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THE ILLUSTRATED JOURNAL OF AGRICULTURE

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Boro-Glyceride.

I have received a letter from Mr Vaudry, of Shefford, requesting information on the subject of Boro-Glyceride, its probable price, and where it can be obtained. There is, in Montreal, as far as I can learn, no druggist who has heard of the preparation, but on mentioning my wants to Mr Devins, near the Court House, he told me that he could compound it at a moment's notice, and that the price would be, as nearly as he could tell, from 65 cents to 70 cents a pound. No little gratitude will be due to Professor Barff, the inventor of this antiseptic, if all kinds of perishable commodities can be preserved by its use, at the mere trifling cost of a few cents for the treatment of many dollars worth of goods. The Boro-Glyceride, when properly prepared, is a white, crystalline compound, and should be mixed, for use, with fifty times its own *weight* of water. A gallon should not cost more than from 25 cents to 30 cents, and will preserve as much meat as can be surrounded by it in any containing vessel. The same liquid may be used over and over again!

A. R. J. F.

A Model Farm-School.

Our readers will learn with pleasure that a model-farm, of the highest class, with all the due accompaniments, will be opened at once, at Rougemont, in the county of Rouville. Instruction in the making of butter and cheese, both on a large and on a small scale, will be given gratuitously. The management of cattle of the best races, both native and foreign, will be part of the course of study; and, at the same time, the best methods of farming, of horticulture, and of tree-culture, will be taught with the greatest care, and solely with regard to the greatest possible profits to be derived therefrom.

An apprentice will be received from each of the twenty judicial districts of the province; and these districts will have the right to be represented at the school, if application be made in time by intelligent, laborious, and respectable men, who will pledge themselves to do their best to profit by the encouragement offered by the government of the pro-

vince, with a view to promote the best interests of agriculture.

Sons of farmers, above sixteen years of age, will be preferred. They will be boarded and lodged gratuitously, and a salary, in proportion to the amount of labour they perform, but not exceeding \$100.00 a year, will be paid to them.

It is certain, that a young man of good intentions, one who can read and write, can learn in the course of a year to make the best description of butter and cheese: this will easily enable him to earn \$2.00 a day, as good factory-men are rare, and much sought after. At the same time, his general knowledge of agriculture will be improved, and this increased acquirements will render him capable of doing immense service to the localities which may be fortunate enough to secure his assistance.

Applications must be made at once to the honourable Commissioner of Agriculture, Quebec. There are already many candidates, and if a situation at the model-farm is desired for this year, no time should be lost in forwarding requests to that end, enclosing the highest testimonials to morality, love of work, &c.

My readers will learn, perhaps with interest, that I am about to undertake the entire direction of this model-farm, and that *The Journal of Agriculture* will give full accounts of all the operations connected therewith.

ED. A. BARNARD,

Director of The Illustrated Journal of Agriculture

First steps in Farming—Young man's Department—

We brought our calf, in the last number of the Journal, to the weaning stage. It is now your duty to see that no falling away in flesh or fat takes place during the interval between June and the middle of October, at which latter date the young animal will be about to return to his original home in the stables. It is one thing to inspect a lot of young beasts twice a day in their winter quarters, and quite another to watch over their supplies of food and water during the out-door season; and I am sure, from long observation, that many a calf loses, from careless superintendence, more flesh during the latter months of autumn, than can be replaced at double the cost of the food it has eaten. The grand point is: frequent change of pasture. Fencing is expensive, we know very well; but strong hedges, like those figured in our last, can be prepared at a moderate cost, and with plenty of these there can be no difficulty in arranging matters. The old saying in the great grazing districts of England that, 50 acres in 5 fields are equal in value to 60 acres in one field, is as true here as there.

Grass land requires very careful management to get the full value out of it. Two things are to be avoided: overstocking it, and understocking it. The best way of escaping from these mistakes is, first, to have no more stock on the farm than the grass will support during summer in good condition; and to avoid continual stocking, the cattle should

not be allowed to remain too long in the same field. Place all the stook at once in the same field, until it is eaten down, and then change them to another piece. Thus, the cattle at periodic times will enjoy the flavour of newly grown grass, their appetites will not be cloyed by long pasturing in the same field, and the grass will not become foul by their constant passage over it. Watch the evident delight of beasts, horses, or sheep, turned into a fresh bite, and you will acknowledge that my recommendation is in accordance with reason and nature.

There is another principle involved in this way of treating pastures: the manner in which different animals crop the grass. The ox bites high; the sheep low, and the horse both high and low. And from these facts, we may deduce the following rules: the horse or the sheep should accompany or follow the ox; they should never precede him.

I need hardly harp upon the necessity of an ample supply of good fresh water for all stock. Sheep can, and do, bear its absence better than other stock; but even in the damp climate of England, every sheep-master provides drinking places for them: as may be seen any day on the Downs, where the water-cart is as necessary a companion of the shepherd as his dog. These Down lands, however, have a climate of their own, and are as dry in summer as our own province. In the western districts, where the clouds passing from the Atlantic first discharge their superfluous moisture, no water seems to be drunk by the sheep.

Shade is particularly desirable for the calves of the year. A portable shed, in the absence of trees, can be knocked up for a trifle, and will well repay the trouble of moving. Constant exposure to the burning sun of this country cannot be advantageous to the tender younglings.

The signs by which you may tell that your calves are doing well are these: a clear eye, a dewy nose, and a pleasant, gay manner. To be a good thriver, the hair should feel mossy, and the handling, or touch of the skin, be mellow. If the calf seems dull; if it keeps away from the rest; if it hangs its head; if its skin is hard and tight; in all these cases there is something wrong with the animal, and it should be attended to. Particular care should be taken to inspect young stock throughout the latter part of the season. The autumn rains and chilly nights seldom fail of injuring the health of one or more calves.

Acute rheumatism, called by different names in different districts, is the chief evil, and many a thriving youngster is thrown back by its attacks. Here, again, the portable shed will be of use, as a protection against the driving wind and rain. The moment you observe a calf suffering from pain—they generally lie stretched out at full length—remove it to the stable, keep it warm, with cloths or sacks steeped in hot water put over the loins, and the body rubbed dry afterwards, and give it warm mash of bran and crushed linseed with a little nitre. The swollen joints should be rubbed with hartshorn and sweet oil, after long continued fomentation with water as hot as can be borne.

A great cause of damage to young stock is changing them too suddenly from a bare pasture to one over-luxuriant. I may say that in some of our districts there is not much danger of this happening; but in the Eastern Townships, when the farmers turn the stock into the meadows after mowing, I have seen the calves gorge themselves, and evil consequences ensue. The first sign of illness in these cases is weakness, accompanied by a feeble and rapid pulse; some part of the body swells, becomes puffy, as if containing air, and the animal soon succumbs. There is no cure for it, but, as a preventive, our English graziers apply a seton in the neck, or dewlap, to all their calves in the autumn. A little good hay, as an alternative, might be beneficial; and I have heard, from

a large Scotch farmer, that since he gave his young ones linseed or cotton-seed cake, he has never lost one.

Towards the middle of October, the calves should be taken into the yards at sun-down. I say, into the yards, as no one can approve of tying them up, at all events the first winter. Colts and calves should have as much freedom as is compatible with the necessary warmth. Let them run loose as long as possible, and when confinement is absolutely needed, for want of room, try and contrive that they shall have a separate division of the stable, where they may kick about and play: half a dozen calves won't take up much space. Plenty of air, exercise, and well chosen food, will make very different things of your young stock in the spring to what we generally see in the province.

On the treatment they receive during their first winter depends the future profit or loss of all young stock. Bone and flesh (muscle) are the desiderata; fat is not required now, but if the animal is properly fed, a certain sufficient proportion of fat will always be deposited in the tissues, or rather, between them. Rough hay, good sweet straw, a little pease-meal and crushed linseed, is all that is necessary. Corn-meal is not wanted for any young stock, except for lambs preparing for the butcher.

Practical ration for calves: Chaff $\frac{1}{2}$ a bushel; pease-meal 2 lbs; linseed 8 ounces; linseed (crushed) to be mixed with $\frac{1}{2}$ gallon of water and poured over the chaff and pease-meal; the water may be hot or cold—except for milch cows, and, perhaps for fattening beasts. As a rule, I don't care for cooked food for cattle; in fact even milch cows don't absolutely show any profit on cooked food—potatoes, however *must* be boiled. For fattening beasts, it is so necessary to suit them in every way; to watch their tempers; to care for their peculiarities of disposition; and they do like warm food so much, and seem so comfortable after it, that I should, even with all experience to the contrary, be tempted to cook their food—at least to the extent of mixing the linseed with a good lot of boiling water.

The calves will be glad of any roots you have to spare; but with the above ration and plenty of good straw, cut green, they can do without them. The theoretical ratio of the diet of the growing animal may vary from 1:5 to 1:7, the more nitrogenous diet being most suitable for growing animals, or for the production of more rapid increase; our practical ration, mentioned above, will be found to be a medium between the two.

The character of the fattening process has been a great deal more thoroughly studied than the nutrition of the younger animals. And no wonder; for the profit and loss is very much more visible in the one case than in the other. To care for an animal with perfect attention for 3 years is one thing; to wait upon it for 4 months is another. If the body is to increase in weight, it is clear that the food supplied must be in excess of the quantity necessary for mere renovation of tissue, and for the production of heat and work. And when such an excess of food is given, part of the albuminoids and ash constituents will be converted into tissue, and part of the fat, carbohydrates, and albuminoids will be stored up in the form of fat.

And in this conversion is involved a most important consideration: quick, and therefore liberal, feeding is the most economical system. For it is clear that if a lamb be made fit for the butcher in one year, instead of taking two years about it, the food necessary to produce the work and animal heat for one year will be saved.

Again, economy of food is promoted by diminishing the demand for heat and work. A beast at rest in a stall, will increase in weight faster than a beast that has to hunt about on a pasture for his living. A pig, once more, will fatten

faster in autumn than in winter; for in the former case a far less proportion of food will be required for the production of heat than when the animal is living in a cold atmosphere. Keep, then, your fattening animals in a temperature conducive to their comfort, say 60° F.; let their food be properly prepared for them; and as quiet promotes their thriving, let their stalls be kept free from excess of light, and never allow dogs or cats to go poking their inquisitive noses about the sheds. I am a strong advocate for loose boxes for fattening-beasts. The extra cost is not great, and the rapid thriving of the stock well repays the trouble. Eight feet six inches square is sufficient space for a bullock which will weigh, when fat, 200 lbs a quarter. They should be dug out 2 feet below the level of the floor, and if there is no more straw given for litter than is absolutely necessary, the beasts will press down the manure so tightly that no formation of ammonia is possible; in fact, when the boxes, after from 3 to 4 months occupancy, are emptied, no disagreeable smell is perceptible, and the manure is in the most perfect state imaginable, all the solid and liquid excrements being as fresh and unaltered as when they were first deposited. The cattle are as clean as can be; they can lick themselves all over; and the trouble of currying them is saved. I do not approve of currying cattle—it pulls out the hair, and exposes them to chills; I would, if necessary, prefer rubbing them down with a wisp of hay or straw; but in the boxes nothing of the sort is needed—cattle will not lie in dirt if they can find a clean place.

RESULTS OBTAINED WITH FATTENING ANIMALS PER 100 LB. LIVE WEIGHT PER WEEK.

	Received by the animal.		Results produced.		
	Total dry food.	Digestible organic matter.	Food consumed for heat and work. (1)	Dry manure produced. (2)	Increase in live weight.
Oxen	12.5	8.9	6.88	4.56	1.13
Sheep	16.3	12.3	9.08	5.10	1.76
Pigs	27.0	22.0	12.58	4.51	6.43

RESULTS OBTAINED IN RELATION TO FOOD CONSUMED.

	Increase in live weight.		On 100 lb. of dry food.		
	Per 100 lb. dry food.	Per 100 lb. digested organic matter.	Consumed for heat and work. (1)	Dry manure produced. (2)	Dry increase yielded.
Oxen	9.0	12.7	54.9	36.5	6.2
Sheep	11.0	14.3	56.6	31.9	8.0
Pigs	23.8	29.2	46.6	16.7	17.6

(1) In calculating the amount of food consumed for the production of heat and work, it has been assumed that the fat in the increase has been derived entirely from the fat and carbohydrates supplied by the food.

(2) The manure is exclusive of litter.

Messrs Lawes and Gilbert have carried out, with that intense carefulness which characterises all their work, experiments on the three animals in feeding which the farmer is

principally concerned. They find, as the result of their work, that on an average of the whole fattening period, an ox will produce 100 lbs of live weight from the consumption of 250 lbs of linseed-cake, 600 lbs of clover hay, and 3500 lbs of swedes. Sheep will increase equally with 250 lbs of cake, 300 lbs of clover hay, and 400 lbs of swedes. Pigs require 500 lbs of barley meal to produce a like result.

ARTHUR R. JENNER FUST.

STATEMENT OF AMOUNT OF MILK, CREAM, AND BUTTER,
Given by *Oaklands Cora* 8853, A. J. C. C. at the public test at "Oaklands," which began on the morning of the 7th of March, and ended on the evening of the 13th March, 1883.

OAKLANDS CORA 8853.

DATE OF MILKING.	Weight of Milk.		Weight of Cream.		When Churned.	Amount of Butter.	
	lbs.	oz.	lbs.	oz.		lbs.	oz.
March 7th, Morning,	13	8	4	4	} Churned together Night of 10th inst.	8	6
" " Night,	9	8	3	3			
" 8th, Morning,	13	8	3	13}			
" " Night,	8	8	3	2			
" 9th, Morning,	11	8	4	4			
" " Night,	9	8	2	12			
" 10th, Morning,	12	8	3	4	} Churned together on 14th instant.	9	
" " Night,	10	2	15}				
" 11th, Morning,	13	8	3	10			
" " Night,	10	3	3	4			
" 12th, Morning,	12	8	4	6			
" " Night,	8	3	3	6			
" 13th, Morning,	13	3	3	15			
" " Night,	9		4				
Totals in 7 days,	155	8	49	9	Total Butter,	17	6
	lbs.	oz.	lbs.	oz.		lbs.	oz.

(Sgd.) E. E. KITTSO, Com., &c.

(Sgd.) JOHN EASTBROOK.

East Flamboro, Ontario, March 17th, 1883.

HOPS. (Continued.)

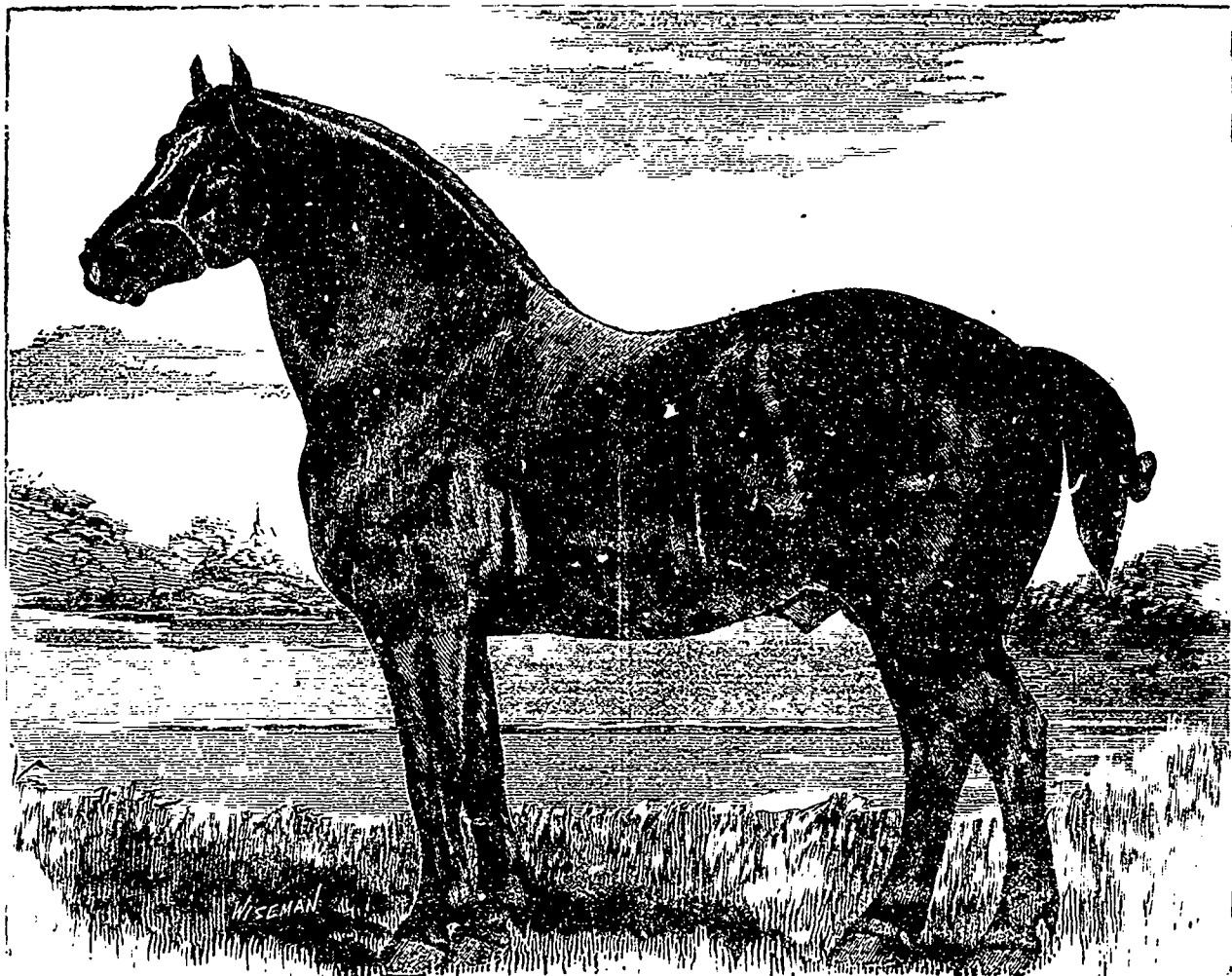
Poling.—The poles which were in use last year were, of course, carefully stacked, and covered in with a rough thatch of straw and hop-bine. Some new poles will be wanted, to fill up the place of broken ones. It is impossible to say what length of pole is necessary, as it depends entirely upon the strength of the land and the habit of growth of the hops; but a year or two's experience will give an idea of it. Every hill should be poled at once—one of the longest, the middle size, and the shortest, to each hill. They should be placed triangular fashion, and put into the ground to the depth of as many inches as the pole is feet long; but care should be taken that the end of the pole goes to the bottom of the hole made by the *fold-pitcher* (a pointed iron bar), the point of the pole being forced into the ground below the bottom of the hole to make it stand firm. A little earth trodden with the heel into the cavity made by the pole will help its rigidity. It is very desirable that the poles should stand in a right position: if there is a bend in one of them it should lean towards the centre of the hill, to be out of the way of the horse in the subsequent tillage operations.

Poles at the same hill should stand from 20 to 24 inches apart, according to the distance between the hills, and the greater or less quantity of bine which the land is accustomed to produce. Old poles should be tried before using them, by striking them a sharp blow at the spot where they protruded from the earth last season—this is the weakest place. Too much care cannot be exercised with the poles: some are sure to break down when loaded with bine and

hops, and it is small consolation to the grower to reflect that his own carelessness has increased the number.

Immediately after poling, pass the grubber through the yard, taking care not to injure the young bine. As soon as this is long enough to reach the poles, it must be tied to them. This is another ticklish job; the selection of the proper bine to tie can only be depended on by those who have had long practice. If they are not tied at the right time, the bines will twist up together, and a great many more than are required will run up one or two of the poles, so that much injury is done, and many of the heads are broken off in separating them to tie up to the poles. All pulpy, rank growing bines should be pulled out; they climb fast,

the remaining ones should be pulled up, unless one or two are spared for fear of accidents. The bine should be well tied to the pole at the bottom where it first reaches it, but care should be taken not to tie very near the head of the bine.—rather tie below the second joint. After the poles are all furnished with bines, the tier has only to see that they run up properly, tying up the heads that are hanging far away from the poles, for after a high wind, many a hundred will be found broken away, and there is no good trying to put them to rights until the wind stops, for many, in a still time, will get back of their own accord, so great is the desire of the plant to cling to something. Don't tie tight, but let the rush or other material be fastened in a slip knot, to allow



PERCHERON-NORMAN STALLION.

having their joints far apart, but they don't branch downwards or hop well. Three bines to a pole—9 to the hill—are sufficient: In Kent, they are generally tied with rushes, but old matting, or sedge, will do.

Some growers only give two poles to a hill and enormous crops have been seen under this treatment, but the fact is, that in what is called a *hop year*, any treatment will do: three poles are the safest. It is not necessary for the tiers to wait until there are three bines for every pole long enough to tie, but they should begin as soon as some will reach the poles, and go round again, keeping them tied up as they come to length, and when every pole is furnished with three bines

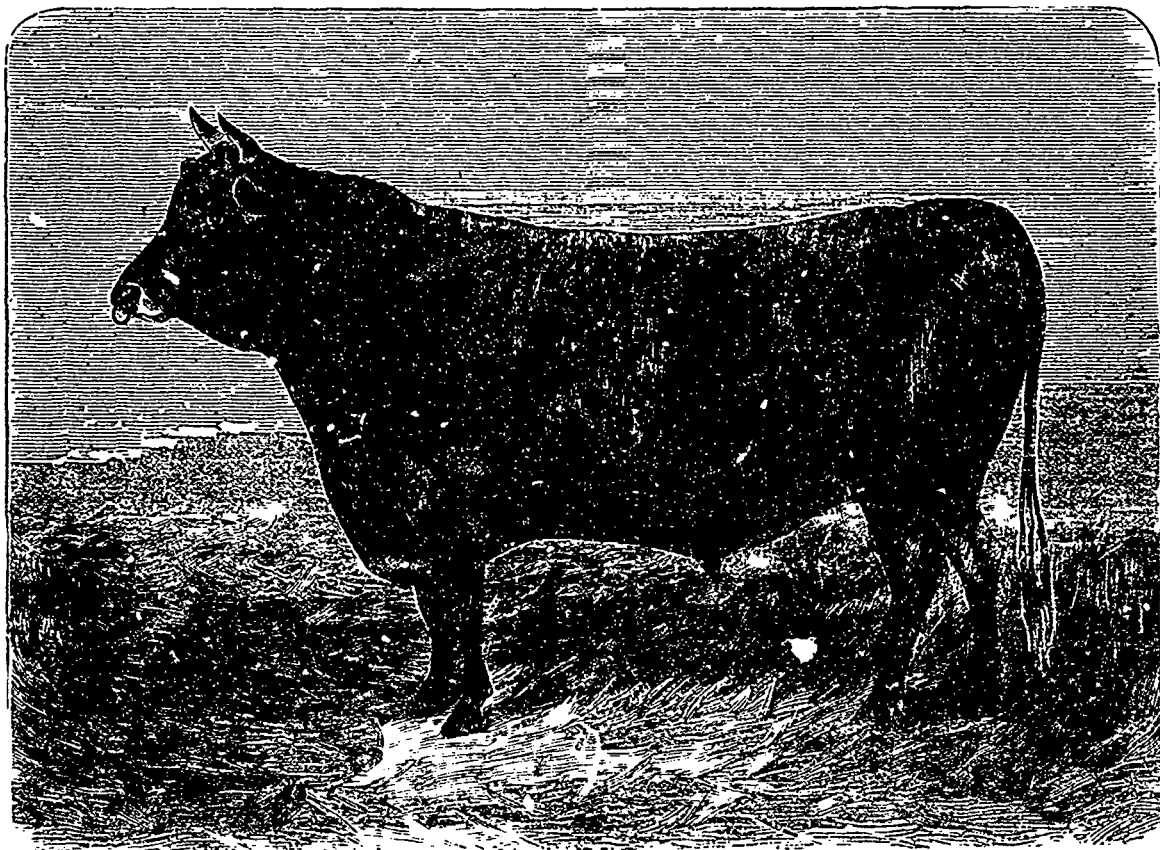
for the bine swelling. Lastly, clear out all the fresh grown shoots, and all the surplus bine, and strip the leaves and branches from the lowest 18 inches or two feet: this latter process, however, appears to me to be a doubtful one: many of the growers I knew never practised it, and, at best, it must injure the plant by depriving it of its natural mouths. The idea was, that by clearing away the lower growth, the land dried sooner after rain, and mould was less likely to occur. You will soon find out what mould means. Keep the grubber going all the time, until the burr is coming into hop, especially after rain, for if the land once becomes crusted and bound down with sun following hard rain, good

bye to your prospects of a crop. Hops won't stand being played with. Hand-hoe round the hills, and keep the land perfectly clean. A Kent or Surrey hopyard in August is worth a long journey to see.

Earthing the hills.—A small round of earth is put on the top of the bine between the poles, taking it from the alleys, and filling up the space between the poles. This process is essential for several reasons: to stop new shoots from coming out of the hills, and to keep weeds from sprouting. It also helps to keep the poles steady, it causes the bine to swell and provide new cuttings for the following spring; and it improves the crop for another year, inasmuch as where the bines were earthed the previous year, they do not shoot out and come as forward, but they are more productive in hop, and branch more than those not earthed. Keep on the grubber, and dig the hills again, if the earth is at all

120 bushels of sprats in the spring, are no uncommon dressing—cost for the two, \$75.00! As regards this country, all I can say is, that you can't overdo hops with manure. Guano is too dear for us; bone-dust made into a compost with earth, moistened and turned over once or twice; cotton-seed meal, blood, tankage &c, from the abattoirs; all are good in their way. The dung should be spread over the whole ground, and ploughed in; the lighter dressings should be given to the hills and hoed in, not too deep.

Diseases of the Hop.—In this division I include the insects which injure the hop-plant. First, the *wireworm*, which cuts off the plant just under the surface. The only cure for this pest is to put pieces of linseed, or other cake, about the size of a small nut, in the hills. Mr J. C. Charnock, now of Lennoxville, whose prize-essays in the Journal of the Royal Society of England are not so well known here as they



JERSEY BULL, LORD BACON.

bound by rain followed by hot sun. A rapid way of working with the fork, and one which I have always adopted in the cultivation of cabbages and tobacco, is to plunge the fork as deep as the spines will go into the ground, and pressing upon the handle as a lever, not turn the earth over, only break it up: the fine earth will, thus, be left atop, and the surface will admit the air and rain without caking.

Towards the end of the season, from high winds, some of the heads will break away from the poles. In this case, a *step-ladder* will be needed to enable the tiers to reach the necessary height. Poles blown down will have to be replaced, and should be re-pointed.

Manures.—It would frighten most of my readers, were I to tell all about the way in which our Kent and Surrey men manure their hop. Fifty tons of dung in the winter, and

deserve to be, is the inventor of this deadly trap. The brutes gorge themselves with the cake, and meet a not unearned grave in the very scene of their intended depredations. The general trap is a potato cut in two, which is to be visited every day and the beasts destroyed: it would be too often neglected, here, I fear.

One of the *Halticæ*, first cousin of the turnip-fly (beetle) is another vicious little wretch, which keeps on its deadly work until, often, leaves, shoots, and heads of the plant are all destroyed. In Kent and Surrey they sweep them into a tin funnel, stuck in a wine-bottle, with a feather-brush or a turkey's wing. Finely worked land sometimes escapes the ravages of this pest, when rough land suffers: can the fly hide among the clods? It may be so.

The Aphis.—The hop has its own *aphis* as the hen and

the dog have their special fleas. No sooner has the bine outgrown its devourer, the beetle, than down comes the *hop fly*, and the leaves, in a week or two after their first advent, are covered with lice and *nits*, as the eggs are called. The leaves are sucked dry; the juices of the whole plant is extracted; and the excrements of the predacious villains mix with the moisture of the morning dews, and, falling on the leaves below, form 'hat sticky composition called *honey-dew*. The head of the plant droops, from want of sap, and dies; the lice, having by this time gone through their various changes, die, too; the leaves dry up, turn a rusty black, and fall off; and few, if any, of the bines survive to produce hops. Six or eight weeks suffice to produce all these ravages. One curious thing is, that a hopyard infested with aphides one year, is sure to be free from them the next. The Lady-bird and its progeny feed upon the aphids, and great is the joy among our hop growers when a host of these appears. There is no preventive against the attacks of the aphids: good cultivation and plentiful manuring will sometimes enable a hopyard to persist in yielding after it has done its worst, but sometimes from producing too much sap, the beast is enticed to remain longer, and less time is left for recovery. The effects produced by the aphids and its progeny are commonly known among hopgrowers as the *blight*.

Mould.—A disease which attacks the finer sorts of hops more than the inferior kinds. Mysterious in its ravages, as I have known one yard attacked and destroyed, while its neighbour yielded a full crop. Blight is general in its work, mould partial. When first Guano was used as a hop-manure, it was credited with all the attacks of the mould; but men are wiser now. The yard once seized upon by this dire enemy hardly ever recovers, and the provoking part is this; the disease being partial, as I remarked before, does not raise the price, as the more general blight does: hence, the extreme speculativeness of hop-growing. Since I left England, I hear they have a way of washing the hops, for the cure of this disease, with a solution of flour-brimstone in water. It costs, as may be imagined, a round sum, about \$15 an acre, but as this year it saved about 3 cwt. an acre in some yards, where the hops without its use would not have been worth picking and as these few hops brought \$150 per cwt., it was not an extravagant investment. But we are not likely, here, to suffer so fearfully as our brother hop-growers in the old-cultivated countries. I fancy the dissolved sulphur is pumped over the hops with a garden engine.

As an old brewer, I hope none of my readers will pick their hops until they are fully ripe. Green hops may attract the eye of a tyro, but an accomplished workman won't look at them—there are not many such in Montreal.—When the seed is brown and firm; the leaves of the cones have a brownish tinge at the edges; and the hand feels full if it grasps a few cones and presses them together; the hop are ripe. The seed should be abundant, not that it is of any use in brewing, but because the more abundant it is, the more abundant is the *lupuline*, or yellow powder, called by England brewers *condition*, in which the whole virtue of the hop lies. When the hops are ripe, the lupuline plentiful, and the whole well dried, the cones will almost vanish on being rubbed between the hands. *Unripe hops never weigh well*. It is an absurd mistake, but a mistake into which many people fall, to suppose that green hops impart less colour to our fine pale ales than fully ripe ones. On the contrary, there is more danger of colour from the former, though, in point of fact, if the malt is pale, the little colour hops can give the beer won't be perceptible to the most accurate eye. Some years ago, there was a discussion on this subject between the Kentish hop-growers and the London brewers, and the former carried their point, declaring, as a

body, that for the future they would pick no more unripe hops to please any one. The use of sulphur, too, is absolutely useless: it may hide defects, such as splotches on the leaves, but it can only deceive the eye, while the nose and the sense of touch will easily set the real judge right. While seeing that your hops are fully ripe, take care that they are picked before the frost attacks them. Like tobacco, ripe hops will bear a slight frost without injury, but in late seasons, I have seen hops in a heavy soil, in a too shaded spot, severely damaged.

ARTHUR R. JENNER FUST.

(To be continued.)

Cotton-seed.

Oakley, Arkansas Co.

Arkansas, February 1st 1883.

Dear Sir,—Yours of 25th January enquiring the price of seed is just to hand; what I intended to say was that the seed at the gin, on the plantation, was worth \$2 per ton—delivered on river bank in sacks, (sacks furnished by purchaser) \$3.50 per ton—this was until last August—since then cotton seed has gone up as they are scarce this year, and the fact that many families are using the oil in place of lard has created a greater demand—they are now worth \$6.50 sacks on the river. Nearly all the seed has been shipped to the oil mills, and it is now too late to purchase; next fall I can purchase them for you and have them loaded in a box car and shipped to you; as I suppose you have railroad connection with Chicago. But I doubt if it will be as cheap as the hulled seed unless you can utilize the hulls and lint—I feed the whole seed with the hulls on, simply because it is cheaper than to pay freight on meal or cake. But of this you can judge best, if you know the cost of a car from here to Montreal; but if we had a small mill that could be attached to the engine that drives the cotton gin, and the seed hulled and then shipped to you, it would pay better than whole seed.

If you wish any seed shipped to you next fall I will take pleasure in giving you all assistance I can.

I think the cake is quoted at \$18 per ton in Memphis and it should certainly be shipped to you for \$5 per ton.

I should like to have a copy of your journal—and if an occasional article from Arkansas will pay for it send it on and I will write up Cotton farming and negro labour in the south—and why the cotton States or cotton planters are poor.

I will be pleased to answer any enquiries that I can. If the sheep rot is still prevailing in England, I should like to see a lot of rotted sheep fed on cotton seed before the oil is extracted, as I have reason to believe it will cure the rot.

Yours,
J. H. MOORE.

Upon reading your letter a second time, I have thought that I had not sufficiently answered your letter—when I spoke of the price received by the planter in Memphis I meant, "nett," after paying freight charges, sacking, and hauling to river or rail road. The best way to ship would be in bulk by railroad—if shipped by boat, sacks will be necessary to ship in. The cheapest place to purchase is on plantations, and you had best send your order by 1st Oct.

I hope the cotton states will engage in sheep husbandry, as they can then feed their cotton seed to sheep and at same time manure their lands as well or better than if the seed were put on the land.

Yours,
J. H. MOORE.

Arkansas Post, Arkansas, February 7th 1883.

Dear Sir,—I saw an agent of the cotton-seed oil mills of

Little Rock, Arkansas, and he stated to me that oil cake could be purchased from their mill for \$17.50 per ton, and he supposed that a car would cost about \$100 to Montreal and that a car load was 49,000 pounds.

I have a son in law living in Little Rock who will purchase for you if you wish it—the cake cannot be adulterated as it is cheaper and better than corn meal.

You could find out, from the freight agents of some roads running to Little Rock, what are the rates per car.

I rather think that if 5 or 10 car loads could be ordered at once that the price would be \$16 per ton.

Respectfully yours, J. H. MOORE.

AGRICULTURE.

PARIS, NOVEMBER 4.

The beet crop has not been good this year: the weather was unpropitious: the plant ripened irregularly, had a tendency even to a second kind of growth rather than to maturity. This told unfavorably on the richness of the root. The transport of the roots to the factory has been difficult, on account of the wet condition of the soil, and the washing of the roots was laborious, owing to the same cause, complicated by the numerous rootlets which the moist season developed. The factories were compelled to commence operations earlier than ordinary; in fact, there were in full work on the 30th September 226 factories, or 41 more than at the corresponding period of 1881. Also, 9,000 tons of sugar had been manufactured at that date. The mean degree of the juice was, 3.5, being one-tenth superior to that of 1881.

In Germany, complaints are rife, that notwithstanding the greatest care bestowed in the cultivation of beet, the crop fails to be profitable. Messrs. Kuhn & Liebscher have for some time been occupied with the investigation of the anomaly, and trace the cause to the presence of an insect, the *nematode*, which develops itself rapidly pending the summer and autumn in the roots of the plant; it multiplies by premature development and dies early. The best way to conquer the scourge is, not to cultivate beet too frequently on the same soil, and so starve the enemy out. The culture of cabbage and colza has been recommended as traps for the insect, which has marked predilection for these plants, and as the latter are consumed early, in the green state, multitudes of nematodes are thus extirpated. Leaving a period to elapse between the culture of the beet crops, in other words, adopting a rotation, appears to be the soundest plan for depriving the insect of its special food. Indeed, this truth is becoming daily more and more evident, that the destruction of insects, by depriving them for a definite time of their favorite aliment, is one of the fundamental advantages of a rotation of crops.

Something like a rago has set in to employ sowing machines. The only surprise is, that the change was so long coming about. Though Pliny desired a sort of cadence, or harmony, in the regular movement between hand and foot on the part of the sower, such could never compete with the implement. Indeed a sowing-machine may be regarded as a kind of harrow, with hollow teeth, depositing seeds at measured distances and fixed depths. Dr. Esbein, a noted German agriculturist, has recently published a work on the sowing of seeds in lines by machines. Hand sowings, however carefully effected, have the uniform vice of irregularity. The economy of seed by regulated distribution and equalised covering is enormous. Take rye for example; the thirtieth part of an ounce of rye contains on an average 32 seeds or grains: this would represent 360 grains per square yard: Remark in the autumn and spring a good field of rye, and you will never see 360 plants on a square yard of soil, per-

haps not more than 25 to 28, all badly grouped, and of unequal development. Judge then what must be the waste of grains in broadcast sowing generally. Institute a contrast with a field sown by a machine, and the comparison will be conclusive. Again, in Norway, where the fate of the harvest is a question of a few days, and where the winter snows often commence to fall before the shocks are carted home, the sowing of the principal crop, oats, is effected by the machine, and such secures invariably an advance of eight days in harvest. The complement of the sowing machine is the horse hoe: impossible to employ this instrument if the plants be irregularly distanced. M. Thomas estimates, that to sow the 18 millions of acres under wheat in France, seed, valued at 300 millions francs is required: the four-fifths of this value, or 240 millions, are lost, by unproductive hand sowings.

Salicylic acid is regarded as a poison by the French authorities, and so prohibited as an antiseptic in the preparation of wines, especially for exportation. Wine growers protest against the law, alleging, that the quantity of the acid employed, less than one quarter of an ounce per 22 gallons, cannot affect health. Besides, all Spanish and Italian wines are dosed with the acid, and no complaints are heard against such brands. Some farmers claim, that salicylic acid added to food, secures stock in sound health, and for horses and cows, maintains a shiny skin. In Austria, arsenic is given to horses; it imparts to them dash, fire, and induces foam at the mouth, a consummation wished for in carriage horses. (Oh!)

The dairy interest, and the municipal laboratory of Paris, are at war: the analytical chemist, M. Girard, a scientist of authority, declared, that the milk of cows fed on distillers' grains was aqueous to excess—in fact a baptizing of the milk, simply in an indirect form, and an evasion of the letter of the law: nay more, that kind of diet tended to make cows consumptive, and so created a danger for the community. The dairy farmers appealed to M. Bouley, head veterinary inspector: he does not believe the milk of cows so fed to be more aqueous than that from cattle nourished on the succulent pasture lands of Normandy. As to being a source of phthisis, the mammal of the cow allows no germ of that disease to pass into the milk: it acts as a filter. It is a fact, that consumptive cows diminish in their secretion of milk, and the farmer has no interest in keeping such stock. Some cows yield about 20 quarts of milk per day, others 15, even when not fed on grass. Now in the case of 135 dairies, whose stock are fed on grains from a large distillery in the vicinity of Paris, the maximum average yield of milk daily, for 2,122 cows, was 10½ quarts. This is but a fair production. In Rotterdam, where the grains constitute so greatly the diet of milch cows, the public has never complained of the milk. The plan of giving rations cooked to stock, is very wide spread among German farmers, who estimate that it enhances the value of the food one-fifth. Lucerne and boiled potatoes fatten sheep with marked rapidity, as compared with the use of the tubers in their raw state. The practice is extending in France. Another plan resorted to with profit, consists in the fermentation of the food. Straw or hay, when chopped, is mixed with sliced roots, in layers; then watered, plain or salted; or better still, with water in which linseed cake has been dissolved or some grains thrown in. The mass is placed in tuns for three days, carefully excluding the air—to ferment; the cattle relish it with avidity. This is after all only the trench preserved fodder system on a smaller scale.

M. Muntz has discovered some years ago, an animalcule (microbe) which had the property of inducing fermentation in ammoniacal substances, where the nitrates figure. Now, M. Gayon, also a chemist, of Bordeaux, has discovered a microbe with properties absolutely inverse: it attacks the

nitrites—instead of promoting, as in the other case, their formation, and disengages the nitric acid or other nitrogenous combinations. This explains the azotous vapour which escapes from the tuns in which the juice of beet-sugar is accumulated; the juice being knowingly rich in nitrates.

In the principal towns of Switzerland, gratuitous public lectures are delivered on agriculture, and its kindred sciences, during the winter months. The results have proved highly practical, and the lectures are well attended.

The agitation has been renewed to institute a "Herd Book" for France. The chief difficulty lies, not as to discussions on the subject of standard qualities as a type of certain races or breeds, but to convince breeders of the utility of the measure. France might be content with the examples of England, Germany, and Switzerland in this respect.

OUR ENGRAVINGS.

Percheron Norman Stallion.—A good illustration of the massive, heavy-draught horse.

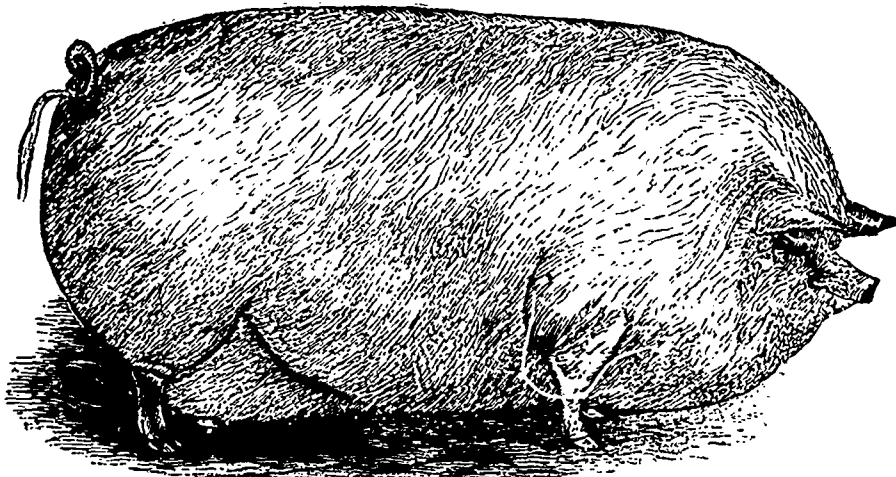
Jersey Bull.—Lord Bacon.

Victoria Sow.—Bred by Scheldt and Davis, Ind.

Shropshire Wether.—Winner of Sweepstakes at Chicago, Fat-Stock Show, 1882. This three year old weighed 270 lbs. Now as the Hampshire-Down lambs, at the late Smithfield Club show, weighed 224 lbs, and the shearlings 325 lbs, I leave my readers to judge between the two breeds.

finished pointing the wall on the inside with common lime mortar, and on the outside where it was above ground with Portland cement, and placed a building on the wall 18 x 30 feet, which I intend finishing off on the inside this year, by studding and boarding upon the inside, and filling in between with sawdust, leaving the inside of the building the same size as the inside of silo wall, which will give me a silo 14 x 26 feet and 16 feet in height.

In the spring of 1882, I thought I would put in a piece of corn for fodder, and try ensilaging it. Accordingly, after the ordinary spring's work was done and about the first of June, I drew out what manure I had in the yard, 10 two horse loads, and spread it on a piece of pasture land, a slight coating as far as it would go; then I ploughed 2½ arpents of said pasture, harrowed it well and drilled, in rows 2 feet apart, Western seed corn and one barrel of superphosphate. The seed proved so bad that I had to reseed again about the 16th of June. I ran the cultivator through the corn twice, that was all the cultivation it had during the season. That part of the ground which received the manure as well as the phosphate was heavy, some of it 12 feet high, and I should think produced fully 20 tons per arpent. The soil was a flat sandy loam, rather low for corn, in fact, a part of the piece was covered with water the last part of June, and the fodder was of a small growth on that part, but notwithstanding, I got 14½ tons on an average, (silo measure 50 lbs. to cubic foot,)



VICTORIA SOW.

Abbotsford Silo.

TO THE EDITOR OF THE JOURNAL OF AGRICULTURE.

Dear Sir,

Having had some enquiries about my silo, and having been requested by others to communicate my experience in ensilaging corn fodder to your journal, I send you the following, and if you think it would be of advantage to our farmers, please publish it.

Having taken a lively interest in the articles published in the Country Gentleman, in 1880 and 1881, on silos and ensilage, I determined to build a silo. Accordingly, in the fall of 1881, when farm work was not very pressing, I built the foundation of a silo, some 70 feet distant from my stable. The ground slopes enough to have the upper end of silo wall mostly underground, and lower end sufficiently above ground for a door to take out ensilage. The size of silo wall is 14 x 26 feet on inside and 8 feet high. The wall is 2 feet thick, and the stone laid in mortar as you would build an ordinary cellar wall for a house. During the summer 1882 I

per arpent.

On the 19th of September I commenced cutting the corn fodder with the sickle, and drawing to the silo, and cutting up the stock ¾ of an inch in length, with a Baldwin cutter, No. 13, with a one horse power; there were five of us at work the most of the time. But what with bad weather (it rained every day but the last two), old horse power, and other hindrances, we did not finish putting in and weighting our 65 two-horse loads until the 28th of September.

We used a horse 2 and 3 times each day to tread down the fodder in silo, and it is surprising how a horse will settle the pile, even after the men have trod it down as hard as they can.

On Sunday the 24th, of course, we did not touch the fodder in silo, and on Monday morning the fodder in silo looked and felt as if it had been dipped in hot water, and some of my neighbours who dropped in to look at the silo, predicted that I would have a good pile of manure there before long, and to all appearance there was a good show for it, for the whole

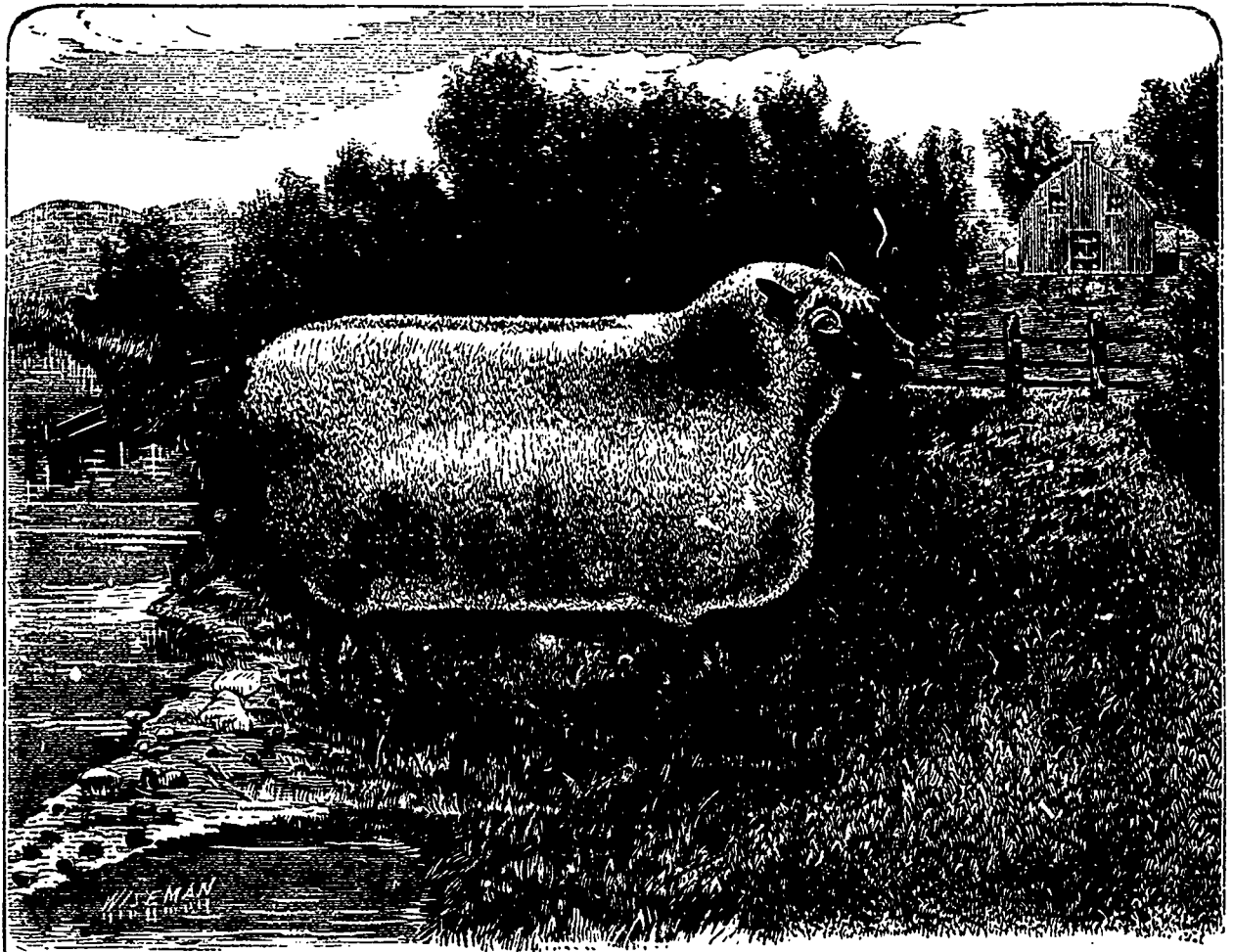
mass was very hot and moist. But I continued cutting and filling in the silo, and finished cutting at noon on the 27th.

We then trod the fodder well down, put a small load of straw on the top, covered it with $1\frac{1}{4}$ inch planks, laying them as close together as we could, and then covered the plank with about 15 inches of stone. Two men drew and placed the stone on the silo in one day.

The fodder settled 17 inches in silo during the next 4 or 5 days, there was no odour from silo that one could perceive, and the question was very often asked me by my friends, during October and November. "Well how is the silo, do you think it is all rotten?" Not having opened the silo I could not answer them positively, but said I thought it was all right.

the cows are on grass, although we did not feed but 600 lbs. per day to 18 head, and what straw they would eat, during the month of December.

During the months of January and February, I fed but 300 lbs per day to the 18 head, with what straw they would eat. Since the month of March came in, I have been feeding 300 lbs. per day with straw in the morning and at noon, and a feed of hay at night: 150 lbs. of ensilage in morning and the same at night. We fed the hay and then put the ensilage on the top of the hay, they will stop eating the hay and will not commence with it until the ensilage is all gone. This certainly shows that they prefer the ensilage to the hay. When I was feeding on straw and ensilage alone, as soon as the ensilage was brought into the stable they would



SHROPSHIRE WETHER.

On the 4th of December I opened the silo. Next to the door and along side of door, about 6 inches in depth, the ensilage was mouldy and rotten, and about 2 inches on top and down at the side of walls the ensilage was also mouldy and bad, but the rest has proved to be good.

We took out some of it and tried the cows and young stock with it, they all ate it without an exception. We tried the horses, they worked it over a little, but made up their minds hay and oats was better, and as long as they could get them they would let ensilage alone.

The cattle took to it freely, the cows increased in their milk, and the milk had the flavor of milk that we get when

stop eating, and appear as eager to get the ensilage as horses do their oats. The cattle are looking well, and are in full as good order as when they came into the stable.

I am so well pleased with the experiment that I shall endeavor to put 100 tons into the silo this fall, I think it answers (in a measure) the same as roots in winter, and is much less expensive. I do not think it costs me any more to cut the stocks and put them in the silo, than it would have done to stook and dry them in the field, providing you could dry them in the field, which is not very often the case, and I do not think the ensilage cost over \$1.00 per ton in silo, counting just the labor expended, exclusive of value of land,

manure and team, horse power, cutter, and seed. The 2½ arpents gave me 34 tons of ensilage, counting two tons worth one ton of hay this gave me 17 tons of hay.

This mode of preserving corn fodder, in my opinion, is of great advantage to the farmer: it makes him master of the seasons. If he finds that by the previous droughts or hard winter that his crop of hay is likely to be short, he can make up the deficiency by putting more corn fodder into the silo. If he wishes to increase the number of his stock he can do so and thereby increase the fertility of his farm, the contents of his purse, the number of his luxuries, &c., &c.

I was talking with a Mr. Swett (who is a foreman, and is keeping 300 cows, on ensilage, for Governor Smith, of St. Albans), and in comparing notes with him, I asked him if he had ever fed any animal on ensilage alone, for any length of time. He answered me that he had, and said "I bought a pair of two year old steers this fall, and have fed them on nothing but ensilage this winter, and have weighed them, at different times, during the winter, and their greatest gain at any one time was 156 lbs. in 33 days. They consumed 70 lbs. each per day of ensilage"; and he also said that they could not keep one half of the stock on the farms, if they had no silos.

I cut the hay on a piece of meadow, gave it a top dressing of manure, turned it over, dropped corn with a drill at every second furrow, on the 18th of July harrowed the piece well to cover corn, and had a nice growth as thick as it could stand 2 feet high, for fall feed.

Hoping that other Canadians will give the journal the benefit of their experience in ensilaging. I remain yours &c.
N. C. FISK.

Abbotsford, P. Q., March 12th 1883.

Growing Potatoes

HERE is my experience in potato growing the last two years: I plow the ground deep in October, using a jointer on the plow and turning all the sod under, and then in winter the manure is hauled on and spread. As soon as the soil is dry and the weather warm enough—in March or about the first of April—the ground is well stirred up with the double-shovel plow and thoroughly harrowed until it is as fine and smooth as the onion beds of most people. Then I run furrows, using a two-horse plow, throwing the furrows out each way. I set the plow shallow and don't let it go too deep. In using the shovel-plow the soil falls in behind the plow and is not left nice for covering with the harrow. I cut the seed potatoes some two or three weeks before I expect to plant, spread them in a thin layer, and sift plaster or lime over them. Thus treated, they will come up stronger, and also earlier. I always plant as soon as the weather will admit; for late-planted potatoes do not thrive in this section on account of insect pests, and if there happens to be a drought they are generally injured more than the early ones.

The potatoes are cut to one eye in a piece, and the furrows are three feet wide, the "seed" being dropped about 18 inches apart; but when I want to grow something extra, I plant about 2½ feet in the row. When all are dropped they are covered with the harrow, which can be done very easily as the ground is thrown up on each side of the furrow, and when the earth is completely levelled they are all nicely covered, and as soon as they begin to come up I put on the harrow. There is no danger of tearing them out. Then, in three or four days I put the double-shovel plow to work, and work once a week until the tops fall over. They are never worked after that, but the hoe is used in keeping out the weeds, as potatoes and weeds were never made to grow together. I cultivate as nearly level as possible, as I consider it the height of foolishness to ridge up potatoes.

The past season I had an experimental plot on which 21 varieties were tested, half a pound of each having been planted on the same day. All received the same cultivation, but the results were quite different. Some of the old and degenerate varieties, such as the Fluke, Cow-horn, Blue Neshannock, Peachblow, etc., didn't yield one-tenth as much as some of later date. Below I will give the results from half a pound of cut "seed" planted in each case:

Mammoth Pearl, 137	Chicago Market,	73
Grange, 130	Ontario,	85
White Elephant, 121	Compton's Surprise,	17
B. of Hebron, 109	Blue Victor,	65
Belle, 105	B. Neshannock	7
St. Patrick, 101	Watson's Seedling,	35
Clark's No 1, 92	Peerless,	55
Snowflake, 42	Dunmore,	64
Magnum Bonum, 70	Early Ohio,	62
Early Rose, 48	White Star,	80

The plot was fertilized with 30 bushels of wood ashes and 15 bushels of hen droppings to the acre. Some will ask what would be my choice of all the leading varieties for the main crop. To all such I would say, give me for early the Beauty of Hebron, Ontario and White Star; for second early, the White Elephant, Grange and St. Patrick; and next, Mammoth Pearl, Belle and Blue Victor; but if I were to be restricted to four only, give me the Beauty of Hebron, White Elephant, White Star and Mammoth Pearl for the main crops. We have potatoes that possess really finer qualities than any of these; but they are poor yielders, so that they are desirable only for family use.

I exhibited 25 varieties of potatoes at the West Virginia State Fair at Wheeling, where I secured the red ribbon on the White Elephant over all other competitors, and was also successful in carrying off the first premium on several other varieties.

Probably, no vegetable is of more importance, the world over, than the potato. Therefore, whatever can be done to increase its productiveness or to improve its quality, should be taken advantage of by all who are interested in its cultivation. There is no disguising the fact that the potato, when propagated year after year from tubers in the usual manner, is subject to deterioration, degeneration or a continual "running out" of its productive capacities. Where are our Flukes, Cow-horns, Mercers, Neshannocks, Peachblows, and other standard varieties of 25 years ago! Meagre indeed are the returns from our old favorites. Their day has passed, and others have taken their places, and these in turn must give way to others when they become unproductive, as they certainly will; but yet there are farmers in my neighborhood who still cling to some of those old varieties, apparently through "contrariness."

Belmont Co., Ohio.
New-Yorker.

THEODORE NEFF.—*Rural*

VINEYARDS.

The winter of 1881-82 will always be reckoned among the most disastrous seasons in regard to its effects on the cultivation of the vine. The alternations of frost and thaw, its characteristics, have sorely tried, not only the vines, but in a still greater degree, the half-hardy plants and trees. Many a garden has entirely lost its gooseberries, raspberries, &c.

Nor was the spring of 1882 more favourable. The vines which had escaped, though in a weakened condition, the murderous attacks of the frost, in vain attempted to set the sparse flowers they put forth; the plums, pears, and apples, suffered in like manner from the late frosts, the chilly rains, and the absence of sun: in fact, the season was as unproductive of fruit, as it well could be.

The practical vine-grower, then, must find it most interesting to investigate the consequences of the excessive inolemeny of the spring and summer. Many a valuable lesson will he deduce from his observations. He will see at once, that the vines which have escaped from the rigours of the year are, without doubt, hardy and worthy of confidence; while others, which have only partially suffered, may be tried again with care and on a small scale.

To have ocular demonstration of these things, I paid a visit to the College of Montreal, on the 13th of last September, where I closely inspected the splendid vineyard established there; and, subsequently, I spent a short time in the smaller plantation of the Oblat Fathers, Visitation street, Montreal.

The vineyard of the College, as regards its exposure, occupies a site almost unique. It is in the form of a horse-shoe, sloping to the south, and sheltered from all the winds which blow from the other points of the compass. Trees, scattered here and there on the slope, retain the snow. In summer, the plantation, from its situation, receives the full benefit of the sun's rays, and the air, rarely agitated by the wind, does not suffer from the sudden changes of temperature so characteristic of our fickle climate.

Terraces, about 6 feet wide, have been made on the slope, one under the other, and the vines are set at from 3 to 4 feet, from plant to plant, in a sort of niche, so that the ground, when the vines are covered in the autumn, is level, and does not present those hillocks so liable to be left bare of snow in the thaws of winter when the ordinary mode of cultivation is pursued: v. cut.

The vines are trained to a wooden trellis 6 feet high, with three horizontal bars.

The distance left between the plants will probably be considered too little. But it would be as well to say, at once, that the vines are principally of Italian origin, and much less luxuriant in growth than those of our continent. Still, in my opinion, the distance, even for foreign vines, is not sufficient, and better results would ensue if it were increased.

The space between the rows varies from 4 feet to 10 feet, according to the nationality of the plants. A row of currants has been placed, where there is room enough, between the rows of grapes. These are cultivated bush-fashion, in order to admit of the cultivation of the soil, and to compensate for the land lost by the wide extent of the alleys.

Of well established vines, from 2 years old to 6 years old, there are about 7,000, here; not above 4 of which were destroyed by the cold of last winter. Seventy-five varieties of grapes have been imported from the Italian Alps, 44 of which have been discarded as unsuited to our climate. After a severe trial, 31 varieties are proved to be able to stand the Canadian winter: a most important acquisition to American vine-growers.

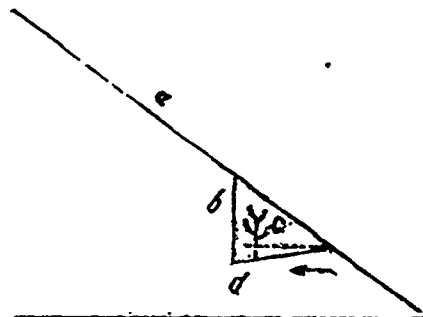
The most numerous of the imported black grapes is the *Teinturier* (*Dy* a very vigorous grower for an Italian vine. Its leaves show a deep violet colour from the month of August. The skin is very thin, the stones excessively small, and the interior is all juice, which, if you squeeze the fruit, spurts out in your face, and nothing but a stone or two and the thinnest of skins remains. Excellent in quality and abundant in quantity, this grape furnishes the most wine of all those grown here; but it is not a good dessert fruit (1).

There is a black *Chasselas*, too, the earliest of all the grapes in the College vineyard. Many white *Chasselas* are grown, and a good dessert grape, called the *Judea* (*Pales-*

line?), the bunches of which are often more than a foot long. Its fruit is oblong, and loosely set.

From these details, it will be clear that the principal object of the College authorities is the acclimation of foreign vines. Still, they cultivate several American sorts, among which we saw the *Champion*, Salem, Brighton, and especially the Delaware. According to the Manager's idea, the *Champion* is absolutely worthless, being neither hardy nor fit for wine, and as a dessert grape he considers it utterly valueless. The Salem and the Brighton are good, but, still, he gives the preference, both for wine and for the table, to the Italian sorts. The best American grape, he thinks, is the Delaware: it is the only one of that nationality planted in any quantity in the vineyard (some hundreds); and much good is augured from a nameless black grape, the clusters of which are thick-set, the berries medium, and the juice abundant, from the garden of a Mr. Tait, in the neighbourhood of Montreal.

In addition to the 7,000 vines mentioned above, the College has started 50,000 cuttings. It is to be hoped that, when the question of acclimation is settled, the College will enable the public to benefit by the purchase of plants of the best varieties.



Experiments were made last season by sowing the seeds of the grapes grown in this vineyard, and the result is that there are now 30 plants of this origin. This is not the least interesting of the trials made here. Some of these plants must be hybrids of the European and American sorts, and, doubtless, among them will be found one or more new varieties, uniting the hardiness of our vines with the fine quality of the European vines.

It must be allowed, that if the grapes have not suffered much by the winter, the inolemeny of the spring has had the effect of greatly reducing the quantity of fruit they have borne. The dropping off of the grapes has been generally felt throughout the vineyard. I also observed that more than half the cuttings under two years old have perished. Still, on the whole, the vineyard has not much suffered.

During last season, the College made 250 gallons of red and white wine, both of which I tasted. The red wine made chiefly from the "*Teinturier*" grape, is not a high class wine, still it is good, with a little acidity, and rather resembles some qualities of clarets, St. Estèphe, for instance. It is pretty strong in alcohol. The white wine might be mistaken for Grave. These wines are only yearlings, and they may be expected to improve by keeping.

The peculiar position of the vineyard of the College of Montreal, it may be said with justice, eliminates it from all comparison with others situated in the same latitude; nevertheless, we ought to follow with great interest the experiments that are being made there. The west of the Province of Quebec, and the Province of Ontario will reap great benefit from the trials instituted by the College, and will acquire specimens of foreign varieties of grapes which will render possible the manufacture of good Canadian wines. But let it be well understood that I am speaking only of the

(1) As I have often stated in the Journal, it is useless to expect dessert fruit, whether grapes, apples, or pears, to make first-rate wine, cider, or perry. A. R. J. F.

province of Ontario and of some highly favoured spots, as to climate, in Quebec. Beyond these places it would be a *bêtise* to invest considerable sums, as some have done, in planting vineyards for the manufacture of wine for sale. This is the settled opinion of grape-growers.

One word as to the small vineyard of the Oblate Fathers. It is well protected on all sides, and is about an acre in extent, containing 500 vines, planted very close together (3 feet on an average), but well pruned. There are the Chasselas, and some of the American sorts. I could not learn much about them, as the Brother who accompanied me in my visit did not understand any thing about vineyards.

The vines have not suffered at all from the bad season. They are, literally, loaded with fruit, and some of the clusters of Chasselas are enormous, and very much advanced in the ripening stage. Here, again, is an exceptional case—all vineyards cannot be so fortunate as regards shelter as this is. Here, was a magnificent wild vine, with berries almost as large and quite as thickly set as the *Hartford*. Mildew has injured this as well as the College vineyard. But I was told one dressing with sulphur put a stop to its ravages.

From the French.

J. C. CHAPAIS.

Cotton-seed.

The State Granges of Mississippi and Georgia are endeavouring to prevent the sale of cotton-seed:

"Whereas, the selling of cotton-seed from the plantation threatens to bring sure and speedy impoverishments of the land and landlords, and is questionably remunerative at all to the first seller, therefore be it

"Resolved, by the State Granges of Mississippi and Georgia, that we, the delegates thereof, do earnestly pledge ourselves to use increasing efforts by reason, and by the terms of contracts with our tenants, to stop this nefarious traffic; and, furthermore, to get all possible co-operation in this effort of all land-owners in our respective counties."

At present, more than half the cotton-seed grown is allowed to rot in heaps at the side of the gins. The seeds yields fine and well flavoured oil, and should be sold to the crushers, to be replaced by cheaper fertilisers. Evidently, the Southern land-owners are imitating the system of the English landlords, which forbids the sale of hay, straw, turnips, &c., from the farms.

Hampshire Downs.

You advocate Hampshire Downs. Can I purchase any in this Province, and where? What a pity it is that farmers do not advertise more freely in the Journal of Agriculture!

Yours truly, "Quebec County."

In reply to the above, I beg to inform the writer that there are, to the best of my knowledge, only two Hampshire Downs in the Dominion. It only needs a glance at the last number of the Journal to show how superior they are to all other breeds of sheep in that most desirable quality, early maturity; a superiority which they keep up till their full growth. As I have said before, they are not *show-sheep*; many a man who sees them for the first time would be disappointed in their looks, as there is certainly a want of finish about them; but I have bred them, and I know their hardiness, and their capacity for making mutton and wool on the most moderate keep. I give the patriotic Mr George Whitfield due notice that I shall let him have no peace until he sends an order to England for the purchase of a flock of these invaluable sheep. (1)

A. R. J. F.

(1) Mr Eady, whose advertisement noticed last month, will import largely of Hampshire-Downs this summer. I hope to see some of them at Mile End in September.

A. R. J. F.

Canadian Cows.

A gentleman writes from St. Barthéolmi to say that a neighbouring farmer has a Canadian cow which, in the month of January last, was giving two pounds of butter a day. I have done my best to get a class provided at the Provincial exhibition for Canadian cows, and Mr Laroque has given me a promise of \$75 for the prizes; but, for what reason I know not, there seems a reluctance on the part of the authorities to avail themselves of this liberal offer. The owners of pure Canadian cattle should really begin to press their claims to fair treatment. They cannot expect that every thing should be done for them; if they will not move in their own affairs, the usual fate of the sluggard will befall them. The preparations for the exhibition will soon begin, and I shall be woefully disappointed if I do not see there a fair number of the true native stock of the country. The money is ready for the prizes, and I do not see what hindrance there can be. (1)

A. R. J. F.

REPORT OF POLE STAR CREAMERY FOR 1882.

Creamery opened May 23, closed Oct. 31.....	
Number of cows.....	380
Amount of milk received.....	614,505 lbs
Amount of cheese made.....	58 081 "
Amount of butter made.....	8,912 "
Total pounds of solid.....	66,993 "
Pounds of solid from 100 lbs milk.....	10 $\frac{2}{10}$ "
Pounds of milk for 1 of solid.....	9 $\frac{17}{10}$ "
Pounds of butter from 100 lbs milk.....	1 $\frac{10}{10}$ "
Pounds of cheese from 100 lbs milk.....	9 $\frac{10}{10}$ "
Total amount of money received.....	\$7,945 $\frac{80}{100}$
Gross receipts from 100 lbs milk.....	1,29 $\frac{3}{10}$
Average price of cheese.....	10c.
Average price of butter.....	24c.
Expenses, including carting milk, making butter and cheese, salesmen fees &c.....	1,842.00
Net proceeds to patrons for 100 lbs milk.....	99 $\frac{3}{10}$ c.
Average pounds of milk from each cow daily..	16 lbs.

J. M. JOCELYN, manager.

The Escutcheon

The Island society offers special prizes, says a writer in the Journal of the Royal Agriculture Society of England, for a system comparatively unknown and somewhat ridiculed. In this Guenon system, prizes are awarded to both the bulls and cows showing the richest types. The system has been known and practised for more than half a century in France.

François Guenon, a poor lad of studious habits, while sending his milch cow in his native province in France, observed a growth of the hair above the udder the reverse way, and he noticed that when this was scratched a kind of powder fell from it. He reasoned that as plants had signs for their good and bad qualities, there might be analogous signs in the animal kingdom. He examined other cows and concluded, from the various sizes, ways and forms in which the reversed hair, now called the escutcheon, grew in these parts, that the good or bad milking properties of animals might be ascertained, even before they calved. After long and wide observation, he arranged animals in three groups—large, middle

(1) Now Mr. Whitfield's noble offer has been accepted by the Provincial Government, I hope we shall see what Canadian cattle really are.

A. R. J. F.

and small size. He divided the escutcheon signs into eight classes and found that he could determine, as he claimed, the quantity, and quality of the cow's milk daily, and the longest and shortest time she should hold it. This system he pronounced infallible, and was so endorsed by the agricultural committee of Bordeaux in 1837; later by other agricultural societies, and he was honored and rewarded. Others who have studied the intricacies of the system call it a guide in

estimating the milking properties of cows; and though introduced into the Jersey societies as late as 1874, it is rapidly gaining adherents, and breeders are qualifying themselves to judge by it. The system has received considerable attention in the United States. It has been observed and remarked that cows with very remarkable escutcheons have been bad milkers, and cows with no escutcheons have been good milkers.—*Boston Post.*

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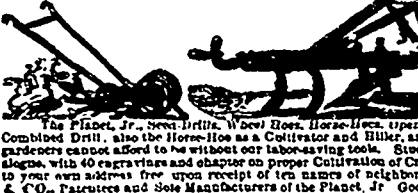
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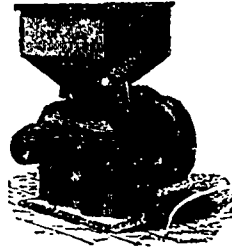
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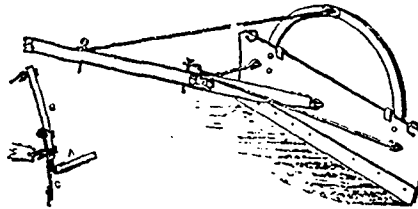
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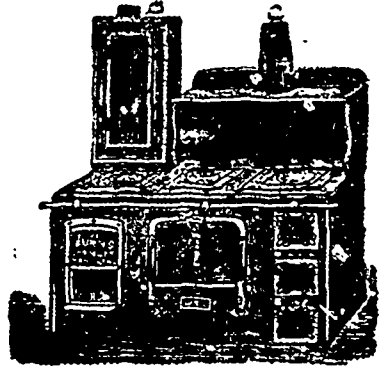
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