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THE ILLUSTRATED JOURNAL of AGRICULTURE



Vol. 16, No. 10.

MONTREAL, OCTOBER 1, 1894.

\$1.00 per annum, in advance

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Journal of Agriculture**

The ILLUSTRATED JOURNAL OF AGRICULTURE is the official organ of the Council of Agriculture of the Province of Quebec. It is issued Monthly and is designed to include not in name, but in fact anything concerned with agriculture, as Stock-Raising, Horticulture, &c. &c.

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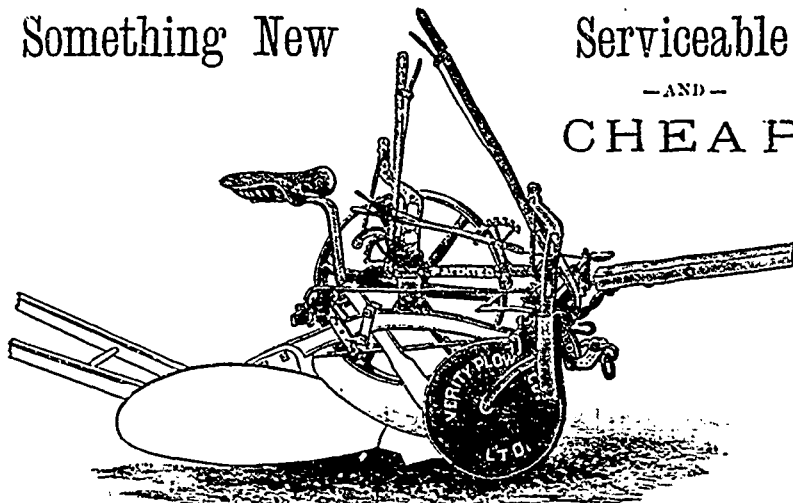
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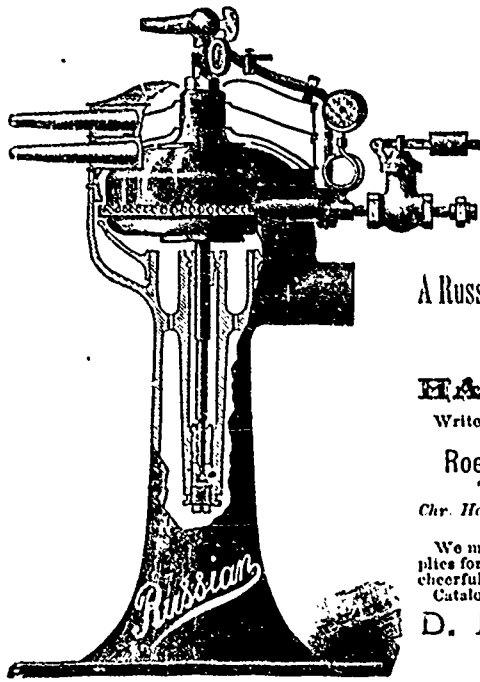
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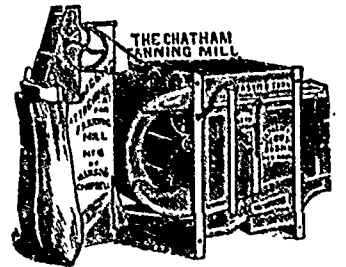
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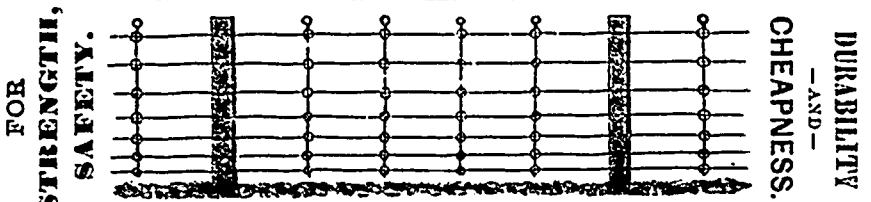
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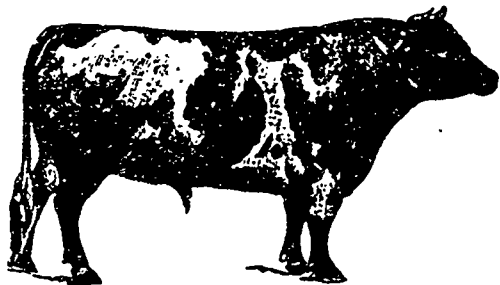
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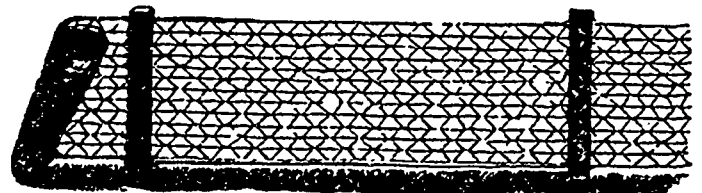
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THE ILLUSTRATED
Journal of Agriculture

Montreal, October 1, 1894.

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Notes by the Way.

The harvest is all in throughout this district except the buckwheat. (Sept. 1st.) As for the yield, we cannot say much in its favour. There is very little wheat grown, and the only piece we saw was standing a fortnight after we, if it had been ours, should have cut it; consequently a large proportion of the grain was shed out in the field. Pease, too, left till dead ripe, and having a good deal of rain on them after cutting, lost much, and as the fences are but badly made, there is no chance for the young swine to go out shacking.

Oats would have been a good crop, but, unfortunately, rust attacked them early in July and shortened the yield materially. We saw one piece of late sown oats that will certainly not give back twice the seed. Barley seems to be the best crop of the year; some fields were sown very early, and turned out all the better for it both in quantity and quality. No roots grown, except a patch here and there of mangels, perhaps, on the ten farms I have visited, an acre in the whole.

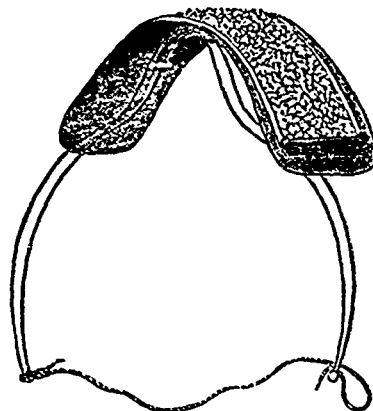
Tobacco.—A small plantation of tobacco is to be seen on most farms here. A great mistake is made in letting the plants come into bloom before heading them: this draws force from the leaves and delays ripening. As a rule, the sort planted is the Havana; but in one or two places we find the old Canadian kind, small and crooked in the stem and mean in the size of leaf, but of all the tobaccos grown here by far the sweetest and richest in flavour. For this sort, 24 inches between the rows and 12 inches in the rows is wide enough; so the number of plants to the acre will be about 20,000. Now, allowing the dried leaves of twelve plants to weigh a pound, this will give upwards of 1,600 lbs. to the acre, which, at 10 cents a pound, would be a return of \$160.00, as much as would pay the interest on the purchase money of many a farm. The expense of cultivation is not half as much as people fancy, the horse-hoe, properly employed, will do three-fourths of the work. But to grow even this small kind to the best advantage, the seed must be sown in a gentle hotbed, and should be transplanted into a cold frame, before being finally set out in the open air. Treated thus, it would, in an average year, be fit to harvest by the 25th to the 31st of August, before there is any danger of frost. (1) Then cut, let it wilt till it is safe to hang, and hang it at once; never pile it to sweat, this makes it "bite the tongue;" the sweating is the business of the manufacturer, who knows, far better than the grower does, how to conduct the process.

Potatoes, as a rule, are planted much too near together in the rows, and of course never arrive at any decent size;

(1) No frost here yet! Sept. 21st.—Ed.

we are still speaking of the Pointe-Clairo district, though of course there are exceptions to which we shall advert later. It is a pity that they are not sorted, but all, except the very tiniest, are thrown together into the bogs, and this must deteriorate the sample. In England—Britain in fact—potatoes are classified into *wares*, *middlings*, and *chats*, the last being retained at home for the pigs, and the sooner our farmers get into the habit of treating their potatoes in like fashion the better it will be for them. As yet, we hear no complaints of the disease: the haulm, in general, is all dead, and yet no one seems to be digging. (1) Potatoes should be dug as soon as ripe, and either stored, for the present, in a shed, or covered up with straw in the field, so that they shall be thoroughly dry before being put into the root-house or cellar.

The Horn-fly.—The cattle fall off in milk yield, the young stock don't thrive, the fly is abundant, and get no one will use the simple remedy. By the bye, we received a slip, from the inventor, containing a cut and description of a protective saddle to be fastened on to the cow's back. It is an extension of the old "Catch-em-alive-oh!" plan, but we fear it will have a good deal of trouble in making its way. However, we give an engraving of the saddle, and, doubtless, the Messrs. Senécal will have great pleasure in receiving orders for advertisements from the proprietor.



TEXAS FLIES, HORN FLIES, CHICAGO FLIES.

We have just shown the above engraving to the two most promising of the farmers of this district, and they seem to think that the plan would answer, as answer it certainly would if the cow-feeders in general persist in carrying it out. But we fear that during haying and harvest, two months during which the fly is most savagely active, farmers would be mighty apt to neglect the application of the "Sticky": but, we shall see.

A well cultivated farm.—On August 22nd, we paid a second visit to Mr. Crane's farm, at Lakeside, where we were fortunate enough to meet with his very intelligent steward, an Aberdeenshire man, who formerly lived with Dr. Craik, at Lachine Bank. The stock on this farm is very good, though not numerous. The Small Yorkshires, from Ontario, are true to their type, and their habitation is thoughtfully arranged, with a handy boiler in the entrance-porch to cook roots, &c. We doubt if any roots pay for cooking, except potatoes. Five Jersey cows, and a few sheep were in the pasture, which looked bare enough, but a plentiful provision of fodder-corn was quite ready to cut.

The root-crops were very good. Swedes had been sown too early—the

(1) Hard at it now.—Ed.

middle of May—; consequently the mildew had affected them sadly, the lower leaves being quite withered. May is the right time to sow swedes in Scotland, but not here. From the 10th to the 25th of June gives a far better quality of flesh, and, if well worked, as these were, the weight to the acre is not very much less than when sown earlier. Carrots, both red and white, were thriving and well cleaned; in fact, the whole farm was clean.

The horse-beans, for the "Robertson-mixture," were sown too far apart—28 inches—and not half thick enough in the rows. As we mentioned in our last, if beans are sown too late, the aphides play the mischief with the blossoms and leaves, (1) and those had suffered greatly from the attacks of those beasts: practically, there was no crop. If we were growing this plant, we should put the seed in on the flat—these were on raised drills—and allow only 24 inches between the rows, sowing at least 2 bushels an acre. But why not mix 1½ bushels of beans with a bushel of pease, and try that? The idea of ½ a bushel of beans on an acre of land must strike any one who has grown the plant as an absurdity. The distance between the rows—28 inches, though some were 34 apart—is the same as used to be observed in Scotland before the double-mould board plough was improved for drill-making, and the reason was that the ordinary plough in use there made that width of drill to perfection. Why, again, earth up horse-beans in this dry climate? Necessary enough in Scotland, no doubt, but perfectly needless even in England, therefore not required here. All earthing up is bad, as it confines the roots of the plants. Thousands of growers are giving up this treatment of potatoes, and even corn-growers are abandoning it.

A piece of clover, in full bloom, attracted my attention, as it was then being cut for the third time: pretty well for the 23rd August! Not one other piece here has given even a second cut. (2)

The fodder-corn was looking well—10 to 12 feet high—but such lofty stuff wants more room, if good ears are desired. Potatoes were a good crop, and very few small ones, plenty of room in the rows being allowed between the sets, and, we must say it, more space between the drills than necessary. We observe that this crop is turning out very badly in the States: Apples, too, are only 40% of a yield. Will not these two failures give our farmers a chance?

Bonnets.—Whence the following comes we know not; but it is not bad:

"Who now of threatened famine dare complain,
When every woman's forehead teems with grain?
Mark how the wheat-ears nod among the plumes;
Our barns are now transferred to drawing-rooms;
And husbands who engage in active lives,
To fill their granaries may thresh their wives."

Ensilage.—Mr. McPherson, of Lancaster, who is so well known to all those who attend the annual meetings of the Dairymen's Association, has published an account of his stock and crop of last year. A most successful exploitation it seems to have been.

(1) V. p 162.

(2) Except an orchard near our house, where the 2nd crop has been fit for days and is yet uncut! Sept. 17th.—Ed.

The silage corn turned our 700 tons from 40 acres, and the same acreage is expected to yield 800 tons this year. Seventy cows are being kept on 35 acres of grass: Yes, but, and we beg to call our readers attention to the fact most emphatically, the 35 acres were divided into three fields, each being fed a week at a time. A cow to half an acre, seems marvellous to us, accustomed as we were in our youth to some of the finest cow pastures in England, on which 1½ acres to a cow was the general rule in stocking for summer, and 1½ acres in hay for winter.

The silage from the 40 acres fed 140 head of cows and fattening beasts for 210 days, so only 155 days remained for pasturing, which may account for the difference remarked on above between English and Canadian pastures, as our cattle are at grass from April to January inclusive (1): just double the 155 days Mr. MacPherson's are out; and, though it is not mentioned, no doubt he is too good a farmer to let his cows suffer for want of green-fodder if the pasture runs short.

Theory vs practice.—Wheat is said by many to be inferior, as cattle food, to bran.

This, Mr. Hoard seems to doubt: the cow and the chemist do not always agree, says "Hoard's Dairyman." According to the published analyses, the digestible nutrients in the two matters are:

	Protein.	Carbohydrates.	Fat.
Wheat	93	55.8	1.8
Bean	12.6	44.1	2.9

And yet, Stewart, in his "Feeding Animals," gives the value of wheat, for feeding purposes, as \$26.00 a ton and of bran as \$22.00! There must be experiments on a large scale tried to settle this question, and the persons to undertake them should be well educated practical farmers. At the present price of wheat, large quantities of that grain will doubtless be given to both hogs and cattle this winter, and the experience derived from its comparative effects will be most valuable. For ourselves, we must say that we have never found the use of bran or shorts what it is "cracked up to be."

Kerry-cows.—We do not remember ever to have seen a thoroughbred Kerry cow; but, if in general she resembles her portrait, given at p. 188, we would rather not have her about our yard. The "Dexter-Kerry," though, is a very different looking beast.

Early-maturity.—We recollect that, in the forties, there was no difficulty in finding any number of six-tooth (3 yr.-old) down wethers at the autumn fairs in Kent, Surrey, and Sussex. These were taken to the farms of the wealthy classes, and after a couple or three months on turnips, cake and corn, killed to supply the house, weighing, in general, about 100 lbs. the carcass, and marvellous mutton they were. Nowadays, there is nothing of the kind to be found—nothing but at most 2-tooths (shearlings), though thousands of tegs (lambs after weaning) are slaughtered, many of them giving a carcass of 80 lbs. The old wethers were what used to be called "working sheep"; had been "to sold" every night since they were lambed; nothing to eat from 5 P. M. till 9 A. M. the next day, as the fold was always on

(1) With hay night and morning from November 1st.

the fallows. Now, people are wiser, and "early maturity" is the main point studied. It is the result of skilful feeding and produces a superior quality of meat: the fat is better mixed with the lean; and the flavour is as good as good can be, though the gravy is not so dark as that from an older animal. Look at the meat of an old draught-ox, that has been taken off a bare pasture and fattened for a few weeks. He takes on fat fast enough, but he puts it all outside and inside; the fat and lean are never mixed, giving that pleasant marbled appearance we see in a joint from an animal that has been well fed from its calf- or lamb-hood. The meat of the latter is more nutritious because more digestible, and more palatable because more tender. Flavour is, of course, desirable, but tenderness is, of the two, the more sought after. Again; in the case of well-bred animals, the economy of food is most marked; during the early stages of its growth; up to two years or so; you have the natural increase of development of bone and muscle, as well as the increase of fat and flesh due to the use of a well selected combination of food. There is no beef better than the meat of a well-bred, well fed, 2-yr-old maiden heifer.

Lean vs. fat-hogs.—There is not the least doubt: that the English taste has at last revolted against the corn-fed, over-fat hogs that, in the form of pork and bacon, have been sent to Britain up to the present time.

M. Gigault, the Asst. Commissioner of Agriculture, in a letter recently addressed to M. Beaubien, mentions the fact that Mr. Laing, President of the meat-packing company, St. Catherine St., Montreal, is obliged to import hogs, from Manitoba and Ontario, on a large scale, 1,500 having been received by him in the week previous to July 7th. Fat hogs, as heretofore, are not wanted. The day before M. Gigault's visit, to the Co's Office 500 were killed, of which only 75 were suitable to the export-trade. Pork for England should have only ¾ of an inch of fat down the back, and should be the meat of long-bodied pigs, in good order but not fat, about 6 to 8 months old, and weighing from 140 lbs. to 200 lbs. Mr. Laing's firm pays a cent a pound more for such export-hogs than for those fit for local consumption. A great deal of this pork is sent to England, to be there converted into (smoked) bacon, and sufficient supplies of it are hard to get: our pork is preferred to the American, as, being firmer and less oily, it does not shrink in the cooking.

It seems to us a cross between the Berkshires and the Tamworths should give just the stamp of hog above described. Taking the average weight as 176 lbs. = 22 stone London weight, pigs farrowed in spring should easily attain to it by the middle of October, and that without any great expense. A roomy yard, with plenty of shelter from the sun; lots of water for drinking purposes and for a bath; skim-milk and whey; barley or corn in moderation ground up with a fair proportion of pease: clover or vetches, or both, cut and carted into the yard fresh daily; treatment such as this ought to turn out the kind of hog required. As we were accustomed to feed some 100 to 120 pigs for the London market, we do not advise giving oats to pigs, except a little in the case of a sow suckling. Corn is useful provided pease are added in large proportion, but barley is the best of all the grains. Spay your sow-pigs as well as cas-

trate the boar-pigs; nothing is more offensive than the flavour of a sow's meat if killed while at heat; but you know that as well as we do; only, when a lot of hogs are to be sent off, the butcher is not always particular enough in looking to see if any of the sows are seeking the boar.

It is a pity that in requiring such lean pork the demand for this style of meat will deprive the English of the possibility of over eating a good ham. No ham is worth eating unless it is as fat as fat can be. Those that we get in the Montreal grocers' shops, are hard, indigestible, and coarse in flavour.

Lambs in Montreal are selling for from \$1.80 to \$2.50: not much profit in keeping a ewe for a twelvemonth to get a return of 3½ lbs. of (washed) wool, and two dollars' worth of lamb! For early maturity, a cross of the native ewe with a Hampshire down ram would have great effect, as many breeders in the States have found.

Ripening cream.—It is not well to mix quite fresh cream with staler immediately before churning. Mix creams by all means, but at least twelve hours before putting them into the churn, so that all may be equal in ripeness before churning. The reason is clear: sweet cream takes longer to churn than ripened cream; so that if you mix sweet with ripened cream just before churning, the ripened part yields its butter before the sweet part, and the butter in the latter goes to the hogs.

Do not let cream become very sour before churning; other changes beside the production of lactic acid may set in; and so it often happens that very sour cream is hard to churn.

Barley for malt.—Again, complaints were made, this spring, of the peeled and broken grains in the foreign barleys in the London market. Some of it showed a marked improvement in dressing from former years, but there was still too great a proportion of defective and broken grains in nearly all samples. The peeled grains allow the acrospire or plumule to protrude before it has gone high enough up the grain; consequently, the grain is not malted throughout all its length; the broken grains turn mouldy on the floors and produce a fretting fermentation in the finished beer or ale that never terminates: the beer is never as bright as it should be.

English barleys of the best kinds weighed from 57½ lbs. to 59 lbs. the struck bushel. Even after the turning summer of 1893, the light-land barleys were by far the best, and the samples grown after wheat were better in quality, though of course the yield was not so great, as the barleys grown after a root-crop fed off by sheep.

In Hampshire, Eng., we remember the practice used to be to grow two root-crops in succession followed by wheat and then barley with seeds. Our dear old farm tutor, Wm. Rigden, of Sussex, who dinged his land almost too much, always sowed barley as 5th crop; thus:

Roots, fed off.....	1st year.
Wheat.....	2nd "
Clover or pease (alternately).	3rd "
Wheat.....	4th "
Barley.....	5th "

and it was only in this way that he could get a sample fit for the maltster. As long as the present style of threshing-machines are in use here, there

will always be broken grains in the sample, and we need not expect to get a market for our barleys in England. Best quality sold this winter as high as 53 shillings a quarter—some of the foreign barleys as low as 10 shillings for 400 lbs.; really good grinding (hog-feed) samples of foreign barley are to be bought in London to-day for 16 shillings a quarter.

Another thing against our barley is, that it ripens too fast. In England, it takes five months in the ground; barley sown in February is rarely fit to cut before the latter part of July.

There were no samples from Canada at the Browers' Exhibition this last winter. Let us hope that the reduction of the duty in the States will have the effect of restoring to us that market.

The Canada thistle.—A correspondent wishes to know how to destroy the Canada thistle. We agree with Professor Shaw: grow drilled crops; horse-hoe them deeply; don't let your land lie too long in grass as long as the thistles are troublesome.

Oil-meal.—By this we suppose our American neighbours mean ground linseed-cake; but we are left in doubt, when the term is used, whether the old or new process of extraction has been employed, and a vast difference exists between the results. By the old process, the cake contained 12 to 14% of oil, and 32% of nitrogenous matter; the new process cake contains 2.1% only of oil, and 32.5% of nitrogenous matter; really not so much oil or fat as common corn-meal. It used to be the fashion to sneer at those who valued fat in food, but that folly has, like many other follies, gone to its grave.

Hay-making in a wet-season.—Mr. Wrightson, of the Downton College of Agriculture, speaks thus of making hay in "catching" weather: "The well-known rule of leaving the swathe untouched as long as possible in showery weather proved useful this season, especially in the case of heavy crops. We saw cuts of clover and sainfoin which were exposed to repeated soakings during a fortnight turn over of excellent colour, the only damage being a trifling amount of blacking on the surface of the swathe. All below was in good order. In other cases, where turning was attempted before the advent of settled weather, the hay was discoloured throughout, and went into the stack more like the haulm of vetches than good hay."

Hay, when cut young, takes a good deal of spoiling; in our opinion, it deteriorates, after a certain point has been reached, more by standing than when cut. An old friend of ours, who had for years made hay for the London market, used to say: "When to mow? Why, mow when the hay is fit to mow, of course." And our old Kent saying was: Mow in the wet and make in the dry. A moderately bright day, with a good stiff breeze: that's the weather for hay-making.

Here, most of the farmers waited far too long before mowing, not considering that the season was ten days earlier than usual; and the consequence was that before hay-harvest was over, grain was fit to cut, and as very few hands were employed, the pease and wheat stood so long that great quantities of the grain and pulse were shed-out on the field.

Over-fat hogs.—Upon the whole it seems to us that it is rather hard upon the breeders of first-rate pigs to ask

them for bacon-hogs with only from $\frac{1}{2}$ an inch to $\frac{3}{4}$ of fat down the back. The largest establishment in England, situated in the very centre of the great Wiltshire dairy-country, is not so exacting as that, as may be seen from the following published list of prices they are now paying at Calne for prime pigs, in lots of not less than 10, on rail within 100 miles of the factory.

Hogs weighing.	Thickness of fat in any part of the back.	Price per score.
130 lbs. to 190 lbs.....	2 $\frac{1}{2}$ in. and under.....	9s. 6d.
Under 210 ".....	Not exceeding 2 $\frac{1}{2}$ in.....	9s. 0d.
" 230 ".....	" " 2 $\frac{3}{4}$ ".....	8s. 3d.
" 240 ".....	" " 3 ".....	—

We remember well, when we used to send small pork to the London market; pigs weighing from 50 lbs. to 60 lbs.; the salesman's note frequently bore, as a pleasant heading "too thick down the back;" but a large hog for smoked bacon must be allowed a little more fat than would be admissible in a roast-pork pig in a "West-End" butcher's shop.

Terminology.—Where technical operations are to be described, technical terminology should be employed. The reporter who sent the following item to one of the Montreal papers was evidently not used to sporting terms any more than was the late "Harry Lorrequer," who always described any given race-horse as being got by the mare out of the stallion!

A fox hunt.—The Montreal Hunt Club had a little excitement this morning in the shape of a fox hunt. The fox was sighted in the 'Domaine' at Cote St. Michel by the dogs and ran to his hole. The huntsmen came up and took him out and let him loose 'across country', and after a smart ran captured him. Mr. Ross got the brush, Dr. Bruneau the head, while the legs were distributed to other members of the club. Dr. Bruneau is having the head stuffed.

It should read thus: A fox was found by the hounds in the Domaine at Cote St. Michel and run to ground. After digging him out, he was turned down, and killed, after a good run. Mr. Ross got the brush, Dr. Bruneau the mask, and the pads were distributed among the other members up.

Separators.—As some farmers still hesitated above buying a separator, it may be well to lay before them a recent series of experiments made by Mr. L. L. Van Slyke, the well-known dairy-expert, on the relative results of skimming with the Baby-separator and the system of cold deep-setting on the milk of ten cows for one month. The percentage of fat recovered in the butter was 70.2 with deep-setting and 93 with the separator. The same author compared the separator and deep-setting in creaming the milk of six different breeds, showing that "in the case of every breed the separator gives better results in yield of butter. The increased yield was greater with the Holsteins and second with the Ayrshires." He calculates that the saving would pay for a separator in a year with a herd of 6 or 7 Holstein, 12 Ayrshire, 16 Devons, 18 Holdernesses or Jerseys, or 24 Guernseys.

H. H. Wing, too, reports a number of trials with the De Laval horizontal separator, the Baby separator No. 2, and deep setting. The skim milk from the horizontal separator contained 0.19, from the Baby separator 0.09, and from deep setting 0.23 per cent of fat.

From some 40 trials in churning sweet cream at different temperatures, Mr. Robertson concludes that the cream should not be above 50° F. when starting, and that the churn, if a revolving one, should not be more than one fourth full.

Sour cream. Messrs. Patrick, Layton, and Bisbee, found gave 3 oyo more butter, churned more quickly, and gave a better coloured butter, with

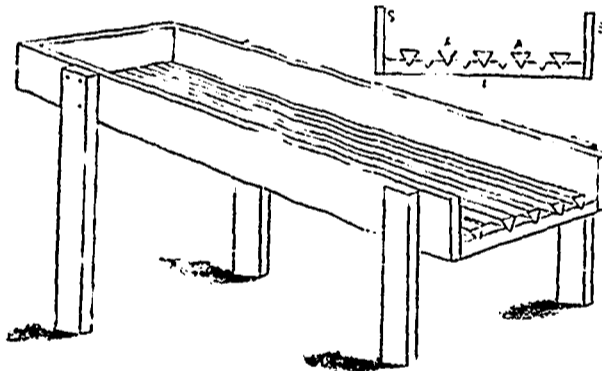
less fat but more in it, than sweet cream.

Mr. Dean, of the Ontario Agricultural College, finds that "wheat at \$20.00 a ton = 60 cts. a bushel, is an economical food for milk-cows, calves and young pigs." We remember that it was found to do well, given whole, for sheep at the Woburn experiments under Voelcker.

Lucerne vs. corn.—Lucerne was tried against corn in Colorado, and was found to be by far the superior. The albuminoids of the lucerne, which was cut 3 times, were 1,602 lbs.; of the corn only 405; fat: lucerne 246 lbs., corn 84 lbs.; carbo-hydrates: lucerne 4,782 lbs., corn 3,263.

FARM-WORK FOR OCTOBER.

Not very far distant now is the time when all work on the land will cease for a few months. It behoves us



DEVICE FOR ASSORTING POTATOES.

then to lose no opportunity of completing the work to be done on the land, for the winter will soon be here, when further preparation for the coming spring will be impossible.

Root-harvest.—Most of the early potatoes were made safe during September, especially in the western part of the province; but many a hundred acres will be found in the ground as late as the first week in October. Those who have a double-mouldboard plough fitted with what the Scotch call a "brauder," the same as the English "gridiron," will have no trouble in getting the tubers out. But those who, for want of this useful implement, are obliged to extract them by manual labour are earnestly advised to use a fork and not a hoe. The latter tool cuts so many into pieces that the sample is quite spoiled for market, for, even in the smaller towns, people like to buy the best-looking potatoes; and besides, the work of the fork lightens up the land and is almost equal to an additional ploughing of that part of the soil that is occupied by the drill.

All potatoes should be, as far as possible, sorted in the field; but as time will not always allow of this being thoroughly done at the season of harvest, we give here an engraving of a useful and very cheap potato-sorter, which we lately met with in an American publication. The idea is as old as the hills, and the implement has been used for many years in England, but we have never been able to get a sketch of it before, and, very unfortunately, the young lady, who designs the engravings for the household articles—all of which, we beg to say, are originals—is in England, and of course not available for artistic purposes here.

"Serviceable potato sorter.—In sections where large quantities of potatoes are raised, some kind of a sorting apparatus is a necessity. The work of picking over potatoes is something that costs too much to be done by hand, and yet potatoes classed into even sizes always sell better than uneven lots. In the great centres of commercial production of this crop, assorting is always done by some sort of a machine, which varies in the different sections, but is almost always home made. The one herewith illustrated, from sketches by L. D. Snook, is in use in New York State by many potato planters, and is a simple and inexpensive affair, and being adjustable it will be found more valuable than many other designs. The general form is usually made eight feet in length, fourteen inches wide at the bottom, and eight inches high, the whole supported upon four logs nailed to the sides. Six strips eight feet in length, three inches wide and one inch thick form the bottom of the sorter seen in the sketch. The strips are be-

the tubers. These fagots, about 9 inches in diameter, may be placed at distances of 4 ft. x 6 ft. apart, and are very effective in carrying off any moisture that may arise from the potatoes sweating; especially when the rot occurs after storing.

Such a lot of tiny tubers as we saw in M. Lanthier's farm buildings here (Beaconsfield) this week (Sept. 5th)! More than half the crop was destined to the pigs-sty. This sad turn out was attributed to the drought! But there has been no drought here at all, since the growing season began. The real cause is that though there was plenty of room between the rows, the sets were planted much too close together in the rows: not less than ten or more than twelve inches is the proper distance.

The other root-crops should be got up in succession, beginning with the most tender, the mangels, then the carrots, and, last of all, the hardest, the swedes. Pull the mangels and leave them in the field for two or three days exposed to the air during the day but covered at night with the leaves. Take care, in pulling both these and the Belgian carrots, to pull them up quite straight, for the part in the ground is very tender and apt to break-off and be left behind. Wrench off the leaves of the mangels, and never allow the knives to be stuck into any roots, as some lazy workers are too much in the habit of doing to save themselves the trouble of stooping.

Red-carrots must of course be dug, but the whites draw very easily. Cut off the tops pretty close but do not wound the roots if you can avoid it: a piece of an old scythe, set in a wooden handle, is a convenient tool for this purpose. The harvesting of sugar-beets we say nothing about, as we never grow any, and we have always made it a rule, ever since we wrote for this Journal, never to attempt to describe any operation in husbandry that we have not practised ourselves.

The same system advised for potatoes—inserting ventilator-fagots in the heaps—should be extended to all roots in the cellar.

If the red-carrots intended for the table are kept in sand, plenty of that material being thrown over the top of heap as well as mixed with the roots as they are being piled up, they will keep succulent all the longer: the same with parsnips and that very much under-rated vegetable, the white-turnip. The latter, if sown not earlier than the 20th July, and grown quickly on rich land, is, to our taste, one of the most delicately flavoured of all garden produce. There are two things the Montreal market never supplies of good quality: white-turnips and Cos lettuce (*Romaine*); in fact, the latter is never to be found here, though when we sent some to the Department of Agriculture at Quebec, those who tasted them declared that they were the finest salading they had ever eaten. They have to be tied up, with bass, to blanch for about ten days, and as that is a little trouble, it is probably the reason why they are not grown. (1) In the best English houses the common, or cabbage lettuce, is only used for cooking purposes.

Parsnips are very fine here, but they are never fit to eat anywhere till after the turn of the year. How one does envy the people at Sorel with their 8 foot deep *caveaux*, or *caveaux*, as they call them, in the sand. Dry as chips, the roots keep in them to perfection.

As soon as the roots are carted off, and the tops either spread or given to

(1) Some were shown at the Montreal Gardeners' Exhibition in September.

the cattle, the land should be ploughed *at once*. Hold nice narrow furrows of say, 7 x 10, and all the frost of winter, combined with the thaws and rains of spring, will not be able to melt down the crests, but they will stand up boldly and afford plenty of "crumb" to cover the seed.

As to the care of stock, during the month, all that need be said is, that all should go into winter-quarters in thriving condition. House horned cattle and horses at night as soon as white-frosts appear. Hogs for killing should have plenty of pease and skim-milk—but little corn, if the very difficult English market is to be suited. Sheep, particularly breeding ewes, should not be allowed to lose flesh; plenty of grass still, but a little dry food, such as pease-straw, will do them no harm. There is more *proof* in pease-haulm, if harvested well, than people imagine. The milk-cows will need great attention, and as many are pretty nearly ready to calve, for winter-dairying, provision should be made for them; no better food than *crushed* linseed; it keeps the bowels open enough, and, we are sure of it, makes the delivery of the calf less fatiguing to the cow. A pound a day for ten days before parturition is enough.

Arizona must be a pleasant State to farm in: they are growing 56 to 57 bushels of barley to the acre there, each bushel weighing from 55 to 57½ lbs.!

Trifolium incarnatum.—Crimson clover is still an open question. From the information at hand we should not feel justified in advising you to incur any great expense for seed this fall in expectation of having a profitable crop to turn under next spring. We do not mean by this that such a course must inevitably result in failure, but simply that the evidence either way is not conclusive. It may very properly be tried in a small way in Connecticut, but not more, unless you have information in regard to its behavior under your conditions of soil and climate that we have omitted to notice. For ourselves we should much prefer to sow winter rye, which will give both late fall and early spring feed.—*Hoard.*

In England we don't sow trifolium in standing maize 9 and 10 feet high, as some one wrote to the *Country Gentleman* asking how he was to do it! After the wheat is cut, and carried, the stubble being clear, we sow the seed—20 lbs. to the acre—and harrow it in, rolling afterwards. The plant seems to prefer a firm bed, as all attempts to grow it on broken-up land invariably fail. The trefoil is cut when coming into bloom, and as it never comes to anything worth having after the first crop, the land is ploughed up and sown with turnips or rape. As to ploughing in, *pas si bête*. It is not very good food, but useful stuff enough. As it is not to be depended upon even in the Northern counties of England, it is doubtful whether it will answer in New-England, though, perhaps, if it is sown very early—say, by the 20th August, it might stand the winter. At all events, it should be rolled as early in spring as possible.

PROF. WHIMMER'S figures, in his address before the New Hampshire Board of Agriculture, do not confirm the claims so persistently put forth in many quarters recently, that the big milking cows are the most profitable. We do not overlook the fact that he reports "the best cow of all," at the

New Hampshire Station, is a short-horn weighing 1,300 lbs., a good shaped beef animal, too.

Well, why not? The first Duchesse cow (Tommy Bates') gave 18 lbs. of butter a week!

Some very curious processes for propagation are practiced at the public gardens, says the Washington Star. One consists in cutting with a knife a ring around a branch of a plant. One might imagine that the intention was to kill the branch, but such is by no means the object in view. The cut having been made, a piece of wet moss is wrapped and tied round the branch at that point. Beneath this protection the sap exudes from the wound and little rootlets are developed. After a few days the branch is cut away from the parent stem, being then itself a complete plant, with roots, all ready to put in a pot. This plan is adopted with plants of slow growth, because one plant may thus be split into half a dozen or more of good size, instead of waiting for a seedling or little slip to develop. Show this to your wife, if she is a lover of flowers. Some of the most difficult plants to grow from slips are easily propagated in this way. DR. HOSKINS.

The above process does not seem to us to be new. We rather think that, in one of the earliest numbers of this periodical, Monsieur Chapuis, to whom we present our compliments, gave a description of the method, with an engraving.

Where sheep are pastured upon clover there is constant checking of the plant, and this predisposes it to the forming of seed. Thus it produces a heavier seed crop than when the common practice is followed of allowing it to grow until in blossom and then cutting it close to the ground; but, if the clover is fed off, Canada thistles and other biennial weeds in it should be mown down to the surface with a scythe. The sheep will not take sufficient care of these to absolve you from giving some attention to them.

"The Western Agriculturist says that while American butchers discriminate against heifers for beef, English butchers pay one cent per pound more for heifers. One of the largest wholesale butchers in Liverpool, Eng., Mr. Andrew Ross, says, "Out of the 1500 to 2000 cattle handled by me weekly 60 per cent are heifers. The butchers who buy from me will give twelve cents per fourteen pounds more for heifers than for steers, as they have less bone and stand more cutting, better roasts being got out of them than out of steers."—*True—Ed.*

"It is also a fact, notwithstanding all the jokes made about "bull beef," that the meat of fat young bulls, say under six years, is as good, to say the least, as that of the best oxen."—*False—Ed.*

Vale of Berkeley cheese.—We are happy to find that at the Gloucestershire, Eng., agricultural show, two of the tenants of Herbert Jenner Fust, (our brother) of Hill Court, distinguished themselves:

Cheese.—There was not much competition in the three classes for cheese. Mr. John Smith, of Hill, took first prize of £3 for the best hundred weight of thick cheese, Mr. Clifford, of Frampton, coming in second; while Mr. Wilcox, of Churchdown farm, Hill, was highly commended. In the next

class, for 1 cwt. of double cheese, there were four entries, and Mr. Smith and Mr. Wilcox were again the prize takers, the former gentleman also taking 1st prize in the thin cheese class.

Mr. Wilcox is going to be good enough to send the Editor of the Journal a specimen of his manufacture.

Tuberculosis.—We perfectly agree with Dr. Hoskins in his opinion as to the danger of forcing cows. "Free lung-space" cannot coexist with narrow brisket:—

There can be little, if any doubt, that the almost frantic efforts made to get big butter records from Jersey herds are responsible in great measure for the presence of tuberculosis among them. An intelligent writer in the Stockman and Farmer, in calling attention to this subject, says: "This cow must have large digestive capacity; she must have a fine head, slim neck and thin shoulders, which of necessity makes her lungs somewhat cramped. In short, in order to be of a first-class milk type, her form must be that of a predisposed consumptive; so we see that the tendency of breeders of dairy cattle has been toward breeding a type of animals that has a natural predisposition toward consumption (tuberculosis). So I say without fear of successful contradiction that all the pure breeds of dairy cattle are more susceptible to consumption than the pure breeds of the beef cattle, or of mongrel bred animals that are kept for dairy purposes."

It is only under these high pressure methods that such trouble is encountered. The Jerseys generally, throughout New England, are as healthy and strong as the old stock of cows. We can make any creature sick by over feeding, petting and confinement. These kill thousands of human beings. Let common sense rule in this matter, and there will be no trouble. Breed for vigor of constitution first, and especially for free lung-space; for if a cow cannot breathe freely, and get fresh air enough, she can't make butter long. Don't breed for a narrow chest. The Jerseys are naturally rather narrow there, and there is no need of increasing that peculiarity.

Wheat after pease.—We print the following, from "Farm and Home," as an instance of the great danger that lies in a little trifle of theory without practice to support it. There cannot be a worse preparation for wheat than the pea-crop, unless it be tares. The roots of both pulse-crops make the land too shattery, and there is no chance of a firm root-hold for the following wheat.

As for not ploughing the land after pease, did the writer who advises such treatment never reflect upon the effect of a summer-fallow? It is too often the case, "on this side," that people only think of the immediate crop to be grown, neglecting all consideration of the subsequent crops.

DAIRY-CATTLE AND THEIR FOOD.

(By the Editor.)

We all think we know a good cow when we see her; but, in spite of our supposed knowledge of the animal, there are very few good judges of cows to be met with, or else we should not see such extraordinary decisions at our cattle shows. You know that the desirable qualities of cows vary with

the uses they are intended to serve. It would be absurd to look for the points of a Shorthorn in a Jersey, or the form of a Devon in an Ayrshire. Each has its own peculiar beauties, and the man who breeds the one is often prejudiced against the other. All breeds are good in their way—one for stall-feeding, another for grazing, a third for milk, again, a fourth for butter; and of these several kinds, every one must choose for himself the sort best adapted to the land he occupies and the food he has at hand. It by no means follows, however, as we shall show further on, that because we happen to farm inferior land we must be contented with inferior cattle, for a very small outlay for additional food will make our second-class pastures equal to the best grass-lands in the province.

Now, in judging of dairy-cattle, what are the principal points to be determined? And, first, of the cow; if her digestive powers are imperfect, she won't be worth a farthing. The signs of good digestion are the same in all animals: a large stomach, broad hips, deep loin, and well rounded ribs; the brisket should be moderately deep and broad, to afford play to the lungs and heart. But here we may note, that, where food is scanty and much ground has to be gone over to find it, the brisket will be narrower than in the reverse case. Thus, for example, the Downs on their native hills are much narrower before than the same race fed within hurdles (folds) on the turnips of Cambridgeshire and Norfolk, and the brisket of the Devon on the wild moors of Bodmin is a very different thing to the brisket of the shorthorns of Underley of Compton (1).

A good constitution is indicated by several unmistakable signs: a kind head with bright, calm eyes; fine, lustrous hair, and a pliable but not a thick skin—a very different sort of handling skin to that of the Shorthorn.

As you will probably want to fatten your cows for the butcher, when they have done their duty in the dairy, you had better not fall too much in love with the wedge form. Some of the delicate little Ayrshires to be seen at our shows in the autumn, are perfect models of this style: I do not counsel you to keep this shape in your eye, when you are starting a herd of dairy cattle. A visit to Greenshield's herd of Guernseys will amply repay you for the trouble of a journey to Danville, and an hour's study of the two best cows will, if your memory is good, keep you from making mistakes in buying dairy-cows for the rest of your life.

The udder.—well, if you have an eye for form, your own taste will guide you in this point. It should be square, broad, well up before and behind, not fleshy, and yet not harsh to the feel. The teats should be equi-distant from each other and of moderate size.

If you intend to sell milk, the colour of the skin of your cow need not trouble you; many perfectly white skinned cows are marvellous milkers. But as you probably intend to make butter, it is as well to know that a yellow skinned cow is almost invariably a butter-producer.

Look inside her ear, on the point of the shoulder, on the skin covering the bones at each side of the tail-head; and if these points are yellow, or, preferably, orange coloured, the cow under examination will seldom turn out

(1) When we say that the brisket of cattle, on poor land, with a great expense to be gone over before sufficient food can be got to fill the belly, will be narrower, we mean that each succeeding generation will decrease in this point, until what may be termed the normal width is reached.

unprofitable to the dairy. We have, as we have often stated in this journal, our own ideas as to the best style of cow for the general farmer, and we hope to have an opportunity of showing what is meant before very long.

Esutecheons, milk-mirrors, and dished faces, we do not bother ourselves, or you, about; colours are utterly unworthy of attention—a white short-horn, in England, fetches as high a price as a red one, if other things are equal; in the States, a white or light-roan is almost unsaleable; and the black Ayrshire in the Rougemont herd was by no means the worst of the lot. The raving madness for whole-coloured Jerseys, with black tongues, and black switches, to the almost total neglect of other more important points, has done inconceivable injury to the breed. Mind, we are speaking to you as to men who look for profit from the herd, not to amateur farmers whose desire is more for beauty and uniformity of appearance.

But the pedigree of your stock is worthy of deep attention. Don't imagine that this is a fanciful point. The old milking families of short-horns still retain their pre-eminence, (1) and we strongly recommend you, wherever it is possible, to find out the milking power of the dam and granddam of every cow you buy. This, in your case, is pedigree, and only fools, and men bigoted in the ways of their ancestors, deride it.

With the bull, you must exercise the same care before purchasing. He must be thoroughbred of his kind: never on any account breed from your own cross-bred male animals, until at least four generations of heifers have been topped by pure-bred bulls; less, however, in the case of milch-cows than where beef is the subject.

We are curious to see how long it will take, on the ranches of our Western prairies, to bring up the produce of the Montana and Texan cows to the stature and form of the shorthorn, polled-Angus, and Hereford sires employed there. You see, the importance of these pure bred males lies in their power of transmitting the qualities of their ancestors to their descendants: vulgarly called pre-potency. For our part, we will back the shorthorns to exercise the most influence of the three. The Herefords have been carelessly bred until lately, and the polled-Angus, too, was not much looked after until Mr McCombie's time. Yes, we think these half bred shorthorns will show their descent most.

But to return to our subject: what sized cattle should we keep? Most people would tell you that the question is a simple one, that the quality of your land must be your guide. We differ entirely from this response, and we will tell you why: the quality of your land is just what you please to make it. If you have a farm of poor soil and choose to keep it so, you must be satisfied with cattle of an inferior sort, little miseries, such as we saw not many miles from Montreal a few days ago, weighing about four hundred pounds a piece. No doubt, the owner of these rats was wise in his generation: he was very poor, and farming, on shares, poor, sandy soil, a most pitiable man, to our mind, though he appeared happy enough. We know, without seeing, what the state of the animals must be from the first of July till the stables are ready. Nothing but a few dried up grass-roots to be torn up for food, when once the little flush of grass is over, except a few potato peelings, and the dish-water of the house (ough!

(1) The first *Duchess* gave 18 pounds of butter a week!

when they come home at night to be milked. Decent sized cattle would of course perish from starvation on such keep.

You, if you mean to farm in this fashion, must be contented with the same sort of stock; but we hope better things of you. Common sense will tell you that it is better to employ what means you have in cultivating a moderate number of acres well than double the quantity badly; and in this country, where food is relatively cheap and dairy produce relatively dear, the best and cheapest way of raising the quality of your land is by feeding your stock as it ought to be fed.

And no great outlay will be necessary for this. Fifty cents worth a week, per head, during three months will make your poor pasture equal to very much dearer land, the yield of milk will be enormously greater, and the soil of the whole farm will, in a very few years, be improved to double its original value.

Your cows will of course run the pastures from the usual time of grass say, the 25th May to July 1st. About the latter date, the grass will, in most years, be pretty nearly gone, and on the soil we are speaking of, it hardly does much good afterwards; the cows fall away in their milk as well as in their flesh, and become utterly unprofitable. Nothing is so expensive as bringing back condition when it has once been lost, except bringing back a flow of milk when it has once begun to decrease. Before it come to this you will do well to try the following mixture:

One bushel of linseed
Two do corn
Two do pease

These are to be all ground up together, made into a thick mash with water, and four pounds to be given to each cow at night when she comes home to be milked. The cost is about four cents a head:

One bushel of linseed....\$-70
Two do corn..... 1.00
Two do pease..... 1.40
\$3.10

The five bushels of mixed grain will weigh about three hundred and two pounds, which will make it as nearly as possible, a cent a pound—a trifle must be allowed for miller's toll. The linseed is high in price, but very cheap in reality. Never fiddle away money in cake when you can get the seed. In spite of all the pseudo-scientists say, oil does make fat, and, therefore, butter. Try this mixture for one month, and we do not think you will ever leave it off.

Again, though on account of the uncertainty of our seasons I do not think it would answer to depend entirely on what is commonly called *soiling* for our cattle during the entire summer, still, there should be, at all times after the beginning of July, one or more green-crops ready for the scythe. A piece of vetches, some oats and pease, or *gabourage* as our French Canadian friends call this mixture, but sown much thicker than in their practice—two bushels of pease and two of oats to the acre are not too many—above all, in the light soil we are speaking of, an acre or so of lucerne near the stables; these, with a piece of clover left after haytime, and a trifle of Hungarian grass, to come in towards the middle of October, will send your cows into winter-quarters in good condition, never troubling themselves or you either, whether

their normal weight be six hundred pounds or one thousand two hundred pounds.

You can't do all this at once; but the sooner you begin to attempt to provide additional food for your cow-stock, the sooner they will begin to pay. For the first few years, the pasture on this light soil will, after June, be nothing more than a promenade for your cattle, but the improvement will soon show itself, and you will find that the extra condition of the land will not only produce much more grass, but it will enable, in some mysterious way, that grass to withstand the scorching rays of a Canadian sun.

We shall probably be regarded as a visionary by many who read this article; but if they had seen, as we have seen, the Saturday trains on the Eastern Counties' Railway, in England, bringing up their thousands of big, ripe bullocks from the sandy soils of Norfolk, Suffolk, Cambridgeshire, and Essex, which, seventy or eighty years ago, produced nothing but rye and long-legged, black-faced, heath-sheep, they would, perhaps, think us a prophet rather than a dreamer of dreams. We have persuaded more than one Montreal milk man to try the mixture of linseed, corn, and pease, and they speak highly of its effects, as indeed, if fairly tried, every-body must, as it is in accordance with practice as well as with theory.

Whatever produce: beef or skin, wool or mutton, milk or suet, you expect to draw from your flocks and herds, you must first give to them in the shape of food.

Does your cow toss her horns as she leaves the stable? In doing so she expends a certain amount of energy, and that means a certain amount of food: no movement is made without expenditure of food. We must beg you to try and impress this very firmly on your minds, for if you can ever convince yourself of the truth of the proposition, you won't send your cows a couple of miles to pasture, neither will you let them be driven fast by dogs or boys. Heat, again, you know, is produced by food. If a cow drinks water at 35° F., that water has to be warmed up in the animal's interior until it reaches 96° F., and this warming up is an expenditure of heat, i. e. food. The best temperature for cattle is 60° F., and if the water troughs are kept full, their drink will always be comforting and pleasant to them, their rest will follow immediately after food, and there will be no staring coats on them.

As to feeding in general, the first thing to be observed is that a certain quantity of food is necessary to keep a cow, or any other beast, in a certain state of condition—a state in which the animal neither improves nor falls back—is stationary, in fact. From the amount of food equal to keeping a cow in this condition you must not expect any milk. Judging from what we see, the idea, here, is that cows can be kept poor all the winter and give the same amount of milk in spring as if they had been well fed! According to many trustworthy experiments, it requires two-thirds of a full ration to keep a cow in fair condition—what is commonly termed "food of support"—before any milk is yielded; that is to say, two thirds of the food are expended in keeping the cow alive. Up to that point, all is expenditure, there is no return. What is a cow? As regards dairy-work, a cow is simply a machine for producing milk, just as a steam-engine is a machine for producing power and motion—if the boiler is supplied with just enough fuel to

keep the water at 211° F., no power is gained, as you very well know; the boiler must receive extra fuel to produce extra heat before any work can be done.

Would you keep a boiler going which required 25 o/o more fuel to get up steam than other boilers? By no means—you would soon make a change. And so with cows. If a cow gives only one thousand two hundred quarts of milk a year, she is not paying you very well. A good cow, well fed, should give three thousand quarts a year, that is, she should average ten quarts a day, for 310 days, and the cost of this great yield will be only a trifle more than the cost of the bad cow's yield. You see, now, why we insist so much upon the food beyond the food of support.

You will observe that we have great confidence in pease, as a food for milch-cows as well as for young animals—in fact for every creature on the farm young or old, fat or lean—in England we used beans, or lentils, according to market price, but the principle involved is the same in all: nitrogen! Pease contain of albuminoids (compounds containing nitrogen) about 24 o/o, oats only 12½ o/o. Our favourite linseed, so scornfully treated by the pseudo scientist, contains only 20½ o/o of albuminoids, but 35 o/o of digestible fat. Corn we have had very little practical experience of: we prefer buying it to growing it; its chief use in the mixture is to supply the digestible carbohydrates, of which it contains 60 o/o. Now without bothering you about nutritive ratios or any deep calculations, we must ask you to believe that, from practical experiments carried on by ourselves on the one side, and by the Webbs and Jonases on the other, the most prejudiced of men confessed that seven pounds of our mixture (two o' linseed to five of pease) with one bushel of turnips, was fully equal in effect to twelve pounds of linseed cake and two bushel of turnips. We substitute corn in the ration for half the pease, but, only as a concession; for in our own practice, we should still use pease for fattening animals.

Stops will tend to produce milk, but unless dry food is given in abundance with them, the health of the cow will suffer. Brewers' grains, a famous milk-food, if given too freely will rot the animals. Two to three pecks a day is enough for a cow. Malt-dust, or cummins, the roots trodden off the malt after drying, makes good milk and healthy cows; compare its digestible nutrients with those of bran—10,48,3; malt-dust, 20,43,9. It contains double the albuminoids, almost as much carbohydrates, and only half's short in fat; and yet people willingly pay \$20 a ton for bran, and can hardly be got to draw away the malt-dust for nothing. If you try malt dust, pour boiling water over it, with a dash of salt in it. Look after the digestion of your cows, if you don't use linseed, that is, for with it healthiness will be the rule in your herd.

You need not fear shortening the life and usefulness of your cows by high feeding, if you balance their rations judiciously; but do not keep their bowels always loose by too much linseed, or always constipated by too many pease, and you will soon find out that, with cows as with human beings, a proper diet is the main source of health.

Ventilation we hope we need not trouble you much with. It would be an insult to suspect any one, now-a-days, of neglecting this matter. One thing we must remind you of: ventilation must not be carried out at the expense of warmth.

We are troubled in our mind about exercise for cow stock! When the cattle are all in loose-boxes there need be no anxiety on this head, moving about in freedom in the eight feet or so square allotted to each beast is exercise enough. But we can't afford the space yet in our stables for this most desirable plan. Cows must for a long time be tied up by the head from the middle of November to April—four months and a half of strict confinement, poor things, and yet we cannot bear the idea of turning them out of the stables into the open air, when the temperature is at or below zero of Fahrenheit. Shall we compromise for half an hour out of doors when the sun is shining or the weather pretty mild? The young stock there can be no doubt about—plenty of exercise in the open air, and perfect freedom, must be the rule for them.

Garden and Orchard.

MONTREAL HORTICULTURAL SOCIETY

AND

FRUIT GROWERS ASSOCIATION

OF THE

PROVINCE OF QUEBEC

ANNUAL EXHIBITION.

An Excellent Display at the Victoria Rink—The Proceeds for the Benefit of the Hospitals.

"With something like 1,200 exhibits of products of the floral and vegetable kingdoms, aided by a large quantity of bunting and a hard working committee, the Montreal Horticultural Society and Fruit Growers' Association of the province of Quebec has succeeded in transforming the Victoria Skating rink into what should certainly prove a very attractive and popular spot during the present week. It is the society's annual exhibition, and that organization has undoubtedly done its share towards making the event a success. It now only remains for the flower-loving public, which may be said to include every body, to show their appreciation of the society's efforts to give them a first-rate exhibition. The show will remain open until Saturday, and, beyond the excellence of the exhibits, the society may justly claim to be deserving of all patronage, for it has magnanimously decided to donate the gross proceeds of one day to the General and Notre-Dame hospitals, half to each.

The prize money is the largest ever offered by the society, and this has had the effect of bringing together, at least in the floral section, a display that has never been surpassed in the history of the organization.

From the roof of the rink depends an aggregation of bunting that, with the festoons of greenery that run from side to side of the building and adorn the galleries, produces an effect that is decidedly pleasing. The central portion of the floor is occupied with a grand display of ferns, foliage plants and plants in bloom, the whole arranged in a manner well calculated to convey to the visitor the idea of walking through a magnificent garden. Surrounding these, and arranged on tables, are the cut blooms, fruit and vegetables. Taking first the floral section, which to the ordinary observer is the most attractive, it may be said that the collection is one

which will delight the casual observer as well as the professional florist, the former by reason of its beauty and neatness of arrangement, and the latter by the excellence of the blooms and foliage, as well as the symmetry of the plants. It is a collection with which none but a pessimist would find fault. There is a good collection of crotons, all of them showy as ever, and those who have a penchant for caladiums will find some fine specimens. The begonias—seedlings, tuberos and foliage—are a really excellent lot, and one that it would be hard to beat, being fine in both bloom and foliage. Gloxinias are a good show, and of gladioli there is an admirable display, the spikes being almost uniformly good. There are some well trained colours, and the double geraniums are a nice collection. Fuchsias are good, both in bloom and symmetry, and of cacti, those most fantastic of tropical products, there is nice lot. Asters are an attractive collection, and among the pansies and zinnias are some fine blooms, whilst single and double petunias make a good showing. One specimen in peculiar interest to all all visitors will undoubtedly be that of *coca loba pubescens*, of which it is said that there are not more than three or four in the entire Dominion.

Vegetables are scarcely up to the average in quantity. Of apples there is a big display, and on the whole the fruit is of very good quality. Grapes, both outdoor grown and those raised under glass, are small in quantity, but the bunches, especially of the latter, are very good. There are some fine tomatoes and a good collection of onions. Potatoes make a pretty good show, and "headed" vegetables are a fairly good lot."

The above article is copied from the *Montreal Gazette* of September 12th last and only requires the reader to use the past tense to make it come in properly in the *Journal*. I might add that those who missed the opportunity of seeing the Exhibition were the losers. F. Roy.

PRIZE LIST.

Section 1, collection of plants, 100 square feet—Frank Roy, Mount Royal Cemetery Co., 1; Jules Betrix, gardener to Andrew Allan, 2.

Section 2, collection of plants 50 square feet—F. Roy, 1; J. Betrix, 2; John Walsh, gardener to W. W. Ogilvie, 3; John Eddy, gardener to Mrs Redpath, 4.

Section 3, adiantums—W. Wilshire, gardener to Mr. R. B. Angus, 1; F. Roy, 2; J. Betrix, 3.

Section 4, anthuriums in bloom—F. Roy, 1; W. Wilshire, 2; J. Walsh, 3.

Section 5, American aloes (2)—John Eddy, 1; C. A. Smith, gardener to T. A. Dawes, Lachine, 3.

Section 6, American aloes, specimen—A. Pinoteau, Logan's park, 1.

Section 7, begonias foliage—A. Pinoteau, 1; C. A. 2; H. W. Meyer, gardener to John Molson, 3.

Section 8, twelve begonias tuberous Thomas McHugh, Forest and Stream club, Dorval, 1; F. Roy, 2; Geo. Trussell, gardener to J. H. R. Molson, 3.

Section 9, six begonias tuberous—F. Roy, 1; W. Wilshire, 2; A. Pinoteau, 3.

Section 10, six caladiums—J. Betrix, 2; H. W. Mhyer, 3.

Section 12, six crotons—F. Roy, 1; W. Wilshire, 2.

Section 14, one cycas—A. Pinoteau, 1; J. Betrix, 2; John Walsh, 3.

Section 15, four dracenas—F. Roy, 1; W. Wilshire, 2; Geo Copland, Cote des Neiges, 3.

Section 16, one dracena—F. Roy, 1; Geo. Copland, 2; John Walsh, 3.

Section 17, six ferns, two ferns excluded—W. Wilshire, 2; F. Roy, 2; Geo Copland, 3.

Section 18, three dc—F. Roy, 1; H. W. Meyer, 3.

Section 19, one fern specimen—F. Roy, 1; T. Mollugh, 2; J. Botrix, 3.

Section 20, one tree fern—J. Walsh, 2.

Section 21, six fuchsias—T. Holder, gardener to Mr. Jas A. Cantlie 1.

Section 22, three fuchsias—T. Holder, 1.

Section 23, one fuchsia—T. Holder.

Section 24, six zonal geraniums—George Trussell, 1; F. Roy, 2.

Section 25, six double geraniums—George Trussell, 1; F. Roy, 2.

Section 26, three tricolor and three bronze geraniums—George Trussell, 1; F. Roy, 3.

Section 29, ficus elastica—F. Roy, 1; George Trussell, 3.

Section 30, ficus elastica, variegata—C. A. Smith, 2.

Section 31, hanging basket of plants—R. Roy, 1; A. Pinoteau, 2; P. A. Summerville, 3.

Section 32, hanging basket of ferns—C. A. Smith, 1; John Eddy, 2; A. Pinoteau, 3.

Section 33, lygodium scandens—Geo Copland, 1; John Walsh, 2.

Section 35, one marantas. J. Wilshire, 1; F. Roy, 2.

Section 36, nepenthes three—F. Roy, 3.

Section 37, nepenthes one—F. Roy, 2.

Section 38, three orchids in bloom—F. Roy, 2; W. Wilshire, 3.

Section 39, one orchid—F. Roy, 1; W. Wilshire, 2.

Section 40, six palms—W. Wilshire, 1; John Walsh, 2.

Section 41, three palms—W. Wilshire, 1; T. Holder, 2; F. Roy, 3.

Section 42, six palms, not larger than six inch pots—F. W. Mayer, 1; F. Roy, 2.

Section 43, specimen plant—H. W. Mayer, 1; John Walsh, 2; T. Holder, 3.

Section 44, vase plants—F. Roy, 1; George Trussell, 2; B. T. Graves, Cote St. Antoine, 3.

Section 45, five plants for table decoration—W. Wilshire, 1; F. Roy, 2; H. D. Mayer, 3; John Walsh, 4.

Section 46, six pairs of solaginella—George Copland, 1; C. A. Smith, 2; F. Roy, 3.

Section 47, specimen green house plant in bloom—T. Holder, 1; F. Roy, 2.

Section 48, green house foliage plants—W. Wilshire, 1; F. Roy, 2; H. W. Mayer, 3.

Section 49, green house foliage plants—F. Roy, 1; H. W. Mayer, 3.

Section 50, three French cannas—F. Roy, 1; J. Betrix, 3.

Section 51, one French canna—F. Roy, 3.

Section 55, one green house climbing plant in bloom—J. Walsh, 2; J. Betrix, 3.

Section 56, six coleus—Geo. Trussell, 1; B. T. Graves, 2; F. Roy, 3.

Section 57, three coleus—Geo. Trussell, 1; F. Scott, jr., 2; B. T. Graves, 3.

Section 60, collection of cacti and succulents—A. Pinoteau, 1; F. Roy, 2; B. T. Graves, 3.

Section 89, selection of apples, 25 varieties—R. W. Shepherd, jr., 1; A. Knight, Catarauqui, 2; Charles Grave, Catarauqui, 3; G. B. Edwards, Covey Hill, 4; R. Jack, Chateauguay, 5.

Section 90, collection of Russian apples—R. Hamilton, Grenville, 1.

Section 91, apples, one variety new seedling—Geo. B. Edwards, 1; Thomas Scott, jr., 2; R. Jack, 3.

Section 92, apples, three summer, three fall, three early winter and

three late winter—R. W. Shephord, jr., 1; Malcolm Smith Lachine, 2; R. Jack, 3; R. Hamilton, 4; G. B. Edwards, 5.

Section 93, six apples for commercial purposes—R. W. Shephord, jr., 1; Geo. B. Edwards, 2; A. Ducharme, St. Paul's, Abbotsford, 3; R. Jack, 4.

Section 94, apples, famous—Malcolm Smith, 1; James Coupland, Shofford Mountain, 2; R. W. Shephord, jr., 3; R. Jack, 4.

Section 95, apples, St. Lawrence—Malcolm Smith, 1; R. Jack, 2; R. W. Shephord, jr., 3; James Coupland, 4.

Section 96, apples Duchess—Malcolm Smith, 1; A. Ducharme, 2; R. W. Shephord, jr., 3; Jas. Robson, 4.

Section 97, apples wealthy—Jas. Robson, 1; B. W. Shephord jr., 2; Jas. Coupland, 3; R. Jack, 4.

Section 98, apples Alexander—Geo. B. Edwards, 1; Jas. Robson, 2; A. Ducharme, 3.

Section 99, apples Bothel—J. Robson, 1.

Section 101, blue Pearmain's—Geo. B. Edwards; W. B. Davidson & Sons, Cote St. Paul, 2.

Section 102, apples, Canada Baldwin—R. W. Shephord, jr., 1; Jas. Coupland, 3; W. B. Davidson & Sons, 3.

Section 103, apples, golden russett—A. Ducharme, 1; George B. Edwards, 2; R. Jack, 3.

Section 104, apples-peach of Montreal—Malcolm Smith, 1; R. W. Shephord, jr., 2; R. Hamilton, 3.

Section 105, apples, Powaukeo—Jas. Coupland, 1; R. Jack, 2; Geo. B. Edwards, 3.

Section 106, apples, pommes grises—W. M. Ramsay, Merchants banks, 1; R. Jack, 2; Geo. Trussell, 3.

Section 108, apples, strawberry of Montreal—G. B. Edwards, 1; W. Rawlings, 2; W. B. Davidson & Sons, 3.

Section 109, apples, Winter, St. Lawrence—Jas. Coupland, 1; R. W. Shepherd, jr., 2.

Section 110—Apples yellow, transparent—Jas. Robson, 1; Jas. Coupland, 2; Geo. B. Edwards, 3.

Section 111, apples, Jonathan—G. B. Edwards, 1.

Section 112, apples, any other variety—R. W. Shephord, jr., 1; W. M. Ramsay, 2; Malcolm Smith, 3.

Section 113, five crab apples—R. W. Shepherd, jr., 1; Geo. B. Edwards, 2.

Section 114 one crab-apple—W. M. Ramsay, 1; R. W. Shepherd, jr., 2.

Section 115, shipping case illustrating best method of packing apples for exportation—R. W. Shepherd, jr., 1.

Section 116, six pears—J. Betrix, 1; John Eddy, 2; Geo. Trussell, 3.

Section 117, three varieties of pears—J. Eddy, 1; J. Betrix, 2; G. Pasco, gardener to R. Reford, 3.

Section 118, one variety pears—Geo. Trussell, 1; John Eddy, 2; W. M. Ramsay, 3.

Section 119, plums, six varieties—B. T. Graves, 1; W. B. Davidsous & Sons, 2; W. M. Ramsay, 3.

Section 120, three varieties plums—B. T. Graves, 1; R. Jack, 2; T. Scott, jr., 3.

Section 121, one variety plums—B. T. Graves, 1; W. B. Davidson & Sons, 2; W. M. Ramsay, 3.

Section 122, plums, wild, of P. Q.—E. Hamilton, 1.

Section 123, plums, wild, of N. W. states—R. Hamilton, 1; R. W. Shephord, jr., 2.

Section 124, basket of fruit for dessert—J. Betrix, 1; J. Eddy, 2; Geo. Trussell, 3; R. Jack, 4.

Section 125, basket of outdoor, fruits—T. Hall & Son, 1; John Eddy, 2; J. Betrix, 3; Geo. Trussell, 4.

Section 126, grapes, outdoor, eight

varieties—W. M. Patterson, Clarenceville, 1; B. T. Graves, 2; Robt. Reid, Outremont, 3.

Section 127, grapes, outdoor, four varieties—R. Reid, 1; R. Jack, 2; W. M. Patterson, 3; John Eddy, 4.

Section 128, grapes, outdoor, varieties, white—R. Jack, 1; W. M. Patterson, 2.

Section 129, grapes, outdoor, two varieties, black—W. M. Patterson, 1; R. Jack, 2.

Section 130, grapes, outdoor, two varieties, red—W. M. Patterson, 1; R. Jack, 2.

Section 131 grapes, outdoor, any variety heaviest bunch—R. Reid, 1; R. Jack, 2.

Section 132, grapes, outdoor, heaviest bunch, black—R. Jack, 1; W. M. Patterson, 2.

Section 133, grapes, outdoor, heaviest bunch, red—R. Reid, 1; W. M. Patterson, 2.

Section 134, grapes, outdoor, heaviest bunch, white—R. Jack, 1; R. Reid, 2.

Section 135, grapes, in door, six varieties—J. McGuire, gardener to John Molson, 1; J. Betrix, 2.

Section 137, grapes, two white—J. Betrix, 1.

Section 138, grapes, indoor, two black Hamburg—J. Betrix, 1; J. McGuire, 2.

Section 139, do., any variety—J. Betrix, 1.

Section 141, nectarines—J. Betrix, 1.

Section 142, peaches, six varieties—J. Betrix, 1.

Section 143, peaches, best plate—J. Betrix, 1; J. Eddy, 2.

Section 144, water melons—H. W. Mayer, 1; W. B. Davidson & Sons, 2.

Section 155, melon musk—Thos. Hall & Sons, 1; F. Roy, 2; Geo. Trussell, 3; Ignace Morand, Cote des Neiges, 4; W. B. Davidson & Sons, 5.

Section 156, melon musk, best new variety—I. Morand, 1; F. Roy, 2; W. B. Davidson & Sons, 3.

Collection of cut bloom, grown outside—1. F. Roy, M. R. Cemetery Co.; 2 W. B. Davidson & Sons, Cote St. Paul; 3. Geo. Trussell, gardener, J. H. R. Molson, Esq.; 4. John B. Goode, Cote St. Antoine; 5. R. Jack, Chateauguay.

Asters, 24 blooms—1. John B. Goode; 2. W. J. Wilshire, gardener to R. B. Angus; 3. Geo. Trussell; 4. T. B. Bond, gardener to A. A. Ayer; 5. W. B. Davidson & Sons.

Asters, 12 blooms—1. John B. Goode; 2. W. B. Davidson & Sons; 3. G. Pascoe, gardener to Robert Seford, Esq.; 4. Geo. Trussell.

Dahlias single—1. John Walsh, gardener to W. W. Ogilvie, Esq.

Dahlias, single 12—1. John Walsh; 2. C. A. Smith, gardener to T. A. Dawes, Esq.

Dianthus, collection of 24 blooms—1. T. B. Graves; 2. W. B. Davidson & Sons.

Gladioli, 12 spikes—1. F. Roy (best cuts not dissimilar disqualified); 2. A. Pinoteau, city gardener; 3. B. T. Graves.

Gladioli, 6 spikes—1. F. Roy; 2. A. Pinoteau.

Gladioli, 3 spikes—F. Roy.

Pansies, 24—1. T. B. Graves; 2. W. M. Ramsay, Merchants' Bank.

Pansies, 12—1. C. D. Smith; 2. B. T. Graves; 3. W. M. Ramsay.

Potunias, single—1. F. Roy, 2. A. Pinoteau; 3. Geo. Copland.

Potunias double—1. Geo. Trussell; 2. C. D. Smith.

Phlox Drummondii—1. H. W. Mayer, gardener to John Molson, Esq., 2. B. T. Bond; 3. C. A. Smith.

Phlox, perennial—1. F. Roy; 2. B. T. Graves.

Sweet peas—1. B. T. Graves; 2. John Eddy, gardener to Mrs. Redpath; 3. A. Pinoteau; 4. R. Hamilton, Grenville; 5. G. Pascoe.

Zinnias—1. Geo. Trussell; 2. John B. Goode; 3. F. Roy.

Hollyhocks—1. Geo. Trussell; 2. F. Roy.

Canna—1. F. Roy; 2. B. T. Graves; 3. J. Betrix.

Verbena—1. A. Pinoteau; 2. John B. Goode; 3. J. M. Nelson, Cote St. Antoine.

Basket of cut flowers—1. W. B. Davidson & Sons; 2. A. Pinoteau; 3. Geo. Trussell.

Vase or epergne with cut flowers—3. W. B. Davidson & Sons.

Vase of roses—1. Geo. Trussell; 2. W. B. Davidson & Sons.

Vase of Marguerite carnations—1. J. Betrix; 2. W. B. Davidson & Sons.

Vase of Marguerite carnations—1. J. Betrix; 2. W. B. Davidson & Sons; 3. B. T. Graves.

Vase of outdoor grown out flowers—1. Geo. Trussell; 2. W. B. Davidson & Sons.

VEGETABLES.

Artichokes, Jerusalem—1. T. Westlake, gardener A. J. Dames; 2. M. Ignace Morand, Cote des Neiges, Colloges.

Beets, turnip, blood—1. T. Westlake, 2. G. Trussell; 3. R. Jack, Chateauguay.

Beets, long blood—1. G. Trussell; 2. T. Hall & Sons; 3. T. Bond.

Beans, Lima—1. M. Morand; 2. G. Trussell; 3. C. T. Smith, Amherst street.

Beans, kidney, yellow, podded—1. G. Trussell; 2. W. Rawlings, 41 Simpson street.

Beans, kidney, green, podded—1. M. Morand; 2. G. Trussell; 3. T. Westlake.

Borecole (Kale)—1. M. Morand; 2. F. Roy.

Brussels sprouts—1. M. Morand; 2. F. Roy.

Cabbage, winter—1. F. Roy; 2. M. Morand.

Cabbage red—1. F. Roy; 2. M. Morand.

Cabbage savory—1. M. Morand; 2. F. Roy.

Carrots, half long—1. John Nesbitt, Petite Cote; 2. G. Trussell; 3. W. B. Davidson & Sons.

Cauliflowers three heads—1. T. Hall & Sons; 2. W. B. Davidson & Sons; 3. C. T. Smith; 4. F. Roy.

Cauliflower, one head—1. G. Trussell; 2. C. T. Smith; 3. T. Hall & Sons; 4. W. D. Davidson & Sons.

Cucumber—1. T. Westlake; 2. W. B. Davidson & Sons.

Celery, white—1. T. Hall & Sons; 2. M. Morand; 3. T. Westlake; 4. C. A. Smith.

Celery, red—1. M. Morand; 2. C. A. Smith; 3. F. Roy; 4. W. B. Davidson & Sons.

Celery, yellow—1. T. Westlake; 2. W. B. Davidson & Sons; 3. M. Morand; 4. C. A. Smith.

Corn, sweet—1. T. B. Bond; 2. G. Trussell; 3. M. Morand.

Egg plants—1. C. T. Smith; 2. M. Morand.

E ; plants—1. J. Beatrix; 2. M. Morand.

Leeks—1. M. Morand; 2. T. Hall & Sons; 3. F. Roy.

Onions, six varieties—1. T. Hall & Sons; 2. G. Trussell, F. Roy.

Onions, red—1. T. Hall & Sons; 2. C. A. Smith; 3. G. Trussell; 4. M. Morand.

Onions, yellow—1. T. Hall & Sons; 2. C. A. Smith; 3. G. Trussell, F. Roy.

Onions, white—1. T. Hall & Sons; 2. F. Roy; 3. G. Trussell; 4. M. Morand.

Parsnips—1. T. Hall & Sons; 2. B. T. Bond; 3. T. Westlake.

Peas, 1, G. Trussell; 2, F. Roy; 3, T. Westlake.

Peppers—1, M. Morand; 2, G. Trussell; 3, C. A. Smith.

Potatoes, collection—1, M. Morand; 2, G. Trussell; 3, T. Scott, jr., St. Laurent; 4, T. Hall & Sons.

Potatoes, three varieties—1, M. Morand; 2, G. Trussell; 3, T. Scott, jr.

Pot Herbs—1, M. Morand; 2, W. B. Davidson & Sons; 3, G. Trussell.

Radishes—1, W. M. Ramsay; 2, J. M. Nelson, Cote St. Antoine; 3, T. Westlake.

Lettuce, Cabbage—1, James Robson, Outremont, 2, T. Hall & Sons; 3, G. Trussell.

Lettuce, Cos.—1, W. B. Davidson & Sons; 2, G. Trussell.

Parsley—1, G. Trussell; 2, M. Morand.

Salsify—1, B. T. Bond; 2, C. A. Smith; 3, Geo. Trussell.

Tomatoes three varieties—1, C. T. Smith; 2, G. Trussell; 3, C. A. Smith.

Tomatoes, red—1, Geo. Trussell; 2, C. A. Smith.

Tomatoes yellow—1, C. A. Smith; 2, Geo. Trussell.

Turnips, white—1, M. Morand; 2, John Nesbitt; 3, C. A. Smith.

Turnips, yellow—1, M. Morand; 2, Geo. Trussell; 3, W. B. Davidson & Sons.

Squash, vegetable Marrow—1, W. B. Davidson & Sons; 2, G. Trussell.

Squash, Hubbard—1, M. Morand; 2, G. Trussell.

Squash, best table—1, Geo. Trussell; 2, M. Morand.

Vegetables, collection—1, T. Hall & Sons; 2, W. B. Davidson & Sons; 3, C. A. Smith.

AMATEUR DEPARTMENT.—PLANTS.

Six plants, bloom—1, H. Whitman, city; 2, T. W. Burdon; 3, T. Scott, jr.

Three plants, bloom—1, T. W. Burdon; 2, Robert Reid, Outremont; 3, W. M. Ramsay.

One plant, bloom—1, A. Ducharme, St. Paul, Abbotsford; 2, H. Whitman; 3, T. W. Burdon.

Musk—1, W. M. Ramsay.

Abutilon—1, H. Whitman; 2, T. W. Burdon; 3, W. M. Ramsay.

Hydrangea—1, H. Whitman; 2, P. A. Somerville, 47 Mayor street.

Balsam—2, H. Whitman; 3, W. M. Ramsay.

Aster—1, H. Whitman; 2, W. M. Ramsay.

Fuschias—1, T. W. Burdon; 2, T. Scott, jr.; 3, H. Whitman.

Geraniums—1, H. Whitman; 2, R. Reid; 3, W. M. Ramsay.

Tuberous begonias—1, T. W. Burdon; 2, P. A. Somerville; 3, Robt. Reid.

Six plants, foliage—1, T. W. Burdon; 2, H. Whitman; 3, W. M. Ramsay.

Three plants, foliage—1, T. W. Burdon; 2, P. A. Somerville; 3, W. M. Ramsay.

One plant, foliage—1, T. W. Burdon; 2, H. Whitman; 3, Thos. Scott, jr.

Colours—1, H. Whitman; 2, T. W. Burdon; 3, W. M. Ramsay.

Fern—1, T. W. Burdon; 2, W. M. Ramsay; 3, H. Whitman.

Ivy—1, T. W. Burdon; 2, H. Whitman.

OUT BLOOM, BOUQUETS, &c.

Annuals collection—1, W. M. Ramsay; 2, J. M. Nelson; 3, R. Jack.

Asters—1, John B. Goode; 2, W. M. Ramsay; 3, J. M. Nelson.

Bouquet, or bunch of flowers—1, A. P. Somerville; 2, W. M. Ramsay; 3, T. W. Burdon.

Cut flowers, vase or epergne—1, T. W. Burdon.

Gladioli—1, W. M. Ramsay; 2, A. P. Somerville.

Pansies, 18—1, W. M. Ramsay; 2, J. M. Nelson; 3, R. Reid.

Pansies—1, W. M. Ramsay; 2, R. Reid; 3, John B. Goode.

Dianthus—1, W. M. Ramsay.

Verbena—1, R. Hamilton, Grenville; 2, W. M. Ramsay.

Potunias, double—1, W. M. Ramsay.

Potunias, single—1, John B. Goode; 2, W. M. Ramsay; 3, H. Whitman.

Phlox, Drummondii—1, John B. Goode.

Sweet peas—1, John M. Nelson; 2, R. Jack.

Zinnias—1, John B. Goode.

FRUITS AND VEGETABLES.

Apples, three varieties, dessert—1, Malcom Smith, Lachute; 2, W. M. Ramsay; 3, Robert Reid.

Apples, one variety—1, Robert Reid; 2, A. Ducharme; 3, W. M. Ramsay.

Grapes, five varieties—1, Robert Reid.

Grapes, best bunch of any kind—1, R. Reid; 2, P. A. Somerville.

Pears—1, W. M. Ramsay; 2, R. Reid; 3, W. Rawlings.

Plums—1, C. E. T. Moody, Cote St. Antoine; 2, W. M. Ramsay; 3, Malcom Smith.

Corn, sweet—1, John M. Nelson; 2, W. M. Ramsay.

Tomatoes—1, W. M. Ramsay; 2, John M. Nelson.

Onions—1, W. M. Ramsay; 2, John M. Nelson.

Carrots—1, John M. Nelson; 2, W. M. Ramsay.

Beets—1, W. M. Ramsay; 2, A. Ducharme.

Celery—1, W. M. Ramsay.

Parsnips—1, W. M. Ramsay.

Lettuce, cabbage—1, W. M. Ramsay.

Beans—1, W. M. Ramsay; 2, John M. Nelson.

Peas, green—1, John M. Nelson; 2, W. M. Ramsay.

DIPLOMAS AND SPECIAL PRIZES.

Groups of fuchsias, exhibited by T. Holder, gardener to Mr. James A. Cantlie, diploma and special prize.

Musa Ensete (Abyssinian banana), exhibited by John Eddy, gardener to Mrs. Redpath.

Bed of tuberous begonias, exhibited by F. Roy, gardener to Mont Royal Cemetery Co.

Table of seedling tuberous begonias, exhibited by T. McHugh, Forest and Stream Club, Dorval.

Group of Geraniums, group of dracaenas, and group of crotons achimenes, &c.; also collection of nepenthes, all exhibited by F. Roy, Mont Royal Cemetery Co.

A superb collection of indoor grapes, exhibited by George McWilliam, gardener to Mrs. Josiah Lasell, Whittinsville, Mass.

Spikes of a magnificent new seedling French canna, exhibited by James S. Cowles, Newport, R. I.

A collection of apples, nine varieties, and six varieties crab apples, grown by the Rev. Canon Fulton, St. Vincent de Paul, having been received too late for entry in the competition, the judges awarded them a special prize, all being magnificent specimens.

MONTREAL HORTICULTURAL SOCIETY.

The Directors and Exhibitors have completely eclipsed any previous effort in this season's exhibition. The Victoria skating rink was changed into a palace of enchanting beauty and taste

by the decorations and skilful arrangement of the specimens; neither pains, or art were spared to render the show attractive and refining in its influences, and a scene of beauty was produced which could scarcely be surpassed. At every turn, some new effect greeted the eye of the beholder, and the whole was admirable beyond expression. When critically examined in detail, the specimens exhibited showed, that in most cases, the utmost limit of good cultivation had been reached. The plants, too, were of the rarest species, and such as none but men highly advanced in their profession could have produced in such perfection.

The City of Montreal has advanced during the last fifteen years in every respect, until it has few rivals for architecture, educational institutions—convenience of travel; condition of its streets—beauty of its squares, and delightful suburbs—and not least as regards its horticulture.

The Exhibition, just closed was sufficient to prove that horticulturists are, by no means behind in the march of improvement, and form a class of men of which the citizens may be proud.

To single out an individual, when all have united in acting their parts so energetically and successfully, might be considered invidious—nevertheless, it is due to one gentleman, Mr. F. Roy of Mount Royal Cemetery to chronicle that he has the credit among his compeers of having contributed, by his indefatigable exertions and executive ability, in the greatest degree to bring about so marked and impressive a result.

Of course he was ably backed and assisted by the President, David Williamson Esqr., the Vice-President, W. M. Ramsay, Esqr., the Directors, Messrs. John Doyle, Jules Betrix, John Eddy, John Walsh, Geo. Trussell, F. Roy, James Bennett, and the enthusiastic and attentive Secretary-Treasurer, Thomas Williamson, Esqr., to all these gentlemen the public are indebted, and the meed of praise is also due to the Exhibitors, without whom their designs could not have been carried into effect.

The principle of these were—Plants &c. Messrs. F. Roy, Jules Betrix, W. J. Wilshire, John Walsh, F. McHugh, C. A. Smith, H. Meyer, A. Pinoteau, J. Eddy &c., Fruit R. W. Shepherd Junr., C. M. Edward Cowey, Hill Huntingdon Co., Robson, Smith, Lachute, W. B. Davidson, Cote St. Paul, &c., Cut flowers & Vegetables, Geo. Trussell, W. B. Davidson, W. Ramsay, T. Hall & Son, B. Graves, C. Smith, Amateurs, class, Messrs. Ramsay, Somerville, Borden and others. Now, as to the public, it is grievous to have to remark, that after all the efforts made to advertise in spite of the excellent press notices, and the numerous means by which the holding of the exhibition was made known, the attendance was not so large as could have been desired.

Alas! that such should be the case, and that a thirst for sensational and, too often, depraving pastimes, should be more popular than such a refining, elevating and educational means of amusement as that offered by the Gardens and their friends! What better use of the public money could be made than by assisting an association whose object is to build up a better moral sentiment in society? And surely that class of the population who, as individuals, have the same end in view, should give it their countenance and support, rather than to those whose chief end and aim are to make a profit and who introduce immoral,

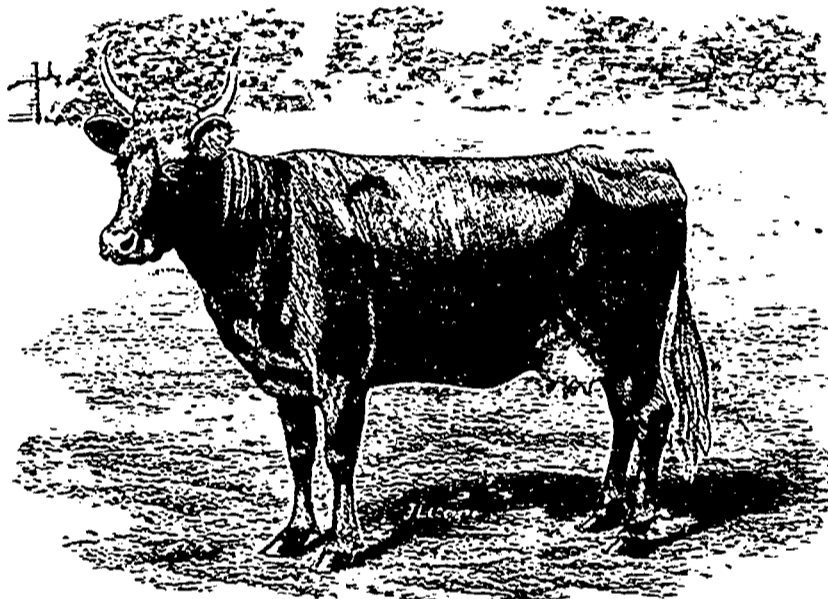
vitiating or debasing shows and amusements along with the legitimate part of the Exhibition, for the purpose of drawing or a crowd whereby to replenish their exchequer.

Geo. Moore.

The Dairy.

GREEN CHEESE.

In spite of all that has been said and written with regard to the selling of cheese too green, many factories continue this bad practice. In the spring, when cheese is high and likely soon to fall in price, we give, as counsel and advice, to use lots of rennet and a small quantity of salt, so that the cheese may be sold early. But as the season advances, and the market has started on an upward journey, we advise using less rennet and more salt, so that the keeping qualities of the cheese are much superior—and they are not ready for sale before 10 days or two weeks. During last month, on my visits, I found cheese which were made on Saturday, were taken out of the hoops on Monday, were weighed



AN ENGLISH ROYAL PRIZE-WINNING KERRY COW.

and boxed for market on Wednesday. Such folly! Now suppose these parties were buying the best brand of granulated sugar and the merchant weighed up the poorest brown, what names they would call him: cheat, robber, and such like! but it depends on whose ox has been gored; they sell cheese and deliver only curd, which is simply getting money under false pretences. The Dairy Association of this Province has gone to considerable trouble and expense to educate the cheese-makers to make a uniform article of finest cheese; then, salesmen, who know nothing about how the cheese are made, go to work, and deliberately undo the work that has been done by the inspectors during the past 4 or 5 years. Ontario usually keeps the cheese a much longer time than we do in this province, and even the United States during last spring got credit for their cheese being much better cured than ours. Every dairyman in this province of ours should see that his cheese is allowed to get to maturity before selling. On the other hand, do not become speculators, and hold your cheese too long: sell when it is at its best, and nine times out of ten, you will hit the mark.

PETER MACFARLANE,
General Inspector

August 24th 1894.

NOTES ON OCTOBER AND NOVEMBER CHEESE.

There are many makers who think it a very easy matter to make fine cheese in October, as the milk is generally very sweet, but nevertheless we find many poorly made cheese, pasty, badly cured, and very often badly cracked.

A little attention to the following rules will overcome all these defects.

As soon as you have received enough milk to cover the bottom of the vat, apply the steam and heat up the milk to say 94° or 96° F., keeping the steam going until the last milk received will cool the lot down to 86° or 88° F.; then apply the rennet test and ripen your milk so as to have about 3 hours from the time you add the rennet until it is time to draw the whey. After a few trials you will know how many seconds by the test will give you this result. Use rennet enough to coagulate the milk ready for cutting in about 45 minutes; cut evenly in cubes of about $\frac{3}{4}$ of an inch in size, cut uniformly; remove the curd on the sides and bottom with the hands, and should there be any pieces of curd which have escaped the knives, be sure you

curd enough left over for half a cheese or more, press it and the next day pull up the bandage, loosen the curd around the outside at the top, and fill up with fresh curd, and in this way you will have cheese uniform in size, as the foreign markets require tall cheeses. Keep the temperature of the curing room as uniform as possible; about 70° F.; have your stoves ready so that if a cold snap comes you will be prepared, and not allow your cheese to get chilled; turn them every day in the curing room: and try if possible and make the best cheese you have made all the season.

PETER MACFARLANE,
General Inspector.

August 24th 1894.

GERVAIS CREAM CHEESES.

To make these you require a set of twelve little tin moulds, about 3 in. high, and 5 in. inside in circumference, without either lids or bottoms, the moulds being joined together round one end by tin in four rows of three moulds, this set exactly holding the curd made by the following recipe, and it can be made at any hardware shop for a trifling sum.

A dozen pieces of white thin blotting paper, 3 1-16th in. wide and 5 1/2 in. long, with which carefully line the moulds, and if the cheeses are for market you can get sets of papers with the name of your dairy stamped on each from the Dairy Supply Co., Museum Street, London, also the tins, if you prefer doing so to having them made locally.

A bottle of rennet. The strength of this varies with different makers, so in these recipes I am giving the quantities that should be used with Hansen's extract. Two beech or pine wood boards, rather larger than the set of moulds, and two straw mats to fit the boards, these being all well-calced, rubbed with salt (to prevent the cheeses sticking to them) then thoroughly cooled in cold water.

A good-sized huckaback, or crash cloth, well soaked in and then wrung out of scalding water just before you want it.

A large basin, tablespoon, and cup or glass in to which to drop the rennet, and a glass dairy thermometer (1st.). Having everything ready in a room or dairy 60 deg. Fahr., take 2 quarts of new milk and 1 quart of cream, freshly separated if possible; otherwise skimmed off milk that has not stood more than twelve hours. Mix well together, and if the milk is not fresh from your own cow, place the basin in a pan of hot water, and stir till the mixture is 65 deg. Fahr. this being the renneting temperature. Half an hour after mixing the cream and milk, put three drops of rennet in a little cold water, and stir well into the mixture, continuing to do so occasionally till it coagulates; then leave till a little green whey has collected on the top of the curd. Then with a tablespoon ladle out in fine slices into the cloth, being careful neither to crush nor break it during this process, and one cloth must not contain more than the three quarts of curd. Hang up to drain in a temperature not below 60 deg. Fahr., and open the cloth once or twice during this process, which will take about twenty-four hours, and scrape down the sides to ensure uniform drainage. When the curd is fairly solid, take down and mix in thoroughly a little clean dry salt. Then with a teaspoon (I prefer the end of a small ivory paper-knife, myself, kept for the purpose) fill the

cut them. Apply the steam slowly at first, heat to 100° F., after the curd begins to firm, finish the stirring with the small rake, hay rake, be sure you get the curd firm in the whey, as the milk is much richer in butter fat than during July and August, and more moisture remains in the curd. As soon as you have acid enough usually $\frac{3}{4}$ to $\frac{1}{2}$ an inch, (although in some sections more is needed) with the hot iron test, draw the whey and after it is drawn, stir the curd well to expel the surplus moisture, and pack the curd at the sides of the vat. If there is only a small quantity of curd it may be packed altogether, keep up the temperature to 94° and 96° F. turning the curd in 30 minutes, piling double the second turning, and increasing every turning until 5 or 6 high, and, in about 3 hours if it has been kept at the proper temperature, it will be fit to pass through the curd mill. If there is no gas, salt in, say, 30 minutes after grinding; if any signs of gas, do not salt until they have disappeared. In the meantime, stir the curd occasionally to keep it from matting again, salt in vat at the rate of 3 lbs. per 1000 lbs. of milk, and in November, 3 1/2 lbs. to 3 3/4 lbs. Stir the salt well and put to press in, say, 20 minutes at a temperature between 80° and 85° F. Make your cheese as large as you can; press and have boxes to hold them. If you have, say

moulds, pressing each spoonful in firmly, so that the cheese are a good shape when turned out. They must remain in the mould three or four hours to settle, drain, and allow the paper to adhere properly, being inverted once during this time on the second mat and board. Made thus, they take about three days, but, if a quicker cheese is required, two drops of rennet to the quart can be used, when the curd will be ready in from eight to ten hours; but in this case a larger proportion of cream must be used, or the cheese will be hard. About half-and-half if the cream is fairly thick. They can be eaten fresh or kept for a week or ten days till ripe. Their retail market price is 3d. or 4d. each.

These cheeses can be made in larger sizes, but in this case the moulds are perforated and provided with a light tin follower, on which is placed a 4 lb. weight. The moulds are lined with fine butter muslin.

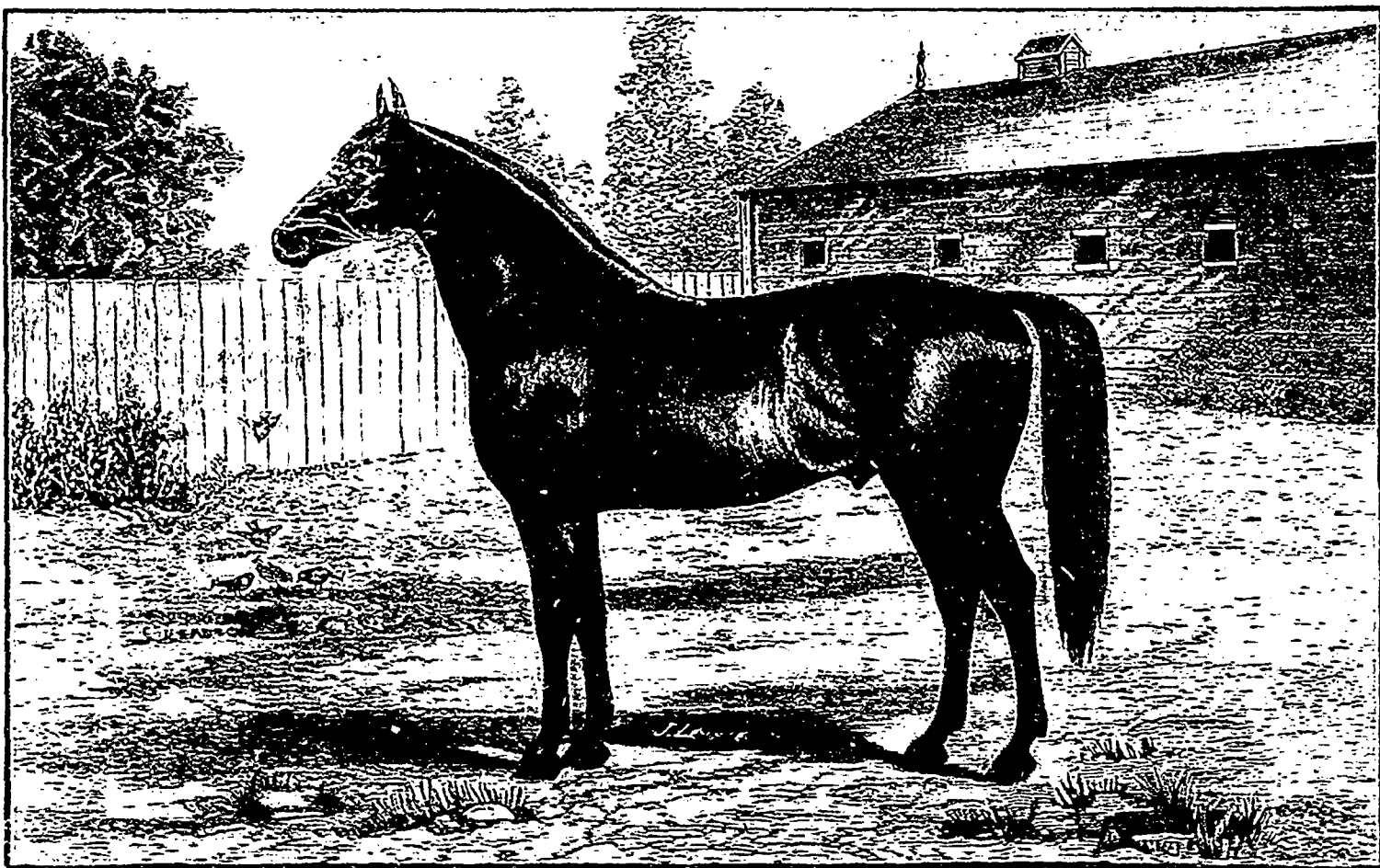
in earnest, and should appreciate the cows that are under his charge. It would be very unwise to place the sensitive, highbred Jersey or Guernsey cow in the hands of the average dairyman, because under the care he would be willing to give her, she would soon become a very poor investment to him. Until one sees clearly the necessity of kindness, good, warm stabling, pure drinking water, either given her often when stabled, or arranged so she can help herself, knowledge of good feeding rations, cleanliness in every particular, and is willing to devote time to weighing and testing the milk of his cows, it would be better for him to keep his scrub cows, and do scrub dairying.

The successful dairyman of to-day is a very different man from the dairyman of the past. He must take good dairy papers, read them carefully and follow their teachings, at least until he proves them false. If this were done, instead of an average

those qualities to his offspring, she will disappoint you. If you have not such cows, and are unable to get them, select your best native cows for the foundation of your dairy. Now breed them to a full-blooded Jersey or Guernsey bull, coming of a family having the qualities noted above, and a record of not less than 300 pounds of butter, and your heifer calves should be something to be proud of. Breed them right back to their sire, and you will soon have a dairy that, with proper care, will be among the best.

3d. Care of the Cows. Cultivate the acquaintance of your cows, fondle them, teach them to regard you as their best friend. When I cross the pasture where my cows are kept in the summer time, they all crowd around me and seem disappointed if I do not stop and give them each a caress. This surely shows that they love kindness. And rest assured it will pay. In making the change from barn to the pasture, great care should

chilly to stable them, also through any cold rains, for cold cows and success do not go together. Have a silo if possible; if not, then secure an abundance of corn fodder, well cured, with some roots and a good supply of bran, oil meal, corn meal and ground oats. These, with good, early cut clover hay, will provide a good range of rich, milk-producing food. Now, with a warm, well-lighted and properly ventilated stable, with absorbents to save all the manure, both liquid and solid, you are ready to feed your cows for profit. Feed liberally, but not blindly. Weigh and compound a balanced ration, which you can learn to do from your dairy papers. Note the capacity of each cow, and feed accordingly, as some will be found able to pay for better feeding than others. In order to know this, weigh each cow's product, then, knowing what the feed costs, it is a very easy matter to know whether you are feeding at a profit or loss. I know



THE CARRIAGE STALLION, KNIGHT OF THE VALE. (v. p. 195.)

If the curd has been drained too much, mix with a little fresh cream ere moulding, or, if "gritty," press through a fine cheese-cloth before doing so. Neglecting to stir the mixture when setting causes a precipitation of milk to the bottom of the bowl and this should not be mixed with the other, or it will cause grittiness.

ESSENTIALS OF SUCCESSFUL DAIRYING.

The most important requisites for the successful dairy are the following: 1st. The Dairyman.

I consider the man stands at the head of the list, for, if he is qualified to make dairying a success, he will see that the other necessary things are not wanting. He should have a good business education, be of a careful, methodical habit, with a determination to do everything pertaining to the work to the best of his ability. He should be not only able, but thoroughly

of 130 pounds of butter, or 3,000 pounds of milk, each cow would easily make from 250 to 300 pounds of butter, or 5,000 to 7,000 pounds of milk. The writer knows this from practical experience, and believes dairy-writers should teach first, better bred dairy-men, and that it takes a gentleman to handle a dairy of cows successfully.

2nd. The Dairy-Cow. Since it was found in the test at Chicago last season that the cow giving the richest milk, "according to the Babcock test," and most of it, made the most butter, cheese, and the greatest net profit; keep only those cows which give a good quantity of milk rich in butter fat. Whatever the breed, look well to the form of the cow. See that she has the wedge shape, fine, slim neck and head, soft silken hair, large udder, teats well spread, and large, crooked milk veins. These, with a good constitution and capacity for large amounts of rich food, are very important points, but above all, look well to her ancestry, for unless she comes of a family of large milk givers, giving milk rich in fat, and having power to transmit

be used. Do not be in too great a hurry about getting the cows out to grass. Wait until the grass gets a fair start, and the ground gets warmed up, so that the cows will not be chilled when lying down. I believe that is the cause of most cases of gas get. Keep up the grain ration for some time, reducing gradually as the grass improves and the cows will not have that gaunt look so often seen at this time. It will pay to place some bran in each cow's manger before stabling them for milking, as they will be on hand, thus saving time driving them up at night. As soon as the grass begins to fail, have some early sweet corn, or peas and oats, ready to give to keep up the flow of milk. Keep salt always within their reach. Provide an abundance of pure water, piping it into the stable for winter use, if possible. If butter making be followed, make winter butter, for with cows well taken care of, and with such a man as I have described in charge, it will pay the best. Have your cows fresh in milk in the fall, being very careful as soon as the nights become

this is some trouble, but it is the only sure way. I have weighed each cow's milk for the past year, recording the same in a book kept for the purpose. So much for quantity of milk. Now test the milk by the Babcock test a number of times, in order to know the quality each cow gives. Don't depend on the amount of butter you may obtain from a certain amount of milk, for you may lose considerable butter fat in creaming and churning, and so condemn the cow wrongfully. If, after a fair trial, you find you have cows that do not pay, sell them, and the sooner the better. Keep your cows in the barn every night after it begins to get chilly, and as soon as the frost kills the grass, keep them in all the time, unless there is a warm, sunshiny day, when they can be let out for at least an hour without harm.

Now don't listen to some easy-going, careless dairyman about this, but follow the teachings of the successful dairyman of to-day, and you will be surprised how little exercise your cows need if properly taken care of otherwise. Keep the stables clean and the

cows well bedded, card (1) them every day and do not allow a particle of manure left on them. Milk them at regular times, having the same milker milk the same cows each time. Allow no loud talking or other noise during milking time. The cows coming fresh in the fall, and well fed, will give a good flow of milk all winter, and on getting out to grass in the spring, will give nearly as much as though fresh in the month of March.

4th. Handling the Product of the Dairy. Although this part of the subject comes last in this article, it by no means should be thought of the least importance; indeed, upon this depends the financial success of the business. A good deal depends on how you dispose of your product, but in either the retail milk trade, patronizing cheese factories, or home butter-making, offer nothing for sale unless it is of the best. The cows should be carefully brushed before milking, and the hands of the milker kept perfectly dry during the operation. As we use a creamery and make butter, I shall confine myself to that method. Use tin pails for milking, great care being taken to thoroughly scald and clean them. Do not let them stand in the stable after being filled, but strain the milk as soon as you can get enough to fill a can in the creamer. We strain our milk through four thicknesses of cloth aside from the strainer on the pail; this keeps out every hair, if some should get in the milk. The milk being quickly strained will have a temperature of 95°, and should be set in a temperature of 42° in order to get the best results. After setting twelve hours, the cream will be all up, (2) when it should be skimmed. Keep the cream pail in a cool place, and stir up every time you add fresh cream. When you have enough to churn, or at least every three days, place your cream pail in a room with a temperature of about 65° to 70°, and stir occasionally, that it may ripen its contents evenly. As soon as the cream assumes a thickened, velvety appearance, it is ready to churn, and should be churned in summer at 58° to 60°, and in winter at 65 to 68°. We use the barrel churns, and believe they are as good as any. Do not fill your churn too full, one-third full is about right. Turn the churn about forty-five revolutions a minute, not forgetting to air the cream once or twice when first commencing. If everything is all right, in about twenty or thirty minutes the glass will become clear. Then churn slowly until the granules of butter are distinct, and about the size of wheat kernels. Add cool water at about 55°, so the granules will harden slightly and then draw off the butter milk. Wash until the water runs from the churn perfectly clear. Salt in the churn with the best salt to be obtained, and to suit the taste of your market. After standing a short time, work slightly and pack. Use the package which your trade demands, in fact, please your customers. Use parchment paper for covering, and if packing in tubs, line them with the same. If the above directions are followed, you will never have any trouble with unruly churning, and will have an article which will always sell, and at a good price. Stamp your name and address on each package.

For the last four years we have sold all of our butter to one grocer, who supplies private customers who are willing to pay a fancy price for that

(1) We say: brush, but never use a curry-comb.—Ed.

(2) Is this so?—Ed.

which suits them. I like that better than retailing. We guarantee every pound, and have never had a poor churning, or any fault found with the butter.

I presume most of the readers of this will say, "All this trouble will not pay," but all the successful ones will know that it is the very reason why so few reach the top. This is not theory but facts, as I commenced with 125 pound cows, and market prices for butter, and have reached an income of \$70 per cow.— *The Practical Farmer.*

O. H. LIVINGSTONE.

EXPERIMENTS IN FEEDING AT THE DAIRY INSTITUTE, WORLESTON.

The following is taken from the *Macclesfield Courier*:

An almost universal opinion exists among dairy farmers that "rich foods produce rich milk." Of late, however, strange theories have been propounded by some scientific men that the richness of the food has no influence on the quality of the milk, although it does affect the quantity to a considerable extent. A number of experiments have been carried out, chiefly by American scientific men, in support of this theory, and a few are to be found in this country who are imbued with the same idea. The theory is certainly antagonistic to the belief and practice of most dairy farmers. Doubtless, Cheshire farmers feed with the object of increasing both the quantity and quality of their milk. If the American doctrine be true, it becomes a serious question whether high feeding is of the special value that has been ascribed to it.

With a view of trying to throw some light upon this matter, the Farm Management Committee of the Cheshire County Council instructed Mr. Drace to carry out a series of experiments in feeding at the Dairy Institute, Worleston. The main object aimed at was to see if special feeding produced any alteration in the percentage of fat contained in the milk, or, in other words, if the quality or richness of the milk was altered. Three ordinary cows were selected. No. 1, a Welsh cow, had recently calved; No. 2, a cross-bred Shorthorn, had calved three months; and No. 3, a cross bred Shorthorn, five months. Thus, cows in various stages of their milking career were taken for experimenting upon.

The ordinary daily ration given to the cows at Worleston during the past winter has been a mixture of 17 lb of good hay with 3 lb. of nice oat straw. In addition each cow received 2 lb. of oats, 2 lb. of maize meal, and 2 lb. bran. During the third and fourth weeks of January the milk of each cow was carefully tested, morning and evening, by means of the Babcock tester for the percentage of butter-fat. The whole milk was then churned, and the amount of butter ascertained. The milk under this system of feeding may be considered as the normal standard of these cows both in quality and quantity, as it was the result of the regular system of feeding in vogue. This may be tabulated thus:

1st Period.	Cow No. 1.		Cow No. 2.		Cow No. 3.		Total milk of three cows in six days.	Total weight of butter.	Average No. of lb. of milk per lb. of butter.
	Weight of milk daily.	Per cent. of fat.	Weight of milk daily.	Per cent. of fat.	Weight of milk daily.	Per cent. of fat.			
	34	3.28	20½	3.92	20½	3.47	448½	15 8	28.9

The ration of concentrated food was then completely changed, the hay and straw remaining the same, and 4 lb. each daily of cotton cake, a food rich in albuminoids, substituted. A fortnight was allowed to elapse, so as to get the new ration thoroughly into the system. Then the milk was tested, exactly as in the first instance, and the result registered. We now have:—

2nd Period.	Cow No. 1.		Cow No. 2.		Cow No. 3.		Total milk of three cows in six days.	Total weight of butter.	Average No. of lb. of milk per lb. of butter.
	Weight of milk daily.	Per cent. of fat.	Weight of milk daily.	Per cent. of fat.	Weight of milk daily.	Per cent. of fat.			
	35½	3.61	22½	4.13	22½	3.53	479½	23 3	28.3

In the month of March a food rich in carbo-hydrates, viz.—6 lb. daily of maize meal was substituted for the cotton cake, the hay and straw remaining precisely as on the former occasions. After allowing a fortnight again to elapse, the same tests were applied as before, with the following results:—

3rd Period.	Cow No. 1.		Cow No. 2.		Cow No. 3.		Total milk of three cows in six days.	Total weight of butter.	Average No. of lb. of milk per lb. of butter.
	Weight of milk daily.	Per cent. of fat.	Weight of milk daily.	Per cent. of fat.	Weight of milk daily.	Per cent. of fat.			
	31½	3.19	18½	3.80	211.12	3.24	424½	14 5	29.6

Now, it will be noticed that an alteration took place on each set of occasions, both in quantity and quality, and that the same change took place in every cow, and to a similarly proportionate extent. Further, the change is very clearly marked, and also carried out in the average weight of milk required to make a pound of butter.

It will also be observed that the best results are obtained, both in quantity and quality, when the cotton cake, a food rich in albuminoids, was used, and the least satisfactory results when maize meal, a food rich in carbohydrates, but containing a less quantity of albuminoids, was given.

This is in accordance with the principles laid down by scientific men as governing economic feeding.

The Farm management Committee do not intend to rest satisfied with these experiments, but will continue them later on with other varieties of feeding.

Now dealing with the question of cost of the various rations used. As the hay and straw remained precisely the same throughout, we will first leave them out of the reckoning, and deal only with the concentrated foods. We then have:—

	Weight of Milk in six days	Butter yielded.	Cost of Concentrated food used	Cost of concentrated food for each lb. of Butter.
	lb.	lb. oz.	s. d.	s. d.
1st Period	448½	15 8	5 1	5 4
2nd "	479½	16 11	4 2	5 3
3rd "	424½	14 5	4 6	5 3

	Weight of Milk.	Butter.	Total Cost of food used.	Cost of Butter per lb.
	lb.	lb. oz.	s. d.	s. d.
1st Period	448½	15 8	19 10	15½
2nd "	479½	16 11	18 11	13½
3rd "	424½	14 5	19 3	16 1 10

Thus it appears the cost of the concentrated food required to produce each pound of butter was least when the cotton cake, or highly albuminoid, ration was used.

Next dealing with the whole cost of the food used, and calculating hay at £4 10s. and straw at £3 10s. per ton, we have:—

When viewed in this manner the cotton cake ration shows up most decidedly as the most economical one, and the maize meal one as the most costly.

From the experiments of German chemists, which have been prominently brought before the public, Mr. Lloyd and other specialists have laid down that the best ration for feeding for dairy purposes was one where the albuminoids were in the proportion of 1 to 5.4 to the carbo-hydrates and fats. Thus:—

Dry foods.	Albumi- noids.	Carbo- hydrates and fats.	
24.00	2.5	13.5	or as 1 to 5.4

When we examine the rations used in these experiments we have—

	Dry food.	Albumi- noids	Carbo- hydrates and fats.	
1st period	21.84	1.66	13.04	1 to 7.8
2nd "	19.20	2.20	10.56	1 to 4.8
3rd "	21.18	1.50	13.30	1 to 8.8

With a slight alteration, the feeding used in the second period would be in the proportion named.

SCIENTIFIC POINTS.

Here Is Wisdom For Both Milker and Butter Maker.

"If a cow shows indications of milk fever, use aconite and belladonna and sometimes arsenicum—homopathic preparations—with the addition of covering the animal from head to foot with heavy blankets and ironing with a hot laundry iron outside the blanket along the spine from head to tail. This will start a counter irritation. Don't use stimulating liniments along the spine.

"The hide of a beef animal should be soft and flexible and feel unctuous and oily to the hand. The hide of the dairy cow should be flexible, but not too thin. There should be indication of vitality and power but not extreme softness and flexibility.

"The dairy cow should be wide behind, not from having a thick ham, but because the pelvis is wide, giving room for the large udder between the thighs.

"Yellow skin indicates yellow butter, but is no indication of quality. A single yellow skinned cow in a herd will not make the butter streaked if the milk of all is well mixed.

"The length of tail is to be considered mainly as an indication of spinal development. When the tail is long, it indicates an excellent character of spinal development, and a strong spine is indicative of a high degree of nervous energy. A cow giving a pound of butter a day, with its concomitants of casein and other solids, is subjected to more nervous strain than a horse pulling a plow from morning until night. It is a more serious draft on the vital energy of the animal.

"There is no such disease as hollow horn. It is the individual characteristic with many cows to have hollow horns. Some man had a sick cow, and boring into the horns found them hollow and said that's what's the matter. Rather than use turpentine about a cow's head or spine I would put a cloth on its back and go over it with a hot iron, or take a piece of cotton cloth, wrap it about a hot laundry iron and lay it the point next the head and run it along the spine.

"The rule for the dairyman will be found in the teaching of St. Paul: 'Prove all things. Hold fast to that which is good.'

"For 15 years I have been studying the question of temperaments, and I believe today that the differences in cows, between the highest forms in the dairy down to the beef animal, are based upon temperament. The Arabians said 2,000 years ago, 'Form is everything to the purpose,' and no one who has studied the horse since has made a clearer statement. Form is indicative of a function, and form is based upon temperament.

"I and my friend Walker are of a bilious nervous temperament, and you might as well try to fatten a fanning mill by running oats through it as to make fleshy men of us. Why? Because we are of that temperament that is not given to laying on flesh. Now, as to cows, the beef animal has the lymphatic temperament, the Guernsey and Holstein, the nervous. The nervous system has wonderfully to do with the production of milk. And I base this nervous theory upon these three premises: 1. Butter is produced by and through nervous energy. Let me call your attention to the fact that the great mammary gland is enveloped by a wonderful net work of nerves and is united with the uterus by the same network of nerves that is called the sympathetic plexus. This combination of nerves enter the spine and pass to the brain, and from the brain to the mammary gland you have a marvellous combination of nervous action. Now, when you consider this function of maternity, this function of motherhood—when you study into the physiology of it—you find you are employing the nervous system in a wonderful way at every step I said that butter was produced by and through the nervous system of the body. It is the maternal function designed by nature for the support of the offspring. 2. Butter is produced from food largely composed of albuminoids or nerve supporting food. If you wish to produce fat in the body, you can do it by feeding carbonaceous food, but you cannot produce butter by feeding fat. (1) Butter is not produced from the oil in the feed.

"It is anomalous to all other fats in the animal kingdom, and to be produced properly requires a peculiar combination of albuminoids and carbo-hydrate food, the same as the lean meat or muscle, so we see that butter itself is produced largely from the nerve supporting foods. 3. Now, when butter is produced and taken into the human body and digested, it goes to the support of the brain and the nervous system. No other fat does that. Here lies the great indictment against bogus or substitute butters. Many men say oleomargarine is as wholesome as natural butter. No true physiologist will for a moment say this, because butter is composed of eight essential oils, with traces of others, and the body fat is mainly composed of stearine and palmitine.

"You have in butter fat a peculiar combination that isn't seen in any other in existence. Nature designed this for the support of the brain and the nervous system. Let me call your attention to the fact that to-day the most eminent physicians are asserting that sweet cream is one of the most valuable foods for patients low in nervous condition, taking the place of cod liver oil. Therefore you see in this natural butter fat we have something that no substitute butter will take the place of.

"There isn't a boy in Pennsylvania to-day who is fool enough to go out to hunt birds with a bulldog; not a boy in Pennsylvania but who knows better than to do so foolish a thing as that, yet

his father will go on a hunt for butter with a beef cow."—Address of ex-Governor Hoard at a Pennsylvania Farmers' Institute.

FAT AND FOOD.

According to a writer in *Hoard's Dairyman* an experiment carried out by Messrs. VAN DRESSER, of Cobleskill, New-York State, some time ago effectually proved that the richness of a cow's milk can be materially affected by food. It was an unnatural kind of experiment, and is only mentioned because of its marked results. Four cows were first fed on a mixture of silage, wheat, bran, maize meal, cotton-seed oil, and their own skim milk, and a little over 23 lb. of their milk made 1 lb. of butter. Afterwards the diet was enriched by adding beef fat (or tallow, as it is called) to the mixture of meal and bran, beginning with $\frac{1}{2}$ lb. per cow daily, and increasing up to 2 lb. At the end of five weeks the milk of the cows was again tested, and it was found that only 18 $\frac{1}{2}$ lb. of milk were required to make 1 lb. of butter. The quantity of butter made in a week when the cows were fed on the first ration was 48 lb. 9 oz., and it rose to 71 lb. 7 oz. when they were getting the second ration, the only difference being the addition of tallow. The plan of feeding cows on their own milk (after skimming it) and the fat of their own species is akin to cannibalism; but cows have no sentiment against the practice, and if it is permanently healthy to feed them in the manner described, no objection need be taken upon fanciful grounds. The beef tallow cost only three cents a pound, while the butter produced was worth twenty-five cents. Therefore, the increase of butter due to the use of the beef tallow was very profitable, supposing the account to be correct.

SOME experiments carried out at the Dairy Institute, Worleston, and fully reported in our columns a few weeks ago, also point to a marked difference in the quantity and quality of milk produced by cows fed on different rations. The first daily ration per cow consisted of 17 lb. of good hay, 3 lb. of oat straw, 2 lb. of oats, 2 lb. of maize meal and 2 lb. of bran. This was the usual winter diet of the cows, and under it, when tested in January, three animals gave in six days 418 $\frac{1}{2}$ lb. of milk, containing an average of 3.56 per cent. of butter-fat, and yielding 15 $\frac{1}{2}$ lb. of butter. Next they were fed on a diet richer in albuminoids, $\frac{1}{2}$ lb. each of cotton cake being given instead of the oats, meal, and bran, the hay and straw remaining the same. After a fortnight on this diet, the yield of milk in six days was 479 $\frac{1}{2}$ lb., containing 3.74 per cent. of butter-fat, and yielding 16 lb. 11 oz. of butter. In the third period, after a fortnight on the hay and straw as before, but with 6 lb. of maize meal instead of the cotton cake, given as a food rich in carbo-hydrates, the cows gave in six days only 424 $\frac{1}{2}$ lb. of milk, containing 3.41 per cent. of butter-fat, and yielding 14 lb. 5-oz of butter. Here we see differences quite as great as could be expected from the change of one good diet to another. But why will experimenters not try extremes in diet to test this question? (1) *If it be true that food does not affect the quality of milk, or, at any rate, its fatness, a cow should give as rich milk on a diet of straw and white turnips or*

(1) Precisely what we have been asking for four months. The italics are ours.—Ed.

even grains, as or one of sugar beets, clover hay, and a mixture of cake and meal. We understand that the Worleston experiments are to be repeated with different rations, and we suggest a trial of an extremely poor diet against an extremely rich one, the test to be taken at the end of a month on each ration.—*Eng. Ag. Gazette.*

CANADIAN LETTER.

EDITOR MASS. FROUGHMAN:—I wish to talk a little with your thousands of readers in all classes of society about Canadian farming and gardening as it is carried on in the Province of Quebec.

The French Canadians are very slow in adopting new methods of agriculture, but usually retain the old system their forefathers followed in cultivating the soil. Those located in English settlements are more enterprising and willing to adopt English methods; but there is one thing in which the French surpass the English farmers: they all have a good garden and raise their own vegetables, and it is kept neat and clean, while but few of the English farmers pay any attention to gardening. If they have one it is generally neglected, as they say it don't pay—they have no time, though they may be good and successful farmers in every other respect. That is a mistaken idea, as gardening is one of the most profitable departments in farming. One can really support a family during summer on sales from a garden, and raise enough for home use besides; a vegetable garden should be the first department to receive attention on any farm, as the use of vegetables in a family is conducive to health by a frequent change of diet.

The English farmers in the Eastern Townships are turning their attention to dairying, and sending their milk to cheese factories, which is considered very profitable, as Canadian cheese brings the highest price in the English markets. This shows that they are of exceeding good quality, as is also shown by their being awarded the first prizes at the Chicago Fair; since which the price for Canadian cheese in England has advanced.

The townships are all adapted to dairying. They are well watered, and the soil produces luxuriant grasses, wheat, and the best of hay, as well as cut feed in summer; a large number of the farmers have silos, and raise large quantities of corn to fill them. R. H. Pope, M.P., raised over sixty acres of corn, sunflowers and beans for his silo.

The farmers of the Eastern Townships are very enterprising in making improvements in farming by adopting new methods, and are making their farms more productive every year, as they have found ship-shod farming doesn't pay, and that they can raise more on ten acres well tilled than they could on thirty under the old system.

I have found this out by experience. In 1860 I carried on a large farm and did as others did, thinking I must sow about so many acres of grain. I had good crops when the land was in a good state of cultivation, but I tilled too much hungry, worn-out land that took off the profit, so that in the end there was but little left. Produce sold very low. Farmers, under present conditions should make money, as they have all the appliances to do so by labor-saving implements, which in 1860 were only of the rudest kind. In those days it was not considered necessary for a farmer to be educated in order to be successful. The bright, active members of a family were educated for

some profession, and the dull ones kept at home to help run the farm and take care of the parents in their old age. But this state of things has changed, as it has been satisfactorily proved that farming is as much a profession as any, and requires just as bright, active and well-educated men to engage in it successfully as any of the so-called liberal professions. It is one of the noblest and most independent occupations men engage in, and is so acknowledged by all except snobs and dodos who have no standing in society and should be made to feel their inferiority to the intelligent portion of the community.

But I must close these rambling remarks.

Cookshire, P. Q.
Mass. Ploughman.

A. R.

The readers of the *Gazette* are already familiar with the new doctrine that the richness of the food does not affect the richness of the milk. The experiments conducted at numberless stations in America all corroborate this idea, and now there is an accumulation of evidence on this side of the water to the same effect. I believe I was the first to moot the subject here, my attention having been called by my friend Mr. Wm. E. Bear to a letter of Professor Henry's in the autumn of 1891 in *Hoard's Dairyman*. A few weeks ago Mr. John Sperr, of Newton, Glasgow, gave a lecture in his own neighbourhood detailing his experiments on this subject, in which the cows were fed with different mixtures of ordinary standard foods for lengthened periods, and the results tested by the Babcock tester. In no case could he find any good results from rich feeding over poor food; the quality of milk varied, but the fat percentage remained the same. A solitary exception was found in the case of brewers' grains; cows which had been yielding butter-fat to the extent of from 3 per cent. to 4½ per cent. immediately dropped to about 2½, thus bearing out the popular idea that grains give poor milk. An article will appear from the pen of this gentleman in the coming *Journal of the British Dairy Farmers' Association*, in which, I presume, he will give all details not already made public. The accumulated experience of our forefathers—or foremothers rather—is getting the bottom knocked out of it by the new scientific testing apparatus. We thought that rich food gave thicker cream; possibly it does, but the tester shows that there is no more butter-fat present than before, so that we cannot believe our own eyes. The moral of this is a point of importance at the present time, when so much food has to be bought in, and it is that we should feed for quantity only with the cheapest foods in the market, irrespective of richness in nitrogen, in the sure belief that the quality will come out all right if the cows are getting enough to eat—bar only brewers' grains, dry or wet.

P. McCONNELL.

AN INDICTMENT OF COTTON SEED MEAL AS CATTLE FOOD.

ED. HOARD'S DAIRYMAN. — As a weekly reader of your paper, I am glad to see much communication admitted as the letter of M. E. King, on page 316. Around Baltimore we have heard similar stories about the wonderful capacity cows, even claiming 42 pounds of butter a week. A fair average is 2½ gallons of milk for a

pound of butter. This would give over 100 gallons of milk or 15 gallons a day. Some of us around here fully understand the matter and I presume none any where else were fools enough to pay any attention to the claims made for the cow which died a short time afterwards. I have no fault to find with those who cry sound fish when they have fish to sell.

When scientific men, who claim to know so much, assert and publish to the world the fallacious statement that cottonseed meal has double the value of corn meal, our great food, and the manure from a ton fed to stock is worth \$28, it is time to let them know that the story is too thin, and for one I deny it and stand prepared to prove it before a jury of practical, not so-called scientific, experts. Cotton seed meal no doubt has some virtue, like thousands of other seeds from weeds, but what is there in it that can take the place of starch and sugar, the great carbohydrates of corn, combined with the proper proportion of gluten, to form fat, flesh and bone for the millions of animals that are slaughtered for the home markets, as well as the markets of the outside world. A daily visit to the numerous steamboats arriving at the Baltimore wharves loaded with sheep, hogs, chickens, ducks, geese, &c., coming from the waters of the Chesapeake tell the value of corn, where for over two hundred years it has been the main feed for both man and beast. In this section the silo and cotton seed meal are among the unknown, and it may interest the reader to say that I have never heard of any tuberculous cattle coming from this district, but have heard of great loss by abortion, of those who tried cotton seed meal. A letter just received from a feeder of it in Texas states that cattle fed on it ought to be sold within a hundred days, as they go blind and die. Any food that will blind and kill cattle in a hundred days should not be valued as worth double that of corn, a food that the uncivilized as well as civilized, have used for ages, and still use more and more as its value became known.

Fermenting ensilage, as a feed, has died a natural death around Baltimore; I hear of one or two dairymen who feed four or five pounds a day as a tonic.

A. P. SHARP.

Baltimore, Md.

What intense nonsense!—Ed.

THE VALUE OF SUCCULENT FOOD IN THE PRODUCTION OF BUTTER.

When the Jerseys were tugging away at the contest in the World's Fair last year, Superintendent Fuller made up his mind that his cows needed more succulent food than they were getting if they were made to do their best. Accordingly he contracted with Mr. A. O. Fox, of Oregon, Wis., for a car load of fresh green clover every day, and the effect upon the cows was considered very satisfactory.

We notice in Bulletin No. 20 of the New Hampshire Experiment Station, that an experiment was carried on which again clearly brings out the wonderful value of succulent food in the production of butter. A ration of hay, oat hay, ensilage and mixed grain was fed as a basic ration to each 1,000 pounds of live weight in cow. The nutritive ratio was 1 to 6. Then the cows were fed in turn a series of oils to see if fat could be fed into the butter. First cotton seed oil, then corn oil, then palm oil, then cocoanut oil,

then oleo oil, lastly stearino or tallow fat. Twelve ounces of oil was fed of each of these oils.

On the hay, ensilage and grain ration, one of the cows gave 1.23 lbs. of butter fat a day. When the 12 ounces of palm oil was added, the same cow gave 1.30 pounds of butter fat per day, with addition of stearino she gave 1.29 pounds of butter fat per day, and the same figures when the 12 oz. of cotton seed oil was fed. The same ration of hay, ensilage, oat hay and mixed grain was continued through all this different oil feeding. But when the cow was taken off both the hay and grain ration and the oils and put on a good pasture she gave an average of 1.38 pounds of butter fat per day. Can we not learn from these and many more facts within easy reach of an observation, that for the making of milk and butter, we should provide the cow with good hay cut at the succulent stage, and ensilage, roots, etc., if you wish her to do her level best in providing us with butter fat. We should keep an eye steadily on the one fact of approaching as near as possible the succulent condition when we prepare her food for her.—*Hoard*.

A LAZY DAIRYMAN'S RESORT.

In looking through the files of the *FARMER'S ADVOCATE* recently, we observed the following, which we deem of sufficient importance to reproduce from the Dairy Department of our issue of October, 1891:

"MILK PRESERVATIVES."

"In a small pamphlet, entitled 'Instructions to the Patrons of Creameries' Association of Ontario,' the use of a substance called 'Preservaline' is recommended where Saturday night's milk is to be held over till Monday morning. Many other suggestions in this circular are excellent, but this we cannot endorse for several reasons. In the first place, the use of these so-called 'preservalines' is not necessary, and is apt to prove a lazy man's resort to cover up the consequences of filth or carelessness in handling the milk after it comes from the cows. Many of the largest patrons of our cheese factories and creameries are able to keep milk pure and sweet from Saturday night till Monday morning by means of thorough aeration, cooling and proper care subsequently, and others can do the same. Once a dairy farmer gets the idea that by pouring a quantity of 'Preservaline' into his can of milk it can be kept from souring or developing taint, then good-bye to that scrupulous and rational care that all milk should receive, if choice and wholesome butter and cheese is to be produced. Those who have at heart the interests of dairying in this country should oppose anything and everything tending to carelessness or uncleanness. In the last place, 'Preservaline' has been found, on analysis by competent chemists, to contain large quantities of boracic acid, which is quite injurious to health—in fact, so much so that its use has been condemned by eminent authorities, and forbidden in various European countries. Unscrupulous milkmen in cities and towns, during hot weather, have been detected resorting to such anti-septics as boracic acid, utterly regardless of the well-being of infants and invalids, of whose food milk constitutes such an important part. Such compounds should be rigidly banished from the farm dairy."

SOILING FOR THE DAIRY.

At the Iowa Experiment Station, the influence of soiling in butter-making was tested on four cows—a Short-Horn, Holstein, Red Poll and Jersey—with green oat and pea fodder, clover, rape and fodder of sweet corn. All, rape excepted, increased the flow of milk—in some cases the percentage of fat—as compared with a blue-grass pasture, with the addition of 4 lb. of corn meal. The soiling commenced July 21, with green oats and pea fodder followed by green clover, rape, and sweet corn fodder, fed separately in short periods of ten days. From 110 to 125 lb. were fed to each cow daily, together with the 4 lb. of meal. This continued to Sept. 10. The milk of each period was tested and weighed, and part of it used for butter-making.

Though taken from an abundant pasture and confined in a barn, feeding all they could eat with peas and oats increased the flow of milk from all. The effect was not always uniform with different cows, but as a rule, oats and peas proved superior to pasture conditions, both in quantity and quality of milk. The clover did not maintain either entirely. On rape there was a general shrinkage of milk, and fat dropped in all except the Jersey. The sweet corn did not make much variation in quantity of milk, but the butter from it scored highest, confirming the general belief of Iowa dairymen in that respect. Butter made from rape was of positively bad flavor, and soon became offensive. It was thought that rape fed sparingly with other plants might not be objectionable, but advantageous, as it is so rich in protein. Blue-grass, peas, oat and clover made high class butter, but sweet corn equals these. (1)

It isn't always the "poor" cow that is to blame because dairying doesn't pay, it is frequently on account of the "poor owner."

The best cow in the world can't run herself as a dairy machine. She requires careful handling by one who understands her wants.

A cow isn't a machine that will take a regular quantity of feed every day and convert, most of it into milk; but she is a machine that will take a certain quantity of selected feed and pay a profit on all she uses.

It is this way; the cow's appetite varies, some days she will eat more than others, some days less. If she be fed a regular amount, regardless of her appetite, she will occasionally leave some of it uneaten, and if, at the next feed the usual amount be given she may leave half of it. The treatment continued will result in the cow refusing to eat at all.

If the feeder had noticed the first failure to clean up the manger, and governed himself accordingly, both feed and the cow's health, would have been saved and the yield of milk wouldn't have fallen off.

In summer there is less danger of ill results following careless feeding so far as the health of the cow is concerned, but there will be the same loss of feed and milk as in winter.

Those dairymen who sell milk should experiment a little by feeding same kind of grain while the cows are on pasture. Pure wheat bran ought to increase the milk yield more than enough to pay the cost.

A change from one pasture to another will increase the yield.

(1) Rape is the special food for sheep. We never heard of it being given to milch-cows in England.—Ed.

A pasture divided into two (1) lots and grazed alternately two weeks at a time will yield more milk and butter per acre than if all on one lot.

The increase would probably cover more than cost of fence the first year.

One advantage in having two lots to graze is that every two weeks the cows have fresh pastures.

Another advantage is the grass is grazed down evenly and less is wasted.

Still another, that the same number of acres gives a greater yield of milk and butter.

Unless you are sure you will have plenty of pasture this year it *might* (2) pay you to run a fence across your pasture field. Then you can see for yourself exactly how it works, and if it works all right you can tell others about it.

Free martins seldom become breeders, but if you have a heifer calf twined with a bull, and it is out of your best cows and sired by a pure-bred bull, keep it long enough to find out whether it will breed or not. If it won't breed it will take on flesh *equal* (3) to a steer and you can get back cost of feed.

Don't breed for color, breed only for dairy qualities, and for shape only so far as it appears to give the best results at the pail.—Stockman and Farmer.

Irrigation.

There exists in hilly and springy Vermont, a great opportunity for irrigation, which ought to be more generally utilized. Some very profitable crops occasionally suffer from drouth, when a little ingenuity and enterprise might have arranged to irrigate them when necessary. Irrigation is very important for grass, either for pasturage or hay. The judicious damming of brooks, in a good many cases, might save some profane laments over a drying-up meadow.

In fruit growing, also, a little running water can often be made to give a large profit. An Exchange illustrates this as follows: "Joseph Albiston marketed 6,100 quarts of strawberries this year as against 5,000 quarts last year. He has matters arranged so that he can irrigate his strawberry beds and thus offset a dry season. This is an important feature in raising small fruits and garden produce generally and is well worthy of emulation.

Small fruits generally, but strawberries especially, often require water in a dry time. By a proper selection of a locality for a strawberry bed it would often be easy to run a thin stream of water over it to great profit. Water lot on at the right time will often double both the size and the price of the berries, thus "cutting both ways." It will pay even with a moderate sized bed to locate it so that water can be conducted over it from a pump, or it may be so located in relation to a water-rain as to make the water available." (4)

DR. HOSKINS.

Household-Matters.

I read a notice in an English paper the other day lamenting that the art of *darning* was dying out. I very

(1) Should be *three* lots.—Ed.

(2) For *might*, read *will*.—Ed.

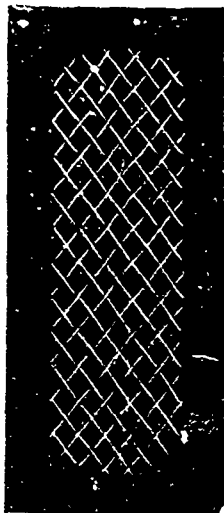
(3) For *equal* to, read, *more quickly than*.—Ed.

(4) Compton-folk, please notice.—Ed.

much fear the art never existed out here or the people I have met know nothing about it. I constantly see garments thrown on one side, as useless for want of a little mending. Few servants nowadays as a rule, make or mend. They say: "what is the good of darning stockings when you can buy a pair for 15 cents? But I find to my cost they are very glad to take my well darned stockings. This I have had done for several years. But to the point about darning: it is as well to learn how to do it well!

How to darn ladders in stockings.—The best way I know of doing this, is to pick up the loop at the bottom and knit up to the top. Do not miss one thread or the darn will not be a neat one. A couple of large pins, or better still, two coarse darning-needles, using the blunt or eye end, continue this to the very top of the ladder, and darn down the loop, so that it shall not run back again. Thus you will have only a very little hole to finish off which, if well done, will scarcely show after one washing.

To make an elastic darn.—If you are not an expert at picking up a ladder, the next best way, is to darn it like the illustration; but it must be done very close together. Remember to take up the threads of the ladder passing over one and catching up the next reversing as you pass back again; I mean picking up the under thread



every time. This is also a very good way of mending a tear in a dress: but, in that case, tack a bit of some neutral colour under the tear before you darn it. I mended very bad tear thus in a little dress this summer: done by a wire fence. I was quite glad when I got "Thanks! It scarcely shows at all," from the child owner.

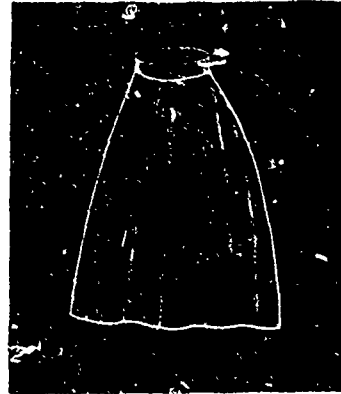
Holes in stockings.—Start by taking a fine needle and thread, the colour of the stocking, and run the thread round the hole; draw the thread just enough to keep the shape of the stocking, pass across a few times and you will find what has looked such a formidable undertaking only just a little work. I beg to say I am not trying to teach any but those who do not know; it has been my misfortune to come across such gross ignorance on this matter, that I hope my few hints will not be in vain.

Dress and Jacket.—At this time of year, one must be prepared to wrap up a little more than usual.

The illustration, shows a jacket which may be worn over a calico, or any other dress.

The blouse waist being a little full in front will always give a certain

style to a very simple dress. If the jacket is made in black, it can be worn with a dress of any colour, fastened



with a tie of ribbon at the neck—which need not necessarily be black—will give a finish to the whole, as it forms a necktie and ornament at the same time. This costume with a Tam will



make a very neat dress for a school girl, and the girl ought to be able to crochet the Tam herself, thus combining thrift with a desire to help.

Care of cellars.—A damp cellar may be kept quite dry by placing a few pounds of fresh-burned lime upon a shelf, as near the floor above as it can conveniently be placed, in a shallow dish. The damp air rises to the top and three pounds of lime will absorb one pound of water and yet seem dry. The best time to ventilate a cellar is during the night, as the air is then dryer, having deposited its moisture outside in the dew. The temperature also is more nearly that of the cellar, and the coolness of the cellar does not condense the vapor from the air as it does in a warm day. In a hot day the ice-water pitcher "sweats" because the hot air condenses upon the cold surface. If there are any suspicious odors of mustiness or mold, or of decaying vegetables, place another pan of fine charcoal by the side of the lime until there is time to give the cellar a cleaning out.—Ex.

Don't be afraid of a free but judicious use of concentrated lye about the kitchen. It can be made to lighten labor in many ways; but care should be taken not to leave it on sinks, pipes, or anything metal, as it will eat them and cause them to leak.

COAL-OIL spilled on a carpet need not distress a housewife, for if she will wait in patience for perhaps a week, or sometimes a little more, it will entirely disappear without having anything done to it. Having the door or windows open will, however, help to hasten the evaporation.—Ex.

Wash your fruits.—Some fatal cases of diphteria recently attracted the attention of an unusually intelligent

physician, who immediately set about searching for the cause. The drainage was perfect; There had been no fault here, as far as could be discovered. The sanitary conditions were all that could be desired. The youngsters had all been in unusually sound health, and for a time the research seemed to be likely to meet with no satisfactory results. At length, by accident, some remark was made about a barrel of apples received not long before from a friend up country. The doctor asked to see the fruit, selected a couple of specimens at random and carried them away for examination. Microscopic investigation revealed the presence of great numbers of specks, that proved to be various species of fungi, among which were clearly defined germs identical in general character with those found in diphteritic conditions. Unwilling to criticize without full knowledge, the doctor made a trip to the place whence the apples came and investigated the surroundings. There was nothing objectionable there, and he then began a systematic overlooking of the apples from various localities. It appeared that those kept in cellars at the ordinary temperature were frequently infested with these germs, and not particularly dangerous unless they came in contact with favourable surroundings. A dozen children might eat without harm, while one would contract the disease in a violent form which might prove fatal. A peculiarity of this state of things seems to be that while the disease germs from the apples caused only an occasional case, as soon as the malady had developed in the human system it acquired greatly increased virulence, and it was thought that these germs, like many others, were comparatively harmless, save in exceptional cases, when they developed with frightful rapidity and formed a propagating ground from which the disease was likely to spread through an entire community. It is a fact well understood by many people that fruit that is handled by scores of persons, carried through all sorts of atmospheres, and exposed to no end of disease germs, should be thoroughly washed before it is eaten. But it is no unusual thing to see persons eating fruit in the streets or public places where the air may be charged with the germs of contagious diseases of all sorts. Lodging upon the juicy surface of a partly eaten apple, it is at once taken into the system and meets exactly the conditions favorable for its most rapid development. It should be an inflexible rule in all households that no fruit be eaten without washing. The practice of devouring it in the streets and public conveyances, while in many cases it seems almost a necessity, is yet, for the same reason, open to serious objections.—New-York Ledger.

THE SHERBROOKE EXHIBITION.

Sherbrooke, August 10th.—The receipts at the Fair gates were the largest that have been taken at any exhibition since the inception of the Association, and the management declare themselves perfectly satisfied with the not financial result, in spite of the extraordinary expenditure for new buildings, repairs, advertising, etc.

The Horse show, according to Mr. Robt Ness, of Howick, a prize winner at the World's Fair and a judge here, was a good one. The various classes were well filled with excellent animals in each class, they being more numerous in the heavy classes than in the light breeds.

Mr. Ness suggests that the farmers of the province should breed heavy draught horses or strong carriage stallions in order to meet the demand in foreign markets. The hackney has its place here also, but the day for the nondescript common horse is past and it is no longer in demand. Hairs, such as the present one, were of incalculable benefit in stimulating farmers to progress in this department.

One of the most interesting competitions perhaps during this Fair, from a farmer's point of view, is that instituted by the provincial Government and will be awarded by them later after they have had communication of the papers to be written by each competitor describing briefly stables, special points as to heat, light, ventilation, care of manure, &c., also description of facilities for feeding, watering, &c., which competition is entered as follows in the list: "Best herd of milch cows (not necessarily on exhibition) to be judged only by their actual production of milk and butter for the full space of three months, viz., June, July and August, 1894. The quantity of milk and its quantity of fat to be established by a statutory declaration from the maker of butter or cheese at the factory where such milk is delivered: prizes—\$30, \$20, \$15, \$3. Those who have entered are A. McCullum, Danville; Compton Model Farm (R. Robertson); C. E. Elliot, Quebec; G. E. Ingham, Lennoxville; R. H. Pope, Cookshire.

It was in reference to his entry in this competition that Mr. Robertson, in his interview with a *Star* correspondent stated that his three months test with an unselected herd of eleven Ayrshire cows had yielded during that time an average of one pound and twenty-eight one-hundredths each of butter per day and not 128 lbs. as the telegraph made it. — *Montreal Star*.

SHERBROOKE EXHIBITION.

(Some Decisions.)

AYRSHIRES.

Bull, 3 years and up.—D. McLachlan, Petite Côte, 1; Ross, Sherbrooke, 2; Jas. Cottingham, Ormstown 3.

Bull, 2 years.—R. Robertson, jr., Howick, 1; R. Robertson, North Georgetown, 2; James Johnson, Com 3.

Bull, 1 year.—James Cottingham, Ormstown, 1; A. McCallum, Danville, 2; Thos. Irving, Montreal, 3.

Bull calf.—D. McLachlan, Petite Côte, 1; R. Robertson, jr., Howick, 2; James Cottingham, Ormstown 3.

Bull any age.—D. McLachlan, Petite Côte, 1.

Cow, 4 years.—R. Robertson, jr., Howick, 1; Thomas Irving, Montreal, 2; James Johnson, Ormstown, 3.

Cow, 3 years.—D. McLachlan, Petite Côte, 1; Thomas Irving, Montreal, 2; R. Robertson, jr., Howick, 3.

Heifer, 2 years.—James Johnson, Ormstown, 1; Thoma. Irving, Montreal, 2; R. Robertson, jr., Howick, 3.

Heifer, 1 year.—R. Robertson, jr., Howick, 1; D. McLachlan, Petite Côte, 2; Thomas Irving, Montreal, 3.

Heifer calf.—R. Robertson, jr., Howick, 1; James Johnson, Ormstown, 2; A. McCallum, Danville, 3.

Best female, any age—R. Robertson, jr., Howick, 1.

Best herd, 1 male and 4 females—R. Robertson, jr., Howick, 1.

JERSEYS.

Bull, 3 years and up.—R. H. Pope, Cookshire, 1; E. P. Ball, Rock Island, 2.

Bull one year.—E. P. Ball, Rock Island, 1.

Bull calf.—E. P. Ball, Rock Island, 1; R. H. Pope, Cookshire, 3.

Bull any age.—E. P. Ball, Rock Island, 1.

Cow, 4 years.—E. P. Ball, Rock Island, 1; R. H. Pope, Cookshire, 2.

Heifer, 3 years.—R. H. Pope, Cookshire, 1; E. P. Ball, Rock Island, 2.

Heifer, 2 years.—J. F. Learned, Cookshire, 1; E. B. Ball, Rock Island, 2.

Heifer, 1 year.—E. P. Ball, Rock Island, 1; C. Armstrong, Sherbrooke, 2.

Heifer, calf.—R. H. Pope, Cookshire, 1; E. P. Ball, Rock Island, 2.

Best female, any age.—E. P. Ball, Rock Island, 1.

Best herd.—E. P. Ball, Rock Island, 1.

PURE BRED CANADIAN CATTLE.

Bull, 3 years.—Glenholm farm, Compton, 1; J. A. Archambault, Sherbrooke, 2; Guy Carr, Compton, 3.

Bull, 2 years.—J. A. Archambault, Compton, 1; Glenholm farm, Compton, 2; Guy Carr, Compton, 3.

Bull, any age.—J. A. Archambault, Sherbrooke, 1.

Cow, 4 years.—Guy Carr, Compton, 1; Glenholm farm, Compton, 2; J. A. Archambault, Sherbrooke, 3.

Heifer, 2 years.—J. A. Archambault, Sherbrooke, 1; Glenholm farm, Compton, 2; Guy Carr, Compton, 3.

Heifer, 1 year.—Guy Carr, Compton, 1.

Heifer, calf.—Guy Carr, Compton, 1; J. A. Archambault, Sherbrooke, 2.

Best female, any age.—Guy Carr, Compton, 1.

Best herd or 1 male and 4 females.—Guy Carr, Compton, 1.

DAIRY PRODUCTS.

Best white cheese, made in June.—Robert Wherry, Knowlton, 1; Mrs. Sarah Newton, Sutton, 2; J. N. Labelle, Vale Perkins, 3.

White cheese, made in July.—Robert Wherry, Knowlton, 1; Mrs. Sarah Newton, Sutton, 2; J. G. Wales, E. Dunham, 3.

White cheese, made in August.—Robert Wherry, Knowlton, 1; Mrs. Sarah Newton, Sutton, 2; W. J. Sheldon, Brome Corner, 3.

Best 3 white cheese, made in June, July and August.—Robert Wherry, Knowlton, silver medal.

Best colored cheese, made in June.—Mrs. Sarah Newton, Sutton, 1; Robert Wherry, Knowlton, 2; Charles Wilkins, Mansonville Station, 3.

Colored cheese, made in July.—Robt Wherry, Knowlton, 1; Mrs. S. Newton, 2; A. T. Newton, Sutton, 3.

Colored cheese, made in August.—Mrs. Sarah Newton, Sutton, 1; Robert Wherry, Knowlton, 2; A. T. Newton, Sutton, 3.

Best 3 colored cheese, made in June, July and August.—Mrs. Sarah Newton, Sutton silver medal.

Best lot of 3 colored cheese on exhibition.—Robert Wherry, Knowlton, gold medal.

Best white home made cheese, not less than 10 lbs.—Mrs. S. A. Wells, 1; J. W. Sadler, Ormstown, 2; T. W. Taylor, Cookshire, 3; B. Roberts, Waterville, 4.

Best 3 tubs or fiksins of creamery butter, not less than 50 pounds each.—Compton Model farm, Compton, 1; A. McCallum, Danville, 2; R. H. Pope, Cookshire, 3; J. W. Kempton, Straw bridge, 4.

Best print or roll butter, 10 pounds made in a creamery.—R. H. Pope, Cookshire, 1; Compton Model farm, Compton, 2; A. McCallum, Danville, 3; Lennoxville Creamery, Lennoxville, 4.

Best 2 tubs of butter, not less than 20 pounds, made in a private dairy.—George A. Hodge, Cookshire, 1; J. G. Mair, Howick, 2; Mrs. H. Ross, Sherbrooke, 3; Mrs. Wm. Smiley, Birchton, 4.

Best print butter, not less than 10 pounds made in a private dairy.—H. W. Hunting, Huntingville, 1; G. A. Hodge, Cookshire, 2; Robt. Mitchell, Lennoxville, 3; J. A. Woodward, Hillhurst, 4.

Best 6 butter packages.—E. H. Wright, West Derby, Vt., diploma; Belleville Box & Basket company, Belleville, Ont., diploma.

Cheese factory outfit, including card mill, cheese press, faucet, etc.—Wm. Stafford, Lancaster, Ont., diploma.

Creamery outfits, butter worker, De Laval cream separator, salt scales for butter.—Frank Wilson, Montreal diploma.

Poultry-Yard.

SENDING EGGS BY MAIL.

Last month we tried the experiment of receiving eggs from Iowa by mail. We discovered that there was no law against it, according to our construction, and requested an Iowa breeder to assist in the matter. He sent thirteen eggs of Brown Leghorns in a small basket, packed in cotton and excelsior registered them and they arrived in the East by mail, with only one egg broken, the total cost being only forty-seven cents. This is an important experiment. Heretofore one of the obstacles in the way of purchasing eggs is the expressage, especially if the basket goes over several lines, but in this case the breeder prepaid the postage, and the eggs came in as good condition as if sent by express, as it is not unusual to have one or more broken. All depends however, on the packing. Each egg was wrapped in cotton, and the balls of cotton packed in excelsior in the basket. (1) The basket was small, with a thick muslin covering over the top, and it seems to have been handled carefully.

PURCHASING MALES.

When purchasing males do not depend upon your neighbors, but procure them from a breeder of the variety that you intend to use. Neighbors are not always familiar with breeds, and the result is that very often they have grades, though believing their stocks to be pure. To demonstrate this fact, visit several neighbors who have Plymouth Rocks, and the probability is that some of the birds will have feathered legs, which is not allowable, yet the owner will believe them pure. At this season of the year, when the breeders have a surplus, it will cost but very little to buy a pure-bred male, and if the object is to improve the flock the price should not be an obstacle.

GRAIN IN SUMMER

If grain is used in summer try oats in preference to wheat. If the hens are in good condition they will require only one light meal each day of any kind of grain, and it should never be fed to them so as to permit them to eat it at once. Scatter it over a wide surface and compel the hens to scratch for it. By so doing each hen will get her share, but if they are fed out of a trough some hens will eat

more than they should, while others will receive an insufficient quantity. It is by feeding all of the hens from a trough that some of them become excessively fat while others keep the moderate condition.

EXPERIMENTS IN FEEDING.

When the hens cease to lay, try an experiment with them, as it is then the time to learn. Withhold one of the foods and give meat in place, and in a day or two try oil cake. It may be the case that they lack some substance which is all that is required to induce them to begin laying again. As all flocks differ, there is no better way of learning than to make experiments with the flocks in order to avoid mistakes.

From the *Mirror and Farmer*.

The Flock.

THE MOST POPULAR BREEDS OF SHEEP.

The London Mark Lane Express has some remarks under this head which may be of interest for the hints they afford as to the characteristics of the different breeds and the localities in which they are most popular in Great Britain:

Taking statistics of showyard exhibits into consideration, foreign agriculturists visiting this country might be excused for forming the conclusion that the Shropshire is propagated in England to a greater extent than any other two breeds put together. But it would not be right to base such a supposition on this evidence, because, as most show frequenters are aware, the Jersey breed of cattle is often found by far the most numerous in showyards, even in districts where it is well known other varieties very much predominate. While, then, the number entered for exhibition, and which appear in showyards form very good evidence of the popularity of breeds of sheep and other stock, too much must not be drawn from facts and figures of this nature. Southdowns, next to Shropshires, are often the most numerous in the Royal and other leading showyards, even in localities where the generality of farmers have little or nothing to do with them. The Shropshire is undoubtedly a popular breed even beyond the Midlands, where there are very few others. But Southdowns beyond their native hills, the chalk wolds of the south of England, are certainly not popular, being regarded as a gentleman's breed, adapted for the parks of the nobility and country gentry to supply the best quality of mutton for their tables, but by no means what is termed rent-paying sheep. On hill farms girt with an extensive area of chalk downs they are probably more remunerative for the tenant farmers than any other kind, but for all the deeper and richer soils they are too diminutive. Their mutton yields a higher price than most other mutton, (1) no doubt, and from not eating so much they can be kept thicker than larger sheep, but this does not fully compensate, and it is found in such cases most remunerative to keep either Oxfordshire-Downs or flocks of the Hampshire or Shropshire varieties, which yield both mutton and wool in great bulk, while the joints of meat, although larger and

(1) What material is excelsior?—Ed.

(1) On account of its "neat, small joints" only.—Ed.

therefore not worth so much per pound, are still juicy, with a considerable proportion of lean to fat.

Thus the breed most popular in one district is very far from being so in another, and the wider we take our survey the more perfectly shall we be convinced of the truth of this. In Devon and Cornwall we find long-wooled sheep predominating, and, in fact, no others worthy of the name, either Devon long-wools, or Leicesters, or South Hams, or Dartmoors, and if an inquiry be made on the point, it will be found that no Down variety suits the country. The folds are either too much bounded by woodlands and high fences, and consequently not breezy enough for the Downs, or there is something in the character of the soil better suited for native breeds than for those of other districts. (1) There is a fact published that the late Col. Luttrell tried an experiment in West Somerset on some of the rich low-lying moorlands not far distant from Bridgewater, and he found that he could fatten three sheep of the Devon long-wooled breed before he could make a Southdown fat. He attributed it entirely to the hot, close atmospheric influences, the Southdowns requiring naturally more air, and probably in a colder temperature.

In Scotland and the north of England, they have also a large preponderance of long-wool sheep, the Border-Leicesters or the Cheviots, and in Yorkshire the purer Leicesters or the Wensleydale variety. In the fens and marsh districts of Lincolnshire, the more wealthy sheep of the Lincoln breed suit the locality more than any other, and are consequently the most popular. The eastern counties go in for the Down breeds most, but there are some long wools in the richest and most lowland districts, Norfolk Cotwolds in some and Oxford Downs in others, while for grazing purposes the last-mentioned breed has extended itself into Scotland. In fact, in all districts where that useful and preëminently wealthy cross of a Leicester, Cotswold or Lincoln ram on Down ewes has been found to answer, Oxford Downs will be sure to do so. The breed originally was derived from a Cotswold-Hampshire cross, its present fixity of type having been derived by continuous high selections carried on in a lengthy succession of years.

This is especially worthy of a deep and attentive consideration, now that the mutton of most varieties of English long-wool sheep is only slightly more valuable than New Zealand mutton in London shops and those of many provincial towns. Many of the districts which have in the past been deemed best for long-wooled sheep, would no doubt be equally well adapted for Oxford-Downs. These supplanted Cotswolds very profitably for farmers in the counties of Gloucester, Oxford, Bucks and Berks, and Major Staveley finds that they thrive just as well on his large hill farm in the Yorkshire Wold district as the Leicester and Long-wool varieties most generally kept there. The mutton of the latter does not command anything like so high a price as that of the Oxford-Down; therefore Major Staveley is increasing his flock of the latter variety.

THE SOUTHDOWN OUTLOOK.

The belief is that sheep breeding in this country will, to a large extent, be changed from a wool to a mutton producing industry. By this change

(1) Besides, the wool of the Down-breeds becomes quite altered in character.—Ed.

Southdown breeders have reason to expect that their sheep will be in demand, and they will have an opportunity that is not often presented for the advancement of their interests. But they must not expect that the advantages the situation presents will be of large benefit to them unless they use energetic efforts in making known the superiority of their sheep. The claims of other breeds will be forcibly and persistently presented by wide-awake, progressive breeders, so that other sheep may take the place that Southdowns should fill, if Southdown breeders fail to forward their interests by making it known in every possible manner, and to all parts of the country, that the Southdown is the best sheep for the Western breeder of large flocks, as well as for the farmer keeping a small number, because:

They are hardy, will flock in large numbers, require little care will thrive on less feed and therefore the best of any sheep for arid and grainless regions.

They are healthy, less liable to diseases than other breeds, seldom have foot rot or scab; are more prolific than other breeds, frequently bringing twins and often triplets, are good mothers, and the lambs take care of themselves at an early age, are early maturers, comparing in weight at from 6 to 10 months old with the larger breeds, and always heavier in proportion to size than other sheep. (1)

They are the best for mutton; the meat is the best graded with fat and lean, is the juiciest and best flavored, will market more meat to the acre, and to produce its meat costs less than for any other sheep or domestic animal.

Their wool is next to the Merino in fineness and brings a better price than that of any other breed.

They are of all sheep the most beautiful in form, majestic in carriage, and are an adornment as well as the most useful and profitable of all domestic farm animals.

They have been bred in purity longer, and are certain in impressing their good qualities on other breeds, all attempts by crossing with other breeds to improve their good qualities have proved failures - they have been for many years, and remain the recognized head of the mutton breeds.

Comparing favorably with the Merinos in fineness of wool, (2), in ability to exist with little care and in large flocks in the grainless parts of our country, and superior to them in mutton qualities as well as in less liability to the diseases that have been so hurtful to the wool growing industry, the Southdown is in every respect the best, is the natural cross for changing the Merino from wool to mutton and yet retaining the highest priced wool.—Ed.

JOHN G. SPRINGER.

The Sheep Breeder ventures to predict: It may be safely assumed that the shrinkage in the lamb product of the country will be fully 33 1-3 per cent below the product of 1893. This remarkably large shrinkage, resulting from the merciless slaughter of thousands of breeding flocks, the failure to breed as many more flocks, and the most criminal indifference of many shepherds to the proper winter care of their sheep, will go far toward an early restoration of the high prices of sheep and generally prosperous condition of the industry in 1890-91 and '92. There will be a good-sized army

(1) They are charming sheep, but by no means so early maturing as the Hampshires. Ed.

(2) Stuff.—Ed.

of sick men before the close of the current year—the men who have parted company with the "golden hoof" for a song.—Ex.

Swine.

THE BOAR.

C. J. Stockey, a well known pig breeder, in a paper read before the National Swine Breeders' Association, says:—"The hog-breeder who does not provide some Swedes, mangels or other roots for winter and early spring does not know what he has missed in the way of conditioning his hogs. Feed the boar in such a way that he will keep in the best growing condition—thriving all the time, but not in show-ring form, as the breeders exhibit him at fairs. To get the best results and strongest pigs he should be active and vigorous. It is a fact that cannot be denied that most of our best boar pigs are ruined by overwork when they are young. Some breeders and farmers will pay a good price for a boar, take him home and turn him out with a bunch of all ages, there to fret, worry and work, and in all probability go down to nothing. This should not be. Where is the profit in handling—or not handling—the boar in such a manner? At eight months a pig can do some service, if properly handled, and not hurt him. One good service to a sow is all sufficient and better than more. After a boar is a year old he can be used liberally, if handled right, and the best results may be confidently expected. I am convinced that the more we use old boars the better, stronger and healthier our pig crop will be. It surely has been a mistake with farmers and hog men in the West of late years in not keeping more aged boars and sows to breed from."

While in Ottawa, Mr. McKeller of the Central Farmers' Institute spent some time at the Experimental Farm. You will find from the reports of that farm very useful and interesting information on hog raising. In order to get the hog that packers ask for we must have a strain of the Yorkshire or Tamworth with the Berkshire. Now comes the question, how are we going to do it? There is room in this Province for perhaps a dozen breeders of thoroughbred hogs so that farmers could go and buy thoroughbreds whenever they wanted them, and could keep a thoroughbred sow, killing off the progeny every year when fattened. The older the mother and sire are the better. Professor Robertson is very strong on this point, and holds that the old law of the survival of the fittest is being overthrown by the too common practice of using young immature sires. If you have a young boar, he gets the service that the old one would have got under natural conditions.—N. Y. Farmers.

KNIGHT OF THE VALE.

Our engraving is a representation of that superb carriage stallion, Knight of the Vale, the property of Messrs. Knottel, Boissevain, Manitoba. Knight of the Vale (1799) is registered in Volume V. of the Yorkshire Coach Horse Society of Great Britain, also recorded in the American Cleveland Bay Stud Book, (999), Volume III, and No. 17 in the Horse Breeders' Lien Act of Manitoba. He was bred by Wm. Codling, Eskdale-

side, Slights, Whitby, England, afterwards passing into the hands of John White, "The Grango," Appleton, Roebuck, Bolton, Percy, Yorkshire, from whom he was purchased by his importers, Messrs. J. D. McGrogor & Co., Brandon, Manitoba, subsequently being purchased by his present owners.

Before leaving England he made for himself a remarkable showyard record, winning second place at the great Yorkshire show in a strong and representative class, and third at the Royal at Warwick in 1892; these are the largest and most important shows of Cleveland Bays and Yorkshire Coach Horses held in the United Kingdom."

Since coming to this side of the "pond" his successes in the show-ring have been numerous, always heading the lists wherever shown. At the Winnipeg Industrial in 1893 he stood first in the four-year-old class, and took the sweepstakes (silver medal) for all ages; he also captured the "FARMER'S ADVOCATE" special (a very handsome marble clock and bronze ornament), given for the best carriage stallion in classes 8, 9 and 10, which included Thoroughbred Hackney and Coach Horses. He also won first and silver medal at the Boissevain Spring Stallion Show, and at the Boissevain Agricultural Societies' Show in the autumn.

Knight of the Vale is a beautiful bay in color, stand 16½ hands high, and at present weighs about 1,600 pounds. He has the clean blood-like head and neck of the Thoroughbred, well laid shoulders and grand top, good feet and large, flat, hard bone so essential to the roadster. He moves with that elegant and forceful action characteristic of the Cleveland Bay.

Foaled in 1889, sired by County King 110, first dam by Wonderful 533, third dam by Bass Rock, S. B., etc., etc., of extremely fashionable breeding, combining some of the most celebrated sires in the Cleveland Bay, Yorkshire Coach and Thoroughbred history. Among them, such names from the Cleveland Bay records as Statesman, Wonderful, Cleveland Lad and Skyrocket; and from the stud book of Thoroughbreds, Necromancer, Bass Rock and Darley Arabian.

Manitoba is fortunate to have such a horse within her borders, and great credit is due to the importers and owners of such horses, and now when ordinary horses are so low in value it is the more important to put only good mares to the best available stallions.

The Knottel Bros. accommodate a limited number of approved mares during the season, with care and pasture at reasonable rates.

Farmer's Advocate.

The good horseman, says a writer, will water his horse before feeding him, especially in the morning. French breeders always water their horses before feeding, and in all the large stables of horses in this country that practice is followed. Yet many horsemen and farmers never think of the advantage and necessity of it. If the horse could talk or if man could understand him, he would ask for a drink the first thing every morning and you will be surprised how eager they are to get it whether the weather is cold or hot. It is attention to points like this, too commonly overlooked, that tends to success in every sort of farm work. A little slackness here, a little carelessness there, and a general lack of sharp supervision every day, and everywhere, is what makes the deficit at the end of the year. Don't it?

DR. HOSKINS.

The Farm.

THE ROBERTSON MIXTURE FOR ENSILAGE.

Considerable interest is being manifested by dairy farmers all over the continent in the experiments which are being carried on at Ottawa, Canada, by Prof. Robertson, in the way of ensilage corn, English horse, beans and sunflower seeds together, with the idea of getting thereby a mixture that would present a ration for cows fairly balanced in all elements, carbohydrates and fat. Our recent visit to Eastern Canada we spent a day at Ottawa and looked over the Experimental farm and especially the fields of corn, beans and sun-flowers which are there growing for the silo this fall. The DAIRYMAN has hitherto contained one or more articles from Professor Robertson on this subject, but as the question is full of practical interest to dairymen, we will give the few ideas we picked up during our visit.

The great object to be obtained is the production of a balanced ration on the farm: one that will save the farmer from buying so much of nitrogenous food outside, and at the end of the year leave more of the money his cows have earned in his own pocket. This has been a favorite doctrine with the DAIRYMAN, as our old readers well know, and so we have been counselling the growing of peas and oats. But peas and oats do not ensilo well, so Prof. Robertson and some others have found, though they make a highly profitable crop when cut and cured as hay or for the sake of the grain alone. Professor Robertson's experiments with his mixture show that with a good crop of horse beans grown for fodder, in rows three feet apart, with 3 or 4 plants per foot in the row, he obtained an average yield of 6 tons 1,610 pounds per acre, of green fodder, which showed by Prof. Shutt's analysis to contain 170 pounds of albuminoid and 94 pounds of fat per acre. They were found to silo well either alone or when mixed with corn and sun-flowers. The sun-flowers grows with comparative freedom all over the continent. The variety known as the Mammoth Russian grown in rows with plants say 15 inches apart in the row yielded at the rate of 7½ tons of sun-flower heads per acre. From Prof. Shutt's analysis the crop contained 352 pounds of albuminoids and 789 pounds of fat per acre.

The following table shows the quantities of the nutrients which are contained in a crop of the mixture from 3½ acres at fairly average yields:

	Albumi- acids.	Carbohy- drates and fiber.	Fat
	lbs.	lbs.	lbs.
Indian corn a acres say 30 tons	1,092	10,302	324
Horse beans 1 acre say 8 tons	435	1,210	111
Sun-flower heads ½ acre, say 3½ tons.	176	1,186	364
Total 3½ acres, say 41½ tons	1,703	12,698	799

A group of cows were fed on a ration of which the ensilage part was made from mixing the heads of sun-flowers from a half acre with Indian corn from two acres. The cows of another similar group were fed upon a like ration of which the ensilage part was made from Indian corn alone with two pounds of grain per day more than was allowed the cows of the first group. The milk from the two groups was set in ice water and the following results were obtained in nine tests:

	From ration with sun-flower ensilage.	From ration with ordinary corn ensilage.
Per cent fat in skim milk	0.35	0.51
Churning period, minutes	30	23
Percent fat in butter milk	0.25	0.40

This was interesting in showing the effect of the feed on the churnability of the cream.

The sun-flower ensilage was relished well by the cows, produced a higher flavor and color in the butter, and also developed an agreeable odor in the ensilage.

From what experiments Prof. Robertson has made with the horse-beans it appears to do much the best in moist, cool climates. For this reason he believes that for the dryer and hotter portions of some of the states some of the varieties of climbing beans planted with corn would be better. It should be remembered that the bean belongs to the family of plants known as legumes, like clover, peas, etc. which have the power of transforming the free nitrogen of the air into plant nitrogen and for this reason do not impoverish the soil.

Prof. Robertson's effort to find some combination of plants which will safely ensilo together, can be easily and cheaply grown by any farmer, and when combined will make a rich and proper ration for the cow, is valuable work in the right direction. Very likely he will not come out at just the spot that he expects too, but that does not matter providing the effort sets the intelligent dairy farmer to thinking, and gives him a hint as to what he can do for himself. We would suggest that some of our readers, who have silos, try planting corn and climbing beans together, with an acre or so of sun-flowers. Then run the corn, beans and sun-flower heads through the cutter together and get for themselves some idea of the value of this combination.

Certainly the cost of bran, cotton seed meal, oil meal, and all the nitrogenous foods is great enough to pay for some right energetic effort on the part of dairy farmers to see if they cannot produce a substitute themselves.—Hoard's.

STATE OF THE CROPS.

The grain crop is nearly all harvested, except in that part of this province north and east of Quebec City.

Wheat.—Turning out fairly well—in some sections very well.

Oats.—The quality is fully better than the quantity. Some fields have turned out very well. Many people early in the season thought the oat crop was doomed, there was a peculiar blight struck it: some thought it was caused by a small insect.

Peas.—Are hardly an average crop, they have not done well the past 4 or 5 years. They should be more sown as they do not take a great deal of fertility of the soil away.—(Plough them in 3 to 4 inches deep—Ed)

Barley.—This is the best crop of the four principal cereals, it was ripe very early and is turning out very well; with the reduction in duties by the United States farmers will probably get a better price.

Rye.—Turning out fairly well. Vetches.—Quite a quantity of this grain sown in the parishes. It makes a good green feed to give cows, to help over the dry spell and if sown on

good soil can be cut twice if cut early the first time, I have cut it three times the same season. (1)

Corn.—Has done well through August. In a few places, frost has appeared before the corn was cut, hurting it a good deal for feed; but generally speaking, it has ripened well, some very good pieces of ensilage corn also.

Potatoes.—Are a good crop, although in some sections the dry rot has appeared. The early rose variety seem to be the worst in regard to rot.

Grass.—The cry in Western Ontario seems to be drought, also in the Western States, but here we have had frequent showers. Where hay and clover were cut early, the after grass is excellent, giving cattle a good chance to give plenty of milk. Cheese has sold remarkably well all the summer being quoted nearly a cent a pound better than last year at the same date, this article alone is going to bring a very large revenue this year into Canada, and especially into this Province. Butter has been rather dull; the shipments are a mere bagatelle this year.

The season is so much earlier than usual that in some sections the harvest is all done, manure nearly all carted out, and in many sections the potatoes are dug and cutting corn is now the order of the day. Fall plowing has not yet started. A good deal of ditching has been done this year, a progressive sign of the times. A meeting was held in Huntingdon a short time ago to try and form a company for the manufacture of drain-tile. This is something that should pay the farmers well, under draining. Too few seem to understand this great and important part of farming. The farm on which I was born and brought up has more under drains in it than any other farm in this Province I believe, so that I know whereof I speak. I hope the company will get started and be able to manufacture tile so that the cost of draining will not be too expensive to give it a fair trial.

Apples are only fair. Fameuses are badly spotted. Quite a discussion took place at the recent fruit growers association held at Knowlton between Mr. Fletcher, Dominion Entomologist, and the fruit-growers round Abbotsford, in regard to spraying trees to prevent the spots on apples. Mr. Fletcher maintains it is a sure preventative, while many have tried it and found no benefit from it. Late apples are likely to sell well, as England seems to be short in the apple line. I hope those whose duty it is to pack the apples for shipment, will not put the best apples in each end of the barrel and fill up with trash and spoil the trade.

PETER MACFARLANE,
Gen. Inspector.

St-Hyacinthe, Sept. 10th 1894.

Correspondence.

Barnston, Que., Aug. 1894.

EDITOR *Journal of Agriculture*,
MONTREAL.

Dear Sir,—I wish to have advise as to how to get rid of Golden Rod (Vergo dor) in a permanent pasture. It has been used mostly for colts for several years. Two years ago I mowed them and sowed a bushel grass seed but they are worse than ever. I con-

(1) Tares or vetches should always be in bloom before cutting for stock.—Ed.

not plow and cultivate as it is in its nature stony and too stony to plow. Your best advice by letter (and through the Journal for all) will much oblige subscriber.
C. N. REMICK.

Ans.—We know of no other way of destroying such plants as our correspondent refers to than copious applications of salt or dilute sulphuric acid: The misfortune is, that the same dressing that kills the "golden rod" will kill the grass too. Frequent mowings might, if followed by rain, cause the stems to rot, as this treatment often does in the case of thistles.—Ed.

The Huntingdon Gleaner says: "Potato lifting on clay land is nigh done, and there has been much culling of diseased tubers. Whether the potatoes will continue to rot when in the collar remains to be seen. On gravelly soil they continue good and are still growing. Potato lifting in August is a novelty, and will be long remembered as an instance of the earliest season on record. Many farmers had everything secured except corn and roots, the third week in August, and had begun threshing the second week. The mill is showing the grain to be deficient in quantity, and farmers who counted on 40 bushels of oats to the acre find they will not have much over 30. The quality is uniformly good. Wheat is deficient in every way, the yield being small and the kernels shrivelled. Despite the dry weather of the past fortnight, there is no lack of feed for cattle in this vicinity, and the late showers will help the pastures."

Early season? Yes, we should think so, potatoes were stored here on the 12th August; tobacco cut on the 20th, and grapes, (but as sour as verjuice) sent to market on the 21st!

HILLING CROPS.

It is not easy to account for the extent to which the practice of hilling potatoes has been adopted. If may have originated, to some extent, from the idea that drawing the earth up toward the plants would tend to prevent the escape of the moisture in the hills or near the line of the drills, as the case might be. There is some truth in the idea just mentioned, but, all things considered, the loss of moisture by the process is undoubtedly greater than the gain. We do well to call to mind that the practice of hilling corn was at one time universal, but now it is only done by those who are not skilled in growing corn according to the most approved methods. The reasons for this will be clear to the reflective mind: First, when the hilling is done we stir the ground deeply, no matter whether it is done by use of shovel plough or by the use of hoe. If dry weather follows, the soil loses a large proportion of its moisture through surface evaporation, and in consequence, there is less of this left to be taken up by the roots of the plants. Second, when the soil is thrown against the vines so as to form sharp ridges, when the rain falls it runs away from the roots of the potatoes to that portion of the soil which is most distant from them, so that, in consequence, they suffer. (1)

(1) In this Beauséjour district farmers are beginning to earth up flat and not too much. Ed.

CANADIAN CATTLE.

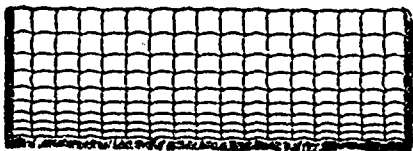
The Board of Agriculture have placed it on record, by a minute of the 13th inst., which was published on Friday, that the action of their officers, in declaring certain cattle from Canada landed at Liverpool in May and June last to be suffering from pleuro-pneumonia, was entirely justified. The special inquiry since held by the Department, during which the lungs of two of the diseased animals were examined by a number of experts, showed that in no instance did a witness find himself in a position to assert, without qualification, that either case was not one of contagious pleuro-pneumonia; while, on the other hand, the verdict of the professional officers of the Board was absolutely and unreservedly confirmed in many instances.

The Board add that:—"It is beyond question that a disease occurs in the lungs of Canadian cattle imported into this country which, in the opinion of many of the most experienced and best qualified veterinarians in this country, is contagious pleuro-pneumonia, which, even in the opinion of pathologists ready to admit the hypothesis that the disease is new and hitherto unobserved, is a bacterial or germ disease, and which could not have developed to the extent shown on the slaughter of the diseased animals in this country a fortnight or three weeks after shipment, unless it had been originally contracted before leaving Canada. In the view of the Board these matters deserve, and will doubtless receive, the serious attention of the Canadian Government and of public and private veterinarians in the Dominion, but in the meantime the duty of the Board is clear. They have no alternative but to act on the assumption that the disease found in the Canadian animal was in fact contagious pleuro-pneumonia, and in view of this fact they must maintain in force the normal security provided by the statute against the introduction of disease by means of imported animals, viz, by their slaughter at the first port of landing."

GUESSING WEIGHT.

The block test competition held at Annan on the 7th inst in connection with the Lower Annandale Agricultural Show was very successful. As many as sixty-four farmers entered and lodged estimates. The bullock having been slaughtered, the carcass weighed 49 stones 1 lb. The lowest estimate was 34 stones 10 lb, and the majority of the estimates ran from 44 stones to 47 stones.

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NOTES AND NOTICES.

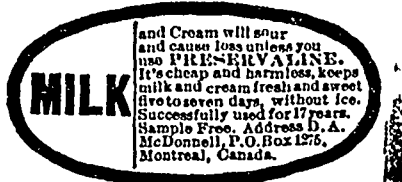
—As the piano factory of Mr. L. E. N. Pratte has been in active operation during the summer, not only during the usual working hours, but even at night, the public can expect a display of his pianos in September which will surprise them.

Experts who have had an opportunity of seeing these pianos in course of construction express themselves delighted with them, and confess that they stand unrivalled, not only in musical qualities, but also in the rarity of the woods, the perfection of finish, and the delicacy of carving and marqueterie employed in their cases.

Although many have been sold before being finished, they will probably be on view before being delivered, so that our amateurs can have a chance of inspecting them.

—Mr. W. H. Smith, provincial agent of the Locked Wire Fence Co., of Ingersoll, report increased patronage for his fencing, keeping his staff busy all the time. A good sample of this fence can be seen along the lines of the Montreal Park and Island Railway. Especial attention should be given to the Locked Wire Fence Co's Gates. They are the cheapest and strongest fence gate made.

Mr. Smith has disposed of several counties to the right kind of men. Parties desirous of securing remaining territory should lose no time in applying to Mr. Smith, at London House, Chaboulez Square, Montreal.



SUNNY SIDE HOLSTEIN-FRIESIANS.

Choice animals, either sex, all ages, for sale at any time. Correspondence solicited.

ADDRESS: McDUFFEE & BUTTERS, 10-14-12 Stanstead, P.Q.

MAPLE HILL HOLSTEIN-FRIESIANS

This herd gained 3 firsts, a second and a fourth; and a third in Dairy Test, at Toronto, this year. Our 4 years old Stock Bull "Archie Aggie Prince" for sale; also some young stock of both sexes.

G. W. CLEMONS, 10-14-12 St. George, Ont.

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Stock for Exhibition purposes a specialty. Pedigrees furnished. Reduced rates by express. Write for particulars.

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FOR SALE

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This Great Herd of Prize Winners will be exhibited at Ottawa and is well worth the attention of all interested in Bacon Hogs, &c. This Herd has won most prizes over all herds in Canada, this year. Write for Prices. Satisfaction guaranteed.

W. M. BUTLER & SON, 10-14-11 Dorham Centre, Ont.

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Have now on hand a choice lot of young pigs of both breeds, 6 to 8 weeks old. Am breeding 30 choice sows for spring trade, parties wishing early pigs for spring purposes will do well to send in orders as early as possible. All orders carefully filled and satisfaction guaranteed. Personal inspection preferred.

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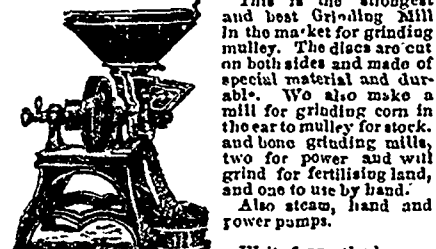
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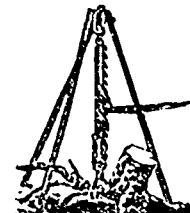
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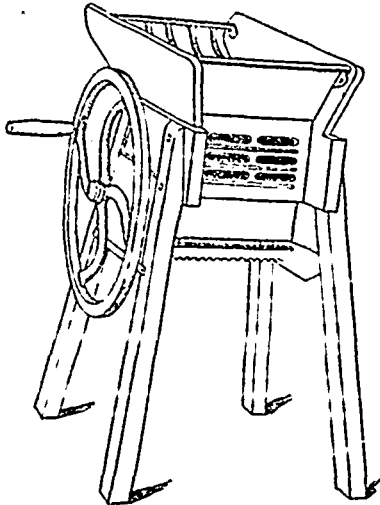


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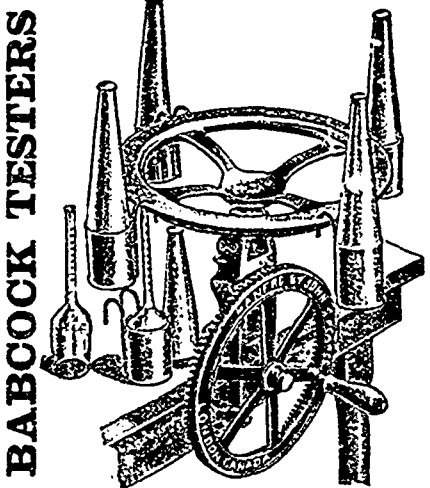
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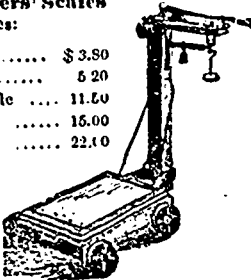
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10 lb. Butter Scales.....	\$ 3.50
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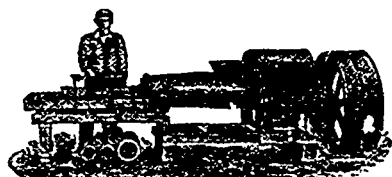
For Steam and Horse Power makes either 3 or 6 Bricks to the Mould.

Brick Moulds made any size to order for any make of Machine.



Also makers of the

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The only one on the market, which the horses can run without their walk being bridged.



"LA CANADIENNE" Perpetual Press.
(PATENT AND IMPROVED.)

It affords us great pleasure to have it known that the improvements brought to our hay press "LA CANADIENNE" have made it superior to all other horizontal presses working in the shape of half a circle. The fuller's course is 33 inches, that is from 6 to 9 inches longer than in any other horizontal press, which gives a wider opening to put the hay in and more speediness. Three men will do more with our press "LA CANADIENNE" than with any other press in the shape of a half circle, while it is much less tiresome for the horses. The materials employed are of the first quality, with the exception of two pieces of chilled cast iron, all the other parts are of steel and malleable cast iron.

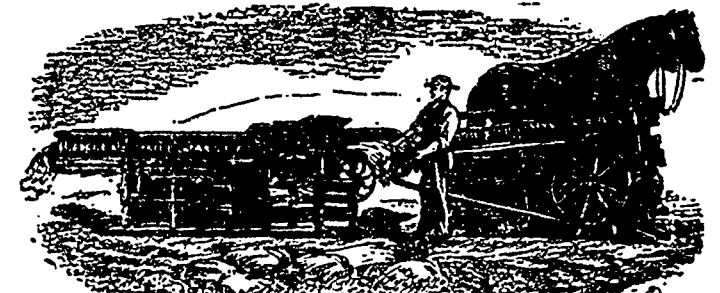
We guarantee our press to work at the rate of 10 to 13 tons of hay every day without the horses being tired.

We manufacture four sizes of presses:

14 x 18 16 x 18 16 x 20 16 x 22

We will send this press for trial to any responsible party.

Write for our catalogue and list of prices.



The thrashing machine represented in the above engraving is our vibrating machine. It has a run of 28 inches long with teeth in steel guaranteed so that they can bend without breaking as the iron work that support the drills is all in wrought iron which is very advantageous and economical as any blacksmith can make it, so that all long delays are avoided.

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