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THE JOURNAL OF AGRICULTURE AND HORTICULTURE

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THE
Journal of Agriculture and Horticulture

THE JOURNAL OF AGRICULTURE AND HORTICULTURE is the official organ of the Council of Agriculture of the Province of Quebec. It is issued bi-monthly and is designed to include not only in name, but in fact, anything concerned with Agriculture and Stock-Raising, Horticulture &c. All matters relating to the reading columns of the Journal must be addressed to Arthur R. Jenner Fust, Editor of the JOURNAL OF AGRICULTURE AND HORTICULTURE, 4 Lincoln Avenue, Montreal. For RATES of advertisements, etc., address the Publishers

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The Farm.

NOTES BY THE WAY.

Half-breds.—Everyone knows—or ought to know—that the "Oxfords" are a cross between the Cotswold ram and the Hampshire-down ewe, it being invariably the practice of our leading producers of cross-bred stock to put the better bred parent "a-top." When "Druce of Eynsham" originated the Oxford, he had to exercise a vast amount of patience, as it was not easy to get the same characteristics indelibly fixed throughout the flock. Now, however, the type is firmly imprinted on the breed—for the Oxfords are a *breed*, though of course not a *race*,—as any one who carefully inspects a pen of these sheep at any of our exhibitions can see at a glance.

Of late years, the "Shropshire" (1) has, very properly, excited a great deal of attention on this continent; in fact, it is the fashionable breed of the day here. We say, again, "breed" but not race, as the Shropshires sprang originally from an aboriginal hill stock in the county that gives them their name, and were brought to their present state of perfection by the same means as were practised in the case of the Oxfords.

To our mind, then, it seems that, if the same rule is to be observed in sheep-breeding that is observed by all good breeders of cattle, namely, that no male shall be employed to serve cows unless he is indisputably *pure*-bred; it seems, we

(1) The Shropshires were not allowed to compete at the Royal Ag. Soc. shows in England till 1852, when the exhibition was held at Gloucester. ED.

say, that neither Oxford nor Shropshire rams should be put to ewes the progeny of which is intended to continue its kind.

Why not try a Hampshire, Messrs. Flock-masters? He is pure bred; he will stamp his character on your flock with remarkable force; the cross-bred lambs from common ewes by a Hampshire ram will generally be very uniformly of the Hampshire type, and, to judge from the reports of the great fat-shows in England, will be superior to the get of rams of any other breed.

For instance:—Smithfield Club, 1889: First and second prizes for cross-bred fat wethers were awarded to pens of the Hampshire and Oxford cross; third prize and reserve to a pen of wethers Hampshire and Cotswold. And at Birmingham, the same year, it was just the same.

The following year, 1890, at the Smithfield Club: the well-known breeder, Wm. Coles, won the first prize for cross-breds with a splendid pen of wethers by a Hampshire ram out of Hampshire-Cotswold ewes, weighing, each, 314 lbs., and Mr. Sheringham took second prize with wethers from Hampshire ewes by an Oxford ram. And so it continues to day.

Malt for milch cows.—We observe in *Hoard* a letter from Professor Henry, of the Wisconsin Experiment Station, in reply to question as to the value of malt as a food for dairy-cows. Mr. Henry refers to the experiments of Lawes and Gilbert, of Rothamsted, which show that the malting of grain does not increase its food-value, so that there is no advantage in giving it to cattle over giving the grain in its original state. Of course, any one can see that the sweetness of malt must make it more palatable to stock than the raw barley. That being granted, let us see if we cannot devise a plan for making use of this quality without much loss.

Now, it is calculated by chemists that malt contains a certain principle called *diastase*, every pound of which is able to convert two thousand pounds of starch into gum and sugar, if properly treated. This treatment is simply to follow the process of brewing; that is to crush the malt and to steep it in water, at about 160° F., for 2 or 3 hours, by which time the conversion will be completed.

But the farmer cannot afford to use so costly a material as malt for the purpose of tempting the appetite of his cows. What, then, can he do to gain that end at a less costly price? He can do this: he can take, say, 50 lbs. of meal, corn, flour, etc., and mix it with a few gallons of water at 170° F., stirring the *mash* till the meal is thoroughly soaked, and then adding 5 lbs. of crushed malt, which must be well worked into the meal and water, when the whole is to be covered up with sacks, etc., and left to repose for a couple of hours; when cool, it may be given to the cattle, and not much of it will be left in the troughs. If any one has a doubt about the conversion of the starch of the raw grain in the mixture into gum and sugar by the *diastase* of the malt, tasting the mash will convince him of its certainty.

Tuberculin.—At the last meeting of the Ontario Shorthorn Breeders' Association, a good deal of contention arose as to the practice of testing cattle for tuberculosis by means of tuberculin. Mr. Richard Gibson, evidently a man of strong convictions, and one who is given to call a spade, asserted that the deterioration of shipping cattle, perceptible during the last 20 years, has been chiefly brought about by the application of the tuberculin test. The medical profession, he declared, had given up its use in the human family, and we should profit by their example. The most eminent specialists agree that in very few cases can it be applied without danger. If cattle are tested in England, they should not be re-tested on arrival in Canada. He believed that the injection of tuberculin is more likely to create disease than to stamp it out.

Mr. Hobson, of Guelph, utterly disagreed with Mr. Gibson. He had made a special study of the test, and having tested one of the largest herds in Canada, he knows that the facts are not as stated by Mr. Gibson.

Dr. Patten, whose name sounds to us as that of a homœopath, said that if he had a herd and knew it to be sound, he would not for thirty thousand dollars allow it to be tested!

However, after two of the members had expressed themselves strongly as to the influence exercised on this question by a mysterious individual

who enjoyed "autocratic power," the following resolution was proposed by Mr. Gibson, seconded by Mr. Wm. Linton, and carried:

That we, the Shorthorn breeders of Canada, do hereby ask the Dominion Government to allow cattle to come into Canada from Great Britain without being tested for tuberculosis.

Colour in Shorthorns.—The first-prize bull calf at the Ontario Provincial Fat-stock show, last year, was one of the most perfect animals ever seen. He was greatly admired, his colour, red, being of course the fashionable colour "on this side." Will he transmit it to his descendants? We cannot say, but we think it doubtful, seeing that his sire was nearly all white except a red neck, while his dam was a roan!

Ploughing-in green-crops.—We remember to have seen, in Britain, many peculiar agricultural operations, but, neither in England nor in Scotland did we ever see a single green-crop ploughed-in, except one season in Essex (1853), when the turnip-crop was so enormous, that sheep enough to consume it were not to be found; consequently, when barley seed-time arrived, the roots, as well as the rape, had to be interred. As the farmers of the British Isles agree with Professor Robertson, that the cattle should work their will on the green-crop, and nothing but what they leave behind them should be turned down by the plough, *a fortiori* must the rule hold good in this climate where, instead of a mild winter of, at most, 2 months in the house, we have to provide fodder for the weary period from November to May, both months inclusive.

Mr Macpherson has made one step in advance, with his proposal to fold off clover with pigs; though why pigs should be preferred to sheep, which would be much less troublesome as regards keeping them in the fold, and which do not bother one by getting the *rings* continually out of their noses, as pigs do, we cannot see.

Will no one try folding a flock of sheep on the second crop of clover? The *rolling hurdle* so often depicted in this publication gives very little trouble to the man who shifts the fold, and mutton, properly fed, is daily getting scarcer on this continent where, particularly in the States, it is growing rapidly into favour.

Farmers' Clubs, etc —At St-Benoit, Two-Mountains, an experiment was tried on the oat-crop:

An *arpent* was divided into 4 plots—1, 2, 3, 4—of these, 1 and 2 received (April 5th) 200 lbs. of hard wood ashes; Nos. 1, 2, 3, on April 11th, 150 lbs. of plain superphosphate, mixed with 3 times its bulk of earth, and harrowed in with the dice-harrow.

April 26th, No. 1 received 10 lbs. of nitrate of soda, mixed with dry earth, and again, on the 3rd of May, the same dose, the oats then being up.

(No. 4, we suppose, received no dressing; again did the 150 lbs. of superphosphate go over the 3 plots or was it applied to each plot? Ed).

The yield was:

No. 1, seed, 30 lbs.	542 lbs.	M. D. Pilon's crop
" 2, "	537 "	
" 3, "	530 "	
" 4, "	339 "	

(The manured plots evidently yielded at the rate of 60 bushels to the imperial acre, a good crop anywhere, and this is another instance of the effect of sowing a good allowance of seed, in this case, 4 bushels to the imperial acre. People who read crop reports are mighty apt to forget that accounts of large crops from small seedings refer in most, if not in all, cases, to yields from highly manured, well cultivated land. Ed.)

At 1 cent a pound for oats, the results are as follows:

	Lot No 1	Lot No. 2	Lot No. 3	Lot No. 4
Yield	542 lbs	537 lbs	530 lbs	333 lbs
Excess over No. 4	203	193	191	00
Cost of manure	$1.20	$0.70	$0.50	00
Profit	$0.83	$1.28	$1.41	00

At St-Wenceslas, Nicolet:

Three competitors sowed, each, an *arpent* in 4 plots, with wheat; on No. 1, 2, 3, were spread 600 lbs. of ashes, 4 being a test-plot. On 1 and 2, 100 lbs. of "Reliance" manure were spread. The result:

François Désilets grew 16 bushels on his arpent; i.e. 10 bushels on Nos. 1 and 2; 4 bushels on No. 3; 2 bushels on No. 4. He, of course, took the first prize.

Ludger Deshaies (2nd prize), 9 bushels on Nos. 1 and 2; 3½ on No. 3; 2¼ on No. 4.

Napoléon Thibaudeau (3rd prize) 8 bushels on Nos. 1 and 2; 3 bushels on No. 3; 2 bushels on No. 4.

(No mention of the quantity of seed sown to the arpent! Of course, we know what "Reliance"

manure is, but in all these competitions, the constituents of the chemical manures ought to be given, as well as the quantity of seed to the arpent or acre. ED.)

FARMING IN NOVA SCOTIA.

To the Editor of the JOURNAL OF AGRICULTURE.

Dear Sir,—Being in this part of our fair Dominion for a short time, I thought I would give my views on farming, as it is done in parts of this province.

I should say that farming is not the great mainstay of the people—it is fishing. When they cannot catch any fish they work on the farm. I should say that if the people would place more dependence on the farm and attend to it properly, they would be a great deal better off.

Another branch of farming, or rather in connection with farming, dairying, is sadly neglected too.

I must now give you my observations on farming here, only the main features as they struck me. The soil is free from stones, that is loose stones, there are some rocks, and rocky p laces, the colour of the soil is a reddish brown, something like that round a brickyard of a clayey nature. I remember seeing something like it once in the State of New Jersey. The land is also very hilly and rolling, but free from stone as I said before, even on the high ground. Usually, in the province of Quebec, high ground is very stony, but here the land is very free from stones. I observe also that they do a good deal of fall ploughing, but I have not noticed any first class work. I do not believe they have competitions here as they have in Canada; that is the term they apply to Ontario and Quebec, Upper and Lower Canada. Another thing that struck me forcibly: they do very little ditching or underdraining, and it is very much needed, as they have springs on the side-hills, and they allow the water to run wherever it likes. Instead of running a ditch to carry it off, they allow it to spoil all below it by keeping it wet and sour. I also mentioned they paid little attention to dairying, only keep a few heads of cows, and those few very indifferently fed. I asked how they kept up the fertility of the soil. It is done by "kelp," a sort of sea weed, and even by fish, and refuse of fish and fish bones. There are some seasons when herrings are so plentiful, that they make a drill for the potatoes, and then scatter in the fish in the drill as is sometimes done with manure, and they grow excellent crops of potatoes, in that way, but I am informed, that the fish are only good for one crop. (Not so. ED).

The kelp is drawn out after a storm and put into a heap and allowed to rot; about 3 cartloads of kelp will make one load of well rotted manure. This is applied as a top dressing, or can be ploughed in, as the case may be. Another thing that struck me also, was the want of wood, or rather, the providing of it. There is plenty of wood, but very few have dry wood on hand; they believe it is time enough to cut it when they want it to burn. In the stormiest weather, after dark night, and even on Sunday, you will see them cutting wood. I have seen very few who had wood cut on hand and dry, for one you will find of this stamp I am sure you will find one hundred that have to cut it as it is needed.

The weather generally is not so cold as we have it further west, but the houses are poorly constructed and consequently they suffer more from cold than those who live in a colder climate, but are better prepared for it. It is a rarity to find a house with double windows; they are but shells, and some of them very poor at that.

One more branch in connection with farming that is neglected here, is good poultry. Very little attention is paid to them, and as consequence there is no profit in them. In summing up, I would say this to the farmers: keep up the fertility of your soil, keep it well drained, attend better to our cows and feed them well, they will furnish you with the material to keep up the fertility; keep a few good hens, pay a proper attention to them, and in a short time you will find your profits begin to accumulate. Attend to the small details, learn to do things in their proper season, cut your year's wood in winter time, when you have not got much other work to do, and you will soon have the wherewith to build yourself a confortable home. In some parts of this province they do not raise enough to feed the population; they have to buy, from Prince Edward's Island, cheese, butter, oats, potatoes, etc., are brought here. Why the farmers cannot raise enough and to spare is because they neglect their farms. I have been telling them how much I grew on one acre and also of what was done by the Rev. T. Shaw Chapman, of Marbleton, P. Q., in your issue of the 1st Nov., but there are some unbe

lievers here, as there are elsewhere, who cannot credit such results.

Yours truly,

PETER MACFARLANE.

Antigonish, N.S., Nov. 24th, 1899.

EARLY POTATO GROWING IN CORNWALL.

For the very earliest potatoes grown on the coast of Cornwall very thick planting is pursued. The seed tubers in some cases are planted in rows about 11 in. apart, and the sets only 6 in. apart in the rows; in other cases the distance is 12 in. by 8 in. Even in the latter case two tons per acre are required for planting, costing this season at least £9. The rows are not banked up, but are merely hoed twice, the soil being drawn around the plants in the hoeing. Myatt's Ashleaf, until a few years ago, was almost exclusively grown in Cornwall for the earliest crops, and is still used more extensively than any other variety; but Royal Jersey Fluke and Prince of Wales (also from Jersey) are now grown, with several other first earlies; while Snowdrops are favourites for coming in a fortnight later.

ONTARIO CROP YIELDS

The Ontario Department of Agriculture has just issued its special November crop bulletin. The yields vary little from the August estimates, excepting in being more conclusive. The acreage sown to fall wheat has been somewhat reduced. Fall pasture, as a rule, has not been good, the fields in most localities being dry and bare until a comparatively late period in the season, when they were revived to some extent by the heavy rains. Threshing has been finished, except in a few localities. The fine autumn weather has enabled farmers to make good progress with their fall plowing. Except at harvest time the supply of farm laborers has been sufficient for the demand. The following is the estimated crop yields in the province for 1899, which will be found interesting:

Fall wheat, 14,439,827 bushels, or 13.8 bushels per acre.
Spring wheat, 7,041,317 bushels, or 17.7 per acre.
Barley, 14,830,891 bushels, or 30.2 per acre.
Oats, 89,897,724 bushels, or 38.0 per acre.
Rye, 2,284,646 bushels, or 16.6 per acre.
Peas, 15,140,790 bushels, or 20.4 per acre.
Buckwheat, 2,203,299 bushels, or 16.7 per acre.
Beans, 651,009 bushels, or 16.1 per acre.
Potatoes, 19,933,366 bushels, or 119 bushels per acre.
Mangel-Wurzel, 20,898,387 bushels, per acre.
Carrots, 3,674,035 bushels, or 309 per acre.
Turnips, 57,878,390 bushels, or 377 per acre.
Corn for husking (in the ear,) 21,673,234 bushels, or 65.0 per acre.
Corn for silo and fodder (green,) 1,697,755 tons, or 9.82 per acre.
Hay and clover, 3,498,705 tons, or 1.40 per acre.
Apples, 19,126,439 bushels, or 3.02 bushels per tree.
Tobacco, 2,241,562 lbs, or 1,019 lbs. per acre.

None of the crops vary much from the August estimate of yield, except beans, which has fallen off over one-fifth.

Of the root crops, potatoes is the only one going over the average.

Household Matters.

(CONDUCTED BY MRS. JENNER FUST).

With this number ends the JOURNAL for the year 1899. A not unprofitable year for the farming community at large; should the next prove a worthy successor one might hope to see farming once more on a firm footing to the great relief of the farmer, his family, and the country at large.

The sending of the milk to the factories has taken from the over-worked women of the house an amount of hard work only to be realised by those who have had to do it.

There is now spare time to be given for a little pleasure as well as work, and the woman of the day sees no reason why she should not have a share in the pleasures as well as in the toil to live.

Consequently she avails herself of every assistance she can find to help to make her task easy.

The women of the day are not fitted to cope with the hardy race of their grandmothers, who worked hard and knew little beyond their own fireside.

A race has now sprung up that is no longer content with a hard-working country life, but desires to push ahead and find out for themselves what is going on in this wonderful world.

Some travel far and gain riches, all gather knowledge, and some become a working power for the less experienced.

So, with grateful hearts for all the benefits we have received during this wonderful century let us all join in giving the year 1899 one long, loving FAREWELL.

Roast Turkey.

Choose a bird according to the number of the family. Stuff the body with herb forcemeat and the crop with sausage-meat. Cover the breast with slices of fat bacon to keep it moist; and over this a piece of buttered paper, tying it on with thread.

Roast in a well heated oven.

A turkey weighing about ten pounds will take about 2 hours and a half to cook well.

But if cooked in a gas oven it will take a shorter time.

Half an hour before serving remove the paper and bacon in order to brown it, but care must be taken not to dry the flesh too much. A little gravy might be served in the dish, also a garnish of fried sausages.

Herb Stuffing.

One tablespoonful of herbs, marjoram, thyme, parsley, and a very little basil. A very little pepper and salt. One egg, a cupful of bread-crumbs, half cupful chopped suet. Mix well together, adding the egg last to bind the whole.

This should be put into the body of the bird.

Stuff the crop with sausage meat which is made by passing ½ pound of fresh pork through the machine twice, mixing this with the chopped liver and seasoning and a little bread crumbs.

Bread Sauce

Peel an onion, cut it across, but do not divide it, boil in one pint of milk till nicely flavoured, pour this over ½ pound of bread crumbs, add one oz of butter salt, pepper and a grate of nutmeg, serve nice and hot but do not boil, or it will be stodgy.

How to Warm up Plum Pudding.

Never warm up a good plum pudding in the oven: this spoils it.

Place the remains of the pudding in a basin, and put this in a saucepan, containing a very little water, keeping the basin quite out of reach of the water, and steam it till it is hot through.

German Brandy Sauce.

Break 6 eggs into a small saucepan, but leave out 3 of the whites; add 2 oz of white sugar and ½ pint of brandy. Stand the saucepan in another containing boiling water, over the fire, then whisk the mixture till it is slightly thick, frothy and hot. It must not boil. Pour a little round the pudding, and serve the rest in a tureen.

A Dainty Table.

Some people, rich as well as poor, seem never to care how their meals are served as long as the food is there. Everything is rough and unrefined, and nothing is done to make the table refined and dainty. I often think when I see such-like tables that I would rather have a dainty table and a meal of bread and cheese, than the costliest viands put on an untidy table. A dainty table need not be a costly one by any means. A few ordinary flowers, a clean untumbled table cloth, bright glass and silver, are within the reach of most of us, I think. Let table linen, however coarse or fine, be spotlessly clean, and always kept ready mended. Let your plate, whether silver or the more homely Britania metal, be clean and bright. As far as you can, have pretty china and glass, for all beauty is refining and civilising, although you may not be conscious of it yourself. A little coloured glass on a table has a pretty effect, as long as you stick to one colour, and no not have too much of it. One would think parsley was a very costly thing, instead of being cheap, by the sparing use some people make of it. Yet how it alters the look of the table, the meat, and the butter, how pretty especially it looks round the golden butter in the dish. An ordinary blanc-mange mould, how its appearance is changed by the crimson or yellow jam put round it on the dish. I think in ordinary middle class houses the daughters should be trained to look after these little matters of cleanliness and ornamentation, for much of the dingy look of a table is owing to the fact that the general servant has no time to bestow on these matters, hence the dull silver, the smeary china and glass we too often see on our tables.

For the Children.

Keeping a corner grocery.

Cut up a good number of bits of cardboard about one inch or more, on these mark the name of any article likely to be sold in a shop with the price per pound.

Cut up any number of bits round, to represent cash, on each of which must be marked the number

cents it represents, put these in a box which call of the bank. Divide the grocery cards in two, and each person must take one bit of money only just as it comes. On what is picked out depends what can be bought. Should only one cent be drawn and the opposite grocery has nothing to sell at that price, the best way is to lay the cent on some article and redeem it the first time you have the good luck to draw from the bank the exact cash you want; this ends the first player.

Now the opposition come with their draw, and it may be will have no better luck than you had, or it may be luck will give them something to suit the cash that has been drawn. No credit is given, but each one draws cash, one piece at a time, the object is to buy out your neighbour till he has nothing left to sell, and thus hold the game.

TOFFEE.

Three pounds and a half brown sugar, one drachm cream of tartar, and three gills of water. Mix all together and boil on a clear fire to sugar-boilers' fourth degree called "crack." To test when you have reached this, dip a stick into the boiling sugar and then at once into cold water. If the sugar thus cooled hanging from the stick cracks and and breaks off at the least touch of the finger it is boiled to the proper degree, and must at once be removed from the fire or it will spoil. The difficulty of the amateur sugarboiler is to watch so carefully as not to let the boiling go the least beyond that point, but after a little practice it becomes quite a simple matter. As soon as you remove the boiling sugar from the fire you may add a little essence of lemon to flavour the toffee, or you may slice pieces of cocoanut into it, converting it into cocoanut toffee, just mixing these rapidly through the sugar; but whatever you put put in there must be no delay about it. Just stir in, and at once pour the toffee out into oiled tin frames or upon an oiled square tin, and as soon as poured out you may cut it into bars of any size by simply marking it well with a knife before it cools. Make the markings pretty deep, and the toffee will easily break off at the indentations. This is the cheapest form of toffee we can give our correspondents.

The Grazier and Breeder.

METHODS AND MANAGEMENT OF STOCK FARMING.

When the stock farmer has decided on the crops which will best supply him with home grown cattle food, another knotty problem will present itself—the sorts and breeds best suited to his purpose. Breeders of Shorthorns may claim that they never fail of success when well fed, and the proposition need not be disputed.

Still it would be possible to find districts where the natural forage crops would hardly support the larger breeds. As with cattle, so with sheep, it is quite possible that they may be misplaced. It has sometimes been asserted that the hardy and beautiful sheep of the Southdowns are like the British army, "fit to go anywhere," and to produce anywhere the finest mutton. But however that may be, one would not put Southdowns on land suitable for Lincolnshires. Common sense tells us that a breed may suit one spot and not another. It may be better adapted to the soil, or to the climate, as the case may be. The custom of tethering cattle—which prevails in places—may remind us of the influence which climate exerts in management. In most inland and woodland districts, the flies that abound in such places, torture tethered cattles beyond endurance, whilst where the summer's heat is moderated by breezes, cattle may be tethered without discomfort.

Another modification in the ordinary management of cattle, consists of rearing the calves "alongside" as it is called. It has been said that we ought to follow Nature as closely as possible, that we cannot improve upon her.

And yet there are many breeders who think they have improved upon it the breeding of cattle, such as the polled Angus, or the Shorthorn; breeds which unaided nature would never have bestowed upon us. This reminds one that, in nature, calves must needs be reared "alongside," and that may be one reason why buffaloes and wild cattle are not deep milkers. It certainly supplies an argument against the system carried out by Hereford breeders, of rearing calves by turning them out with their mothers. Hereford cows cannot be described as really good milkers, but they make beef more quickly perhaps than any other breed, *on suitable pastures*, and this sure-

ly is a specialty which we should avail ourselves of.

It is needless to say that dairy farming is not a specialty among Hereford breeders, who simply devote their energies to the rearing of a beef-making breed. The usual practice in rearing this beautiful breed is to turn out the cows with their calves alongside and this, no doubt, is prejudicial to both cow and female offspring, since the milk and the rich grass together bring the heifer into a state of fatness which proves injurious to her future milking qualities, while the cow suffers that diminution of the milking qualities, which always happens when the whole of the milk is not abstracted from its receptacle. A large flow of milk, however is not always a desideratum, so long as sufficient is given to rear the calf. Naturally, the breeders of the far West admire the Hereford because it is not a milk-making breed, but a beef-making breed. In point of fact, it has acquired the frame of a butcher's beast—thick where a dairyman's beast is thin—through the two practices of selecting bulls bred from beefy dams, and of rearing the calves alongside.

Another method of rearing the calf at grass with its mother may be highly recommended. It consists of fattening cow and calf together, and marketing the latter at fourteen or fifteen months, and the former as soon as she is ripe. After calving she should be served with a liberal supply supply of cake, whilst summering. The grass run over will be greatly assisted by this treatment, and it may be remarked that those who have pursued this system have usually done well with it. The cows selected for the treatment should be such as proved undesirable for dairying purposes, through some defect in the udder, or inferior milking powers.

SHORT SUPPLY OF BEEF.

The Montreal *Exporter* has this to say in regard to the shortage, and which perhaps is more reassuring to cattle raisers than some of the other journals we have quoted :

"The long-headed farmer who has stuck to his 'few in the feed lot' is not going to be sorry for his temerity. Not only are cattle short in Canada, which every one in the trade is fully aware of, but the United States is also a sufferer from the same trouble. From latest reports from Argentina, that country is also a good third, evidenced by the fact that few cattle are offering from there now."

The same journal gives the opinion of an English dealer on the subject which is worth repeating if for nothing else than to stir up our Canadian breeders a bit. He says :

"Good beef and mutton are selling very dear, the latter particularly, and if the supply from Argentina is going to be cut off—as some people say—the native mutton grower is going to have a good time. But real prime beef and choice mutton are scarce, and though there is increasing weight of chilled and frozen meat coming forward, it does not balance the shortage of live meat—native and imported. So it is generally anticipated we are going to have prices rule higher for all classes of meat, but best descriptions naturally will benefit most, which leads me to observe that the last shipments of ranch cattle were not giltedged, and buyers are sarcasticaly asking, 'Have Canadian breeders given up breeding good cattle?' A prominent Birkenhead buyer said the other day, 'he hadn't seen a decent bullock from Montreal this season.' This is not complimentary, but it is true, and what is true cannot be a libel, in spite of the idiotic axiom that 'the greater the truth, the greater libel."

We have quoted these various authorities on this important question in order that our readers may be able to size up the situation for themselves. We know that there is a scarcity of good beef in Canada.—*Farming.*

The Dairy.

THE CONTAMINATION OF MILK IN FACTORIES

It would seem unnecessary to outline the requisite amount of care to be given milk before it is delivered at the factory, yet I must confess that it seems unnecessary, not alone on account of the theme being such a common and simple one, but, also because the manner and condition in which milk is delivered at ninety factories out of one hundred to-day, proves that farmers are not availing themselves to any extent of the good advice so often offered, and that therefore they are wilfully negligent in this respect. This being the case, one would feel inclined to seek a more promising

field in which to sow the good seed, if one were not intimately acquainted with the habits, expectations, and thoughts of those whom one wishes to benefit. The world wags faster and faster year by year, the horse gives way to steam, steam is supplanted by electricity, and "what next"? this is the spirit in which we live "what next"? Anything being possible, there is no reason for surprise, new ways, cheaper and better methods, perfect facilities, coming to everybody.

Yet, it is not to be expected that these changes affect all alike, or even are able to be taken advantage of by any one in the same manner and at the same time. Some people, the same as some businesses, are in a position to more readily grasp, and utilize to their own profit, these new ways and ideas.

Savage tribes innumerable have scarcely yet derived direct benefits from the utilization of of steam power, they are not in a condition yet to do so; they live as they have lived for centuries, with very little modification, eating the same food, inhabiting the same tracts, perpetuating the same customs. until some fine morning they wake up, and lo! a stranger in the midst, a white man, evidently fearless; and then, perhaps they are inclined to receive him, and listen to him, and the first seeds of eventual civilization are sown; then again——perhaps they eat him.

The missionary is always a martyr; no less the agricultural or dairy missionary, than the Gospel Missionary. The majority of the farming community is unready to appreciate and utilize the new doctrines and economic instruction of the dairy missionary, and so—he is eaten.

But fortunately, he is ahead of the Gospel man in one respect, in that his labours are backed up by those advantages, of which other classes more prepared have availed themselves, and his doctrines, living after him in unmistakable language, have through the agricultural press, oft' times, reached that 'god-send' but "rara avis," the husbandman prepared.

Now, I take it for granted, that it is wise to accept the theory with which other missionaries (not dairy) con-ole themselves, that it takes long for the seed to germinate and eventually come to maturity;—but one can't help worrying about the quantity of seed sown.

With this consolation in view, I will confine myself to those factors which affect, or rather infect milk in the creamery or cheese factory.

Of course, I realize that I am in no way entitled to any claims of martyrdom on this trip, for I must confess to a sort of fine conceit (others say they have the same failing, how strange!) that buttermakers and cheesemakers are more prepared to take advantage of, and utilize to their own benefits, and also (very kind of them) to the benefits of the farming community, the new ideas, methods, and economies which are going around in their line of business.

What affects milk before it comes to the creamery, affects it after it has been delivered, and where milk has been damaged before it arrives at the creamery, there remains nothing to be done if it is received at the factory, (which it should not be), but to minimize as much as is possible the damage already done. Milk may be spoiled in many different ways, yet there are many skillful ways of partially counteracting them.

Milk is not always safe when it reaches the factory receiving vat, many conditions, unavoidable or overlooked, may occur to injure the quality of the finished product. It may be said that all changes in milk are due to bacteria. Butter and cheese making both require the presence of bacteria, but the germ life must be of the right kind, otherwise they are undesirable, and will probably do harm.

Of course the maker wishes the milk to arrive in as pure a condition as possible, but the proper treatment must be continued in the factory if the best of products is to be expected. Numerous influences are at work in the factory, that add their mite to the milk in different stages of its manufacture, and ultimately affect in a serious way the final product.

The cardinal precept in the factory as well as the farm dairy should be: cleanliness. Cleanliness here mustn't be taken to mean a mere absence of dirt and filth, but all utensils that come in actual contact with the milk should be rendered as germ-free as possible. From the time that the milk is emptied into the weigh can, until the butter is in the tub, and the cheese on the curing shelf, it must be remembered that many opportunities for infection are present.

In the factory, as on the farm, milk is infected with germ life from the cans, vats, churns, pipes, etc. with which it comes in contact. In the creamery where steam is in use, there is no excuse for uncleanliness of any sort, as all utensils should be arranged so that steam may be readily applied.

The separator bowls, churns, cans and dippers should all receive a daily steaming. The rational nature of this treatment is seen in the case of pails and dippers that are used indiscriminately in handling the fresh milk, or the more highly contaminated waste products, as buttermilk and whey.

Of course the air in creameries is relatively free from dust, as during the greater portion of the day they are damp. Germs, to a great extent, come from the person of the attendants. Germ-life from this factor can be largely minimized, by having the attendants properly attired in white caps and suits provided for this purpose, and these should be washed at necessary intervals. It is readily seen that the value of these precautions are largely minimized, if the separator and ripening rooms are accessible to the general public, especially to those persons, such as farm-hands, that come continually in contact with dirt of all descriptions. The vat in which the cream is ripened should at all times be covered with a canvas or linen cover, so as to exclude dust and dirt.

Water, and to a less extent ice, always contains bacteria in varying numbers. The water supply requires minute examination frequently, often private wells are used, and they should be so arranged as not to receive any surface drainage. A deep well from which the water is used in large quantities, if properly arranged, it is claimed, will contain the minimum number of germs, as the bacteria in the water of the soil are filtered out in passing through thick soil layers. The majority of organisms in ice are destroyed by freezing, (60 to 90 per cent), so that water in this form is relatively freer from microbes than that in a fluid condition. However, ice which is taken from shallow, still ponds, where the germ-content is very high, must always contain a large number of organisms.

The construction and plan of a creamery should be such, that no undesirable germs should be able to gain access to any of the rooms, either from outside, or the basement, cellar, engine-room, boiler-room, or ice house. Where there is "mother earth" beneath the floors of a creamery, particular care must be taken that there are no openings which shall admit the objectionable mouldy smell; the engine room invariably has an oily smell which is not desirable elsewhere; whilst the boiler room is hot and frequently smoky, both of which conditions are objectionable where milk or cream or butter is being manipulated; ice houses as a rule, smell of sawdust or chaff, and should be isolated either by construction or location.

I could tell the makers lots of other things, far more personal, than these mentioned, without fear of—being eaten—; but I have been allowed to address them on the subject before, and I am sure it is not necessary to do so again so soon.

H. WESTON PARRY.

Nov. 27th, 1899.

LECTURE BY DR. GRIGNON.

I feel rather uncomfortable in addressing you, for the lecturers that have already spoken have said almost everything I was going to say. After having been a couple of days at our sessions, and after listening to all the speeches on the butter and cheese trade, you must surely think that we are in the "buttering" season. You know how, in election time, you voters are "buttered" by the candidates, by the canvassers, in fact by everyone; and now here you are being just as much "buttered" by the members of the Dairymen's Association. I hope, gentlemen, that you at least prefer our "butter" to the "butter" of the politician.

You are perhaps asking yourselves: Is not it queer what they want to do with us? They bring forward lawyers, priests, notaries, and now here they are putting up a doctor to talk farming to us! You would be wrong, however, to be surprised at that, since nowadays everybody takes an interest in farming. I saw in a paper that the Holy Father the Pope had directed wheat to be sown on his land, to see if there were lime enough in it; whereupon, I said to myself, if the Pope is a farmer, I do not see why Dr. Grignon should not be one, too. And if the clergy interest themselves in it, no blame can attach to them: for the same reason. All over the world, agriculture attracts the affections of all kinds of dispositions, and still more does it affect them in our country, I think. I have seen in the House, while ordinary matters were under discussion, members fast asleep at their desks, but as soon as the word agriculture was heard, everyone was wide awake. Have you not read in the papers how Lady Aberdeen had built a dairy at Rideau Hall, that her children might be taught to make butter in it? Do you

not know, too, that Our Gracious Sovereign, Queen Victoria, has a herd of cows, and has butter made by the princesses of the royal family? Looking upon such examples, is it not a shame for our little Canadian women to despise the farmer? For my part, I should always prefer a good milker to a *piano smasher!* (Applause), and if I had advice to give you, it would be to convert all your fine carriages, your trinkets, and your pianos into good milchcows: depend upon it the country would be all the richer for the change. When you see your Bishops, your priests, preaching agriculture, attending your meetings, you ought to be proud of the sympathy they manifest for you. Proud, too, ought you to be of the encouragement you receive from members of the House, and from Ministers. You have listened to their speeches, so full of good advice, and I trust you will put it in practice.

You have observed that the lectures and discussions at this meeting bore chiefly on dairying and pig-breeding. Well, there is still room for butter and for cheese. You are told everywhere in the province: make butter, make cheese; you will perchance inquire: Who is going to eat it all? Don't be afraid; there is plenty of room. England consumes yearly more than $60,000,000 worth of butter, out of which we only supply two millions' worth. Why, then, you will ask me, do we not get higher prices for our butter? Just consider; you are not the only people that send butter to England; there are other countries as well that are trying to get a hold on that market. So, we must do our best to make the best possible goods to prevent them. Don't fancy for a moment that the English will buy your butter out of sympathy, because Canada is an English colony. If our butter is better than the butter of other peoples, the English will buy it; what they want is something good; and when a good thing is offered for sale, the English do not stick at the price.

What distressed me more than anything else that I saw in my tours through this province, was the little care farmers take of their milk. At Beauce, last year, a farmer said to me: "What do you think of a man who takes a can of milk to the cheesery at the bottom of which, when it was emptied, was found a rat?" I replied: "You spoke about it to the man?" "Oh! yes," said he, "I told him it was not a wise thing to allow, and he replied: 'There is no use making such a fuss about it; this cheese is for the English.'" A peculiar way of looking at it, is it not?

I met a maker who was receiving 15,000 lbs. of milk a day in October. When he had shown me his books, and I saw the great quantity of milk he was receiving, I said to him: You must be rich and happy. "Not so much so as you fancy, Doctor; there are people who do not take much care of their milk, I can assure you. I have had milk here that had even dung in it." To which I replied: "Do you know that the man who sends in such milk is wasting three things; his milk, the milk of the other patrons, and a third thing: his dung?" "What then," he asked, "should be done to such a man?" "What is done to cats that are dirty in a house: rub his nose in it." "But," said the maker, "that is not so easy; he is a powerful man; a 'bully' in the parish." "But there is the law," said I. "That is not an easy remedy, either," replied he. "This man is the father of 26 children, all married, and all living in the parish. If I refuse his milk, the will go to his children, his sons-in law, their friends, and will tell them to keep their milk at home, and I shall not have a drop of milk." He was right, was this maker, up to a certain point; but, anyhow, he ought to have sent back the man with his milk, to see how his wife would have received him. Women are not always inclined to make butter, with a creamery at the door. And it is not every woman who knows how to make butter. In this case, the man, "catching it" from his wife, would have to give way; he would strain his milk, and every one would be satisfied.

Now, why do not people used aerating-strainers? Milk must be aired to rid it of the *cowy* taste that is communicated to both cheese and butter when the milk is not aerated, and it is to cure this that the use of aerating-strainers is recommended. Here is the reason why these implements are not in general use: of two neighbouring farmers, one bought an aerating-cooler and used it for some time; after which his wife said to him, one fine day: "I say; our neighbour does not use that strainer there, and he get as much for his milk as thou dost; if we do not use ours any more, it will make one fewer vessel to wash." The strainer was stuck up on a post, where it rusted quite at its ease. The neighbour sees it, and says to himself: "What is the good of having an aerating-strainer? My neighbour has tried one, and does not use it

any more; it can't be good for much. And it ends by nobody using a strainer at all.

At St-Prime, Lake St-John, there was not, formerly, a single aerator-strainer; the cheese made there was bad, and was refused at Quebec, whither it was sent for sale. A rule was then passed, to compel the farmers to use the aerator-strainer, and now good cheese is made there that will sell anywhere. The dealers no longer ask for samples; they simply write: "Send us your cheese, and we will pay you the highest market price for it."

Just now, you were told all about the selecting of cows, but you were not told how to select them. What sort of cows do we want? It has been found that the best cows for us are the Canadian, the Jersey, and the Ayrshire. This does not mean that you have not in your herds all that is needed to make good cows. If you would take the trouble to rear no heifers but those from your best cows, before the expiry of ten years, you would have the best herds in the world.

If you would pick out a good cow, take care that she is short legged, with a refined, delicate head, the horns curved inwards, the eye prominent and so intelligent that one would say it was about to wink at one. The bricket should be narrow, the hide supple, the ribs wide apart, and the *rosette* (?) on the back rather in the rear than in front; the further back it is, the better. These are some of the best points of a good milch-cow.

In selecting a cow, remember, next, that food seldom produces two things from a cow: meat and milk. If you have several cows, you will find that, with one, food causes the formation of fat; with another, the production of milk; these differing aptitudes are also found in their ancestry. A good milker is never very fat, neither is the heifer born from her; she arrives in the world weak, hardly able to get up alone; you feel inclined to kill her. But take the trouble to lift her up for a day or two, and you will soon find her as active and vigorous as her dam

Now, there is a mistake often made by our farmers, and encouraged even by some lecturers: they do not let their heifers calve early enough. In my opinion, heifers should calve at two years old, rather than wait till three. Why loss a year? Of course, this will not allow of the heifers being brought up along the high road; for the high-road and lanes are not the places in which to rear heifers. When I first began farming, I did like the rest; the first heifer that came, *hop!* on the road with her; another came, and the same treatment followed. The fall came, and the heifers were so poor and I was so ashamed of them that I denied having anything to to with them. A man came to see us one day, who, seeing the heifers, asked to whom they belonged. I said I did not know; but my boy, who was there, exclaimed: "Dost thou not recognise them, papa, they are thine." I though I should have died with shame, and I said to him: "Thou shalt never again make thy father blush about his calves."

Near us lived one Eusebe Lajeunesse, who always had fine calves. I asked him how he managed, that I might have fine ones too. "Easily enough," replied he; "come and see mine;" and he took me to the shed. "What, do you keep your calves indoor?" "Of course I do;" then, I observed what a trouble it must be to keep calves thus in a shed. He said it was no trouble; in the morning, he gave them clover and skim-milk for the first few months, and then clean water to drink. "I began with dry grain, skim-milk, and green-fodder, and in four months I refused ten dollars apiece from the butcher for my calves" "Why do you keep them in," said I? "Because," he answered, "the sun, the rain, and the cold nights keep my calves back" This man had a herd of 25 cows, out of which eleven or twelve had calved at two years old, and I could not distinguish these from the rest of the herd.

As I left, I said to myself: "Next year, Doctor Grignon, thou shalt have as fine calves thyself." The first heifer calf was promptly put safely into a shed, so was the second, and the third followed suit: it was a perfectly successful plan. Just try it, and you will see. Keep one calf in, and another out, and compare the two in the fall; you will find a difference between them.

Another mistake is, farmers do not keep on milking a heifer with her first calf long enough. At Michaelmas, a heifer with her first calf slackens in her yield; the wife says: "The cow begins to weary, and I do, too; she is giving less than a couple of quarts; we will dry her off." With the second or third calf, this cow, towards the time when she was dried off the first season, will dry herself off, just as if she seemed to say to herself: "There; that's my task done; I shall stop now." If you milk her 9 or 10 months after her first calving, you are making an udder of 10 months.

Do so ; for a ten months' udder is worth more than one of six months.—*From Dairymen's Ass. translated by the Editor.*

COMPETITION OF DAIRY-PRODUCTS AT MONTREAL, 21st OCTOBER 1899.

Judges of butter, MM. J. D. Leclair and J. A. Vsillancourt ; of cheese, MM. E. Bourbeau and P. W. McLagan.

23 exhibits of butter, and 24 exhibits of cheese were examined.

Prizes :

CHEESE.

W. B. Bullock, Marlington, Stanstead, 98 points, first class diploma, silver medal, and $11.00 in money.

Jos. Baillargeon, maker for M. J. P. Gagnon, St-Jérôme, Lac St-Jean, 98 points, a first class diploma, a silver medal, and $11 00 in money.

Geo. Blanchet, Sainte-Victoire, Arthabaska, 95 points, a second class diploma, a bronze medal, and $5.00 in money.

A. M. Méthot, Warwick, Arthabaska, 94½ points, a second class diploma, a bronze medal, and $4.00 in money.

Philéas Laroche, Tingwick, Arthabaska, 93 points, a second class diploma, a bronze medal, and $1 00 in money.

T. A. Danis, Sainte-Marthe, Vaudreuil, 93 points, a second class diploma, a bronze medal, and $1.00 in money.

BUTTER.

A. Beaudry, Saint Jean de Matha, Joliette, 97½ points, a first class diploma, a silver medal, and $10 00 in money.

F. Hébert, Rivière-Ouelle, Kamouraska, 97 points, a first class diploma, a silver medal, and $9.00 in money.

Marc McDuff, L'Ange-Gardien, Rouville, 97 points, a first class diploma, a silver medal, and $9.00 in money.

John Burns, Saint-Benoit, Deux-Montagnes, 96 points, a second class diploma, a bronze medal, and $7 00 en argent.

Amédée Grégoire, Saint-Anselme, Dorchester, 96 points, a second class diploma, a bronze medal and $7.00 in money.

Auguste Breton, Saint-Epiphane, Témiscouata, 96 points, a second class diploma, a bronze medal, and $7.00 in money.

Joseph Gauthier, Saint-Jean, I. O., 96 points, a second class diploma, a bronze medal, and $7.00 in money.

Philippe Morin, Saint-Valentin, Saint-Jean, 95½ points, a second class diploma, a bronze medal, and $6.00 in money.

Henri Perusse, Saint-Louis, Lotbinière, 95 points, a second class diploma, a bronze medal, and $5 00 in money.

Philéas Kirouac, Lamartine, L'Islet, 94½ points, a second class diploma, a bronze medal, and $4.00 in money.

Alfred Ostigny, Marieville, Rouville, 93½ points, a second class diploma, a bronze medal and $2.00 in money.

Eugène Métivier, Saint-Patrice, Lotbinière, 93 points, a second class diploma, a bronze medal, and $1.00 in money.

As usual, the chief fault, both in butter and chief, lay in the aroma. A great improvement, however, was apparent in other respects, such as the packages, salting, colour, grain, and texture.

The makers must really take every possible means to improve the aroma and flavour of their goods, though it is true that this improvement depends not upon them alone, but is greatly dependent upon the quality of the milk furnished to them ; so they must do their best to compel the patrons to supply them with no milk that is not of the very purest quality.

By paying attention to these points, makers would make their work much more satisfactory, and they cannot be too earnestly pressed to follow this advice.

(*From the French.* Ed).

MALT FOR DAIRY COWS

Ed. Hoard's Dairyman :—F. W. G., St George, Wis., writes inquiring if malt is a good feed for dairy cows, especially those whose milk goes to the cheese factory.

Malt is made by softening the barley grain and allowing it to germinate slightly through the action of moisture and gentle heat. Under this action the starch contained is converted into a soluble substance. The grains are then dried and the sprouts removed. Malt is a very palatable food article for stock and is much relished by them. Carefully conducted experiments by Lawes and Gilbert, of England, show, however, that the

treatment the barley grain undergoes in converting it into malt does not increase its food value, so that there is no advantage in feeding it over giving the barley grain direct.

The writer of this reply wonders if our correspondent does not mean malt sprouts, a by-product in malting. The tiny dried sprouts from the malt sprouts accumulate in great quantities where malt is produced, and these sold to stockmen for feeding purposes. Malt sprouts are a fairly satisfactory food for stock, but must not be fed in large quantity. Allow each dairy cow about two pounds of the sprouts daily, soaked with water before feeding, or mixed with silage which will furnish the required moisture. Malt sprouts are rich in protein, and hence are a desirable feeding stuff so far as that constituent is concerned.

W. A. HENRY.
Wisconsin Agricultural Experiment Station.

AMERICAN BUTTER IN ENGLAND

There is a market for American butter in England, but it must be the kind of butter that England wants. Shipping anything, just to relieve the market here, will never build up a demand for American butter. The Englishman knows what he wants and is not going to buy any thing else if he can help it.

An interesting trial shipment of American butter arrived on the London market this week per the St. Paul, and was on view in Tooley street. It represented variously treated butters from four different dairy states, namely, Nebraska, Illinois, Minnesota and Iowa. All the butters were made from separated cream, excepting two from gathered cream, and it is curious that the latter turned out the worst of the whole parcel.

The consignment from Minnesota and the unbranded butter from Nebraska, made a particularly good impression, and, although not quite equal to the best colonial, show a marked improvement on the States' butter hitherto received, and no doubt careful study of the market requirements will enable these shippers so to improve their quality as to compete successfully against the highest grades now reaching this country from Canada. The dairying industry has been rapidly developing in the United States during the past few years, but hitherto American butter has been coming over very spasmodically, the manufacturers evidently studying their home requirements exclusively, and simply sending over such surplus as was not wanted on their market; without paying particular attention in the preparation of these shipments, to the altered conditions required for English taste. With the increased output of dairy produce, the importance of this market has now attracted the interest of the more enterprising firms, who hope by cultivating the English taste to secure a permanent foothold here.

SLOPPY FEED FOR COWS

A good many farmers have the idea that if the feed of milk cows is cooked or given in the form of slops there will be an increase in the yield of milk. We have known men who were furnishing milk by the quart to townspeople to go to the trouble of feeding slops, frequently cooking them, saying that it would increase the quantity of milk and would decrease the richness, and it was quantity and not richness that made them money, says Wallace's Farmer. In this they are mistaken. This subject has been discussed quite freely at the stations. At the Highland Agricultural Society in Scotland cooked feed was given to four cows and uncooked feed to four others, and the only difference was that the cows receiving cooked feed gave six-tenths of a pound, or a little over one-half pint, per day more. This increase may have been accidental. At any rate it proves that the increase is not sufficient to justify the cooking.

The Ontario Agricultural College did some experimenting with regard to the slop question, and found that there was little or no difference whether the cow had the water in her slop or drank it afterwards. There was no evidence whatever that slops add in any way either to the amount of milk or its richness. There is a decided advantage in giving succulent food to dairy cows. Nature, or rather the Author of nature, has a trick in mixing water and the solids in the shape of growing things that the art of man has never been able to imitate; hence, the water in grass, in roots, and in ensilage has an effectiveness that can be supplied by no water that any man mixes with any kind of feed.—*N. W. Farmer.*

(1) Precisely what we stated in the JOURNAL 20 years ago with reference to the analysis of the swede and the mangel. ED

A SATISFACTORY YEAR.

The Dairymen's Association of the Province of Quebec meets at St. Jerome.

St. Jerome, Quebec, December, 5. — The Dairymen's Association held its eighteenth annual convention here to-day. Among those present were: The Hon. Sydney Fisher, Messrs. W. Garneau, M. P. P., Gigault, J. C. Chapais, J. L. Taché, L. Desjardins and Magnan. The first meeting was called for 10.30 a m., and Mayor J. B. Rolland was on hand to welcome the visitors, who came from all over the Province of Quebec. Mr. J. A. Vaillancourt was the chairman, and Mr. Castel acted as secretary. The other meeting were held at 2.30 p.m. and in the evening at 8 o'clock.

Messrs E. Bourbeau and J. A. Plamondon, inspectors, reported considerable progress in the province, but stated that there was still considerable carelessness among the farmers which should be stopped. A paper prepared by Mr. McFarlane on cold storage was also read, and Mr. J. H. Scott delivered a lecture on Progress in Butter making.

In his address during the evening session the Hon. Mr. Fisher enlarged on the necessity of improving the packing of Quebec butter. The quality was ahead of Ontario during the past season, but great losses had resulted from boxes which were not fit for shipping purposes. He favored a forward policy for Quebec dairymen, and promised the hearty co-operation of his department in bringing about any improvements.

Addresses were also delivered by several Quebec members and other prominent men.—*Witness.*

THE BUTTER TRADE AND IMPORTATIONS.

The diminished output of English butter, owing to the disastrous drought of the past season, has says the *Times* caused our markets to be flooded with imported produce. In September the quantity of colonial butter that arrived at our ports reached the unprecedented total of 3,800 tons, of which 3,220 tons came from Canadian ports, though part of this may have been American butter from Chicago, shipped via Montreal. Very high prices have ruled, but they are now declining. Messrs. Weddel report that the Copenhagen official quotation, which rose to 132s. per cwt. at the end of September, has now receded to 126s., but this is still 14s. per cwt. above the corresponding week of last year. Not since 1884 has the September quotation been so high as it was this year. How seriously the drought has affected supplies of butter from Europe may be gathered from the circumstance that for the four weeks ended October 7 we received from the countries around the Baltic —Denmark, Sweden, Russia—only 117,960 cwt., as against 154,737 cwt for the same period last year. In the same four weeks, France sent us 24,158 cwt., as compared with 29,616 cwt. last year. Our shortage for the four weeks from these European countries was thus 42,505 cwt. From Canada and the United States the excess this year, for these four weeks, was 54,521 cwt. In the cheese market there is a good demand for Canadian Cheddar at 54s. per cwt., but buyers find they have to pay 56s. to fill their requirements. Choicest parcels are commanding up to 58s. or 60s., and these prices must shortly be paid, as there is not a sufficient supply at the lower quotations.

VARIATIONS IN THE QUALITY OF MILK.

At the Agricultural Station attached to the Illinois University a test was conducted last year for the special object of studying the variations in the yield and quality of the milk obtained from a number of cows specially selected for the purpose, and the results obtained were very curious, and in many recpects very conflicting. The experiment lasted for a period of close one a year. As an outcome of the results obtained during that period the officials having charge of the researches came to the following conclusions :—

(1) The yield of milk from different cows under the same conditions differs greatly, and that from the same cow varies greatly from day to day.

(2) The composition of milk is highly variable; the ratio of fat to other solids, and that of solids to water, are not constant as between different cows or for the same cow on successive days.

(3) The percentage of fat, or of other solids, is not always highest in the smaller yields, but cows that give milk with a high per cent, of solids generally show a low total yield.

(4) Fat is the most variable constituent of milk, and its variations are independent of those of the other solids ; therefore, the yield of milk is

a better index of the other solids than it is of the fat.

(5) As regards the first and last milk drawn, the proportion of solids not fat is higher in the first, but the proportion of fat is decidedly greater in the last.

(6) Neither day time nor night time is shown to be superior as a milk-producing period.

(7) Different cows differ in their power to make milk from food, and the same cow varies in this respect from time to time.

(8) Aside from the influence of food or environment, each animal exhibits individual variations of her own, and such variations tend to show something like periodicity in the separate functional activities of the animal body.

The Garden and Orchard.

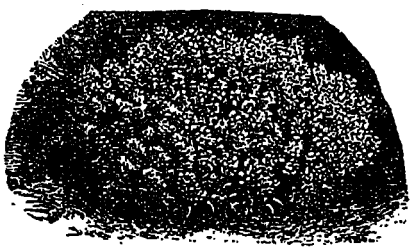
(Conducted by Mr. Geo. Moore).

ROCKERIES AND ALPINE PLANTS.

Having alluded in previous articles as to where ferns and semi-aquatic plants may be used with a advantage in a pleasure ground, we now notice how rockeries may also be made to aids its embellishments. There are numbers of hardy herbaceous plants whose natural habitat is among rocks and stones, and they seem not to thrive so well in any other situation, many of them are found by travellers in Alpine regions, in places where it would appear that vegetation was impossible, growing in small quantities of soil that had been washed down by torrents and found a lodgment in the little crevices of the rock, some peeping out of the melting snow, and charming the mind with a sensation of Spring in the most sterile region. Alpine plants are usually dwarf in their habit of growth, bearing diminutive leaves and flowers, which are no less beautiful, upon close inspection, than the gaudy plants of the prairie or the meadow. A few of the Rock or Alpine plants for artificial rockeries are: The Silvery Yarrows of Switzerland, *Achillea argentea*, it grows only six inches, has beautiful silvery foliage, and bears pure white flowers in the months of May and June in rich profusion.

Achillea argentea.

Alyssum saxatile compactum, silvery foliage with bright golden yellow flowers.



Alyssum saxatile compactum.

Aubretia deltoidea, purple rock cress, four inches high; one of the first Alpine plants to bloom in spring, and keeps blossoming for three months; flowers bright purple.

Aubretia deltoidea.

Cerastium tomentosum, (1) bright silvery foliage; flowers purest white; plant four inches high, blooms in early summer.

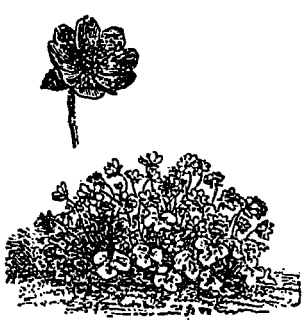
Cerastium tomentosum.

(1) *Tomentum*—latin—is the stuffing of a cushion. Ed.

Draba aizoides, a very minute plant growing only two to three inches high, with tufts of deep green foliage and small, but brilliant heads of yellow flowers, one of the smallest but, when in bloom, one of the most interesting of the Alpine plants. Some of the Welsh mountains, in the month of May, are aglow with its yellow blossoms.

Draba aizoides.

Hepatica tribola, flowers red, white, and purple, or pale blue ; among the earliest to bloom of the Apine plants, loves a rich loam and is generally found on the mountain side at the foot of rocks.



Hepatica tribola.

Lychnis alpina, dwarf Lychnis, or Lampflower, bears deep green leaves, and blossoms of deep rosy pink in May and June.

Lychnis alpina.

Myosotis semperflorens, a variety of the "Forget me not," which is ever blooming, as it name implies; grows well on rockeries and produces flowers of brightest blue. The true "Forget me not" Myosotis palustris, grows only on in moist soil.

Myosotis (1) semperflorens.

In dry situations or in parts of the rockery exposed to the sun, the Prickly pear, one of the Cactus-family, can be used with good effect and will form a pleasing contrast with the plants from the frigid zone. Three species, namely Missouriensis, Raffinesquii, and Vulgaris are all hardy and thrive in spots apparently bear of soil.

Opuntia or Prickly pear.

Saxifragas. Of these there is a large variety peculiarly adapted for the rockeries, the flowers of all are showy, and the foliage, very effective, even when the plant is not in bloom. There are two sections: broad and narrow leaved, some are natives ot the cold wilds of Siberia, some of California and some of the Himalaya mountains.

Saxifraga cerdifolia.

(1) i.e. fly's ear. Ed.

The Sedums or Stone-crops are the rock plants par excellence, they will grow where there is scarcely any soil, and when it is dry; their species and varieties are numerous, and all are beautiful and interesting; Spectabile is the most attractive.

Sedum spectabile.

There are also many other plants suitable for rock work but the above are the best.

We will treat of the formation and planting of rockeries in a future issue.

GEO. MOORE.

SPRAYING.

Next to good tillage, and the destruction of weeds, comes the important operation of spraying the crops with such chemicals as have been *proved* to be effectual in the prevention of plant diseases caused by fungoid parasites, and the destruction of the larvæ of insects which would prey upon such crops.

The difficulty is to awaken the farmer to the fact that, to insure the safety of his harvest, he must guard against all enemies that might destroy it, hence spraying is as much a necessity as good cultivation. And yet it is common to be met with such arguments as: "Oh! it is one of the new fangled ideas you scientists want to cram into our heads," or, "I have no time for such work!" But scientific experiments demonstrate truths, and all that the average farmer is called upon to do is to watch these, note their results, and put the knowledge thus obtained for him into practical effect.

The Departments of Agriculture have done a good work at their various experimental stations to prove the advantages of spraying, and had nothing else been done, the saving to the farmer and fruit-grower by the adoption of the system would be sufficient to counterbalance the whole expense of running the model-farms where the experiments have been made.

A farmer can scarcely be expected to be a scientific savant, because he cannot afford the time to study all the facts in botany, entomology, or chemistry which it would be necessary for him to be acquainted with, namely, the peculiar habits of certain vegetable and animal plant-destroyers, and the poisons which will prevent their propagation or subsequent growth; but he may read and study what the botanist, the entomologist, and the chemist have found out by the most patient research, and conform his practice to what he has learned from their discoveries

Several principles must be carefully observed to make spraying positively successful. Spray thoroughly, that is to say, be sure that the tree or crop sprayed is perfectly saturated with the mixture; always choose a calm, and, if possible, a cloudy day for the operation. Do not alter the formula of the mixture recommended; the chemist knows what is right, and one ingredient preponderating might alter the effect entirely. For instance, in "Bordeaux mixture," there is just enough lime introduced to counteract the too caustic effect of the sulphate of copper. Never spray fruit trees while in blossom; in the first place, it will do no good for the prevention of fungus disease because the fungi will not be developed, and the next place, you may kill your own, or your neighbours' bees, who are in search of honey, while the petals of the flower remain, but will come no more after they have fallen.

Alluding to Bordeaux mixture, the certain and infallible cure for all diseases caused by fungous growths, I remember about thirty five years ago, having a large stock of choice, named verbenas, and while I was propagating them, they were suddenly seized by a mysterious rust or mildew, which killed many and threatened to destroy the whole batch. I took some sulphate of copper, dissolved it, and added some quick lime to the solution, placing it in a barrel, I allowed it to settle and then inserted a tap above the sediment. I then drew off the clear liquid and sprayed my verbenas, and by this means I entirely prevented the spread of the disease. The difficulty of using Bordeaux mixture, unclarified, is that the lime spottles the foliage and disfigures it, but if it is allowed to settle, and ammoniacal copper carbonate added, foliage, and even flowers will not be injured by contact with the fungicide.

The apple is our most useful fruit, and seems to suffer from a greater variety of pests than any other

It is astonishing what an amount of damage the very lowest form of plant life, the bacterial fungi, can accomplish upon superior objects of the vegetable kingdom; floating about in the air, in an impalpable form, they settle upon buds, leaves, or young fruit, and prevent the flowers from performing their proper functions to aid the healthy development of the tree, so that it can withstand the effects of cold and become robust and vigorous instead of sickly and deformed. Or they may make their lodgment upon the fruit while in its earliest stage of formation, and then it either withers and falls off, or else the bacteria amalgamate with the juice which is being furnished to cause the fruit to grow, come to the surface in spots, distorting the fruit, causing it to lose its flavor, and making it unmarketable. This disease is well called apple scab, and is very common but easily overcome by the faithful and proper use of Bordeaux mixture as a spray. It is folly to suppose that a simple application will effect a perfect cure or prevention of the disease; to do this, persistency and systematic attention to detail is necessary, but other pests as the larvæ of the codlin moth and the bud moth can be destroyed by the same process with the addition of arsenical poisons as Paris green added to the Bordeaux mixture. Mr. E G. Lodeman, assistant horticulturist of the Cornell University experiment station, New-York, recommends six applications as follows: First application, when buds are swelling, Bordeaux mixture and arsenites; second application, just before blossoms open, the same; third, when blossoms have fallen, the same; fourth, fifth and sixth applications of the same formula at intervals of ten to fourteen days. Some people will say this is too much work and will not pay; but these must remember that the success of those who have adopted the system has been so certain and remarkable that they have proved that even so much work has been repaid to them in the quantity and quality of the fruit in a single season; and the difference is just that by spraying, a crop of choice marketable fruit can be secured instead of poor, miserable, unwholesome specimens, fit for nothing but to feed to the swine.

Next we have, probably, to encounter Bitter-rot, another fungoid disease which attacks the fruit when it begins to ripen. But again we resort to spraying, using the ammoniacal solution every ten days, and by this means most of the fruit can be saved.

Powdery mildew is classed by some with the insect enemies of the apple tree, but it no doubt is caused by a minute vegetable parasite; its attacks are usually confined to seedlings in the nursery and can also be checked by spraying frequently during the growing season with the ammoniacal solution.

The fungoid diseases of the pear, namely scab, twig or fire blight, leaf blight and cracked fruit, the leaf blight and black-knot of the plum, peach-cure, mildew of the grape and gooseberry, anthracnose and leaf-blight of the raspberry, and strawberry rust, all can be prevented from damaging the crop to any extent by spraying with Bordeaux mixture.

Insects too can be effectually checked by combining Paris green with the mixture in every case, and the cost is quite insignificant in proportion to the good achieved.

One difficulty has been the want of a proper machine to spray with, but the spramotor made by the Spramotor Co., of London, Ont, for which Messrs. W. Ewing & Co., of Montreal are agents, seems to fill the bill better than any yet invented. At any rate, it has received the highest awards wherever it has been put to the test, and has testimonials in its favor from many leading orchardists and experiment-stations. Paris green will not disolve in water, or at least, very slowly, and the undisolved particles stop up the nozzles; but this machine is furnished with a strainer which prevents this and an agitator which keeps the mixture stirred while being applied, and thus the whole is kept at a uniform strength. These are most important considerations. The apparatus is made in various forms to suit people of moderate or large requirements for orchard, garden, or field crops, and the prices, too, are moderate. An ounce of prevention is worth a pound of cure, the means to prevent the loss of your crops are within the reach of most, and experiments have rendered the fact of their efficacy so conclusive that there is no excuse for an orchardist who loses his fruit by neglect, for the farmer who suffers his potato-crop to be blighted or eaten by the Colorado beetle. And yet, I have met some, this very season, who complain that such was the case, and almost murmur at the decrees of Providence,

instead of attributing the failure to their own carelessness, indifference or stupidity, in not adopting means which they should be assured by the best authority would have prevented the damage and given them a paying crop. GEO. MOORE.

A DISHONEST PRACTICE.

Ontario Fruit Growers bent on putting a stop to it.

Whitby, Ont., Dec. 6.—At the annual meeting of the Ontario Fruit Growers' Association yesterday the salient feature was a discussion on fraudulent packing of apples for export. The facts stated by representative members showed that the evil was a grave one. A disgraceful sample of dishonestly packed apples was exhibited and a depressing letter was read from the president, Mr. W. E. Wellington, now in London, England, upon the low estimation in which Canadian apples are held in England.

Mr. A. H. Pettit, of Grimsby, introduced the subject with a paper on "How can we prevent trickery in the packing of apples for export?" and moved a resolution suggesting that certain marks be adopted by legislation, indicating certain grades and sizes of apples and that it be a misdemeanor to stamp these marks on packages unless their contents are of the quality stamped.

Mr. William Wolverton, the secretary, read a letter from the Dominion Minister of Agriculture saying that he is determined to investigate this matter of fraudulent packing and to do everything possible to check the evil.

Mr. Thos. Carpenter produced a sample of apples packed by a professional packer. The barrels were faced with Baldwins, but the inside apples were "ciders."

Mr. Wellington's letter compared the favorable position of the Nova Scotia apples in the English market with the suspicion entertained of the Canadian goods. The association expressed strong feeling on the matter and unanimously adopted the resolution.

The Poultry-Yard.

(CONDUCTED BY S. J. ANDRES).

ARTIFICIAL INCUBATION.

(*Concluded*).

Testing Eggs.

You may test your eggs this month and find them all right; next month they may be all wrong. Suppose that you wish to set two hundred eggs, and get several lots of eggs from different yards or persons to make up the number. One or two lots may be first class while of other lots nine-tenths are infertile and the balance too weak to hatch. If the separate lot were not marked you would *condemn the whole lot* and the parties from whom you bought them; and if you did not test them you would probably condemn the incubator or the hens.

In selecting and marking eggs, it is well to avoid extremely large or small ones, oddly shaped ones and those with cracked shells.

In testing, you can very often trace a number of infertile eggs to a particular hen by a peculiarity in shape and *a uniformity of size*—that is where a considerable number of eggs of a uniform size all possess the same peculiarity of shape, you can be reasonably sure that they were all laid by the same hen. You can use that hen's eggs for market instead of putting them in the incubator next time (unless you remedy the defect in the bird), and leave room for better ones.

Among the causes of infertile eggs and weakly fertilized eggs, are the insufficient number of cocks for the hens, or, which is just as bad, *too many cocks to a yard or colony*, old or worn out cocks, ill conditioned or debilitated cocks; over-fat or aged hens; too close confinement of breeding stock; lack of green food; too much meat; forced egg production by the use of condiments; low vitality of stock, from neglect to feed properly or protect from the weather or diseases.

Stale eggs are almost as bad as infertile ones. After an egg is eight days old, it begins to weaken, both as to the germ and the sac or tissues which envelop the yolk. The older the eggs are the fewer the chicks that hatch and the more feeble are those that do hatch. The percentage of

deformed chicks is greater and increases with the age of the eggs.

As the yolk forms no part of the chick, but is absorbed or taken into the chick just before hatching and is its natural nourishment for the first twenty-four hours *after hatching*, it is important that the egg should be as fresh as possible, when placed in the incubator. If the yolk should adhere to the skin of the egg, the chick must die, although it may break the shell. Some people have said that they have had from one to six chicks hatch on the second and third days after placing the eggs in the incubator; that they know the eggs were perfectly fresh, having taken them out of the nest each day, and that they would like us to explain the "premature" hatches.

They were simply mistaken. There was no doubt that the eggs hatched at the time stated, but that they were all fresh laid could not be true, unless a miracle had been wrought. Human ingenuity has dispensed with the hen as an incubatrix, but it is and ever be beyond human art or science to shorten the period of incubation. Newly laid eggs of certain breeds of vigorous fowls hatch from twelve to forty-eight hours earlier than eggs from some other breeds or older eggs from the same fowls; but that is natural, and cannot be changed by man.

Those "premature" eggs had certainly been under a hen or hens, or subjected to a heat of at least 101° for from sixteen to seventeen days previous to being placed in an incubator.

Now, if a few of the eggs were sixteen or seventeen days old, we may reasonably presume that some of the others were nearly as old; and if those which hatched on the second and third days had live chicks in them, might not some of the others have had dead chicks in them; chicks that had started and, after being taken from the nest, died before they were placed in the incubator?

If these eggs were tested on the fifth or sixth day, any large chicks would show, and they would ordinarily be taken for bad eggs, if dead; if alive, they would be taken for eggs previously started. But, if the germs had died at any time between the thirty-sixth hour and the tenth day, an inexperienced person would probably call them fertile eggs and let them go: then wonder they did not hatch.

This happens more frequently than is generally believed. Such eggs are easily avoided by using the tester before setting the eggs. Chilled, limed, scaled and cold-storage eggs, sometimes find their way into the incubator; but persons should not allow themselves to be so easily deceived.

While the majority of persons who have good incubators make good hatches, there are some who would make decidedly better ones if they would just study a few important points which are easily learned by the practice of simple and inexpensive experiments.

Few persons understand testing properly. Some have a very imperfect tester; some are unable to detect the fertile eggs closely—they cannot distinguish a dead germ from a live one, nor a weak from a strong one.

All eggs should be tested on the fifth or sixth day; at this test all clear or infertile eggs should be removed.

To become expert in testing eggs during incubation, it is necessary to have a good tester. By the use of a good egg tester any person can, with a little practice, learn to test eggs rapidly and accurately.

S. J. ANDRES.

The Horse.

HORSE MANAGEMENT

Practical hints for horse owners

Buyers of horses generally like to see the animal in motion before deciding whether they should purchase or not, but as a fact only when an animal is quite still can he be properly judged. If he is sound he will stand square upon his limbs without moving at all, and the legs showing themselves posed in a natural and plump manner. The feet should not be thrown forward, the heel should not be raised, or the foot be lifted from the ground, and the weight thus taken from it, as in any of these cases tenderness or disease may be suspected. Many owners desirous of disposing of an animal do not hesitate to make it trot, or otherwise to keep it from a standing posture, hence intending buyers should see the animal in both an active and passive condition.

A poor working team makes farming operations more costly. Grooming is essential, as it gives rest to tired muscles, being second only to proper food. It has been said that a good grooming is

worth 4 qts. of oats. Feed liberally, but do not over feed. Feed regularly, and see that the horse has its breakfast, dinner, and supper before you have your own. It is a poor policy to give horses no grain until they are about to do some job of a hard character or a season's work. Overfeeding with grain or grass causes derangement of the digestive apparatus, and impaired digestion means impaired usefulness in the long run. A horse will do more work on oats than on maize, and while maize will prepare a horse for labor, oats make a better ration during hard work; oil and starch in maize make it an undesirable summer food, as it is heating. Old hay, cut and mixed with bran, or a little meal, makes a good working ration, but if old hay is not plentiful, give newly cured clover or timothy. Give also an occasional feed of roots, apples, and the like, as they afford a variety, and help digestion. If at all possible, let the team during hard summer work drink once in the forenoon, and once in the afternoon, besides at their regular meals. See that the breast and shoulders do not chafe, to prevent which see that they have fitting collars, and bathe the shoulders with cool, but not cold water in returning from the field.

RESTING

Hard-working horses which lie down and take their rest regularly, are in a much better condition for the performance of their work than those which sleep at broken periods, or sleep soundly in a standing posture; indeed, it has been said that perfect and refreshing repose can only be obtained while the animal is reclining, and that although food is necessary to its health, sleep is equally so, and there is much truth in the remark. It sometimes happens that young, nervous horses on being brought into the stable for the first time refuse to lie down, and these therefore, should be induced to do so, in some way or other, before they are removed, it may be, to cities or large towns, where, if they have become at all conformed to the habit of sleeping while standing, much trouble will be caused in making them sleep in the proper way, if, indeed, the task is accomplished at all. Two things should be remenbered —first that regular rest or sleep is absolutely necessary to a horse; and second, that it can best be obtained when the animal is in a reclining posture.—*Stockbreeders' Journal.*

HORSEFLESH AS FOOD

France is not the only country where horseflesh is popular; in Denmark it is preferred by many people to beef. Hippic butchers at Copenhagen have been in existence since 1830, and in Belgium for 20 years. In Germany and Austria business is brisk in horse-meat preparations, and is becoming more so every year. England is still reluctant about accepting the new aliment and classes that kind of food alongside snails and frogs. The first hippic butchers in Paris were only established in 1866; ever since that special trade is legally carried on, and is considerably increasing, as demonstrated by municipal statistics—so much so that to-day over five thousand tons of horseflesh are consumed annually in Paris, sold by sixth licensed horse-butchers, who receive supplies from two special hippic slaughted houses, both outside the city proper. In both these abattoirs the sanitation is faultless, while the inspection of the meat itself is of the severest and most satisfactory nature, the same as for oxen, sheep and pigs.—*Sanitary Record.* (1)

BONE IN THE HORSE'S MAKE-UP.

An English live stock authority said recently: When considering a horse's points no practical man will begin to judge from the top. It is true that a horse with a taking head and general appearance is certain to attract anyone; but if upon examination of his feet and legs it is seen that he has not sufficient bone to carry him, however good his other points are, he is useless, not only for carrying weight but for standing much hard work of any sort.

This principle applies to all classes of horses alike. The draft horse requires sound, strong "underpinning" to carry his massive body and successfully move tremendous loads The massive leg, however, is not always indicative of that strength of bone alluded to. We must learn to judge of bone by appearance and feel. Commonly we hear of "flat bone" in a horse's leg, but there is no such thing in any breed. The bones forming the leg of a horse have, when sawed through, an elliptical section slightly flattened in front

(1) We well remember Lord Assulston's cab-horse, a splendid beast, being eaten by a party of "Swells" at the Langham Hotel. The meat was pronounced exquisite. Ed.

with the smallest diameter behind. The contour of the bone is, however, much more cylindrical than flat and this applies to draft as well as racing or trotting horses. "Flat" bone is then a misnomer, but "flat" as applied to the appearance of the leg is correct and the desirable shape in all horses.

A round appearing leg on a horse does not indicate round bone but a meaty condition, a coarseness of tissues and more than all a lack of development and cleanness of the back tendons. In coarse-bred, meaty legged horses of phlegmatic temperament and sluggish disposition the bone of the legs is not of the close ivorylike texture of the thoroughbred, but has a larger proportion of spongy tissue in its centre, hence it is considered weaker than the bone of finer quality. The appearance of a round, meaty leg, however, does not so much bespeak inherent lack of strength as it does undesirable attributes that generally accompany this type, such as grease, lymphangitis and other diseases of the phlegmatic horse.

Breed for the flat-appearing leg for the reason that the bones of such horses are "flinty" in quality, and accompanied by well developed, plainly seen tendons, and in draft horses by a fringe of long silky hair springing from the back portion of the leg, whereas in coarse-bred, sluggish horses the "feather" so-called is likely to stick out all around the leg and in quality is about as silky as the stuffing of an old-fashioned sofa. Choose the breeding horse that has big, sound joints and well-developed flat legs that properly bear his weight. See that he shows the soles of his shoes plainly as he trots away and it may be taken for granted that his temperament is desirable.

The big, flabby, "over-topped" horse is a poor type to breed. He has not the necessary quality and strength of bone to carry his body or stand hard work and it is usual to find such an animal "throwing out" splints, spavins, ring-bones, side-bones, curbs, etc. Such blemishes constitute unsoundness and seem to be nature's way of branding a horse according to his character as if to say the unsoundness seen is a cure evidence of an unseen source of unsoundness which is hereditary. As a general proposition we may confidently assert that the possession of sound feet and ample flinty bone of the flat-leg sort on the part of a breeding horse insures most of the other desirable attributes of a sire and should be always considered indispensable in selecting a stallion or mare.—*N.-W.-Farmer.*

THE UNSATISFACTORY STATE OF THE HOG MARKET.

A great deal of feeling has been expressed by feeders and dealers of hogs in regard to the action of the pork packers in lowering the prices paid for hogs during the last few months. For the first time for some years better prices have been paid in the Buffalo and Chicago markets for American hogs then were given by our packers for what are confessedly a better type of pig for the bacon trade with Great Britain, and y t our bacon sells for a higher price in the Old Country; although we are bound to say that the quality of American bacon and hams is improving so much that the premium on ours at present only amounts to a mere trifle in comparison to what it was a year ago.

But, while the American product has been improving, has ours done the same, or even held its own? We are sorry to say that, so far from doing so, it has even deteriotated. What, then, are the causes of this? The feeders, naturally, blame the packers, and hint at a combination to keep down prices. What have the parkers to say in their defence?

THE PACKERS' SIDE OF THE QUESTION.

In response to enquiries Mr. Flavelle, managing director of the William Davies Co., Toronto, has furnished us with the following information on this subject: Canada has pinned her faith on the production of a hog which will make what is known as a "Wiltshire-side" of bacon. This side is cured in such a manner that when it is ready for shipment it must go forward at once, and be sold as soon as it lands in England. The trade in these wiltshire sides in the Old Country is a weekly one. Small retrailers there govern their purchases by the amount of their weekly sales, and wholesale merchants are governed by the same conditions. On that account the packer in this country has to regulate the p ices paid for his hogs by the probable condition of the bacon market in Great Britain six weeks later, for, bad as the condition of the market may be then, these delicately-cured sides of bacon must be sold on

their arrival there, and all attempts to keep such stock must result in its becoming stale and selling at a loss.

The necessities of the export trade in Wiltshire-sides thus demand a regular supply of properly fed pigs of a suitable type every week in the year, but to furnish this steady supply is one of the hardest things to persuade a large proportion of our farmers to follow out. The old practice of marketing the bulk of their hogs in one lot during the fall months of the year is still largely followed by many, in spite of their knowledge that to do so involves a lowering of prices, to their manifest loss. The remedy is to market at regular intervals during the year, endeavoring to have the biggest bulk of their hogs sent to the market, when the demand is largest and prices at their best.

NO COMBINATION TO LOWER PRICES.

The interests of all intelligent farmers and the fair-minded pork packer are identical. The trend of the hog market is governed by purely natural conditions. There is not secret understanding between packers. We will not discuss the buying price for hogs with any other house, but pay what we consider a fair price, although we oftentimes lose money at the prices paid. For instance, for the week ending Nov. 11th our sales of bacon in London netted us an average price per cwt. of 40s. This bacon cost us landed in London 42s. 3d. a cwt. The week before the cost was the same, while the average price realized was 41s. 3d. The bacon landed in England the last two weeks in September, which represented hogs marketed during the first and third week in August, cost 47s. 6d., and realized 46s. 5d. Is it a matter of wonder that we immediately commenced to put down the price of hogs and have been doing so ever since? Now, as to the reason why the price of hogs has been put to 4c. Pigs bought at the present time will furnish the product that will arrive in England between December 16th and 31st, a period when the English market can do very well with one-fifth of its ordinary supplies on account of the great consumption of poultry at that time. The trade in bacon is then almost at a standstill; therefore, in sheer defence we have to put prices down to the present low point. The arrivals of bacon in England from Canada during this month and next, the two worst months in the year, will be the largest on record, and as these arrivals of generally excellent bacon follow a period of months when we restricted our outlet in England by an altogether insufficient supply of No. 1 bacon (which was rendered still smaller by a large percentage of fat and secondary bacon represented in the shipments), the result is that we lost touch with a number of merchants who used to sell Canadian bacon, but had to give it up because they could not get their wants supplied with bacon of first quality.

THE LARGE A PERCENTAGE OF FAT AND SOFT BACON.

And this brings me to the question that has frequently been brought to the attention of farmers, the large percentage of fat and soft bacon that is met with in curing. I have prepared a statement from April 1st to the middle of October, from which it will be seen that during June, July, August and most of September this faulty stock averaged more than one-third of the whole, and this, too, at a time when the demand is always best for bacon, and the requirements of the trade call for the largest percentage of the best stock. Speaking generally, covering the whole period, the fat bacon would average 65 per cent. less in price than the best lean sides, while the soft and inferior would average about 85 less. Each hog of 170 lbs. yields abont 95 lbs. of cnred meat. Each pig, therefore, represented in the bacon shipments for the period named, which gave a soft bacon, netted about $1.65 less than if it had been properly fed; while each pig fed to make the sides too fat returned about $1.25 per pig less than it would if the feeding had been properly done to make lean sides.

To meet these losses the packer has to reduce the prices he pays, otherwise his businesss would not pay him. Unfortunately these reduced prices press equally on the man who raises good stock and feeds them properly, and on the careless and dishonest farmer who raises inferior stock and feeds them indifferently, because, while a fat hog can be detected and discriminated against in price so that the feeder of it feels the loss, soft hogs cannot be detected until they have passed into the curing room. The remedy for soft bacon lies in the hands of the farmers themselves.—*Farming.*