be called late current prices, and indeed there is scarcely any desirable wool obtainable at present in the New York market." This paper says further, "this is a sorry state of things at this season of the year." Well, we think on the contrary that it is just what the wool dealers have worked for all along, and it is just right. The whole cry during the season has been that wool was too high, and held out of reach. Nobody wanted wool, the wool-dealers and the manufacturers turned with scorn from the pretensions of the wool-growers. In the face of a light clip, and with the prices of foreign wools advancing, they insisted on crowding the home-grown wools down to the very lowest range of prices, and hence the wool-growers have kept their fine domestic wools at home. Their clips are in store; if they are wanted the dealers know where to get them, and they can come after them! They are worth to-day 65 cents, and they are not likely to be worth any less between this date and the first of next July. There are only four months of the present wool year expired, and yet there is a cry of scarcity. What will the cry be during the latter part of the next six months?—*Michigan Farmer.*

To Get Rid of Fleas.

Mr. Ely said at a late meeting of the New York Farmers' Club that there are two or three substances that are obnoxious to the flea—he does not like the smell of them, or they remind him of something he does not like to think about—these are carbolic acid and sulpher. If you want a barn thoroughly purged of weevil, or lice, or fleas, the best way is to fumigate it with sulpher. But if you whitewash all around the stables and posts of the yard with a whitewash made by adding carbolic acid to the lime, it will drive most of these pests away. Washing an animal thus infested with carbolic soap-suds will give relief.

Autumn Leaves for Home Adornment

Setting aside their utility, there is much beauty in the dying leaves whose tints rival those of the sunset cloud, and there are few home adornments which can surpass the various devices that dainty fingers can arrange out of the leaves of maples, oaks, sumacs and elms. It is a pleasurable pastime for our children to gather the brightest, fairest leaves which fall in the streets, press them in large books, and, when thoroughly dried, varnish them with map varnish or any white varnish, and twine them in garlands made with coarse, flexible wire, to which the leaves are fastened with strong brown thread or thread copper wire. When finished, they can be wreathed around picture frames, mirrors and window casements. Or the leaves are fastened with mucilage to cardboard, in varied devices of crosses, wreaths or bouquets, and framed in rustic frames made of pine cones, leather work, shell work, &c.; and we have nothing which can lend a brilliancy to the sitting room than these cheap ornaments, gorgeous with the brilliant tints of Dame Nature's pencilling.

Leaves for Barn-yard and Stable.

Forest leaves are excellent to supply the stable-yards, and where straw is scarce also the cow-stables and hog-pens. They can be most conveniently gathered after the first snow, or at least before the winter blasts have scattered them. They then lie compactly, and being moist, can be handled with greater facility. A cart with a few standards stuck in the sides will hold a considerable quantity; and the best thing to gather them or load them with is a wooden hand-rake. A wooden four-tined straw-fork is also very handy when the leaves are moist. Leaves absorb large quantities of liquid manure, and are an excellent fertilizer in the spring. They can be gathered, too, when other labour about the farm is slack.—*Germantown Telegraph.*

Best Time for Painting Houses.

The best time for painting the exterior of buildings is late in autumn or during the winter. Paint then applied will endure twice as long as when applied in early summer or in hot weather. In the former it dries slowly and becomes hard, like a glazed surface not easily affected afterwards by the weather, or worn off by the beating of storms. But in very hot weather the oil in the paint soaks into the wood at once, as into a sponge, leaving the lead nearly dry and nearly ready to crumble off. This last difficulty, however, might in a measure be guarded against, though at an increased expense, by first going over the surface with raw oil. By painting in the cold weather, one annoyance might certainly be escaped, namely, the collection of small flies on the fresh paint.—*The Technologist.*

The Ice-House.

The long continued and intensely hot weather of this year has given many of our readers frequent and feeling admonitions that the comfort and luxury derived from a plentiful supply of ice, are cheap, and almost necessary gratifications. No well appointed farm should be destitute of its ice-house, any more than of its horse-barn, or wood-house. No elaborate and costly building is needed for this use; no large expense need be incurred in making the enclosure, or filling it with ice. On a pinch the farmer can do all the work himself, and need only buy the lumber, nails, and a few hinges. At any rate, without writing further of the matter of cost, it is safe to say that any farmer, even if he "owes a good deal," or his "taxes are hard to pay," can compass the cost of an ice-house. He had better sell his best cow than do without ice, for by the aid of the latter the profits of his dairy will be largely increased in hot weather. In the house the uses of ice are so various, that once introduced, it becomes a necessity. Some hints regarding construction, though old, may be of use to those wishing to build. First, good drainage must be secured without giving the air access to the ice through the drain. If the soil is porous, or gravelly, no artificial drainage is required. It is not essential that the ice be stored underground, as it keeps quite as well above the surface. Double walls are not necessary, but in small houses are perhaps safest. The ice should be compactly packed and enclosed with packed sawdust, or tan bark, on all sides, and on the top to the depth of at least twelve inches. The packing is the great preservative of the ice. Ventilation must be given from the top of the ice. With these principles in view it is easy for a novice to build an ice-house. It is well to bear in mind that the larger the body of ice stored the better it will keep; no farm ice-house should be less than twelve feet square on the inside, and eight feet high.

About Rats.

A Gentleman, who has passed many years of his life at St. Helena, told me several stories about rats, so curious that I thought them worthy of record. He said at one time the common brown rat was extremely common all over the island, in fact, a perfect pest; and to avoid its attacks his father had constructed a large store, rat proof: namely, a rat once in could not get out again. A number, however came in with produce and goods from the ships, and bred there. Around this store were Venetian blinds to the windows, and one day one of his men, when it was raining, watched a rat sitting on the Venetian and putting out his tail to collect on it the drippings of water at the edge; he then withdrew it, and licked it. The servant told his master, who immediately understood that the rats could get no water inside the store and therefore directed that a butter firkin should be cut down to four or five inches, and in the top a large circular wire rat cage trap should be fixed. Several small planks were placed for the rats to get up to the entrance of the cage, which exactly fitted the firkin. No food would have induced to rats to enter the trap, but water did, and many were thus captured. There is one peculiarity with these rats—namely, their very often building or making their nests in the trees. I have, in India, several times found rats nests in trees; but they have always been stolen nests, such as deserted abodes of the squirrel or sparrow; but here my friend who is no naturalist, tells me they construct them principally of fir spines, on the ends of the boughs, some twelve or fifteen feet from the ground, in the common fir trees. The spots selected are just where the overlapping bough nearly meets the lower one. He said that all know the rats' rests, and that he had seen them fired at, when many rats were killed and fell out to the ground. He could tell me no more, and I think that, if original nests, as he held them to be, some grass must be woven in their constructions, as fir spines have but little power of cohesion. The situation of these nests was worthy of notice although there is scarcely a situation where a rat's nest has not been found.—*Science Gossip.*

Shrinkage of Grain.

We find the following in an exchange, but cannot vouch for its correctness. It is a subject worthy the attention of farmers: A series of experiments, instituted to set the average loss in weight by drying, show that corn loses one-fifth, and wheat one-fourteenth by the process. From this the statement is made that farmers will make more by selling unshelled corn in the fall at seventy-five cents than the following summer at one dollar a bushel; and that wheat at $1.33 in December is equal to $1.51 for the same wheat in the June following. The estimate is made on the basis of interest at seven per cent.; and takes no account of loss from the depredations of vermin. These facts are worthy of consideration.

The Velocity of the Electric Wave.

The velocity of the electric waves through the Atlantic cable has been ascertained to be from 7000 to 8000 miles per second. Telegraph poles in the air conduct the electric waves with a velocity more than double the rapidity of the transmission increasing with the height. Wires slightly elevated transmit signals with a velocity of 12,000 miles per second, and those at a considerale height give a velocity of 16,000 to 20,000.

Straw and its Value

At the meeting of farmers in the Elmira Court House during the State Fair, as reported in the *Country Gentleman*, Oct 2nd, Mr. Van Duzer, of Elmira, read a paper on straw and its value, of which the following is a summary:

He did not propose to recommend straw alone as a suitable food for stock, but rather to discuss the relative value of straw and grain together as compared with good hay. We Americans did not need, perhaps, to study such a subject so carefully as European farmers, because, as a rule, we were not driven to practise the same economies; still it was important to understand the bearings these questions had on profits and savings. Cheese is sometimes said to be a luxury here; yet two-thirds of the American product is exported and used as food as a substitute for meats, because, relatively, it is known to be cheaper there, and a closer study of the relative values of different kinds of foods might show us that cheese is cheaper than meat here. With us and in most new countries, grass is the almost exclusive food for stock, but in Europe necessity has compelled the people to use other articles, and their study of the subject has a value which we may wisely discuss.

When hay is very cheap, straw can be saved by careful stacking through a series of years. It is most valuable, of course, when hay is high and grain is cheap, then, by feeding grain, which is richer than hay, with straw, which is poorer, we can supply a food which combines all the requisites to animal heat and growth.

Mr. E. W. Stewart said that as to the utility of cooking straw he had no doubt. Generally, perhaps, it was not too ripe to yield the best results, but cooking in a measure seemed to restore its good qualities, and he considered it, indeed, worth about two-thirds as much as hay. The best results are obtained in connection with the steaming of roots oil-meal or bean, with straw, corn stalks or hay, which makes handsome butter when fed to cows. For store stock, straw is a cheaper food than hay, and a little grain added makes the feed equal to hay. He had experimented very carefully, and was satisfied that ten pounds of straw and two quarts of fine middling, was equal to or rather better than ten pounds of good hay. Oats and barley straw were of about equal value, next wheat, and rye last. Middlings are better than meal for young and store stock—it contains eighteen per cent. of muscle forming matter, meal only ten per cent. One to two pounds a day of oil-meal for young stock, was excellent. Cooked and uncooked straw are very different in value. As to the general value of cooking, it depended on the amount of stock, whether it would pay. He thought it would hardly pay for less than ten cows at least. With a good apparatus the labour and expense in cooking for a large stock is little more than for a small one.

He had found that sixteen pounds of cooked timothy hay produced as good results as twenty-four pounds uncooked, even when both were cut. He also said that in a combination of food, sixteen pounds of oil meal, bran and hay, did as well as twenty-four pounds of the same, uncooked; hence his conclusion that cooking effected a saving of one-third. Second rate fodder—half stalks and half poor hay—he had found to be worth more than the same amount of the best uncooked hay. He had tried this for fifteen years, and was as well satisfied of it as of any fact in agriculture. Utilizing straw in this way would enable the farmers of Western New York to make a large amount of manure; it was a much better mode than to throw straw into the barnyard in the ordinary way. The manure was better, and particularly in the effect on the crop. As to cooking for sheep, although some farmers thought a sheep's grinders equal to a burr millstone, yet he had found that in 50 pounds of timothy fed out in the usual way, 2 pounds were left by actual weight, but in feeding the same amount cooked, only 2 pounds were left, and they were made up mainly of long pieces which had escaped the knives. The time will come, he thought, when large grain farmers will keep stock, and then with a steam engine for stationary work they can accomplish much greater results than now. One man could attend to 100 cattle by the aid of machinery. Farmers had done too much by hand and in a small way. Machinery will now dispose of an immense amount of farm work, and several thousand head of cattle can as easily be kept as small herds in the old way.

As to corn fodder, he said that he regarded it, early cut, less its water, as about as good as hay. Clover is worth more than corn, but clover *and* corn together are worth more than clover alone, and it makes a better balanced food. When farmers learn to soil, they will find that one acre is equal to four pastured—a great consolation in a dry season.

Mr. Lewis inquired the cost of apparatus for 50 or 100 head.

Mr Stewart said he had fed fifty head with a 30 inch cylinder boiler, and it took eight cords of hemlock wood for the winter. An engine with a rotary steam box will cost $600, or the apparatus for 100 head might cost $1 000. But the saving in one winter will pay for this. The larger the boiler the less the comparative cost of fuel fifteen cords for the winter would be sufficient for a $1,000 apparatus. A cylinder boiler would cost about $65, or put up complete, with cocks, etc, and standing thirty pounds pressure, would cost about $100. The steam box should hold about two and one half bushels for each head, but if larger, there would be no loss of, for cooking as often. The rotary steam box was greatly preferable. A box holding the steam perfectly would be best of all. Food would keep warm forty-eight hours in the steam box in the coldest weather, and will not ferment if thoroughly steamed or cooked; hence cooking is not necessary daily. It should be fed warm. For 100 cows, a man should have two rows of stalls and feed from a car; it will soon cool in that way, but it is better to let it stand a day before feeding.

How to Drive a Horse.

Young man, I see you are about to take a drive this morning and will offer you some advice. Your horse is restive and wants to be off before you are ready; you may as well break him off this now as at any other time and hereafter you will find it has been a half hour well spent. Just give me the reins, while you put your foot on the step, as if to get in; the horse makes a move to go; I tighten the reins and say "whoa." Now put your foot on the step again; the horse makes another move; I hold the reins and speak to him again. The horse is getting excited. Pat him a little on the neck, and talk to him soothingly. Put your foot upon the step again, and repeat this process until the horse will stand still for you to get in, and adjust yourself in your seat, and tell him to go. A few such lessons will train him so that he will always wait for your order before starting.

Now, as your horse has just been fed, drive him at a very gentle pace for the first two or three miles, until he warms up and his body becomes lighter. But, before you start, let me show you how to hold the reins. Take them in your left hand, have them of equal length from the bit, and to cross each other in your hand, the off side one resting on your first finger, the other on your fourth finger, the back of the hand upwards. Now, in guiding the horse, you have only to use the wrist joint, which will direct him to the right or left, as you wish. Keep your hand steady, with a gentle pressure on the bit - no jerking or sawing of the reins. If more speed is wanted, take the whip in your right hand, to be gently used for that purpose; be careful not to apply it any harder than is necessary to bring him up to the required speed.

Speak to him soothingly, and intimate, in the most gentle manner, what you want him to do, and he will try to do it. So noble an animal should not be handled roughly, nor over-driven.

When you return, have the harness removed at once, and the horse rubbed down with a wisp of straw or hay. Give him a bit of straw or hay, and let him cool off before being watered or fed. Every one who handles a horse, or has anything to do with one, should in the first place cultivate his acquaintance; let him know that you are his friend, and prove it to him by your kind treatment; he needs this to inspire confidence, and when that is gained, he is your humble servant.

If your horse gets frightened at any unusual sight or noise, do not whip him, for if you do he will connect the whipping with the object that alarmed him, and be afraid of it ever after. If he merely sees at an object give him time to examine it, which, with some encouraging words from the driver, will persuade him to pass it. You get frightened, too, sometimes, and would not like to be whipped for it.—*Stock Journal.*

To Make Boys Farmers.

I wish all the farmers would heed what the *American Agriculturist* says: Induce the boys to take an interest in the farm, in the implements, in the stock; tell them all your plans, your successes and failures; give them the history of your life and what you did, and how you lived when a boy; but do not harp too much on the degenerate character of young men of the present age; praise them when you can, and encourage them to do still better. Let them dress up in the evening instead of sitting down in their dirty clothes in a dirty room. Provide plenty of light. Thanks to kerosene, our country homes can be as brilliantly lighted as the gas lit residences in the city. Encourage the neighbours to drop in of an evenings. Talk agriculture rather than politics; speak of the importance of large crops, of good stock, of liberal feeding, and of the advantage of making animals comfortable, rather than of the hard times, low prices and high wages. Above all, encourage the boy to read good agricultural papers. Get him some good agricultural book to study. Read with him, and give him the benefit of your experience and criticism. When he has mastered this, give him another. In our own case, we owe our love for farming principally to the fact that our father told us of everything that he was doing on the farm; answering all the questions, and encouraging, rather than refusing, our child-like desire of helping him to plough, to chop, to drain, as well as firing the brush heaps.

Care of Tools and Implements.

The injury done to hand tools and implements by long exposure to rain and sunshine often amounts to more than the wear and tear. Even when implements are made entirely of iron and other metal, the scales of rust that will form on smooth and bright surfaces in a few days will often injure the parts more than the wear during the season. A hand hoe is frequently left with the bright blade covered with wet earth pressed down on the surface, thus facilitating the formation of a thick scale of rust, which wears out the steel and makes the tool work unaccountably hard. It should be one of the inflexible rules of the garden to wipe the bright surfaces of all tools clean, and cover the parts with any kind of oil or grease that contains no saline matter. The wood-work of hand tools and implements, even when painted, is often seriously injured by rain, dews and sunshine. Water and dampness will raise the grain of the timber, settle in the joints and hasten their decay; and the hot sun will crack the surface, and warp, contract and twist the wooden parts to such an extent as to cause more damage than all the work that has been done with it.

The World's Fair at Vienna.

Next year—from May 1st to November 30th—there is to be held in Vienna an exhibition of the industry and achievements of all nations which will far excel any of the former exhibitions in London and Paris; in fact, it will excel in magnitude all of them put together. The statistics of the thing are simply bewildering, and we will content ourselves with saying that the building will be far the largest ever attempted to be erected by man; and that the great Church of St. Peter at Rome might be exhibited entire beneath its enormous dome. Neither shall we attempt to give an idea of the way in which all the people of the far East are to come as they never came before, to meet all the peoples of the West and the North and the South, all laden with the evidences of their thrift and skill, and each learning what the others may have to teach.

It is sincerely to be hoped that our own country will be more fairly represented than she has been on previous similar occasions. But if anything worthy of us is to be done, no time should be lost. Every possible effort, both public and private, should be made forthwith, and persistently. This exhibition offers us an opportunity, if we will rightly use it, such as we have never had before, and for a long time cannot have again.

A correspondent of the *Ceylon Observer* calls attention to a famous rose tree growing on the Goragall estate, Hantanne district. He says it is 80 feet in circumference, 15 feet high, and is bearing at present at least 2,000 roses.

New Uses for Paper.

Paper has now been applied to the manufacture of cuirasses, and other protections for soldiers, having a better resisting power to pistol bullets, spent rifle balls and sword cuts, than iron. It is now suggested to protect ships with paper armour plates, which are claimed to be equal to iron in resistance and but a fraction of the weight. A recent invention has supplied the long-needed want of water proof paper, which is made by dipping paper in an ammoniacal solution of oxide of copper, followed by pressing and drying. Paper moulded into any form can thus be made waterproof. Its applications are almost innumerable.

Exhaustion of our Lumber Forests.

A writer in the Lumberman's Gazette computes that Michigan turns out about three billions of feet of lumber per annum. He estimates that there is still standing in the forest of Michigan over forty-two billions of feet of merchantable pine, making the supply in that quarter sufficient only for fourteen years' consumption. Figures like these cannot be very correct; but they put in a striking shape a fact people are prone to forget, that while the supply of lumber is limited, the demand steadily increases, and greatly accelerates the approach of the day of scarcity. The same exhaustion is going on in pine regions elsewhere, to the north of us, and in Canada as it has in Norway and Sweden. England was originally one vast forest, but now receives all her supplies of timber from abroad. The scarcity of wood is even more felt in Germany and in France, where the jealousy with which the forests are guarded sufficiently attests their present value. We are approaching, though slowly, the same goal, and may well felicitate ourselves upon our present abundance.

Large Suspension Bridge.

The proposed Hudson River Bridge is to be one of the largest suspension bridges in the world. Its exact location will be four miles north of Peekskill—at Anthony's Nose. It will be 1,665 feet long between the towers, and 155 feet above the Hudson River water. It is to be suspended by 20 cables, made of 70,302 miles of steel wire, weighing, with the iron and steel in the bridge, 17,005 tons. It will be made strong enough to hold up safely 2,400 tons, and to break through with 25,171 tons. E. W. Serrell, the engineer, says 3,000,000 tons of coal from Pennsylvania, 54,086 tons of iron from Elizabethport, and 500,000 tons of through freight from the Midland and Erie, will pass over this bridge and over the New-England railway, which will run from Turner's, on the Erie road, over the bridge to the New York, Boston and Montreal railroad.

Texas Beef.

Philadelphia has started a monthly line of steamers for the purpose of bringing fresh beef from Texas preserved by refrigeration. By the process employed the meat does not come in contact with the ice, but is kept fresh by currents of air forced through the ice, keeping the storerooms cool and the meat pure. It will be recollected that a cargo was brought to Philadelphia last summer and sold off very satisfactorily.

Floors of Horse Stalls.

Samuel G. Brennan asks whether the floor of a horse stall should be level, or incline from the fore feet backward. If there is any inclination, it should be very slight indeed. We have known horses to get into the bad habit of hanging back in the stall, where there was considerable pitch in the floor, in order to get their hind feet in a natural position.

If horses are bedded properly, the floor may be level; a horse will, as a rule, wear a level floor less than he will an inclined one.

Advice to Those Intending to Buy Horses.

Sir Walter Scott, in writing to his son (then a cornet in the 18th Hussars), in reference to horses says:—"In buying your horses you will be very cautious. I see Colonel Murray has delicacy about assisting you directly in the matter; for he says very truly that some gentlemen make a sort of traffic in horseflesh, from which his duty and inclination equally lead him to steer clear. But he will take care that you don't buy any that are unfit for service, as in the common course they must be approved by the commandant as *chargers*. Besides which he will probably give you some private hints, of which avail yourself, as there is every chance of your needing much advice on this business. Two things I preach on my own experience—1st, Never buy an aged horse, however showy. He must have done work, and at any rate will be unserviceable in a few years. Secondly, to buy when the horse is something low in condition, that you may the better see all his points. Six years is the oldest at which I would purchase. You will run the risk of being jockeyed by knowing gentlemen of your own corps parting with their *experienced chargers to oblige you*. Take care of this. Any good-tempered horse learns the dragoon duty in wonderfully short time, and you are rider enough not to want one quite broke in. Look well about you, and out into the country. Excellent horses are bred all through Munster, and better have a clever young one than an old regimental brute foundered by repeated charges and bolts. If you see a brother-officer's horse that pleases you much, and seems reasonable, look particularly how he stands on his forelegs, and for that purpose see him in the stable. If he shifts and shakes a little, have nothing to say to him. This is the best I can advise, not doubting you will be handsomely excised after all."

Curious and Useful Crow

J. Snyder, of Virginia, owns a crow which serves as a substitute for dogs, cats and all other domestic sentinels. He destroys every frog about the well; allows a mouse no chance for his life, drives away hawks from the poultry; and bids fair to act as the best squirrel dog in the country. He readily spies the squirrel either upon the fence or on the trees, and with a natural antipathy to the squirrel tribe, his shrill, keen note is readily detected by his owner, accompanied by rapid darts up and down, and the owner is thus led to the game. The most remarkable feature about the crow is, that he invariably keeps five or six days' rations ahead of time, well concealed.

The Sea at Three Miles' Depth.

The Submarine investigations carried on at Government expense, under the direction of the British Association of Science, have disclosed some interesting facts in relation to the character of the bottom of the sea.

These researches have been carried on by means of a small dredge—a rectangular frame forming the mouth of a bag of netting, which is protected from wear by a leather or canvas flap. The whole apparatus, attached to a rope of suitable length, is dropped to the bottom of the sea and dragged along a certain distance, scraping on the superficial layer of mud or sand in the bag, the meshes of which permit the dirt to be washed through while the larger substances are retained and brought up.

The depth at which the bottom of the sea has been thus explored is really enormous, amounting in one instance to more than three miles, far exceeding that of any previous experiment with the dredge, though small quantities of sea bottom have been brought from equally great distances from the surface by means of the sounding line.

At this great depth many species of marine animals have been found, some entirely new and others rare, and the temperature of the bottom indicated about six degrees. The surface water is shown to be affected by the heat of the sun only to a depth of about twenty fathoms, but the gulf stream influences the degree of heat to a further depth of five to seven hundred fathoms.—*Ex.*

Bee Sting.

The sting of a bee is naturally more violent than that of a wasp, and with some persons is attended with fatal effects. Two deaths from such a cause have recently occurred. The sting of a bee is barbed at the end like a fish-hook, and consequently is always left in the wound; that of a wasp is pointed, so that it can sting more than once, but a bee cannot. When a person is stung by a bee let the sting be instantly pulled out, for the longer it remains in the flesh, the deeper it will pierce and the more poisonous it will become. The sting is hollow, and the poison flows through it, which is the cause of the pain and inflammation. The extracting of the sting requires a steady hand, for if it break in the wound the pain will continue for a long time. When the sting is extracted, suck the puncture, and thus prevent inflammation.

Spirits of hartshorn, if applied to the affected parts, will more fully complete the cure. The poison is acid, and the alkali will neutralize it. If the hartshorn is not at hand saleratus can be wet and laid upon the place, and soft soap will often ease the acute pain. On some people the sting of bees and wasps have little effect, but it greatly depends upon the state of the blood whether it will prove injurious, and these simple remedies if applied at once, will soon effect a cure.—

Uses of Charcoal.

The Country Gentlemen says: At this season of the year one desires to obtain some purifier, and charcoal is of the greatest value for the purpose. All kinds of utensils can be purified from disagreeable odors by rinsing them out with charcoal dust wet into a soft paste. Putrid water is immediately deprived of its bad smell by its use. When meat, fish, etc., are liable to become spoiled from long keeping, charcoal dust will keep them sweet; and if there is a slight taint to it, it can be taken out by putting three or four pieces of it as large as an egg into the pot in which it is boiled. This will effectually purify which seems too far gone to use.

Bridging the Great Western Rivers.

The science of engineering has enabled man within the last few years, to accomplish results in bridging rivers, that ten years ago would have been considered visionary. In relation to bridging these streams, the Chicago *Railway Review* says:

The Mississippi and Missouri are already bridged at fourteen different points; at ten on the Mississippi and four on the Missouri. On the Mississippi at Rock Island, the pioneer railway bridge, originally of wood, is now replaced with an iron bridge. The Mississippi is bridged at Clinton, Burlington, Quincy, Dubuque, Keokuk, Hannibal, Winona, Hastings and Brainard—the one at the latter place being a wooden structure.

The Missouri is bridged at Omaha, Kansas City, St. Charles and Leavenworth. The bridge at St Louis is approaching completion. Another is projected at Carondelet below St. Louis; there is another under construction at St, Joseph, Mo., one at Atchison, Kan., ready to be commenced on, and one practically determined on in the vicinity of Booneville, Mo. It will not be long until these great national highways, the Mississippi and Missouri will be crossed at other points, thus offering ample facilities to railway and highway traffic, to all points in the far West.

Bees Not Dormant in Winter.

During the past Winter I made frequent examinations of a strong colony of bees kept in a Langstroth glass hive. In the morning of cold days, they could be seen concentrated in the four spaces between the five central combs. By two o'clock of the same day, provided the sun shone brightly, the hive would become so warmed up that the bees would be found considerably scattered through the hive, some on the outside combs, some in the openings of the honey board, and many even clustering between the ends of the frames and the glass in the back part of the hive, which stood toward the South, and was consequently the warmest part of the hive. At night they would retreat to the central space again. This I saw repeatedly with undeviating regularity—even on the coldest days, provided the sun shone out steadily and brightly all day. The object of this separation of the bees from the main cluster is, not simply to enjoy the temporary warmth produced by the sun, but to bring from their store houses, the adjacent combs, a fresh supply of food, which is again deposited in the capped cells in the central part of the hive. The main cluster does not change its place for the purpose of reaching a new supply of food, but the new supply is brought by individual bees, *to the cluster* from the surrounding combs. On opening a hive late in the Fall, you will find the old brood-cells in the central part of the hive, completely filled with honey, but not sealed over; and this supply is replenished daily, during the Winter, whenever the warmth of the sun invades the hive sufficiently to allow individual bees to leave the cluster. Hence, I infer that bees, kept on their Summer stands, should have their hives exposed to the sunshine, in order to warm them up daily, and give the bees an atmosphere in which they can leave the cluster without danger of freezing.

A few years ago I wished to be especially kind to a weak stock that I was anxious to Winter; and for the purpose of protecting it from the cold, I covered the hive very carefully with an abundance of straw, with boards weighted with stones balanced over it so that it could not be blown away. *The bees died*, having plenty of honey remaining in the hive, but it was out of their reach. The heat of the sun could not penetrate the *two feet* of straw, to warm up the hive; the bees were too cold to move, and they perished where they stood.

Last Fall I resolved to build a house for wintering bees. Since then I have been favored with an inspection of Mr. Langstroth's new plan for wintering bees, and am so well satisfied that is better than any house, that I have given up the idea of building, and shall winter my bees on their Summer stands.

I think I shall try an experiment this Winter for darkening the entrance, without clos-

ing it; in order, if possible, to prevent the loss of bees that fly out when it is too cold, or when there is snow on the ground, and are lost. It could be brought about in this way: On one edge of a board, as long as the portico of a Langstroth hive is wide, and half an inch wider than the portico is deep, nail on a thin strip of wood half an inch wider than the thickness of the board; rest this board with the strip turned down, on two small strips of wood 1-4 or 2-8 inches thick, placed one in each end of the portico. You then have a covered entrance the whole width of the portico, and the strip over the edge of the board falls a little lower than the entrance, and prevents the admission of light, and also keeps out the wind.—*R. Bickford, in American Bee Journal.*

A good harness blacking is made of four ounces of hog's lard, sixteen ounces of neat's foot oil, four ounces of yellow wax, twenty ounces of ivory black, sixteen ounces of brown sugar, and ten ounces of water. Heat the whole to boiling, and stir until it becomes cool enough to handle, then roll it into balls about two inches in diameter.—*Ex.*

The *Ohio Farmer* says more injury in done to carriages by greasing too plentifully than the reverse. Tallow is recommended as a better lubricator than lard for wood axletrees, and castor-oil for iron; lard is apt to penetrate to the hub, and work its way around the tenons of the spokes and spoil the wheel. Just enough grease should be applied to the spindle of a wagon to give it a light coating. To oil an iron axle, first wipe clean with a cloth wet with spirits of turpentine, and then apply a few drops of castor-oil near the shoulder and end. One teaspoonful is enough for the four.

The *American Rural Home* says that an editor or commercial writer who can give advice as to the exact time when to sell farm produce, which as reliable in most cases even, had better quit his pen and take to trade. He has mistaken his calling. The knowledge that would secure such a result would enable a man to accumulate millions of dollars by manipulating grain in the great central markets of the world. Information as to the state of the markets and the prospects of crops, an editor can place before his readers, but then his mission is done; direct advice, as to acting, he should be chary in giving, and his readers wary in followingr The producer must be governed largely by circumstances.

A Good Use for Cats.—A correspondent of an English paper (*Land and Water*) makes his cats serviceable by fastening them with a light chain near his strawberry beds, so as to frighten the birds away. He also provides a kennel or house for their use, and if the old ones have kittens to gambol about the grounds, so much the better. He says that after they "get used to it" they rather like it, and will, if liberated, continue watching voluntarily. He says nothing about frightening birds from fruit trees with cats, but we would suggest that a stuffed cat or two might be useful in this way, that is, when a live cat *under* the tree failed to do the work successfully. If cats can be utilized in this way, it will do something to commend them to public favour. Now, is there no use to which dogs can be put to redeem them from the stigma of worthlessness.

New Style of Milk Pans.—The Jeffersonian, of West Chester, Chester Co., Pa., describes some extrordinary milk pans lately made at that place for the dairy of Enos Bernard. "They each measured 12 feet in length and 4 feet in width, and were about 6 inches in depth. They were double-bottomed, with a vacuum of about one inch between, which space was divided into four apartments by partitions running lengthwise, and were so constructed to allow water to pass up and down the length of the pan, thus keeping the milk cool or warm, at the option of those having it in charge. The four pans had capacity sufficient for containing the milk of one hundred cows, which number we understand Mr. Bernard keeps. It is said by those who have tried this new kind of pan, that a much greater amount of cream is obtained from the same quantity of milk, besides obviating considerable trouble and labour. When the cream is skimmed from the surface the milk is drawn off at the bottom of the pan into buckets, or whatever other vessel is selected."

A Cheap Paint.—Some one gives the following. We can not vouch for its value, but it may be worthy of trial:—Take eleven pounds of unslacked lime and one gallon of boiling water, and stir into a thick pudding; then add to it two gallons of boiled linseed oil and one quarter of a pound of white potash dissolved in one pint of boiling water. Mix thoroughly, and if the oil and water do not unite, add a little more potash water, there must be enough to cut the oil perfectly but no more. It will look thicker than common paint, but will spread easily with a common paint brush, and will wear excellently well, and has all the appearance of a superior paint, while its cost is less than half as much. For a paint for barns, outhouses, fences, &c., it is unequalled.

The Old Man.—Bow low the head—do reverence to the old man, once like you. The vicisitudes of life silvered his hair and changed the round merry face to the wan visage before you. Once the heart that beat with aspiration was crushed with disappointment, as yours, perhaps, is destined to be. Once that form stalked proudly through the gay scenes of pleasure, beau ideal of grace; now the hand of time, that withers the flowers of yesterday, has bent that figure and destroyed that noble carriage. Once at your age, he possessed the thousand thoughts that pass through your brain, now wishing to accomplish deeds equal to any height in fame; anon imagining it a dream that the sooner he wakened from the better. But he has lived the dream very nearly through; the time to awaken is very near at hand; his eye never kindles at deeds of daring, and the hand takes a firmer grasp of the staff. Bow low the head, boy, as you would in your old age be reverenced.

Horses.—Avoid as far as possible exposing horses to storms. When on a journey aim to feed at the regular hour. If nothing more can be done, take along some corn-meal and put a quart in a pail of water, and stir it up while the horse is drinking. It will greatly refresh and strengthen him. Many horses suffer from dyspepsia, and one great cause of it is irregularity in feeding and giving too much grain when the horse is fatigued. When a horse has been exposed to a storm, and comes home in an exhausted condition, give him a warm bran-mash. Put two or three quarts of bran in a pail, and pour on two or three quarts of *boiling* water and stir it up. Then add cold water sufficient to cool it to the temperature of new milk, and give it to the horse. Blanket the horse and rub his head, ears, and legs, dry, and afterwards rub him dry all over. Many an attack of colic would be avoided by these means. We think many farmers err in not feeding their horses more on grain. It would be better to work harder, or at least more constantly, and feed higher. Of one thing we are very sure; not one farmer in ten grooms his horses sufficiently. It is a *shame* to a man to leave a horse at night, after a hard day's work, until he has been rubbed clean, dry-bedded, and all his wants attended to.

Steam-Cultivation in Scotland.—There is evidence of great improvement in the agriculture of the north of Scotland; and it appears to have been promoted by reducing the size of home farms to smaller and more manageable dimensions, few of them now exceeding 200 acres, by a judicious system of rotation of crops and a more liberal use of manure; and by steam cultivation. It is claimed that the introduction of the steam plow has been the chief agent of the great changes which have been produced in the direction of profitable husbandry. A larger breadth of land has been brought into cultivation, and immense tracts of waste land, hitherto covered with heath, have been reclaimed and rendered capable of producing good crops of cereals, vegetables, and grasses. Thousands of acres of moss, and heavy clay, and hillside lands, which could not be reached by ordinary methods of culture, after being trenched and drained have been brought by the steam plow and harrow into a cultivable state. Where neither men nor horses could be employed, the steam plow has been made to tear through everything. To avoid the risk of the breakage of gear in rough land, where the plow is liable to come against boulder stones and old tree-roots, a plow with a revolving coulter has been introduced—that is, a coulter which will cut its way smoothly until it meets with a root or stone, when it will pass over it with a rotary motion.

OUR RECORD OF STOCK SALES, &c.

Lord Dunmore's Sale of Short-Horns.

From the London Field.

The admirers of Bates blood will be more than ever satisfied with their choice after the splendid sale at Dunmore, which exceeded the anticipations of the most sanguine. We heard that Mr. Thornton's valuation was some £4000 below the result, and, with one exception, the animals were all purchased by breeders in the United Kingdom. We were unable last week, owing to the short time at our disposal, to touch upon several points of interest connected with this remarkable sale. It has been said that short-horns are not adapted to Scotland; they certainly have flourished at Dunmore. We do not know much about the climate; situated centrally between west and east coasts, the rain-fall cannot be excessive, and the climate should be moderate The grass land, principally on clay, is very fertile, and this is one chief element of success. The condition of all the animals, the reserves as well as the sale lots, was admirable, and with one exception resulted from grass alone. As we mentioned last week, more milk might have been advantageously given to the calves, several were decidedly poor, although quite healthy. The serious losses in the spring from foot-and-mouth disease afford another instance of the severe and fatal character which this complaint so frequently assumes. The losses in dairy stock, both from the drying up of the milk and the tendency to cast the calves, which is often felt during a second year, are far greater than people imagine. We think with Lord Dunmore, who alluded to this subject in his speech, that the time has come for agitation. As long as fairs and markets go on, so long shall we suffer from this and other diseases. The remedy is to close store markets altogether. We can do without them; this was proved by our experience before. Breeders must call sales at home, and Irish cattle can be selected and delivered on commission. We may have to pay a slight advance, but the stock will be cheaper in the end than if taken from a regular hotbed of disease. Lord Dunmore lost seventeen calves, besides the injury to his cattle for another season. The market offers a temptation to the unscrupulous, and so long as it remains open, so long will the disease be rampant. The moist, gloomy weather has doubtless had some effect in spreading it. At the present time there is a double reason for prompt action, the rinderpest has broken out in Yorkshire, and, though the authorities have shown activity and good sense in their arrangements, it is highly probable that it may spread. It will be interesting, should this be the case, to carefully note the effect of recent regulations in checking this fearful malady. We have wandered from Dunmore, of which a word by the way; the park and mansion (the former extensive, undulating, and well wooded, and the latter modern, handsome, and solid) are approached through a considerable tract of heather and Scotch fir, highly picturesque, and where game should abound. The roads, of fine gravel, were in excellent order, and the shrubberies and grounds generally showed much care. A handsome private chapel marks the site of the former house. The home farm is about a mile from the house, and we had not time to pay a visit to the Second Duke of Collingham and Royal Cambridge; but we had a favourable opportunity of seeing the female reserves, which were grazing in a portion of the park near the scene of the sale—all save the two Duchess heifers, which were on a visit to the Duke of Hillhurst at Col. Kingscote's. They are both by the 8th Duke of York, which was sold at Mr. Bell's sale on Sept. 12, 1871, for 1065 guineas; they are out of Duchess 101st and 103rd, sold to Mr. Cochrane by Capt. Gunter just before the Oxford show of 1870, Mr. Thornton purchasing the offspring for Lord Dunmore at the same price as was paid for the dams. The Duke of Hillhurst, a very high-class Duchess bull, remove some degrees in affinity, should suit these valuable animals. Of the sixteen females remaining at Dunmore we found two Oxfords, viz, Eleventh Lady of Oxford, the dam of the 1200-guinea heifer, by Mr. Becar's Baron of Oxford, and Eighth Maid of Oxford by Second Duke of Geneva, the dam of the other two heifers in the sale They are both roans, and handsome roomy cows, without pretensions to showyard form. Judging merely by externals, we should prefer some of the Red Roses, which, however, are probably not worth more than half the money. There were six of this family, including an admirable calf running with her dam by a Duchess bull. The pick of the lot was Red Rose II., a great beauty, so neat and trim, with rare quality and fine bone. These animals are from Rose of Sharon by Belvidere, 1706. A yearling heifer, Red Rose 4th, by 11th D. of Thorndale, took our fancy; indeed, the lot were good. This family should come out well under the Duchess influence, and we may expect some valuable specimens at the next sale. Of the Kirklevingtons only the old cow Kirklevington 12th, now 11 years old, is retained; she is a grand old specimen of a good sort; her skin is as mellow as velvet, and she shows much style. Waterloo 28th, which came in her company from Didmarton, has not done any good at present; we believe she had a dead calf. She is a fine cow, with a characteristic head and horns; she reminds us a good deal of Mr. Cheney's Waterloo 12th—that is, as to character. A heifer twin to the yearling bull Marquis, a neat roan, was not offered, as there is little chance of its breeding. All the Wild Eyes are sold, the average, as we shall see, being remarkably good; and we have half a dozen fine animals of a tribe which though well descended, has not been much before the public, which Lord Dunmore thinks highly enough of to retain the whole—we refer to the "Revelrys." These came originally from Mr. Waldy's, of Barmpton, and are akin in their origin to Barmpton Rose, which Wetherell brought from there, the dam of the Townly Butterflies. After passing through two or three breeders' hands they came into possession of Earl de Grey. At his sale at Silsoe Park, in 1858, Mr. J. Robinson and Lord Penrhyn were purchasers. The former had a grand heifer, which Mr. Foster, of Killhow, bought in 1864 for 120 guineas; he bred several, which Lord Dunmore bought at the Killhow sale in 1868; he also purchased at Wicken sale in 1870. The specimens at Dunmore impressed us very favourably; they possess size, constitution, style, and charact[illegible] Having such a good foundation, and being [illegible] Colling blood, the Duchess crosses sho[illegible] answer well, [illegible] we may anticipate fine animals from this tribe.

After the sale Mr. Pavin Davis purchased two of the Red Roses—viz, Red Rose 2nd and Red Rose 3rd—for 2000 guineas. Lord Dunmore has done wisely to accept such a bid, and, viewed by its reflection, he is almost justified in declining the tempting offer of £15,000 f[illegible] the lot to which we alluded in our last. T[illegible] Red Rose 2nd is a gem. She has left [illegible] most promising daughter, and there re[illegible] a good stock of this valuable tribe

W[illegible] the [illegible]ces realized by the prin[illegible]es.

[illegible]XFORDS.

Lot.	Price.	Buyer.
36 Ma[illegible]rd.	£1000 10 0	Mr. Pavin Davis.
40 Oxf[illegible]	12[illegible] 0 0	Mr. Pavin Davis
45 Ma[illegible]	903 0 0	[illegible]
52 [illegible] O[illegible]	4[illegible]0 0 0	Dk of [illegible]evonshire

Total 3643 10 0
(Four lots, average £913. 7s. 6d.)

KIRKLEVINGTONS.

5 Siddington 1st...	273 0 0	Mr. Larkin.
17 Siddington 7th...	525 0 0	Lord Bective.
34 Marchioness 2nd......	477 15 0	Lord Bective
35 Marchioness 3rd.......	561 15 0	Lord Bective.
41 Marchioness 4th.	283 10 0	Rev. P. Graham.
53 Marquis 2nd..........	81 0 0	Mr T. Gow
54 Marquis 3rd	267 15 0	Mr. Coleman.

Total £2472 15 0
(Seven lots, average £353. 5s.)

WILD EYES.

9 Bright Eyes 2nd......	556 10 0	Mr. H. Brassey.
14 Lady Bright Eyes 1st..	378 0 0	Mr. H. Brassey.
27 Wild Eyes Duchess 2nd	278 5 0	Lord Fitzhardinge.
31 Lady Bright Eyes 2nd.	288 15 0	Lord Feversham.
33 Grand Dch's of Athole.	267 15 0	Major Stapylton.
38 Lady Bright Eyes 3rd.	393 15 0	Dk. of Devonshire.

Total £2163 0 0
(Six lots, average £360 10s.)

SECRET TRIBE

1 Princess	120 15 0	Mr. Sartoris.
57 Prince of Perth.......	96 12 0	Mr. Thompson.

Total £217 7 0
(Two lots, average £108. 13s. 6d.)

FAWSLEY'S.

6 Fawsley 4th..........	183 15 0	Sir M. Sterling.
12 Fawsley Rose	55 13 0	Mr. Thompson.
55 Knightley Honour....	64 1 0	Lord Rosslyn.

Total £203 9 0
(Three lots, average £67, 16s. 4d.)

LADY BATES TRIBE.

22 Lady Thorndale Bates 2.	845 5 0	Lord Bective.

CHERRY DUCHESS.

29	Cherry Princess.....	845	5 0	Lord Bective.

CLEOPATRA.

6	Cleopatra 6th.....	42	0 0	Lord Bective.
33	Princess Cleopatra....	94	10 0	Mr. A. Whitman.
47	Lady Constance.....	105	0 0	Mr. Angerstein.
50	Lady Margaret.....	178	10 0	Mr. Angerstein.
	Total £420 0 0			
	(Four lots, average £105.)			

MUSICAL FAMILY

11	Musical 9th	210	0 0	Lord Fitzhardinge.
28	Melody.....	68	5 0	Mr Phillips.
41	Musical.....	65	2 0	Mr. Coleman.
	Total £343 7 0			
	(Three lots, average £114. 9s.)			

WALNUTS.

7	Fleda's Farewell	65	2 0	Mr. H. Thompson.
42	Guinevere	63	0 0	Lord Chesham.
56	General Trochu.....	66	3 0	Col. Bruce.
	Total £194 5 0			
	(Three lots, average £64. 15s.)			

LADY BIRDS.

21	Lady Bird 6th.....	157	10 0	Mr. Gow.
49	Lady Mary..... ..	115	10 0	Mr. Gnow
	Total £273 0 0			
	(Two lots, average £136. 10s.)			

The above represent the principal families sold. The difference in value is affected by purity of blood; however good the specimens may be, the public will not give high prices unless the strains are pure. According to the present fashion and past experience, each additional generation of Duchess blood adds from £50 to £100 to the value of the animals; hence it is not surprising that bulls of this sort are eagerly sought after, and make long prices. Two are to be sold at Winterfold on the 18th, and, together with the other valuable animals, will attract a large company.

Sale of Mr. Wm. Bradburn's Shorthorns, at Wednesfield, Wolverhampton, on Friday, October 18.

BY MR. JOHN THORNTON.

The preface to the catalogue stated that the herd was first started from the well-known stock of the late Mr. Joshua Price, of Featherstone, the prize heifer Honey Flower (grandam of Miss Chesterfield) being purchased in 1860; this heifer by the bull Sultan (15355), who was second at the Chester Royal, and full of Milcote blood, was lineally descended from June Flower, bred by Mr. Torr, a great granddaughter of Strawberry, bought by Mr. J. G. Dixon at Robert Colling's sale, 1820. There were also descendants of Flora, a prize heifer (granddam of Nitrogen, ancestress of Ammonia), whose pedigree traced to Mr. Manning's stock at Rothersthorpe as well as other animals from Mr. Price's herd. Purchases were also made from Mr. Charles Stubbs' stock (Coraline being one of them), and some others were bought at the Earl of Dartmouth's and Mr. Harward's sale at Winterfold, 1871. The bulls had been Wednesfield (30281), half brother to Miss Chesterfield, and the prize-winner White Satin (27800), who, bred by Mr. Swingler, was descended from Mr. Torr's stock through his sire, and from the late Mr. Chapman's prize strains of Whitwell, Oakham, through his dam. Mr. Bradburn had been faithful to the almost dying wish of his friend Joshua Price, in continuing the reputation of the Featherstone shorthorns in the Cannock, Rugely and Staffordshire shows, and he further extended it, by bringing them forward at not only the Royal, but at the Yorkshire, Lincolnshire, Northumberland, and nearly every other county exhibition. And similar, too, was the Wednesfield herd bred, for, besides the half-dozen prize things, Mr. Bradburn kept about a score of short pedigree useful dairy cattle; so the charge was in truth literally fulfilled for a dozen years or more, until the decline of life and anxiety of business compelled the successor to give up some part of his business. The land at Wednesfield accordingly is to be set, and the first thing was to dispose of the herd before the showyard honours waned, and the cold and chilly November blast set in The place is ill-fitted for a herd; the murky clouds drop their blackened particles, the coarse, green grass assumes a sickly ashy hue, and rare are the days when the sun's piercing rays can gleam through the darkened air, and give light and life to vegetation and animal creation. Even the buildings are of the red, shaky, porous brick, such as the miners' thirty years' cottages are made of; and as Wednesfield House must have been a farm long before the stress of the mining operations were in force, they could not boast of much comfort. Yet, nevertheless, some of as finely fed animals as the country has seen for some time walked therefrom, to beat in distant Northumberland the Cardiff prize-winner Exercise and air (such as it was) was the secret of his training—ah! and of how many more? but he lacked the snug old gorse sheds from which Joshua Price sent out his Alma, his Flora, and his Princess. Adjoining the buildings, capable of holding perhaps a dozen at the outside, were nice little paddocks or pastures, in which, on their return from the shows, the prize-winners roamed at pleasure, but knew too well where to return for food. Fifty head, with accommodation for a score, necessitated out-keeping, and several of the animals calved on the coal-pit banks, hence the nomenclature. The consequence of this was those reared at home were brought out in beautiful condition, whilst some few of the others from a distance, heavy milkers, were in a poor state. They acted nevertheless as splendid sets off to those in showyard trim.

At the luncheon there was a bottle of champagne to a man. The business was all over before four o'clock, amounting to a total of £1,841 14s., of which the cows averaged nearly 40 and the bulls, 30 guineas, or a general average of £36 2s. per 51 head.

COWS AND HEIFERS..

Hinda 2nd, by Lord Derby (18223).—Earl of Sefton, 31 gs.

Miss Chesterfield, by Fitz Turk (19763).—Mr. H. Fawcett, 80 gs.

Dairymaid 5th, by Prince of Featherstone, (29652).—Mr. Woolf, 26 gs.

Meadow Bute, by Volunteer (30237) Earl of Sefton, 29 gs.

Juno 3rd, by Thorndale's Grand Duke (20976),—Mr. E. Wortley, 40 gs.

Delight of Patshull, by Colonel Dan (21445).—Mr. T. R. Parry, 32 gs.

Miss Valentine, by Huntsman (21964).—Earl of Sefton, 55 gs.

Virginia 2nd, by Charleston (21400).—Mr. J. Webb. 40 gs.

Oxley Maid, by Duke of Manchester (17732).—Mr. A. S. Hill, M.P., 48 gs.

Ellen, by Leo, (24320).—Mr. T. Nash, 27 gs.

Red Rose, by Royal Butterfly 15th, (20723). Mr. H. Fawcett, 110 gs.

Beautiful, by Wednesfield (30281).—Mr. F. Bird, 28 gs.

Coraline, by Lord Lyon (24417).—Mr. S. Brown, 145 gs.

Princess 4th, by Wednesfield (30281).—Mr. W. H. Kitson, 26 gs.

Ammonia, by Lord Charles (26624).—Mr. J. Bickford. 90 gs.

Snowball 4th, by Wednesfield (30281).—Mr. J. Webb, 31 gs.

Snowball 2nd, by Wednesfield (30281) —Mr. J. Webb, 34 gs.

Princess 5th, by Wednesfield (30281).—Mr. H. Wale, 37 gs.

Matchless, by Wednesda/ (30281) —Mr. J. C. Major, 36 gs

Snowball 5th, by Wednesfield (30281).—Mr. S. Stubbs. 30 gs.

Lust, by Wednesfield (30281) — Mr. J. Bickford, 22 gs.

Snowdrop 3rd, by Wednesfield (30281). —Mr. F. Bird, 26 gs.

Lily 3rd, by White Satin (27800).—Mr. T. R. Parry, 19 gs.

Lily 4th, by White Satin (27800).—Mr. E. H. Horsley, 15 gs.

Beautiful 2nd, by Wednesfield (30281) —Mr. J. Webb, 25 gs.

Lust 2nd, by Wednesfield (30281). —Mr. E. H. Horseley, 24 gs.

Princess 6th, by Wednesfield (30281).—Mr. W. H. Kitson, 19 gs.

Coalpit Lass, by Charles Edward (25743). —Mr. S Brown, 37 gs.

Miss Lea, by Wednesfield (30281).—Mr. H. Wale, 16 gs.

Miss Field, by Wednesfield (30281).—Mr. C. Stanley, 13 gs.

Miss Boot, by Wednesfield (30281) Mr. T. R. Parry, 16 gs.

Miss Last, by Wednesfield (30281).—Mr. S. Hudson, 16 gs.

Oxley Lass, by Woodhouse.—Mr. H. Wale, 15 gs.

Christine, by White Satin (27800).—Mr, S. Brown, 60 gs.

Louisa, by Wednesfield (30281).—Mr. W. Yates, 10 gs.

Princess 7th, by Wednesfield (30281).—Mr. H. Wale, 21 gs.

Medea, by White Satin (27800).—Mr. W. Yates, 15 gs.

Folly, by Woodhouse.—Mr. J. C. Smith, 51 gs.

Cowslip 2nd, by Wednesfield (30281).—Mr. Downing, 13 gs.

Juno 5th, by Wednesfield (30281).—Mr. W. Yates. 15 gs.

BULLS.

White Satin (27800). by Donald Bane (26698).—Mr. G. Britt, 45 gs.

Lord Preston, by Charles Edward (25743). —Mr. G. Mann, 23 gs.

White Velvet, by White Satin (27800).—Mr. J. Porter, 33 gs.

Prince of Wales, by Charles Edward (25743).— Mr J. Roberts, 47 gs.

Surly, by White Satin (27800).—Mr. O. Bennion, 40 gs.

Phosphate, by White Satin (27800).—Mr. J. Lawrence, 50 gs.

Lord Lush, by Wednesfield (30281).—Earl of Sefton, 21 gs.

White Satin 2nd, by White Satin (27800). —Mr. J. Bickford, 20 gs.

Lord Fringe, by Wednesfield (30281).—Mr. S. Hudson, 14 gs.

Lord Bilbook, by Woodhouse.—Mr. O. Bennion, 14 gs.

Banksman, by Lord Hawkesworth.—Earl of Sefton, 21gs.

SUMMARY.

	Average.	Total.
40 Cows..	£37 8 8	£1,497 6 0
11 Bulls..	31 6 2	344 8 0
51	£36 2 3	£1,841 14 0

Coltswold Ram Sales in England.

CANADIAN TRADERS SECURE THE BEST LOTS

Mr. John Humphries writes to the "Country Gentlemen", from Andoversford, Gloucestershire under date of July 26th as follows: "The Coltswold ram sales commenced yesterday with the sale of that justly celebrated breeder, Mr. William Lane of Broadfield, near Northleach. From the severe thunderstorm that took place immediately before the sale, the sheep did not look quite as well as they would have done had it been dry; but the Broadfield flock has so often been described, that I need only say that the sheep were fully up to the standard which the average will show. The first five sheep were let for the season, according to custom, at an average of £21 4s. 2d. each, for the use of them. The rest were sold, and the bidding was spirited. Mr Robert Garne secured the highest priced sheep of the day at 62 guineas; Mr. Brown of Norfolk and Mr. Smith, each getting very fine animals at £50 each. Lot 4 made 41 gs. lot 17, 43 gs. These we the only lots that caused much excitement. Mr. Wm. M. Miller of Brougham, Ontario, Canada secured 15 very nice sheep to go with the prize theaves he bought at Cardiff, at the Royal Agricultural Show. Lot 45 was knocked down at 12 gs., which was the lowest priced sheep of the day The bidding continued spirited to the end of the sale, th average of the 54 sheep let and sold, being £25 17s. 3d. The sale being concluded, the company adjourned to the tent, and partook of the good things provided by Mrs. Lane The principle toasts of the evening were the heal h of the worthy proprietor, Mr. Lane. also those of the Canadian gentlemen, Mr. Miller, and Mr. Armstrong, and the evening was finished in harmony, as is the custom of the farmers on the Coltswold hills. In my next I will give you a few notes of Mr. Robert Garne's sale, which takes place to-day but I cannot get it in time to catch this mail.

Public Sales.

The sale of Cyrus Jones, Esq., Towanda, Ill., was very satisfactory. Col. Judy was the Auctioneer.

Forty-two females sold for $17,565, an average of $418.

Fourteen bulls for $3,519, an average of $251. The whole 56 animals averaging $376 50.

Portulaca, calved in 1865, got by General Grant 4825, dam 4th Duchess of Oakland by Duke of Thorndale 2787. Rcbt. Otley, Kewanee, Ills. $1,150.

Miss Lucy, calved in 1870, got by Dan Rice 9723, dam Trinket by Utah 5238. Jas. Rayburn, Bloomington, Ills. $1,025.

Duchess of Clark, calved in 1864, got by New Year's Day (13383), dam Anna Hunt by Duke of Airdrie, (12730). Wm. Stewart, Taylor, Ills. $1,000.—Amongst the females; and among the bulls—

9th Duke of Thorndale, calved in 1864, got by 6th Duke of Thorndale 4725, dam 5th Duchess of Thorndale by Imperial Duke (18083). Nelson Jones, Towanda, Ills $405.

Duke of Belville, calved in 1871, got by 6th Duke of Geneva 7933, dam Faith by Wechawken 5260. G. L Burruss, Carrollston, Ills. $530.

In the sale of the "Oakhurst Herd" belonging to G. P. Brockway, Ripon, Wis., we observed the gratifying fact that high prices will be paid outside of "gilt-edged" pedigrees, for first-class animals, even when such have not the renown of direct descent in either Booth or Bates' family.—

"*Miss Lilly*" whose pedigeee is

Lilly, by 11th Duke of Airdrie 5533; Red Bud 2nd by Alfred 2nd 2488; Red Bud by King Alfred (14760); Beauty by Crowder 3792; Flora by Reform 896; Old Flora by a son of Tecumseh (5409); Pink Ann by Comet 355; and here it appears to stop, was sold for $1000; while *Minorca*, one of her calves, 3 years old, brought $705; and *Messina*, another of her calves, six months, brought $300.

Mr. BROCKWAY'S sale embraced 25 females, which averaged $738 75, and five bulls which averaged $466. In all, 30 animals, which sold for $20,800, an average of $693.

The sale of the Shorthorn herd of J. Spears & Son at Jacksonville, Illinois, took place on the 23rd. A large number of prominent cattle breeders of Illinois and adjacent States were present. Sixty-one herd of cattle were sold, and the prices realized averaged $300. The highest figure obtained for a single bull was $1,475. The highest price for a cow was $1,000.

The annual sale of extra stock belonging to the Duke of Buccleuch, at Drumlanrig Castle home farm, took place on 7th October. Three-year-old Galloway bullocks sold from £22 to £28; two-year-olds, £19 to £20 5s.; Ayrshire fat heifers, £18 15s.; Ayrshire queys, to calve this month, £14 10s. to £21; two-year-old queys, £10 2s. 6d. to £13 15s.; fat pigs, £4 2s. to £7; Cheviot cast ewes, 37s. 6d. to 41s. 9d. The proceeds exceeded £2,500. In consequence of an outbreak of foot and mouth disease, 110 Highland cattle were withdrawn from the auction.

ENGLISH SHORTHORN SALES OF 1872.—1,600 pure-bred Shorthorns have passed through Messrs. Strafford and Thornton's rings this year—thirty-six sales in all, amounting to about £105,000, which would make an average of nearly £65 per head. These prices do not include any reserve figures. The highest averages were obtained at the Earl of Dunmore's, Messrs. Harward and Downing's, Mr. Pawlett's, and Mr. Bowly's sales, and it may fairly be estimated that some of the most fashionable tribes have advanced to more than double the sums they were sold for five years ago.—*Mark Lane Express*

SHEEP SALES AND LETTINGS.—Among the Sheep sales and lettings of the season in England, we particularly notice that of Mr. Rigden's South-Downs, at Hove. The prices made were unusually high—100 ewes having been sold for £530, and 16 rams bringing £344—an average for the latter of over £21 10s., say $107.50 each. Ten rams were also let, realizing £310 in the aggregate—the highest price made being 90 guineas! Mr. Kirkham, Biscathorpe, also sold Lincolnshires as follows:—68 shearling rams averaging over £27 each; 52 rams of other ages were offered, and the average per head on the whole 120 was £25 11s.—a very high figure or so large a number.

SPANISH MERINOES.—One of the largest and most important transactions in Spanish Merinoes has been lately effected in Vermont by Messrs. Ripley Sons of Rutland, through Mr. S. F. Kelley, a well-known breeder of fine sheep. Eight hundred bucks, selected from among the richest blooded flocks in Rutland and Addison Counties, have been purchased for shipment to Southern Colorado. Three hundred go to the Hon. Thos. O. Boggs, of Bent County, to replace the long-woolled bucks from Canada, carefully tested by him for the past two years. Having tried Cotswold, Leicester, South-down and Spanish Merino side by side, he pronounced unqualifiedly for the Vermont Merino as the best sheep to cross upon the Mexican. Another three hundred are for Messrs. Ripley & Thomas of Bent Co., Colorado, and the remainder are for the general market. With these sheep will go several fine Short-Horns to reinforce their herd, some fine fowls, Scotch collies and blood pigs. The stock will leave Vermont about the 1st of October.

The Shorthorns were not so numerous as I expected to see; they were made up for show. Bulls of red colour seem to prevail, but I believe some of their owners sacrificed their good points to encourage colour; I contend that a breeder who will do that is an enemy to himself. Refer to the last notorious sale of the Earl of Dunmore, eleven of the highest priced females were published. Eight of them were roans, two white and red, and one red. Who has anything to say against roans after this. I have seen more inferior reds in Shorthorns than any other colour, still breeders are wedded to this foolish fashion. I have seen many pure white Shorthorns as beautifully symmetrical as flesh, blood, and bone could make them, and of the finest quality and constitution; still, a novice, with more money than brains, if he handled them at all it would be in thin kid gloves, and would then say "Oh, the colour is vulgar." Such fops, called breeders, are doing great injury to the breeding of Shorthorns.—*Michigan Farmer.*

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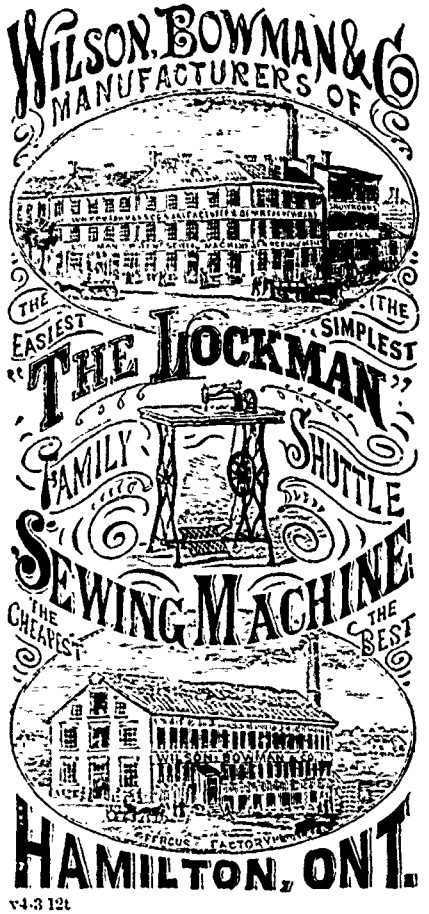

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Markets.

Toronto Markets.

"CANADA FARMER" Office, Nov. 15, 1872.

The produce and provision trades have been quiet during the past month. The general tendency in bread stuffs since this day month has been downwards in this market, flour declining from 15c to 20c, and wheat 4 to 5c. Barley has also declined about 4c. on No. 1, and 6c on No. 2, samples, and the market is still weak. Provisions have been quiet, old meats being scarce and new just beginning to offer. Packing has now commenced, and there is a ready market for both live and dressed hogs. Butter has been very unsaleable throughout the month, and stocks at this point are large and increasing.

In this city the wholesale prices are as follows.—

FLOUR AND MEAL.

Flour—$6 30 to $6 40; Superfine, $5 25 to $5 35; Fancy, $5 75 to $5 80.

Oatmeal—$4 75 to $4 80.

Cornmeal—$3 25.

Bran—$13 to $13 50.

GRAIN.

Wheat—Fall, $1 20 to $1 25; Spring, $1 15 to $1 19.

Barley—No. 1, 68c. to 69c; No. 2, 62c. to 63c.

Oats—40c.

Rye—65c.

Peas—65c to 70c.

HAY AND STRAW.

Hay, in better supply, at $22 to $24 00.

Straw—$14 to $16, in short supply

PROVISIONS.

Beef, by the side, $0 0. to $0 06.

Mutton, by the carcass, 8c to 10c.

Potatoes—per bag, 55c.

Pork—Nominal.

Bacon—8¼c to 8½c, loose

Hams—Salted, nominal.

Lard—10½c to 11c.

Butter—Choice, 15c to 19c; good selected, 14c to 14½; ordinary to medium, 8c to 11c.

Eggs—Packed, fresh, 16 to 17c.

Cheese—12½c to 13c.

Dried Apples—8½c to 9½c.

Salt—Goderich, $1 40 to $1 50;

HIDES AND SKINS.

Hides—No. 1, cured and inspected, per lb 8½c; No. 1, inspected, green, 8c; No. 2, inspected, green, 7c.

Sheepskins—$1 15 to $1 35.

Calfskins—Prices nominal.

Wool—Fleece, 45c.

THE CATTLE MARKET.

Beeves (live weight) $3 00 to $4 50 per 100 lbs.

Sheep—$3 to $6 00.

Calves—$3 to $7.

Lambs—$2 50 to $4 00.

GALT, Nov. 15—Flour, No. 1 super. $6 50 to $7 00 fall wheat, $1 17 to 1 27; spring wheat, $0 00 to $0 00; barley, 54c to 64c; peas, 55c to 62c; oats, 35c to 36c; cattle (live weight), $3 00 to $4 00; beef, $5 00 to $10 00; mutton $6 00 to 10 00; dressed Hogs, $0 00 to $0 00; hides, $7 00 to $0 00; sheepskins, $1 25 to $1 30; wool, 00c to 00c; butter, 14c to 20c; eggs, 14c to 15c; cheese, 9c to 10½c; hay, $15 00 to 20, potatoes, $0 30 to $0 00, corn, 00c to 00

GUELPH, Nov. 15.—Flour, No. 1 Super, $5 25 to $5 50; fall wheat, $1 10 to $1 25; spring wheat, $1 14 to $1 16; barley, 50c to 62c; peas, 63c to 65c, oats, 38c to 42c; cattle, (live weight) $3 00 to $5 50; beef, $5 00 to $8 00; mutton $5 00 to $7 00, dressed hogs, $4 50 to $5 25; hides, $6 50 to $7 00; sheepskins, $0 55 to $1 50; wool, 00c to 00c; butter, 14c to 15c; eggs 20c to 22c; cheese, 00c to 00c; hay, $16 to $18, potatoes, $0 60 to $0 70; corn, 00c to 00c.

HAMILTON, Nov. 15—Flour, No. 1 super, $5 75 to $6 25; fall wheat $0 00 to $0 00; spring wheat $1 15 to $1 18; barley, 58c to 60c, peas, 60c to 65c, oats, 34c to 40c; cattle (live weight) $0 00 to $0 00, beef, $3 00 to $4 00; mutton, $4 00 to $5 00; dressed hogs, $5 00 to 5 25; hides, $8 00 to $9 00; sheepskins, $1 to $1 25; wool, none; butter, 10c to 25c, eggs, 10c to 90c cheese, 10c to 15c; hay, $00 00 to $00 00, potatoes, $0 50; corn, 53c to 60c.

LONDON, Nov. 15—Flour, No. 1 super $0 00 to $0 00, fall wheat, $1 30 to 1 37½; spring wheat, $1 28 to $1 32, barley, 60c to 65c; peas, 50c to 60c; oats, 32c to 36c, cattle, (live weight), $4 00 to $4 50; beef, $6 00 to $6 50; mutton $8 00 to $9 00; dressed hogs, $0 00 to $0 00; hides, $8 00; to $9 00; sheepskins, $0 75 to $1 00; wool, 50c to 55c; butter 12c to 14c; eggs, 12c to 15c; cheese, 8½c to 9c; hay, $14 00 to $16 00, potatoes, c50 to 60c; corn, 48c to 50c.

Contents of this Number.

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GEORGE BROWN,
Managing Director.