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THE ILLUSTRATED
Journal of Agriculture

Montreal, October 1, 1895.

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Notes by the Way.

The Montreal Exhibition of 1895 is allowed by every unprejudiced person to have exceeded all its predecessors in variety and excellence of its exhibits in live stock. We have heard but one opinion about it; and although our health did not permit us to take a long survey of its varied attractions, we were more than pleased with what we did see. The cattle, sheep, swine, and last, but by no means least, the horses, were all good of their kinds, and the Dairy-show was quite worthy of its painstaking managers, M^r. Taché and Castel. When we say that our valued contributor, Mr George Moore, was pleased with the flower show, we have said all we need say in its favour. We are promised an article from his pen for our next number, and we trust other of our friends will send us contributions on different features that may have struck them as worthy of notice.

We were honoured by being selected as judge of the essays competing for the prizes offered for essays on root-growing, care, &c., of manure, and other interesting subjects. We did our best to be impartial, but it was a difficult task.

Milk or butter cows.—A very sensible suggestion was made by a well known dairy-farmer, Mr. E Matthews, one of the judges at the Tring Show milk trials. He proposed that farmers should test their cows to see if they were likely to return more profit as producers of milk to be sold as such, or as butter producers. Taking the value of milk at, say, 12 cts a gallon wholesale, and butter at 32 cts. a pound, if they took the milk of the best cow among the Shorthorns exhibited, it would be found that her milk = 7½ gallons, (77.35 lbs.) was worth 90 cts a day, while the resultant butter 2 lbs. 3 oz. would only bring in 66 cts; taking on the other hand, the best butter cow at the show, Capt. Brand's Jersey, her milk = 4½ gallons, (46.50 lbs.) would only fetch 60 cts., whereas the butter, 2 lbs. 10½ oz., would be worth 80 cts. True enough, but the immense quantity of skim milk and the ease with which she can be made ready for the butcher at any time, will always help to keep the Dairy-shorthorn cow in the front rank in England.

Side-hoes.—At page 177 of the September number of the Journal, in the same space as the cut of the "Howard's Subsoil Plough," are two side-hoes, that have no explanation attached to them. The omission was our fault entirely. These hoes have a peculiar office to discharge. They are intended to be attached to the 3-hoed horse-hoe, instead of the usual simple grubber-teeth, and their use is universal in England. Their office is to cut up all that part of the space between the drills that the front-hoe has left undone, and to pare down the sides of the drills so as to leave not more than the two, or at most three inches on which the row of plants stands to be done with the hand-hoe. Any one who will adopt these side-hoes to any common horse-hoe will soon see how very superior their work is. On referring to p. 99, May No., 1894, will be found an engraving of a horse-hoe, from a photograph of one made after my own plan, with the exception of the side-hoes which have not had suffi-

cient curve given them. The three hoes are plenty; a grubber-tooth is not wanted except in strong land.

Sugar as food.—A well known chemist, Dr. Thomas Oliver, writing upon the diet of the "Working Classes," speaks very strongly in favor of sugar as a muscle food. He thinks it should be much more used by the workers. There is always 1/5 of one per cent in the blood, and when muscle is in a state of activity, there is a disappearance of sugar from the blood, four times greater than occurs in the blood issuing from muscle in a state of rest; clearly showing that, during active exertion, sugar is used up.

In Harley's experiments to discover whether or no sugar is a muscular nutriment, he abstained from all food except 500 grammes = 1.102 lb. of sugar daily, and he found that there was not only an increase in the amount of work accomplished, compared with that done fasting, but that fatigue of the muscles was decidedly retarded. It is recognised that when sugar is added to food, a man is capable of more work than without it, and that this extra capability is perceptible in its highest degree about two hours after it is eaten.

A very pleasant thing to know that theory is in accordance with practice; for what physiology is now teaching us has long been practically known to the Northumberland coal-miner and the English navy.

Hay.—As far as we can judge, there will be a fair demand for our hay on the English market after Christmas. The "rowen"—second crop of meadow-hay—and the second cut clover will be abundant there, but the quality of such hay is never very good. (1) Our people had much better consume their hay at home.

The English crops of 1895.—Some wheat and winter oats suffered from rain, and here and there, a little was grown in the sheaf; but, upon the whole, the native new crop of wheat is coming to market in good condition. No complaints of rust, and prices run from 28 to 24 shillings a quarter for white and red wheats respectively, which is a distinct improvement on the opening prices of last year. Reading, in which market we well recollect seeing, some 40 years ago, a lot of the finest white wheats we ever met with, and that, not on one or two market-days, but generally throughout the year; Reading, we say, quotes new Talavera wheat as high as 30 shillings, about the same value as No. 1 hard Manitoba old wheat; but Talavera is only used for biscuits—not hot rolls, but crackers.—Grinding barleys are plentiful at 15s to 20s for English, and 12s to 13s for Persian. Best English and Scotch oats, for the "West-End" are worth 27s; Russians, 14s; New-Zealand 24s, Canadian white pease fetch 27s per 504 lbs.

Russia.—Plentiful crops of every thing in the Southern provinces and the best of harvest weather. In fact, from all we can gather, the universe can boast of a famous yield everywhere except in Southern England, and, even there, it is not so bad as the farmers try to make it out to be.

Hops.—The reports from the great hop-growing county of England—

(1) Too much dew and moisture in general during the making.

Kent (1)—are of a very encouraging nature, except as regards prices. Some of the grounds where Bramblings and Goldings are grown, are described as magnificent. Germany reports an over-average crop, and in the States, the plant seems to have benefited greatly by the late rains; but the price! Five to seven cts for '94s and eight to ten cts for 1895s! Beer ought to be cheap with hops at 10 cts for the best and barley 54 cts a bushel!

Bread ought not to be dear with flour at present prices. A barrel of the usual make up costs, say, \$4.50. How many pounds of bread will it make in skilful hands? About 260 lbs., equal to 65 loaves of 4 lbs. each, or 43½ of 6 lbs each: cost per loaf, 10½ cts, and 6½ cts, respectively. Really the "horse and the driver" must be costly things to keep up. But it is so long since we bought bread in our family, that we do not even know what its present price is.

Nitrate of soda at Liverpool is worth \$34 the ton of 2,000 lbs. This makes nitrogen worth there 10½ cts a pound, whereas the chief analyst at Ottawa, gives 14 cts as its value here, which would make the price of the 2,000 lbs of nitrate \$44.80, which is rather more reasonable that it used to be.

Wool remains at about the same figures in London; but the market is more lively. A very healthy tone prevails, and as other branches of trade are giving signs of improvement, the wool trade will certainly not deteriorate. Still, down-tog wool is only worth 29 cts a pound!

Butter, particularly Danish, is in good request in England at very moderate prices: Irish creamery is worth, for best qualities, 100s a cwt., and Danish, 106s.

Cheese.—Good to fine new Cheddar is selling in London at 60s, and the best Cheshire at 65s. People here are often deceived in the quotations of Cheshires, not knowing that whereas Cheddars, Glo'sters, &c., are all sold by the cwt. of 112 lbs., the Cheshire cwt. is 120 lbs. The quotation of Cheshire price given above stands in the original "70s a cwt.," and the deduction made for long weight brings the figures to 65s.

Bacon and hams.—Supplies from Denmark very large: market, consequently, down 2s to 6s. Highest price Irish bacon, 67s; highest price Danish, 62s; Canadian best 52s: all for lean, sizeable. American hams, 48s; Irish up to 98s.

Potatoes.—The crop of potatoes in Britain is large, and in spite of the late rains, the quality is good; prices are down in the great London markets from 5s to 10s a ton of 2,240 Beauties of Hebron, and other top qualities are worth 90s a ton.

Scientific Hop-growing.

KENT COUNTY-COUNCIL EXPERIMENTS.

The Burrs' Hill Plots.

Nearly 18 years ago, we wrote our first article in this Journal (2) and the subject thereof was "Hops". We re-

(1) Out of fifty-eight thousand acres of hops grown in England, upwards of thirty-five thousand are grown in Kent!
(2) See vol. 1, p. 47.

member speaking of the crop as being one "fascinating to grow but hazardous," inasmuch as it could never be depended upon for ten days together; to day it would be flourishing, and a week or so afterward, the fly, or the blight, or the mould, would cast all hopes to the ground.

Again, hops, like the splendid potatoes at Little Môtis, arrogate to themselves a right to all the dung on the farm, to say nothing of 120 bushels of sprats or 6 cwt. of woollen rags to the acre, as a sort of *bonne bouche*, or appetiser. A propos of the Môtis potatoes, there hangs a tale. Talking with a lady recently arrived from that watering-place, we happened to ask how the visitors were supplied with vegetables this summer. "Oh!" replied our friend, "very well indeed; green-pease, French-beans, in abundance: the potatoes were superb in size and quality, and as when we left—September 7th,—they were not nearly ripe, there must be a large crop by the time they are fit to dig." "Glad to hear it," said we, "for when the fallow or hoed crop is good, the following grain- and hay crops are also likely to be good." "What do you mean? Following grain and hay-crops after potatoes, indeed! *Pas si bête!* they plant potatoes year after year on the same land, and as long as the farmers of the interior can afford to buy seed-potatoes from the *beach*, the crop is sure to be good." The lady knew what she was talking about.

Curious diseases they have in that queer county; for instance; Madame B.'s cow was ill; some badly disposed person had taken the rags out of the chinks in the stable into which they had been stuffed to keep the wind out, and that in one of the coldest nights of the winter. Cow got up, and seemed better in the morning. Madame went to milk her. nothing but pure water came from her; nothing, nothing, as clear as *l'eau de roche!* And droll medicines too, are exhibited by the country practitioners, another case: the same Madame B.'s horse was ill, very ill indeed. The local "cow leech" recommended a dose of chicken's blood. Quick, quick; kill all the chickens, all, all! However, one was killed and the blood saved and administered to the patient. But the horse died; it was too late to save it, alas!

It is generally supposed, by those competent to judge, that Madame B. is not such a simpleton as she makes herself out to be. Her imagination runs away with her. The English visitors are evidently "*bêtes du bon Dieu*," and her stories are worth an old dress or two. She is certainly very amusing.

Seriously, from what our friends tell us, the harvest in the Môtis district is still green, and the prospects for the winter appalling. The people seem to be disheartened at the failure of the crops, and to have resigned themselves to live upon what they can pick up from the summer visitors. If a family of five or six are content to live during the long winter upon the potatoes they grow and a couple of barrels of herrings, the utter pauperisation of the population is only a matter of a few years. Once let Môtis lose its *vogue* as a watering place, and the whole fabric falls to the ground.

But all this by the way; our subject is hops. Now the first act of the Council of the County of Kent, in connection with agriculture, was to try if by investigating the usual methods of growing hops some new processes could be discovered which being put into practice might improve

both in quantity and quality the yield of that important crop; and the experiments described below are a measure of the success of the investigation.

Some of the yields are phenomenal, and although they are not taken from the final adjudication by the scales, hop-growers in Kent are so skilled in judging yields by the eye, that they may be taken as being very near the mark. (1)

The yield of plot L, from 40 loads of dung an acre, and half a ton of plaster (gypsum), cost, for dressing alone £8. 17. 6, in round numbers, \$44.00. A perilous outlay, but 20 cwt. of hops at, say, only £3. 10 a hundred weight, would bring in the nice little sum of \$340.00, which, in spite of the costly hoeing, digging, washing, and sulphuring, must, one would think, leave some profit behind. What peculiar effect was caused by the plaster, we do not see, but as it was used in plots A and L, both of which seem to have been very prolific, we are bound to suppose it had some effect. However, we shall write to some of our old friends and get them to send us an unbiased description of the whole series of experiments as viewed by the eye of a tenant farmer who is a hop grower.

Altogether there are 17 experimental plots, the hops being the Fuggles variety, the soil Hastings sand, and the bine string trained. The plots are manured as follows:

A.—Nitrate of soda, 4 cwts. per acre; superphosphate, 4 cwts.; steamed bone flour, 10 cwts.; kainit, 3 cwts.; sulphate of magnesia, 2 cwts.; gypsum, 10 cwts.; cost per acre, £8 2s. 3d.

B.—Nitrate of soda, 4 cwts. per acre; superphosphate, 4 cwts.; steamed bone flour, 10 cwts.; sulphate of magnesia, 2 cwts.; gypsum, 10 cwts.; cost per acre, £7 14s. 6d.

C.—Dung, 20 loads at 4s. per load; nitrate of soda, 2 cwts. per acre; superphosphate, 2 cwts.; steamed bone flour, 6 cwts.; gypsum, 10 cwts.; cost per acre £3 1s. 3d.

D.—Fur waste, 12 cwts. per acre; nitrate of soda, 2 cwts.; steamed bone flour, 6 cwts.; superphosphate, 2 cwts.; kainit, 2 cwts.; gypsum, 10 cwts.; cost per acre, £3 4s. 5d.

E.—Nitrate of soda, 4 cwts. per acre; superphosphate, 4 cwts.; steamed bone flour, 10 cwts.; kainit, 3 cwts.; sulphate of magnesia, 2 cwts.; lime, 20 cwts.; cost per acre, £8 13s. 1d.

F.—Nitrate of soda, 4 cwts. per acre; superphosphate, 4 cwts.; steamed bone flour, 10 cwts.; sulphate of magnesia, 2 cwts.; lime, 20 cwts.; cost per acre, £8 5s. 4d.

G.—Dung, 20 loads at 4s. per load; nitrate of soda, 2 cwts. per acre; superphosphate, 2 cwts.; steamed bone flour, 6 cwts.; kainit, 2 cwts.; lime, 20 cwts.; cost per acre, £3 17s. 3d.

H.—Fur waste, 12 cwts. per acre; nitrate of soda, 2 cwts.; steamed bone flour, 6 cwts.; superphosphate, 2 cwts.; kainit, 2 cwts.; lime, 50 cwts.; cost per acre, £3 15s. 3d.

I.—No manure.

J.—Raw Ichaboo guano, 12 cwts. per acre; gypsum, 10 cwts.; cost per acre, £8 4s. 6d.

K.—Dung, 20 loads at 4s. per load; raw Ichaboo guano, 8 cwt. per acre; gypsum, 10 cwts. cost per acre, £9 15s. 6d.

L.—Dung, 40 loads at 4s per load; gypsum, 10 cwts.; per acre; cost per acre, £8 17s. 6d.

(1) Before the removal of the duty, the price on the probable yield of the year, not only among the farmers, exceed all belief.

M.—Dung, 20 loads at 4s. per load; No. 2 Ichaboo guano, 8 cwt. per acre; cost per acre, £8.

N.—No. 2. Ichaboo guano, 16 cwt. per acre; cost per acre, £8.

O.—Dung, 20 loads at 4s per load; raw Ichaboo guano, 8 cwt. per acre; cost per acre, £8 18s.

P.—Dung, 20 loads at 4s. per load; rape dust, 20 cwt. per acre; cost per acre, £8 5s.

R.—Nitrate of soda, 4 cwts. per acre; superphosphate, 8 cwt.; steamed bone flour, 5 cwts.; kainit, 3 cwts.; sulphate of magnesia, 2 cwts.; lime, 20 cwts.; cost per acre, £7 5s. 1d.

S.—Nitrate of soda, 4 cwts. per acre, superphosphate, 4 cwts.; steamed bone flour, 10 cwt.; kainit, 3 cwts., sulphate of magnesia, 2 cwts.; cost per acre, £7 6s.

Before proceeding to the experimental plots, the company's attention was directed to a very ingenious and useful appliance of Mr. Monson's for preventing the burning of hops when drying and enabling the better regulation of the temperature. It was an ordinary thermometer attached to an electric alarm which could be set for the bell to ring at any degree of temperature. For instance, if the temperature is required at, say 105, a platinum wire is adjusted to that degree and immediately the mercury comes in contact with the wire the alarm is set ringing, thus attracting the dryer's attention.

Upon arriving at the plots admiration was at once expressed at their excellence. Taking them altogether they were a splendid lot, and for cleanliness and quality would require a deal of beating. Perhaps the largest hops where those in plot A, on which the basis of the manure was gypsum, but on the other hand neither laterals nor hops were so numerous. They were, however, forward and of very fine quality. Plot B had not so heavy a crop and the quality was fair, but plot C was comparatively a failure both as to quantity and quality, while plot D, which was cultivated deeply at the end of the season, was of the ordinary run. The best piece of the whole was plot L, which will in all probability average at the rate of a ton an acre. Here the bine was very luxuriant and the hops hung beautifully in thick festoons, while as to cleanliness and quality no fault could be found. This plot was manured with 40 loads of dung a 4s. per load, and 10 cwts. of gypsum per acre at a cost of £8 17s. 6d. per acre. In direct contrast to this was plot I, marked "no manure," on which, although there were some very nice hops, yet there was a marked scarcity of bine and therefore scarcity of fruit. Speaking of the whole of the plots generally, washing and sulphuring has been done continuously, and they were very clean. An occasional hop with a slight touch of mould and redness might be found at very rare intervals, but in so infinitesimal a degree as to necessitate being purposely looked for. Various estimates were formed by those present as to the average crop of the plots altogether, the lowest being fifteen cwts. per acre and the highest eighteen cwts. One of the noticeable results of the manure, so far as could be seen up to the present, was that raw Guano had not done so well as number two, in which there is about four per cent. of potash; but all things considered—and amongst others the way in which some of the plots were improving under the influence of the kindly weather—it is somewhat premature to give fuller comparisons yet, and it will be better to await the results which will be published in these columns at later date. Very favourable

comment was passed upon the method of stringing the hops. Last year the strings were on the upright system, but the present year has seen what strikes one as being a great improvement in the way of giving access of light and air to the fruit. To each hill there are four strings running from the ground upwards for about five feet. At this height there is a band of string around the four, and from this the strings are taken up to the overhead permanent wires on either side at an angle of somewhere about 50 degrees. To the eye, the hops when in bearing and thus trained are picturesque in the highest degree, and the light and air thus admitted to the fruit-giving shoots must have beneficial results. Certain it is that the experiments are becoming more highly valued by practical growers who are acquainted with them, and it is very significant when a grower holding the position in the hop industry that Mr. Noakes does is seen carrying out in his other plantations the lessons learned in the experimental plots. To see that such information is worth having one had only to look over the hedge at a plantation of Bramblings of Mr. Noakes's. This garden was indeed a picture and many estimated it at a ton an acre. Upon returning from the plots an old garden with an attack of the weevil was passed and several growers mentioned that spent quassia chips put on the hills were effective, the winter's rain working it down into the earth and thus getting the remedy at the pest.

Lightning.—Some very erroneous notions are entertained about the effect of lightning. Many people think: that lightning never strikes twice in the same place; that the most exposed place is always struck; that a few inches of glass, or a few feet of air, will serve as a complete insulator to bar the progress of a flash that has forced its way through a thousand feet of air. If any one is struck by lightning, prompt and unremittent efforts should be used to restore consciousness, for authorities say that lightning often brings about suspended animation rather than *somatic* (1) death. One record of persons struck by lightning is known to exist, and in it out of 212 persons struck, 74 were killed. More risk in the country than in towns, as in towns the tin roofs, cornices, gutters, &c., afford so much protection that lightning-conductors are hardly needed. Of trees, the superstition in England is that the *ash* is the more frequently struck, and among the farm-laborers' class this idea will be accentuated by the fact that the five poor fellows who were killed at the R. A. S. of England's show at Darlington this year, 1895, had taken refuge from the storm under an *ash*. In the States, we hear that the *oak* is most frequently and the *beech* the least frequently struck; but whatever the tree most favoured by the "levin-bolt," we hope our readers will never take shelter under any tree in a thunder-storm.

Mulching.—Something more than the addition of organic matter to the soil is aimed at by mulching: it increases the water-holding and, consequently, the drought-resisting qualities of the soil.

In one of the bulletins sent out by the Minnesota experiment station, we see it stated that "the use of mulch may sometimes increase the amount of water in the upper 1 foot of soil on

(1) *Soma*—body: Greek.

an acre by 1,700 barrels," equal, we suppose, to 212 tons, or a rainfall of about 2½ inches! Surely the writer must mean "prevent the evaporation of that amount of water"; the mulch cannot add any water to the soil.

Hop-drying is mentioned as having been under experiment by the Kent County Council. In Belgium, too, Mr. A. Leploe has contributed to the study of the process. He speaks of the brewers not liking fertilized flowers; now, we have no little experience in hop growing and in brewing, and we say as a grower, plant plenty of male hops on the windward side of your garden; and, as a brewer, the fecundated female cone contains much more lupuline, than the barren cone. We always chose the cones with seeds in them, because there was more *farina* present, or, as the English say: the fecundated hop has more *condition*.

As for drying hops at a heat never exceeding 95°, at first, to 105° at last, experience tells us that 120° F. is quite safe. As in drying malt, so in drying hops, 4 recurved pipes should be passed from the hot air chamber through the kiln-head or cloth, so as to stand out a foot or so above the hops when the *oast* (1) is loaded. This will rarefy the air and give in a greater tendency to rise through the cowl, preventing the damp from settling on the hops and thereby making them *soggy*. Tin-tubes or pipes, 3 inches in diameter will do very well, and if one is added in the middle, it will be all the better.

As to sulphuring hops, that cannot be dispensed with, as it destroys fungi, and thereby adds to the preservative qualities of the beer. The health of the consumer is by no means endangered by this process, for hops only take up about 0.48 per cent. of their weight of sulphurous acid, of which only about ¼ or ⅓ is permanently retained, the remainder being dissipated in about four weeks.

Rape.—In Colorado, at the State experiment farm, the best yielding fodder crop was rape, which gave 22 tons an acre.

Twenty four tons of turnips were grown on an acre at the Iowa station, and attributed by the experimenter to "frequent and careful cultivation of the surface soil"!

A very useful thing, but it won't grow a root-crop, unless the food is present in the soil.

All tobacco growers should add potash to their manure for that plant, even if the land holds plenty of it already; not for increase of crop, so much, as there is no doubt that tobacco manured with potash does burn better.

Tomatoes.—As usual, we managed to get a tiny piece of land for our tomatoes; in a back yard off 1136 Sherbrooke Street—land very poor, but heavily manured; and there is one queer thing about it: the plants got very little sun, as the fence shut it off by 10 A. M.; now, the queer thing is this: the fruit was ripe about August 18th, very large in size, and by far the best in flavour, when eaten uncooked, we ever tasted! Has any body had the same experience?

Source of fat in milk.—Mr. P. Collier, New-York experiment-station, publishes data for the fat in the food and in the milk in the 90 day breed test at Chicago: summarised thus:

(1) *Oast*, from the Latin, *haurio*, to exhaust. In this case, to draw out the moisture.—Eo

FAT IN FOOD AND IN MILK IN WORLD'S FAIR BREED TEST.

Breed of animals.	Fat eaten.	Fat digested.	Fat in milk.
	Pounds.	Pounds.	Pounds.
Jerseys.....	3,884.2	2,706.2	3,516.1
Guernseys.....	3,756.6	2,486.2	2,784.6
Sherthorns.....	4,101.1	2,932.6	2,410.0
Total	11,741.9	8,125.0	8,710.7

So it would appear that there was upon an average 7.2 per cent. more fat recovered in the milk that was digested in the food given.

Fat from albuminoids (protein).—The great Japanese chemist, Mr. Kumagawa, finds, by experiments, largely carried on, that the animal body is NOT capable, under normal conditions of forming fat from albuminoids. When albuminoids are given in such large quantity that they alone more than fulfil all the food requirements of the animal, the decomposition of the nitrogen-free materials of the food nearly ceases, and the fat and the carbohydrates (les sucres) of the food are almost completely stored in the body as fat.

What say Lawes and Gilbert, in the "Six lectures" now published (1895) by the Government of the United States?

"It is the supply of the non-nitrogenous (les sucres) that is, of the more specially respiratory and fat-forming constituents, rather than that of the nitrogenous (protein) or specially flesh forming ones, that regulates both the amount of food consumed by a given live-weight of animal within a given time, and the amount of increase in live-weight produced." Expts. on sheep. v. p. 242.

The same deduction was made by the same experimenter on pigs:

"The conclusion drawn from the results of the various experiments with pigs was that, in their case, as in that with sheep, it was the supplies in the food of the available non-nitrogenous, or total organic constituents (les sucres) rather than those of the available nitrogenous substance (protein), that regulated both the amount of food consumed by a given live-weight of animal within a given time, and the amount of increase in live-weight produced, produce a given amount of increase." V. p. 245.

But the whole of the summary of the sources in the food of the fat of the animals of the farm is so deeply interesting, particularly when we consider that the greater part of the experiments were conducted as long ago as 1853, and that the two investigators think that "it is satisfactory to find that, applying the best methods of correction which subsequent investigations suggest, the conclusions formerly drawn are confirmed and emphasised, rather than in any way vitiated or modified," (v. p. 247) so interesting, we say, that we propose to give space in the Journal to a page or two of the lecture every month for the present.

FARM-WORK FOR OCTOBER.

One of the peculiarities that must strike the eye of a stranger arriving in the province of Quebec in the autumn—a stranger acquainted with the principles of farming, *diēn entēndu*,—is the

disinclination manifested by so many farmers to prepare their land for the coming year. One would really think that the spring season was a long one in this latitude, and that there was plenty of time to plough, sow, and harrow after the snow takes its departure.

Many have taken it into their heads that a fall-furrow is of no use in shortening the spring tide work. They imagine that the alternate thaw and frost, succeeded very probably by heavy rain, will batter down the furrow and leave the land in a worse state than it would have been if left untouched in the autumn. Well, if the ploughing is done in such a fashion as to lay the furrow broad and flat, we do not say the fall-furrow will be in a nice position in the spring, but if a well constructed plough be used, and the furrow be cut, say, 7 x 10 inches, or so as to lay it up at an angle of 45°, all the frost, thaw, and rain of the roughest spring we ever have here will never batter it down.

Plough all the land you intend to sow, in 1896, whether it be intended for grain, roots, or green crop, and whether the land be sand, gravel, loam, or stiff clay, pick up your "crumb-furrows" and pack them closely; draw plenty of water-furrows, and open them well where they empty into the ditches; you may then rest at peace throughout the coming winter, feeling that you have done all man can do to obviate the inconveniences of a climate like ours.

Potato harvest is, we hope, over; though in '93 and '94, on October 9th, we were sorry to see our friends at Sorel busy with it. Depend upon it, when potatoes are ripe, the sooner they are out of the ground the better. The weather we are having now—heavy rains and the glass at 80°—(Sept 11th) will not only be likely to start a second growth in the tubers, but will certainly promote the ravages of the disease if it is prevalent.

Sugar-beets.—We have had no news of the beet-crop; whether it has been largely grown or not we do not know. One thing is certain; if the crop itself is not largely remunerative, the immense improvement its cultivation makes in the succeeding crops of the rotation must commend its practice to all men of common sense.

The herd will of course be taken in at night and be well fed in the morning, before being turned out to grass. The calves of the year will be all the better for a good feed of clover-hay, as the grass with a touch of white-frost on it is mighty apt to produce looseness of the bowels if taken into an empty stomach.

Sheep, with their warm jackets, can stand out all the 24 hours for many a day yet; but they, if they are eating mangels or turnip-tops, will be all the better for some dry food.

Swine.—We never knew cooking food for farm stock of any description pay, except boiling potatoes for pigs. Jerusalem artichokes certainly do not want cooking, but, as yet, this va-

luable crop, that does so well here, is rarely grown. It is as easy to grow 600 bushels of these tubers on an acre, as it is to grow 180 bushels of potatoes. Whether you grow lean hogs for Liverpool bacon, or fat hogs for London bacon, remember that a stunted animal never makes good meat. We still see, in our Gloucestershire paper, that the great bacon curing firm at Calne; Wilts., is very glad to get pigs that carry 2½ inches of fat down the back. Our own idea is that good bacon and hams cannot be grown without pease. Pickled pork is one thing, bacon and hams are another, and the feeding for the two articles is quite different. One thing is certain: it will pay no one to keep export pigs over 8 or at most 9 months from birth. Keep them growing steadily all along, finish them on pease, and they will suit any market, London, Liverpool, or Calne; but the great, brutal, over-fat, eighteen months old hogs, bristled like wild-boars, with knees and hooks, as big as those of a working ox, are nobody's money, except it be the hard-working *shanty-men's*, who, *au reste*, have no choice.

The horses.—As soon as the teams come into regular hard food, which will be, at any rate, about the middle of the month, we cannot too strongly recommend the practice of giving each horse a cold bran-mash, over a week, at night. We saw this custom followed out regularly for many years, and in our paternal stables, where there were never fewer than 18 horses, of all kinds, from hunters and ponies, to cart-horses and colts, no veterinary surgeon was ever needed during an experience of at least 20 years.

Poultry.—With such a skilled practitioner at the head of this department of the *Journal* as Mr. A. G. Gilbert, of the Central-Experiment-Farm, it would be a complete work of supererogation were we to presume to offer an opinion on the care of poultry during this or any other month; only, when it comes to the treatment of the same in the kitchen, *j'y suis*, or rather, editorially speaking, *nous y sommes*.

The Poultry-Yard.

Development of the Poultry Interests.—Proposed shipments of choice poultry to Great Britain by Cold Storage.—A circular on the subject.—Help from our farmers wanted.

(A. G. GILBERT.)

It is now some time since the *Journal of Agriculture* began to advocate the development of the poultry interests of the country and to place such information in the hands of its numerous agricultural readers as to enable them to practically aid in the development of that industry. The shape that immediate development could take was pointed out as follows:

1. New laid eggs to sell during winter, the period of high prices.
2. Early chickens of large size for our home market.
3. Choice turkeys, geese and ducks for our home market or for shipment.
4. New laid eggs with flavour intact for our home summer market, or for shipment.
5. Eggs of large size and choice poultry for shipment to Great Britain.
6. By the shipment of a superior quality of eggs and poultry to secure a permanent British market such as France and other countries have now.

HOW TO SECURE THESE MARKETS.

Practical instructions as to how to manage so as to be able to cater to all the requirements named were given from month to month and may be recapitulated as follows:

1. Eggs could be had in winter by feeding, housing and managing the laying stock properly as directed.

2. Early chickens could be had by hatching them out early by means of incubator or hen. Large size could be had by keeping Plymouth Rocks, Wyandottes, or other breeds that would give the size and quick growth. (1) And quick growth could be secured by pushing the chicks from the shell.

3. Large turkeys could be had by crossing the Bronze with the Common turkey. Toulouse or Embden geese would make the heaviest weight. Pekin or Aylesbury ducks will mature in 8 or 9 weeks.

4. Eggs of perfect flavour could be had for our summer market, or for shipment, by having them non-fertilized, and non-fertilized eggs can be secured by keeping the male bird away from the laying stock.

5. Eggs of large size for home use, or shipment, could be secured by the farmers keeping the breeds which lay them.

6. Success would depend upon intelligence, energy and enterprise.

Information on all the above points will be found in preceding numbers of this paper. But should further information be desired at any time it will be furnished with pleasure by communicating with the editor.

A CIRCULAR JUST ISSUED

But my principal object in this letter is to call the attention of your readers to the following circular which has been issued in connection with the cold storage service so successfully inaugurated by the Dairy Commissioner, Prof. J. W. Robertson. There is no reason why a large trade should not be done in choice poultry and eggs with Great Britain. We read the official announcement that England alone last year purchased TWENTY TWO MILLIONS OF DOLLARS' WORTH of eggs and poultry from France, Denmark and other Continental Countries. Now, why cannot we try and get some of those millions into the pockets of the farmers of Canada? It can be done by our trying, for there is no country better adapted for the production of a superior class of poultry and eggs than Canada. The intention is to try choice poultry at first, and the circular which is addressed to the presidents and secretaries of the different Poultry Associations in the country and will be also sent to all Trade Associations, reads:—

CENTRAL EXPERIMENTAL FARM.

Ottawa, 10th Sept. 1895.

SHIPMENTS OF POULTRY TO THE BRITISH MARKETS BY COLD STORAGE.

Sir,—The fact that the perishable food products of the country might be made a greater source of wealth to the agricultural community of the Dominion, received practical recognition from the Government during last Session of Parliament, when a sum of money was voted to promote the shipment of dairy products by cold storage.

You are no doubt aware that as a result, the Dairy Commissioner was authorized to arrange a cold storage service, which includes:—

(1) And Dorkings, please.—Ed.

1. Cold storage transportation on railways;

2. Refrigerating chambers in Montreal;

3. Cold storage compartments on steamships.

These arrangements were intended for the shipments of choice creamery butter and other dairy products.

I am happy to say that the shipments of butter by the cold storage service have been a great success, and have led to arrangements being made for trial shipments of fruits in a similar way.

It is thought that the shipments of fine poultry by similar cold storage conveniences would result in the development of a large and profitable trade; and my object in addressing you is to secure the lively co-operation of your Association and yourself in an effort to inaugurate shipments of the choicest poultry from your district. You and the Members of your Association know the capability of your district for supplying quantity and the individuals in it who are best able to furnish good quality.

A Bulletin was prepared for distribution from the Department of Finance, giving information on the best methods of preparing turkeys for export to Great Britain. I enclose a copy of it.

I shall also be glad to receive the names of persons likely to assist in the enterprise, and to receive from your Association, any suggestions which you may make.

You may depend upon my active co-operation in any action which may lead to the introduction of our best Canadian poultry, in an unimpaired condition, on the British markets.

I am, Sir

Your obedient servant,

A. G. GILBERT.

Manager Poultry Department.

BENEFICIAL RESULTS HOPED FOR

The bulletin referred to, as issued by the Finance Department, contains instructions in detail how turkeys, geese and ducks for shipment should be dressed and packed. It is interesting and valuable. Copies may be had on application to the writer.

Now let us hope that this patriotic attempt to successfully place Canadian poultry of a superior quality on the British market in perfect condition will be successful. Under the auspices of the Dairy Commissioner and his dairy enterprises it can hardly fail to be so. It may take a little while before our farmers will be fully informed on the subject or be prepared to take advantage of the opportunities offered. It is to reach a large number of our farmers that I venture to ask space for the circular in your columns.

STATE OF THE CROPS.

HAY.—Those who have good old hay left over from last year, and what was cut in good time this year, will get good prices; some people are holding for more money, they may be like those Ontario farmers last spring, who would not accept \$1.00 per bushel for wheat, they would be glad to take 75cts for it now.

PASTURES are looking somewhat greener than when I wrote last.

GRAIN.—Grain, generally speaking, is turning out better than expected, those who have threshed are well pleased with the result. The prospects are there will be more grain this year than for several years. The farmers of the Province of Quebec should be truly thankful for the bountiful harvest;

there will be enough and to spare for both man and beast. In many countries this cannot be said truthfully

CORN.—At my last writing I predicted a good crop of corn, and my prediction has been fulfilled. In many sections cutting has commenced. Silos are being filled. Corn, if cut in good time, makes an excellent food for cows, last year many left their corn cutting until the frost came; corn fodder when frozen is very little better than nothing, so, one and all out your corn early, do not wait until the leaves are all brown and dry. If for ensilage, cut when at the boiling stage, for both grain and fodder when the first leaves begin to turn yellow. Some favor the idea of filling a silo with whole corn stalks; and give many reasons for their faith in this method, while the greater number advocate cutting in short lengths, being handier to fill and much easier to take out, the cattle leaving less when fed.

POTATOES.—Have done well, are fine and dry. In some localities, indications of rot have set in. The weather is now dry and the reports may be somewhat exaggerated. The potato crop, the past two years, has been rather light in most sections, digging is now (Sept. 9th) pretty general. (1)

Roots have done extra well lately, the moist weather during August gave them a great growth, turnips and mangels have grown to an enormous size.

APPLES.—Will not be much more than half of last year's crop while they are of much better quality. The Ramouse that have been so badly spotted the past two years, are not quite free yet, although not so bad as last year; perhaps the price may help the short crop. I cannot help repeating the advice given last year: in packing, be honest, and do not fill nice large apples at the ends of the barrels and a lot of trash in the middle and try to get the price of No 1 for the whole lot. It is an old saying that "Honesty is the best policy," it is just as true as regards packing apples as anything else.

BUTTER.—The butter market if anything is in rather worse shape than at last writing. Although our shipments this year to Great Britain are heavier than last year, they are still far short of what they were 12 to 15 years ago, and what they should be to day. Some of our creameries make fine goods. If they could be placed in the consumers' hands while still fresh and before the flavor has changed, the market would soon be able to take more of our butter, but makers and buyers like to hold on to the butter as long as possible. There were thousands of dollars lost last year in both butter and cheese by holding.

CHEESE.—The market for cheese has been rather jerky, or erratic. A little business at improved prices, and then it goes off at once. The price of cheese has not ruled so low since 1879 as it has this year. That year, the price was about 2c less than this year until the middle of September when, in 21 days time, the price doubled. There has been lots of money lost this year by the makers or salesmen not accepting current prices when the cheese was fully cured: sell when they are ready and let some other fellow do the speculating.

PLOWING. (2)—Hauling manure has been the order of the day lately—in some sections fall plowing has begun. There seems to be fully more plowing done at this time than in former years at the same date. (Glad to hear it. Ed.)

(1) Quite right.—Ed.

(2) We prefer the English spelling, but... Ed.

FAIRS.—The annual fairs have started. The writer having visited Richmond and Shefford County besides the Sherbrooke Exhibition. The cattle at Richmond fair with two exceptions were rather poor. In Shefford County they were very good. Vegetables at the Shefford fair were first class. The Sherbrooke Exhibition was the best all round show that has been held there. There are many more to be held this week, and the one at Montreal opens on Thursday; from the number of entries now made, it bids fair to be a successful show. (1)

PETER MACPARLANE,
General Inspector.

Chateauguay,
9th Sept. 1895.

FARMERS' SYNDICATE

OF THE

PROVINCE OF QUEBEC,

Office: 23 St. Louis Street,
Quebec.

President: His Grace Mgr. L. N. Begin.

General Secretary: Ford. Audet, N.P.
Treasurer: P. G. Lafrance, Cashier of the National Bank.

Farmers, Agricultural Clubs and Societies can be supplied with every thing they want, viz:

Pigs: Chester, Berkshire, Yorkshire, &c., &c.

Cattle: Canadian, Ayrshire, Jersey, Durham, &c., &c.

Sheep: Shropshire, Lincoln, Oxford, Cotswold, South-down, &c., &c.

Fertilizers and agricultural implements of every kind. Send in your order at once for feed-cutters. Farm products of all kind sold for our members. Informations of all kind given to members.

PRIZES FOR SEEDLING APPLES.

The following report of the Committee appointed by the Pomological and Fruit Growing Society of the Province of Quebec to consider the question of seedling apples was adopted at the summer meeting of the Society held at Como in August last

"A late winter apple combining size, color, quality, hardness and productiveness of tree is felt would be an acquisition of great value to the Province of Quebec:

The late Mr. Charles Gibb had hoped to secure this among the many varieties imported from Russia, but up to the present no variety has appeared which fills the requirements of an ideal late keeping apples adapted to the climate of the Province.

It is thought possible that this "ideal apple" may exist among our native seedlings and in order to bring forward the best varieties grown in the Province, your committee, after due consideration, respectfully offers the following suggestions.

1st. That prizes of \$3.00, \$2.00 and \$1.00 be offered for each district for the best winter seedling apple.

2nd. That a prize of \$10.00 be awarded to the variety scoring the highest number of points in the district competition.

3rd. That a gold medal be awarded for the fruit making the best record during five years of competition, if considered worthy.

(1) And it was, as regards cattle, &c. The grass-hoppers spoiled the flowers.—Ed.

4th. The fruit competing for these prizes to be exhibited at the winter meetings of the Society, where it will be taken charge of by a committee who will see that it is properly stored until 1st May, when the judges will make their awards.

The whole respectfully submitted.

(Signed) R. HAMILTON, }
J. M. FRISK, } Committee.
C. P. NEWMAN, }

The following is a division of the districts.

District No. 1.—Huntingdon, La-prairie, Chateauguay, Beanharnois, Missisquoi, Iberville and St. Johns.

District No. 2.—Rouville, Chambly, Bagot, Shefford, Brome, Verchères and St. Hyacinthe.

District No. 3.—Stanstead, Comp-ton, Sherbrooke, Richmond, Wolfe and Beauce.

District No. 4.—Drummond, Me-gantic, Arthabaska, Richelieu, Ya-maska, Lotbinière, Lévis, Dorchester and Nicolet.

District No. 5.—Bellechasse, Mont-magny, Kamouraska, L'Islet, Témis-couata, Rimouski, Bonaventure and Gaspé.

District No. 6.—Pontiac, Ottawa, Montcalm, Joliette, Berthier, Macki-nongé and St. Maurice.

District No. 7.—Quebec, Champlain, Portneuf, Montmoroney, Charlevoix, Saguenay and Chicoutimi.

District No. 8.—Soulanges, Vau-dreuil, Argenteuil, Two Mountains and Terrebonne.

District No. 9.—City of Montreal, Jacques-Cartier, Hochelaga, Laval and l'Assomption.

FALL PLOWING AND FER-TILIZING.

There is no practice that is so beneficial on clay soils and in a cold climate, as fall plowing of the ground. While in a mild climate, and in a sandy soil, it is the worst of practices, (1) there is nothing that gets the soil into such a good condition, where the land is locked by frost all during the winter months. Not only does fall plowing put the land in such localities in a mellow and friable condition, but it enables the farmer to get ahead of his less thoughtful neighbors with his work in the spring. (2) It is found too that certain forms of fertilizing mat- ters can then be more profitably ap- plied than if their application is de- ferred until the opening of spring. This is particularly the case with crude forms of potash salts such as Kainit. There are certain forms of plant food that one need not fear their getting away from him in the soil. While it would be imprudent to use the more available forms of nitro- genous fertilizers in the fall, even on fall planted crops, the case is entirely different with phosphoric acid and potash salts. These will remain in the soil until some plant calls for them. In using the crude forms of potash salts, like Kainit, there is frequently diffi- culty in using them freely in large quantities when applied at the time of planting in the spring on account of the large percentage of chloride of sodium associated with them. But if they are applied in the fall, the action of the chloride of sodium may be benefit in of rendering soluble matters of plant food in the soil, and the potash has time to get completely incorporated with the soil. On sod land that is to

(1) Why?—Ed.

(2) Very good.—Ed.

be planted in potatoes in the spring, in a climate like Canada, where it is often difficult to work the land as early in the spring as is desirable for this crop, the practice of turning the sod just before the final freeze-up, and at that time applying in the form of Kainit most of the potash needed, will be found of the most economical and profitable that can be adopted. This too will be found the best time to deepen the soil by deeper plowing. An amount of the raw clay subsoil may at that time be brought to the surface that would be detrimental if brought up in the spring. The winter freezing will put it all into such a friable state that no harm will result, but only good.

It is well known to all cultivators that no crop requires more liberal applica- tions of potash than the Irish potato crop. Some contend that the Sulphate is the best form in which it can be used on the potato crop, but experi- ments at the New Jersey Station showed that the chloride or Muriate gave the best results. But if we use Kainit as the source of potash for the crop, we have not only the chlorides but the sulphates as well, and in addi- tion we get the magnesia which is also useful. The Southern market growers, who use potash salts in a lavish manner, on the potato crop in the spring, use generally the Muriate, as all their fer- tilizers are applied directly to the crop at the time of planting, which is months in advance of the time for planting in Canada, and they could not use Kainit at that time in large enough doses to give all the potash that they need. But with the Canada planter the case is very different. His crop is planted much later, and is to be grown all during the summer, when the con- servation of moisture in the soil is one of the most important matters to be considered in connection with potato growing. It is a well known fact that Kainit tends to conserve moisture in the soil. Hence it is desirable to use it in places where the crop grows through the summer. But as we have said the application of the needed quantity in the spring may be for the time being detrimental to the crop, we can see the importance of applying at least a large portion in the fall at the time of breaking the land. The Southern growers of the early potato crop use on an acre 20 lbs. of actual potash. To get this amount in the form of Kainit would involve the use of over 1600 lbs. of Kainit per acre, a larger amount than could be safely used di- rectly on the crop in spring. Another crop in which the plow should play an important part in the fall is the Asparagus crop. Here the plow should be used to ridge up the soil sharply over the rows, leaving drainage fur- rows in the middle between the rows. These sharp ridges warm through much earlier in the spring than flat land, and the earliness of the crop is much enhanced. The old practice of using salt on asparagus was not entire- ly without good reason, but we have found a better way, by which we get all the salt can do for the plant, and at the same time give it the potash it needs. This is by using kainit very liberally in the fall. I have used full half a ton per acre with decided profit. We spread it over the land before the fall plowing, and then plow the ridges up over the rows of plants and get the salts right where we want them. Then a dressing in the spring of manure or of some nitrogenous fertilizer will re- sult in a growth of Asparagus that is seldom seen without the fall ridging up and the heavy dose of Potash. In the preparation of soil to be used in the cultivation of Lettuce under glass in winter we use the more concentrated

potash salts in the form of Muriate and never as Kainit. In fact we seldom use Kainit as a spring application, but believe in it as an autumn application for spring crops.

W. F. MASSEY.

FARMERS' CENTRAL SYNDICATE OF CANADA.

30 St. James St., Montreal.

Honorary President: His Grace, Archbishop C. E. Fabre, Bishop of Montreal.

President: Hon. J. J. Ross, Presi- dent of the Senate, Ottawa.

Manager: W. A. Wayland.

The Farmers' Central Syndicate is in a position to supply the farmers with all that is required for their farms: machinery of all kinds, ensi- lage cutters, mowers, reapers, rakes, dairy supplies, cheese factory outfits, flax breakers and scutchers, binder twine, barb-wire, thoroughbred ani- mals of all descriptions, fertilisers, &c., &c. All the above mentioned goods are first quality, and highly re- commended by the most competent men. The prices are exceedingly low, as can be proved to all those making inquiries at our office or by mail; the purchaser is always sure to gain from 20 to 40 % in buying through our intermediary; the annual subscription is thereby soon refunded.

We call the special attention of those who intend using fertilisers to the fact that we have obtained lately large discounts from the Nichols Chemical Co., of Capetown, thus enabling us to quote low figures. Write for infor- mation before purchasing elsewhere; it will pay you.

Household-Matters.

The illustration shows the Godet skirt so very fashionable just now, but let nobody who is not an expert in dressmaking attempt making it with- out a pattern, which you can get at any store in town by sending 30 cents and 1 cent for postage.



Do not spare yourself the trouble of plenty of basting each lining to the outside before putting together, for in this lies the secret of a well fitting skirt. It is not extreme in any sense, and can be worn by a stout or a thin person, without looking ridiculous; It is 4 yards wide and unlike the bell skirt does not hinder, but on the con- trary makes a most comfortable walk- ing dress.

Other fashionable skirts there are, measuring 7 and 8 yards round the

bottom, but a person must be tall and I might add strong to carry the weight of it.

Some people there are who will be in the latest fashion, at the cost of much discomfort to themselves; for what makes a pretty toilet for a drive, is often quite unfitted for a walking dress.

If people would only study this a little more we should see a less num- ber of them dressed in costumes more fitted for a botanical fête, than for a quiet afternoon shopping.

The Godet skirt, with a number of waists made out of the many inexpen- sive materials sold just now, will al- ways look well.

A brushing up of the skirt, with a well got-up waist, will turn out about as nice a dress for ordinary wear as people of limited means can wish for.

Cooking Vegetables.—Some cooks do not think that it matters much how vegetables are cooked as long as they are on the fire for a certain time.

Take corn, for instance, the genuine sweet sort will be well cooked in 20 minutes, but it must be young, and will be all the better if just gathered. No salt in the water, as it is apt to make it hard.

Some corn was sent to the table hard and quite unfit to eat. The cook was heard to say: Why it must be well done; it has been cooking over half an hour.

She never realised that what was ample time for young corn did not apply to an inferior sort.

A little common sense is often wanted in the smallest trifles.

How to store apples.—Apples in- tended for storing for use during the winter months should not be allowed to hang on the trees too long, as then the fruit is apt to fall, and bruised or injured fruit will not keep. Choose, if possible, a fine dry day, and remove the apples from the trees with a pair of strong, sharp pruning-scissors, then rub them over separately and very lightly with a clean soft cloth, and carefully reject any that are not per- fectly sound. Store in a cool dry place, amongst clean dry straw, the latter being arranged in such a manner as to prevent the apples touching each other, and look the fruit over very frequently so that any which have become unsound may be at once re- moved. The darker and more air- tight the store-room or cupboard is, the better the fruit will be preserved. (Agricultural Gazette.)

A recipe for flavouring vinegar; but this, I think, is one of the most popular amongst the many: Take 4 oz. of finely-grated fresh horseradish, and put it into a jar with a drachm of cayenne, 1 oz. of finely-minced onion, and a teaspoonful of salt, and pour over these ingredients 1 quart of boil- ing vinegar; then cover very closely, and leave in a warm place for a fort- night, at the end of which time strain off into small, perfectly dry bottles, cork closely, seal, and store in a suit- able place. MARIE.

Onions as a Medicine.—In every cellar should be a goodly store of onions, not alone on account of the medicinal value as an article of food, but on account also of their positive value to relieve pain when used wholly as a medicine.

We know of no home remedy for ear-ache that is anything like so effective as onion-juice. To prepare it,

wrap a large onion in heavy brown paper, then wet it thoroughly and bury in hot ashes and roast. When tender, extract the juice and put a drop or two of it in the patient's ear and it will bring immediate relief. If the patient be a child he will usually drop off to sleep and awake completely cured. For several years I have, each fall, roasted two or three onions at a time, extracted the juice, put it into a closely corked phial and kept it all winter for use. When needed two or three drops are poured into a spoon, warmed a little and dropped into the ear.

For a cold on the lungs an onion poultice is unsurpassed as a remedy. Slice the onions thin, salt and pepper heavily and fry in a quantity of lard. Put on to a clean cloth and apply as hot as they can be borne to the chest, putting a very thin cloth between.

A cough syrup is frequently made by slicing onions quite thin, sprinkling plentifully with sugar and letting them stand several hours. The syrup that arises is then given, a tablespoonful at a time, every hour or so

and blossom ends. Hold the halves so as not to cover the out surface and squeeze the seed into a tub or barrel. Set the seed in a warm place until fermentation takes place. It will ferment in from 1 to 2 days, according to the atmosphere and heat. After fermentation begins it should stand from 5 to 10 hours, until the strings and pulp separate freely from the seed. Be careful not to let it stand too long, or the seed will sprout and be useless. To test it, put a few seeds into a dish, add water and mash; if the seed separate readily from the pulp, and sink to the bottom, it is ready to clean.

To clean the seed, add about one-half water and stir vigorously for two or three minutes. Let it stand until the seed sinks to the bottom, then pour off the water slowly without wasting the seed; add more water and repeat the washing process until the seed is entirely free from the pulp. Transfer the seed to a fine wire sieve to drain. Then squeeze into balls until dry. Spread thinly on shutters or tables and set in the sun out of winds. When thoroughly dry, store

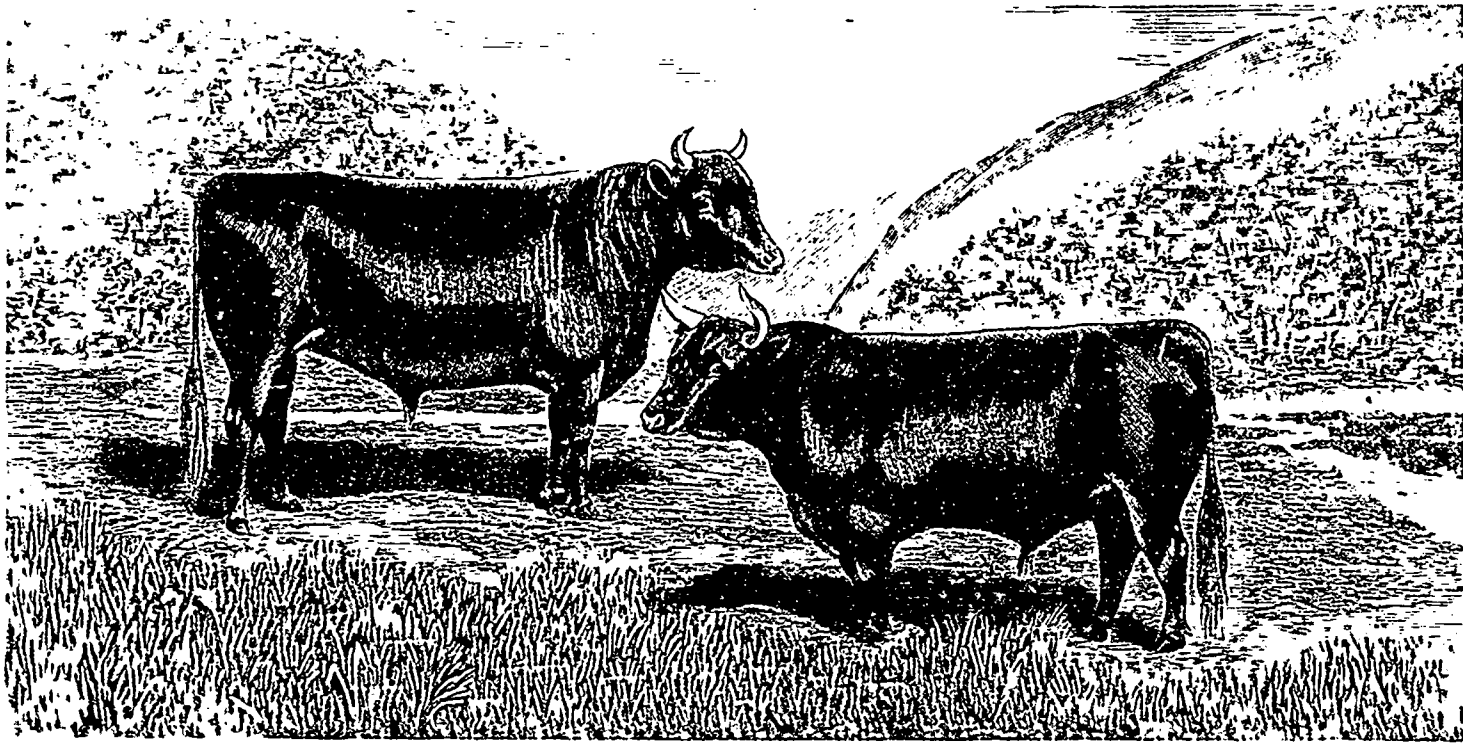
put away in some drawer, box, or cupboard, where they will be kept quite safe from damp until their season comes round again.

NOTE.—In the case of stockings, sometimes the feet have to be rubbed, especially if the wearer sweats at all freely; but this should be done as gently and carefully as possible, or they will very speedily wear through into holes, and cause no end of darning—a branch of needlework which involves a vast amount of patience and no little skill. Before hanging out, too, be careful to pull each one into shape, or the result will not be altogether satisfactory.

A Garment for Baby.—This article of clothing has given me so much comfort with my babies I wish every mother would provide herself with one. To one who has tried crochet shawls, flannel and cashmere squares, flannel wrappers and sacques it will seem superior on account of warmth and adjustable shape. It is knit on needles about one-fourth diameter in

favor in many parts of Britain, as well as in their native home. In general outline they are small but handsome, possessing finely-formed limbs. Their average height is about forty inches, and dressed weight of bullocks is from 400 to 500 pounds, and the average live weight of the cows is from 500 to 600 pounds. They are exceptionally hardy,—will live and thrive in almost any ordinary climate. The Kerry is known as "the poor man's" or the Irish cottar's dairy cow, especially in cold and inferior districts; but the breed also possesses the power of beef production in an eminent degree.

Points.—The true Kerry colors are orange skin with black hair, though specimens with red-brown hair do occur in the purest blood, but more frequently, perhaps, in the Dexter variety than in the others. White patches also appear from time to time. The head is small, fine, tapering, and well-balanced; cheeks lean; muzzle fine; nostrills high, well-placed, and rather open; eyes mild, full, and lively; horns well-sprung, rather up-standing, and smooth, rather thick at



"GAY LAD" AND "TOMMY DODD," KERRY AND DEXTER-KERRY BULLS,

THE PROPERTY OF MR. JAS. ROBERTSON, WARWICK, ENG., FIRST PRIZE WINNERS AT THE DUBLINGTON ROYAL.

A most excellent cough syrup is made by paring and slicing six large onions and cooking them until tender in a quart of good vinegar. Then strain and press to extract all the juice, add a pint of white sugar and boil until reduced to a pint. Bottle and save for use. A dose is from a teaspoonful to a tablespoonful, according to age, every hour or two, according to severity of cold. Care should be taken not to needlessly expose oneself while taking the medicine, as it opens the pores of the skin and renders one liable to take more cold, but with reasonable care it is more effective than the majority of cough syrups found in drug stores. (1)

Onions are an excellent antidote for bites or stings of poisonous insects, such as bees, spiders, etc. Apply a thick slice of onion to the sting or bite, changing frequently for a fresh slice and soon the poison is all extracted.—(Clara Semibaugh Everts.)

How to save tomato seed.—With a sharp knife cut the tomato into halves through the center between the stem

Our subscribers always look forward to the 1st of Oct. as a day of interest.

beyond the reach of mice or insects. If there is a considerable quantity put in an open box in a dry room for a week or two and stir with the hand daily to prevent heating. Label plainly the name of the variety and the day of month and year saved.

How to wash and put away coloured clothes.—These articles should never be rubbed with soap in the usual way, as this invariably destroys the colours to a large extent; but, instead of this, melt down some pieces of pure yellow soap in a sufficient quantity of rain water until a nice lather has been obtained, then dip the articles in this, squeezing them every time with the fingers without twisting, as in wringing, and continue this process until every particle of dirt has been removed, then, if the blouses or stockings are of a woolen material, rinse them well in clean warm water, to which a little borax has been added; but if made of cotton, cambric, or zephyr, &c., rinse in cold, slightly salted water; pass through the wringing machine, each article being neatly folded, and hang in the air until perfectly dry, when they should be tightly rolled up, and

plain knitting or garter stitch, and of the softest quality of Germantown wool, which is sold in long hanks. Cast on 150 stitches, knit four rows plain, then tie in the blue and knit two rows, then two white, four blue, two white, two blue, then about ninety of white and put the border in like the other end. I wrap my babies in this every day. When soiled, wash once or twice in dry flour or meal. A row means across and return.—(Mrs. N. T. G.)

Live-Stock.

Kerries and Dexter-Kerries

The cattle represented on our first page, although not introduced into Canada, are the only pure bred native breed of cattle in Ireland that possess much merit. They have been bred pure for a great number of years, but only in an aimless way until within a comparatively recent period. For a considerable time their excellent dairy qualities have won for them much

the base, but gently tapering and tipped with black; ears small, fine, and of rich orange color within. The neck is straight and fine. The body is well-rounded, the back being straight and even and the ribs well-sprung. The chest is fairly deep and broad; shoulders sloping and wethers fine; hind-quarters proportionately large, but narrow at the rumps and high at the thighs; udder well-rounded, full, and capricious, in line with the belly and well up behind; teats large, well-placed, and rather far apart. The fore legs are short and straight; hind legs squarely placed and well-proportioned.

Mr. James Robertson (England), who has done a great deal to advance the interests of the Kerries, makes the following observations: "I have made no extended experiments and am unaware of any having been made; but my experience of an average Kerry cow is that she will yield twelve quarts of milk per day, and ten to eleven quarts of milk will make a pound of butter. My herd is kept on prime old pasture which has been most judiciously laid down. The part the Kerry plays most pro-

minently in the agriculture of the country is that they are bred by small farmers in the Kerry Mountains, where they have a temperature and climate much resembling that of the Welsh Mountains. They are kept in and a district until they are from and one-half to three years old, when they are bought up in the local fairs in Kerry and elsewhere for the richer lands of surrounding districts; in fact, the popular idea is that if land is not good enough to fatten Shorthorn cattle it will be occupied by Kerries.

"Considering the utter neglect with which the Kerry has been treated—no method whatever being followed in their breeding—it is a wonder that they are not extinct long ago. They are very easily kept. Two will consume very little more food than one large Shorthorn, and when crossed with it make both good dairy cows and butchers' beasts. The Kerry cattle are extremely hardy, not liable to disease, are handsome, docile, pretty in the park or paddock, and excellent butter makers. My champion bull, Busaco, who has never been beaten in a show-yard, and who obtained Royal prizes, measured 68 inches in girth, 36 in height, and 34 from tail to top of shoulder."

The Dexter variety, or Dexter-Kerries, though now distinctly, in all senses of the term, a pure Kerry, whatever may have been its origin, is a much more compact, more substantial and lower-set animal than the Kerry proper. The leg bones are shorter and more substantial, the neck thicker and stouter, and the horns heavier, not so elevated and airy, and the head heavier and so deer-like as in the case of the original Kerry. It is claimed by some authorities that they contain Devon blood; others are of the opinion that their difference is due only to selection. The name Dexter comes from the name of a man who was the founder of this variety.

Our Illustration. — The Kerry bull, Say Lad, the property of Mr. James Robertson. The Firs, Hatton, near Warwick, Eng, number in Herd Book, 288, won first prize at the Oxford Shire Show, first at Bournemouth, and also at the Royal at Darlington, and has, therefore, an unbeaten record. As regards symmetry and style, this bull leaves but little to be desired, whilst his exquisite touch and quality cannot fail to captivate. Our engraving has been re-engraved from the English Live Stock Journal.

The Dexter-Kerry bull, Tommy Dodd, also the property of Mr. James Robertson, is of the miniature type. He has several first prizes to his credit, and with luck cannot fail to add further honors to his list as time goes on. He is very refined in bone and very true in character and quality. This bull was sold on July 11, among 52 others of Mr. James Robertson's for fifty guineas, to the Prince of Wales.

Mr. Robertson has held two previous sales. At the one recently held, the animals (all females but Tommy Dodd) averaged £2 a head more than at former sales. The highest price paid for a female was forty guineas for Gilia, sold to A. N. Cookson. The average for the 51 head was £18 2s. 11d., making a total of £961 16s., which shows the high value set upon the breed where well known.

The Stock Feeding Problem

Late July and early August rains wonderfully improved the barley, oat and other grain crops, so that the

shortage in hay will result in the extra straw being more carefully utilized than in past seasons. The corn and root outlook is generally reported very bright now, and there is far greater acreage of the former than usual. A vastly increased area of millet, Hungarian, rape, rye, white turnips, etc., for supplementary fall feeding, was also sown this season in order to remedy the serious effects of drought. Seedsmen report the run on these classes of seed as something enormous; especially so in the case of rape, the supply of which was completely exhausted.

The stock feeding question will, however, still be a serious one in some sections during the coming winter. Mr. C. P. Goodrich writes in the *Prairie Farmer* that he does not believe it unreasonable to hope that the short hay crop may prove a blessing to hundreds of farmers by compelling them to adopt better methods of saving their forage, and above all to build silos, as did his son, after a tremendous flood, a few years ago, had swept away 120 acres of bottom land hay, which was being depended upon to feed 75 head of cattle and a number of horses. The young man had 90 acres of corn and 25 acres of clover on upland. It was his custom to break off the ears of corn and allow the cattle to browse upon the stalks for a short time. On

cows did better in giving milk than they had done in previous summers, and the butter was better flavored, because the cows had eaten fewer weeds. During the severe drought last year that summer silo caused the cows to produce about as well as if they had had the best of pasture. No other cows in that part of the county could begin to compare with them in the amount of butter they produced. "It was a perfect bonanza," says Mr. Goodrich.

LIVE STOCK AND DAIRY.

Guernsey Cows As Butter Producers.

Perhaps no breeds have so honestly won their high rank as butter producers as have the Guernseys. Never forced for large records, they have always stood upon the work they would do at the pail or churn. It is especially gratifying to notice how they are received in the sections where they have been introduced. Go into New England, down the Hudson in New York, eastern Pennsylvania, Delaware, New Jersey and Wisconsin and you will see not only fine herds of thoroughbreds, but you will notice

In the World's fair tests, there is but little doubt that the Jerseys as a breed rank first according to the rules. The Guernseys follow a close second. If the rules are thrown aside and the data secured are discussed under conditions the dairymen of the country are placed and come in every day contact with, the Guernseys have the two leading cows in the cheese test. In the butter test they are represented by the best cows, aside from two Jerseys, which were exceptional cows for any breed. In cost per pound of products the Guernseys won, as the following table shows:

	Guernsey	Jersey	Shorthorn
1st test cheese,	6.7c	6.7c	11.3c
2d test butter,	13.4c	13.3c	15.9c
3d test butter,	12.8c	13.3c	15.8c
Average of butter tests,	13.1c	13.3c	15.8c

Wherever the Guernseys are introduced they win their way by their own straightforward work in the dairy. Their large size commends them to the farmers who are grading up good butter herds. The golden color of the milk and butter makes them salable in all markets. The World's fair tests have relegated into history the tests so publicly heralded in the past. The Guernsey met her near relative and butter cow, the Jersey, in such a manner that it points out to the dairyman that the dairy cow is an individual animal and that these are found in both breeds. The results of the tests printed above show the Guernsey to be the most economical producers of butter; and such golden, yellow butter, too! There is no mottled color to it. This true, golden, cow color is the most attractive feature on the market. It has truly been said that the Guernsey has but to be tried to be appreciated.—W. H. Caldwell, Hillsboro Co, N H.

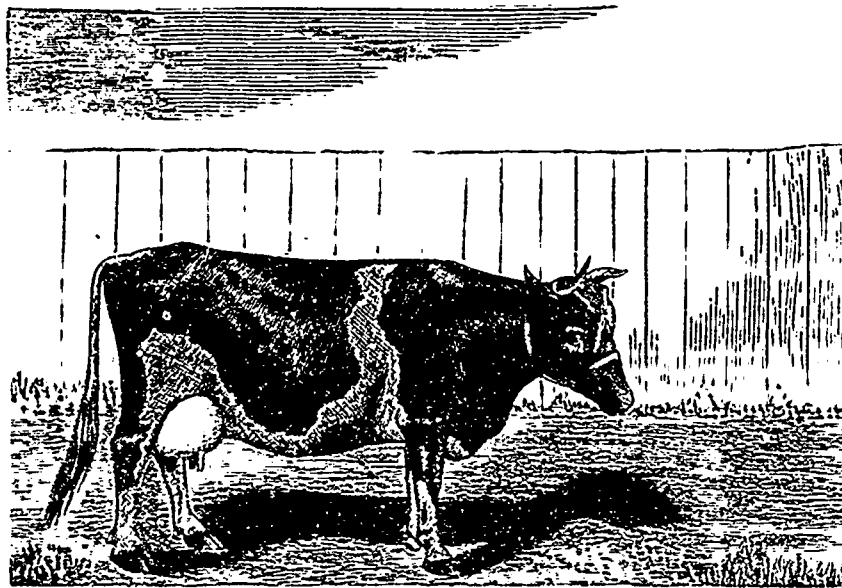
APPLE GROWERS IN CONVENTION.

PROVINCE OF QUEBEC POMOLOGICAL SOCIETY AT COMO.

Fruit to be Shipped to England by the Dominion Government's Cold Storage Steamers—How Fruit can be Preserved.

Como, August 21.—Butter and dairy products are not the only specimens from Canadian farms which will be shipped to England in the special refrigerator steamer provided by the Government. In answer to an urgent request from the Ontario Fruit Growers' Association, two shipments of apples and stone fruit from the Niagara district will be sent across the herring pond during September, and should the experiments prove a success other shipments will follow.

This information was given by Prof. Craig, of the Experimental Farm, Ottawa, to the members of the Province of Quebec Pomological and Fruit Growing Society, who last evening inaugurated their second summer convention by a meeting in the school-house at Como. The pretty building proved altogether too small for the delegates and their lady friends, however, and many stood in the doorway and at the open windows on both sides. The chair was occupied by the president of the society, Mr. R. W. Shepherd, jr., and among the many attentive listeners in the body of the hall were Sir Henry and Lady Joly de Lotbinière, Mr. J. C. Chapais, Assistant Dominion Dairy Commissioner,



THOROUGHbred GUERNSEY DAIRY COW.

ONE OF THE BEST AT THE WORLD'S FAIR.

this particular season, a round silo was built, having a 30 feet inside diameter, and 25 feet high to the eaves. Into this he cut 40 acres of good, well-earred corn, which was planted thin so as to be heavily earred. After he had been feeding ensilage a short time, he discovered that he had not stock enough for the food. He therefore got 25 more cows and young stock. He wintered his 100 head of cattle and his horses in fine shape, and had in the spring half his clover hay to sell a \$12 per ton. He had milked over 80 cows during the winter, and said he never had cows produce so well in winter before, besides having never fed them at so small a cost. That winter's experience taught him that silos were "all right," and he put up another smaller one for summer feeding, which enabled him to get through the summer of 1893 on 60 acres of pasture for his 100 head. They were fed ensilage twice a day, and so well did they like it that by four o'clock every afternoon they were at the gate waiting to come to the barn for their feed. They allowed the timothy and clover to grow up so well in the pasture that several tons of hay were cut therefrom. Besides this, the

that the dairymen of those sections have been impressed with their fine, substantial, business-like appearance and golden-colored products, and have drawn on the breed to grade up and improve the dairy stock of those sections. Their ability to produce butter fat and butter at a low cost demands the attention of all dairymen. At the New-York experiment station several of the dairy breeds have been carefully tested. The recently-issued annual report of the director gives the results of the first two periods of lactation. In both instances the Guernseys produced butter fat at the least cost, as the results below show: First period of lactation; Guernsey 18.4c, Jersey 20c, Devon 23c, Ayrshire 24.3c, American Holderness 22.8c, Holstein-Friesian 26.3c. Second period of lactation. Guernsey 15.6c, Jersey 13.5c, Devon 13c, Ayrshire 24.8c, American Holderness 22.8c, Holstein-Friesian 26.4c. The results of the Geneva experiments agree with the work done at the N J exp sta and with the average results of the butter tests at the World's fair. The cost per pound of butter produced at the N J exp sta was Guernsey 15.3c, Jersey 17.9c, Ayrshire 20.6, Shorthorn 20.8c, Holstein 22.4c.

Prof. Craig, Experimental Farm, Ottawa; Rev. Canon Fulton, St. Vincent de Paul; Rev. J. Edgar Hill, Montreal; Rev. Brother Norbert, Montreal; Messrs J. M. Fisk, Abbotsford; W. M. Patterson, Clarendville; H. W. Benyon, Montreal; James Johnston, Montreal; G. B. Edwards, Covey Hill; R. B. Whyte, Ottawa; M. Newman, Lachine Rapide; G. R. Robertson, Montreal; A. S. Henshaw, Montreal; J. Robinson, Mayor Como; I. J. Gibb, Como, and W. W. Dunlop, secretary, Outremont.

The president opened the proceedings with an able address and was followed by Prof. Craig, who gave an excellent lecture on "Spraying," a full report of which was published in the *Star* a short time ago. He advocated the use of the Bordeaux mixture, which is composed of four pounds of copper sulphate, four pounds of unslaked lime to fifty gallons of water, but warned those present that spraying alone will not preserve the orchards. The time had come when the orchards must be manured and carefully fostered. The old method was to take a crop of hay off the fruit orchard, but the time for that had gone by and those who wished to preserve their good fruit crops would have to assist the trees and at least see that they were not robbed of the goodness of the soil. Prof. Craig answered many questions and advised those who had only time to spray once a year to do this just before the blossoms opened. He would certainly discourage the use of mineral fertilizer in the autumn.

Many delegates gave the result of their experiments with various fruits. The best six varieties of apples for profit in the Ottawa Valley was the next question discussed, the president holding that these were the Duchess Wealthy, Fameuse, Canada Red, Winter St. Lawrence and Macintosh Red. Mr. Shepherd has exported most of these apples and finds a good market for them in England, France and Germany. Other varieties suggested by various delegates were the Ben Davis, Non Pareil, English Russet, Scotch Winter and Yellow Transparent.

Cold storage was then taken up. Prof. Craig defining this as putting fruit into a temperature so low that no interior chemical change will take place. When this can be done the fruit may be stored indefinitely. Last year he had tried storing apples, pears, peaches and grapes at a temperature of 34 degrees. This arrested the ripening process, which continued just the same as though it had never been stopped, when the fruit was taken from storage. The fruit should be picked before it is quite ripe if the best results are looked for, and then it may be easily kept until mid-winter. Stone fruit did not give such good results as apples and pears, even Bartlett's being perfect at the end of February. The Professor advised his hearers to try and go in for some system of district cold storage warehouses, where by paying a small fee, fruit could be stored in time of glut until the market was open. This question of cold storage had been taken up by those who grow for export, and the Ontario fruit men had followed the lead of the butter men in asking the Government to provide them with some means of cold storage, so that perfect samples of Canadian fruit may be put on the English market. The Dominion Government had therefore made arrangements for two trial shipments in butterships. The fruit will be picked in the Niagara district and carefully wrapped in tissue paper and packed each box bearing the grower's name. Should the experiment prove a success, other shipments

will follow, and the speaker advised the delegates to see that Quebec was not left out in the cold in this matter.

To day the members of the society are being entertained by the Trappist fathers, at Oka, where more papers are being read and speeches delivered.

Sir Henri and Lady Joly de Lotbinière, who are attending the Pomological Convention at Como, are to be the guests of the Trappists at Oka for a few days.—*Star*.

FRIENDS IN THE GARDEN.

We should Distinguish Between Insects that are Useful and Injurious.

We should learn to distinguish between foes and friends in the garden, and, if necessary, the children should be taught early the difference between insects and birds that do harm to plants and those that do good. Snakes, toads and lizards, instead of being injurious to the plants, are always invaluable helps in keeping down the injurious insects. Snakes may be repulsive in appearance, and poisonous ones very dangerous, but the ordinary ground snakes will not hurt one, and they will keep down mice, bugs and insects as nothing else can. As a rule the noxious insects are in the greatest numbers in our gardens, and hence toads, lizards and snakes that eat all that come near them destroy more of the foes than enemies. I should never think of killing one of these creatures in the garden, but would be more inclined to protect them, and even import them into the garden. I have seen a small gray lizard clean off the worms from a field of cabbages as fast as they could multiply. Attracted by the fat feast the lizard returned every day, and he would make trips up and down the rows of cabbages until not a worm could be found.

A few toads in hotbeds and cold-frees are of inestimable value. They will keep down all insects that begin to show themselves, finding them under leaves and stalks that hide them from an ordinary observer. In Paris toads are regularly caught and sold to gardeners for insect hunting in their green houses. And yet many boys and older people destroy them ruthlessly as soon as they discover them in the garden. The toads will eat cutworms by the wholesale if they can find them, and I have seen them devour potato bugs in great numbers when deprived of more palatable food.

But we have also friends among insects, and it is well to bear in mind that they can do much good for us. The so-called lace-wing insects are nearly all friendly to us. They live on other insects, and do not eat any of the plant. If a few can be turned loose in a greenhouse they will destroy all insects other than those of their own class. In this class are included the ant-lions, aphid lions and dragon flies. For every one of these we kill we must expect a dozen enemies to spring into active existence that must be destroyed by spraying.

The tiger-beetles and the lady beetles, as well as the long legged ground beetles, are all insect eaters, and they go around the garden in search of their prey continually. They will attack large grubs and other insects, as well as the very small plant lice that hide behind the leaves. These beetles must be distinguished from others that destroy the plants. The large robber-flies are also great friends in the garden, and they will attack all kinds of

grubs and insects to devour. They are particularly eager to destroy aphids, and in this respect their presence should be greatly encouraged.—*Gorhamtown Telegraph*.

TO APPLE-GROWERS.

Be Careful as well as Honest.

The National Apple Shippers' Association desires to acquaint apple-growers of the country with the aims of the association and to ask their aid in the reforms proposed. Dealers, shippers and growers must prosper together or not at all. In this view of mutual interest, the following suggestions are submitted to orchardists, representing the result of careful thought and discussion:

1. It will be to the advantage of all interested in apples—growers, dealers and consumers—if there is a recognized size and quality of package, as well as for size and quality of fruit, both in what is now known as No. 1 and No. 2 apples. A good size of package is easily suggested—one that has been in use for some years by the best class of western dealers and larger orchardists. A full-size flour barrel (that is, a barrel with 17½ inch diameter of head and 28½ inch length of stave) will meet all requirements, giving a good, generous-looking barrel, and when well shaken down and pressed, holding three bushels of apples. In some sections of the West, the barrel now in use is smaller than this, but these barrels are invariably discriminated against in price by the better class of traders; in fact, they are generally spoken of as "the snide barrels." In a good apple year like the present, the difference of a peck of apples in a barrel will mean to the grower not more than five cents in the orchard; but when the apple comes to sell in the market, the small barrel will bring on an average at least 25 cents less. Besides, the trade is so generally convinced that a package "snide" in size generally contains fruit "snide" in quality, that they avoid it as far as possible, even at a fair difference in price, and as a consequence in times of oversupply they are the ones neglected, while the more honest looking, if not really more honest, packages are given more prominence and consequently better sale.

2. It is not so easy to arrive at a proper standard for size and quality of fruit, for the reason that sizes and qualities of the same varieties vary considerably in different sections and in different seasons. The standard adopted by the association will come as near to properly covering the ground as is possible without naming all varieties of apples, and it is recommended to your favorable attention:

"That the grade No. 1 shall be divided into two classes, A and B. That the standard for size for class A shall be not less than 2½ inches in diameter and shall include such varieties as the Ben Davis, Willow Twig, Baldwin, Greening, and other varieties kindred in size. That the standard for class B shall be not less than 2 inches in diameter and shall include such varieties as Romanite, Russets, Winesap, Jonathan, Missouri, Pippin, and other varieties kindred in size. And, further, that No. 1 apples shall be at time of packing practically free from the action of worms, or defacement of surface or breaking of skin, and shall be hand-picked from the tree."

This standard does not prevent any grower who may have good apples below the standard of size in either

class from marketing them for what they are. Occasionally, some really choice fruit might run below the standard, but the exceptions are so rare that there can be little objection to the standard as fixed.

These suggestions are to the interest of every intelligent, capable apple grower. If may not suit his shiftless neighbor when he find that his neglected fruit will not grade as No. 1. But that class has no legitimate place in the industry. To increase the consumption of apples, the consumer must be pleased, and nothing will tend to that end so much as to furnish him with a better, rather than a poorer apple than he expected when he made his purchase. Let the barrel branded No. 1 be not only No. 1, but *fine*; and let the purchaser find the barrel branded No. 2, not oidor apples, but good fruit. Each barrel sold under this plan will make a customer for two more, and a crop of apples cannot be raised in this country too large to sell at fair prices, and that without going to Europe for a market for the surplus.

It may be too much to hope that all that is outlined can be accomplished this year, but by cooperation a long step can be made toward it. One thing is sure in this big crop year, the grower who most closely follows the suggestions will be the man best satisfied with the results of his year's work.

The association is especially anxious to have growers understand that the prosperity of both growers and legitimate dealers are bound up together. Anything advancing the interests of one is for the benefit of the other, and for that reason it urges hearty cooperation between the two interests, to the end that the apple trade may be further extended upon a sound basis with a reasonable profit to all concerned. The apple is the king of fruits, and its use can be greatly enlarged by honesty in all dealings and intelligent organized effort upon the part of the growers and dealers.

The Dairy.

STRAW AS A STOCK FOOD.

The utter neglect of the value of straw and the waste of so many million tons annually by the American farmer, says J. S. Woodward, amounts almost to a crime. In no other country is straw so wasted, and if the present scarcity of hay shall lead our farmers to better appreciate straw as a food for stock, and of their taking better care of it, the frost and drought that have so disastrously affected the grass crop, will not have been an unmitigated evil.

All over the great grain-growing sections of the boundless West the nightly fires which so universally illumine the sky are glowing evidences of the ignorance and folly of our farmers. With them straw seems to be regarded as a necessary evil connected with the growing of grain, and the match is applied as the readiest means of getting it out of the way of the plow for the next crop. Here in the East we make a better use of it, but even here we do not half appreciate it. Most farmers pile it up in unshapely heaps, which they call stacks, but so slovenly done that water saturates it from top to bottom, and the cattle are allowed to run about these during winter to work it down into what they call manure, but which is little more than wet straw,

Very few people anywhere realize its value as stock food. Few will believe that it is more than half as valuable as the best timothy hay, and that, when properly housed and fed, stock will thrive when straw constitutes a large part of their food.

Its digestible constituents, which really cover the true measure of value, as compared with timothy hay, are albuminoids as nine to thirty-four; fiber, nineteen to sixteen; carbohydrates, seventeen to twenty-eight; fat, four to twelve; or, in money value, if the best timothy hay is worth \$12, straw is worth \$9.00.

But it must not be inferred that ordinary straw, as piled up and soaked from top to ground, has any such value. It is only good, bright, clean-housed straw, of which the same can be said of the timothy hay. If stacked, and poorly stacked at that, more than half its value would be wasted. Nor must it be inferred that stock will thrive if fed wholly on even the best barn-housed straw. The fact is, straw is very deficient in albuminoids and fat; its ratio is only one to thirty, and animals whose only food is straw would starve to death if fed long enough—starve because the nerves and muscles would not be sufficiently nourished. Nevertheless, good barn housed straw makes a capital food and is well worth the expense of shelters in which to house it. Even timothy hay alone is not a profitable food. Its ratio, one to nine, is too wide for the best results.

Suppose an animal be fed a mixture of clover hay and straw, half and half, the digestible albuminoids would be 4.1%, while in timothy hay it would be only 3.4%. The digestible carbohydrates in the mixture would be 37.6%, while in timothy it would be 45.2. So it will be seen that this mixture would be much superior to the timothy.

But if to the straw be added one fifth its weight of cotton seed meal the mixture would contain 7.2% albuminoids to 45% carbohydrates, the nutritive ratio of which would be 1 to 6.5, which is much superior to timothy hay. If a ton of timothy hay be fed to stock they will get of digestible elements sixty-eight pounds of albuminoids, 904 pounds of carbohydrates, and twenty-four pounds fat. If a ton of mixture be made containing 1,800 pounds straw and 200 pounds cotton seed meal it would contain 78.8 pounds albuminoids, 618.4 pounds carbohydrates, and 238 fat, with a ratio of one to eight and one-half, a ration on which stock would thrive better than on the best timothy hay, and costing but a fraction as much.

But in order to have stock do their "level best" with straw as the basis of food some succulent food should be included with the daily ration. For this purpose nothing is better or cheaper, or more available than corn silage. In the absence of this, any kind of roots will answer. Or, if no kind of succulent food can be provided, then a mixture of oil meal and cotton seed meal, or of wheat bran and both the meals would be better than the cotton seed meal alone.

The difficulty in feeding straw and cotton seed meal is the liability of these two foods to induce costiveness, as that is the tendency of both these foods, and by putting in a portion of linseed meal, or this and wheat bran, this tendency would be corrected.

From present indications cotton seed meal will be cheap the coming winter, and every man who is so fortunate as to have a straw crop of any kind should be very careful to put it under cover if possible; if not, to see to it that it be put into a nice, compact

stack, well topped out, so as to preserve it in the best possible shape, and thus by the use of the other foods as indicated, he can keep his stock in tip-top order, and in nine cases out of ten he will find when spring comes he has a surplus of hay. Of course wheat straw is what has been considered, as more than 90% of all straw raised in this country is wheat. Many other straws are better than wheat even, and of course what has been said of that is more applicable to them. So take good care of all the straw.—*Hoard.*

STABLING COWS IN FLY TIME.

ED. HOARD'S DAIRYMAN—This is one of those questions that occur annually. It is always old and always new. It is interesting always to the dairyman because it is important. To those who do not believe in "fussing" with cows it is not very interesting, but to the dairyman who is trying to work up in his calling it is a means of profit he cannot afford to let slip. Many men will tell you that they do not believe it is good for cows to be shut up in a hot stable in hot weather; these men, however, are those who never tried stabling their cows during fly time. No one who ever tried it will tell you it is not best for the cows. Would't you rather stay indoors out of the hot sun during the heat of the day? Of course you would; so would the cows. If you wanted to take a nice noontime nap would't you rather go into a nice, cool room, pull the curtains down so if there should chance to be a fly bite and buzz will not disturb you? Certainly you would; so would the cow. If you don't believe it, try it; that will be proof enough.

The theory is all right and so is the practice. You can just as well do it as not. It costs nothing, not even time, and it brings in money and saves you money. It brings in money because the cows will give more milk, and it saves more money because you will have a nice pile of manure by fall to put on your land right where you need it instead of having it dropped in some wallow hole or in some woodland or thicket where it is utterly wasted or where it is not needed at all. Cows do not feed much during the heat of day in fly time but get where they can best protect themselves from the flies and there fight them to the best of their ability.

I do not think fly screens are practicable. It is impossible to keep flies out of a cow stable by having screen doors etc., the same as we do for dwelling houses. By darkening the stable, however, they do not bother the cows and they are allowed to rest in peace. We darken the windows by hanging up old fertilizer sacks. When they are ripped open they are simply a piece of loosely woven canvas or burlap and by using two of these making them double for each window, it darkens the stable just right and yet they are open enough so that the air can readily pass through them. If the wind blows hard they can be fastened with hooks at the sides and bottom or tacked all round just as you would a wire screen, and your stable is both cool and dark.

We have practiced stabling our cows during the day in fly time for several seasons and we would no more give it up than we would give up keeping them in the stable night and day in severe cold weather in winter. They are fed hay and grain in the morning, (unless they are dry, when they are only fed hay) bedded down with good, clean straw, the cover to the watering

trough (which is full of good, clean water) left up, and are not molested until about five o'clock in the afternoon when they are given more water, fed a light feed of hay, milked, given their grain and then turned out for the night. They enjoy themselves then in pasture even if it is dry and short. Is this "fussing" with cows? If it is, all right. It is simply making them comfortable and unless they are made comfortable they certainly will not pay. The only extra labor involved is cleaning the stable, and this is nearly offset by being relieved of putting them in the stable but once each day.

Michigan. COLON C. LILLIE.

GOOD COW JUDGMENT

We have sometime thought that old and experienced dairy farmers were about as likely to have a lot of notions that the used in place of sound judgment as any body else. It is very easy to drop into the "notion" department and continue to do business. For instance, we have heard since we can remember that one of the points of a good cow was "a deep flank." There is no foundation in real dairy experience for that feature. On the contrary, it is an indication of a thick, beefy tendency in the animal. The high arching flank, one which makes room for the udder is a much truer dairy sign. The breeders of the various dairy breeds have a store of breed marks which they are apt to insist on, and which have no significance whatever as indicating the functional capacity of their cows for the real work of a dairy cow. The dark muzzle, tongue and points of a Jersey are diametrically met in the Guernsey by a light tongue, moaly muzzle and light points. The color and markings so tenaciously held by many Holstein breeders are simply so many notions, having no bearing on the power or capacity of their cows. In Denmark, that great dairy country, where the Jutland breed of cattle are mainly used, one would think the farmers by this time would have their judgment down to "hard pan" on the external signs of a good cow. But a writer in the *Farming World*, of Dublin, tells us that if the calves do not show distinctly the Jutland "breed markings," they are "either killed or sold off the place." The writer adds:

"There was pointed out to me a Jutland cow, a little under the average size, but with an extremely well developed udder, and I was informed, about the best milker at present on the place, yet because she was undersized her calves were discarded."

This shows that we need to guard well our natural tendency to fall into mere fad notions about cows. The best way is for every farmer to make a systematic study of cows points with a note book in hand. Notice for instance, all the best cows in the neighborhood, and see how they agree on the question of a deep flank, large pouch, high rugged back bone, and rising pelvic arch at the root of the tail; add to this a full bright eye, and strong nerve power. Of course, all these points are to be coupled with good udder capacity.—*Hoard.*

Prof. Henry on Skim Milk.—Is it Worth 20 cts. a Hundred?—His Opinion of the Skim Milk from Certain Creameries.

In answer to a writer in the *Breeders' Gazette* who asked whether he could afford to pay 20 cts. per 100 for

skim milk to feed pigs, with hogs selling at 4 1/2 cts. per 100 lbs. live weight, Prof. W. A. Henry, Director of the Wisconsin Experiment Station, made the following statement, which will serve as a guide in buying or selling milk:

As a bare proposition with no contingencies I would say, yes. For young pigs the feeder can find nothing equal to skim milk. It gives them a start that nothing else can. For such, feed three pounds of skim milk to one of corn meal. A mixture of half corn meal and half shorts is perhaps more satisfactory from a practical standpoint, though not theoretically. I think shorts are less harsh in the young pig's stomach. Certainly pigs fed shorts and milk do wonderfully well, while theoretically corn meal is the complement of the milk. As the pigs grow older, unless there is milk in abundance, reduce the proportion of milk gradually.

One pound of milk to each pound of grain with fattening hogs makes the grain wonderfully effective, and even half a pound of milk to one of grain will show good results. Under favorable conditions, where there are no serious losses or accidents and everything goes right, one can easily get 20 cts. a hundred out of his skim milk after reasonable allowance for cost of all the grain with hogs at four and one half cents live weight. But it is not fair to allow the skim milk all of its value in such cases. A part of the value comes from combining it with corn or other feeds, and these should be credited somewhat above their market value when used in combination. Again losses are almost sure to occur in handling stock, and all the theoretical value of the feed cannot be allowed in purchasing it. Fifteen cents per hundred is therefore, I think, as much as one dare allow for separator skim milk. Skim milk from deep setting as ordinarily conducted leaves more fat in the milk, and home-made skim milk is often far superior to that of the creamery for pig-feeding. Too many creameries allow their skim milk tank to be germ-breeders, and all sorts of ferments grow there. Then, too often, the washings of the factory are sent up into the tank, and this further reduces the value of the milk through dilution. I know of creameries where I should consider 10 cents per hundred a high value for the skim milk, owing to dilution and the filthy condition of the tank.

As evidence of what may be accomplished by "intensive farming," Mr. D. M. Macpherson, the well known proprietor of the Allen Grove Cheese Factories at Lancaster, Ont., and who was present at the Vermont Dairyman's meeting last winter, writes us (1) as follows:

Lancaster, Ont, July 9, '95.

MR. EDITOR,

Dear Sir:—I receive the *Advocate* regularly and read with pleasure and profit the many articles written in the interests of farmers in general; your efforts in these particulars should be generally appreciated and your paper receive wide circulation.

A thought just struck me to invite you to come up to my place and inspect the work I am doing in regard to improved farming methods and the actual results of same as shown on my farm. Am busy securing the hay, which is an excellent crop, averaging

(1) Editor of the *Vermont Farmers' Advocate*.

three to four tons per acre. The grain crop will be ready to harvest in a few days.

As a matter to induce you to come, I think I can show you some things that have never been attained in farm practice, i. e., to produce an estimated crop value during this summer of over \$5,000, on 120 acres of land, in corn fodder, grain, hay, milk and pork. 70 odd milk cows pasturing on 35 acres, giving 1,500 to 1,800 pounds per day, over 100 tons of hay from 35 acres, a prospect of 700 to 800 bushels of grain from 18 acres, and 700 tons of corn from 30 acres, and 70 pigs pasturing on 2½ acres.

Yours truly,
D. M. MACPHERSON.

CANADIAN DAIRY NOTES.

ED. HOARD'S DAIRYMAN:—The cheese markets here have been almost at a stand-still during the last few weeks. When the first half of June make was put upon the market from 8½ to 8½c was bid for it. The factory-men were, however, loth to sell at those figures, and decided to hold for a week or two, thinking perhaps that the severe drouth which was becoming general all over the country would considerably lessen the production and thereby cause the price to go still higher. But this prediction was not fulfilled. Towards the end of June the market took another drop, leaving the factory-men with nearly all the June make unsold and the ruling price for fine goods only 8 cents. All June make is now being sold at this figure with a few special lots selling as high as 8½ cents.

The market this week is some hat brighter and firmer. Western Ontario factorymen are now willing to let their Junes go at from 8 to 8½c, consequently it is expected that a large share of the goods on hand will be sold this week. Reports from the Eastern Ontario markets show that factorymen are selling for from 7½ to 8 cents. Some of the very fine factories in Western Ontario are holding their Junes for 8½c. They may perhaps get it, as their factory buildings are well equipped for holding cheese for a few weeks. Besides the nights during the dry period have been comparatively cool, making the holding of cheese in the factories less dangerous. The principle of holding cheese in the factories for a very long time is not a good one. Unless there are good prospects of a considerable rise in prices, factorymen will fare better to sell their cheese when ready for shipping.

One peculiarity of the cheese trade this year is the large decrease in the exports. The total exports of cheese from Montreal and New York from the beginning of the season to close of last week (July 13), show the very large decrease of 274,965 boxes.

It may appear somewhat difficult to reconcile this fact with the continued low prices. It would seem as if the dry weather were having a serious effect upon the output, and that these low prices would not continue much longer. It will take sometime, however, before the real cause of low prices will be much effected by the shortage, if this is one. Until the British dealer has unloaded his old stock, he will not be very anxious about securing new goods. It will be to his own interest to keep the price of the latter as low as possible till the old stock is worked off. This he seems determined to do, and to keep up for a while longer, as the reports of old stock still on hand in many places would indicate.

It must, however, be born in mind that, though there has been a considerable shrinkage in the make during June as compared with last year, yet the very large decrease in the export, especially from Canada is due largely to the fact that the larger number of factories have been holding their goods and that a large share of the cheese moved from the factories have gone into cold storage on this side of the water.

Notwithstanding these important factors, there does appear to be a reasonable prospect of higher prices for cheese. They may, however, not come soon enough to give the factoryman the advantage of them for his summer goods.

During the past year or two Canadian dairymen have been watching with considerable anxiety our butter market and the development of that branch of dairying. Prices have been at a very low ebb for several months past, rendering it somewhat difficult for the creamerymen to return a profitable dividend to the farmer for his milk.

The butter market just now, however, seems to have a much brighter outlook than it has had for sometime. Though the prices have not advanced very much, a better feeling prevails and a good steady demand for fine goods continues. Prices this week range from 15 to 16c for fine creamery, with a few sales at 17c, and 13 to 15c for fine dairy.

The cold storage system of transportation, recently inaugurated by the Dominion Government, has probably had a stimulating effect upon the butter market here. By this system our creamery butter will be sent across weekly or fortnightly in a fresh condition. If the quality is good and the shipments are regular and can be depended upon to arrive in good condition there should not be very much difficulty in establishing a market and in creating a demand for Canadian butter. The creamerymen will have to be satisfied for awhile with less than the highest quotations for butter till these goods are known and have acquired the reputation for excellence that Canadian cheese has. When this is accomplished and a regular system of transportation carried out, there does not seem to be any adequate reason why in a few years our export butter trade should not be equal in importance to our cheese trade.

Already two shipments of butter have been made under this new system, and considerable interest is being manifested in the result. If they prove successful, and it is to be hoped they will, the butter industry will receive additional stimulus and will be placed upon a basis that should ensure its success in the future.

The arrangements for this system of cold storage transportation have been under the able management of Prof. J. W. Robertson, the Dairy Commissioner. Several steamships will be fitted up with insulated and refrigerator chambers for the carriage of butter from the cold storage warehouse in Montreal. These steamers will run to Liverpool, Bristol, and Glasgow, and a weekly or fortnightly service will be provided. Refrigerator cars will be run on the main railway lines leading to Montreal, so as to cover the principal butter districts of Quebec and Ontario. This service will be weekly, and arranged so that small lots of butter can be picked up at all the stations and at connecting points with branch lines. Cold storage facilities are provided at Montreal for storing

the butter during the interval between the arrival of the train and the departure of the vessel.

The rates for cold storage for butter intended for shipment by the refrigerator steamships are somewhat lower than the usual charges for cold storage. The rates via rail and steamship will be the same as those for butter and cheese shipped in the usual way for the current week. The Government bears the expense of the cold storage facilities on board steamship, and also the expenses in connection with the refrigerator car service.

It is recommended that no butter be shipped from the creamery until 48 hours after it is packed in the boxes or tubs. Square butter boxes holding 56 pounds net each are recommended. These should be made of spruce wood ¾ or 1 inch thick and 12 inches deep, 11 inches wide and 12½ inches long, inside measurement, and should be lined inside with parchment paper.

It must be seen from this necessarily condensed description that ample provision has been provided for the transportation of our butter in good condition. The success of the venture will now depend very largely upon the manufacturer and shipper.

The Quebec Government will give a bonus of 1 cent per lb. as a further inducement to the creamerymen of that province, on all butter sent forward for shipment to Great Britain, on condition that the creamery sends a stipulated quantity each week.

The long continued drouth has been broken by a number of good rains recently and dairymen are beginning to take fresh courage. In many parts of Western Ontario the effects of the dry weather have been very serious. Many farmers complain of great scarcity of feed, both as regards pasture for the cows, and the prospects for next winter. One farmer states that he will take \$10 apiece for his 36 cows next fall. Reports from many localities indicate that cows will have to be sacrificed at low figures because of a scarcity of winter fodder. This will be the case especially in the sections where farmers depend upon the hay crop for the winter's fodder. The rains have not reached us soon enough to help this crop, which is so light in many localities as to be hardly worth the cutting.

As a rule the corn crop in Western Ontario looks very well. The dairyman with a silo and a large field of corn growing to fill it, need not feel anxious about the winter. He can be quite independent of the hay crop and while his neighbors without silos are compelled to dispose of their cows at a sacrifice, he has ample food for his stock and perhaps a surplus that will enable him to purchase a few of his neighbors' cheap cows.

This extreme drouth will not be without its bright side, if it has the effect of inducing many dairymen to build silos who have not done so before. No dairyman should be without a silo. It is the most economical method of preserving food for winter feeding, and whether the hay crop be a failure or not is the cheapest means of keeping cows during the winter. By means of the silo cows can be kept milking during the winter. By means of the silo cows can be kept milking during the winter at a profit and will be in as good condition for the summer's work as if they were wintered on hay, and not giving milk.

J. W. WHEATON.

London, Ont.

Mr. Joseph E. Gould, of Ontario, writes.

Pasture and hay are almost a failure. I sowed three-fourths of an acre peas and oats for soiling and one acre of corn for the same purpose. I fed 13 cows on the peas and oats twice a day for twenty-four days before it was done, and then commenced on the corn, and we have now been feeding twenty one days and have corn enough to feed a month yet, all they can eat. I have 13 acres for the silo just coming into tassel, and a silo that will hold 150 tons.

PURE CULTURES OF LACTIC FERMENT IN CHEESE MAKING.

ED. HOARD'S DAIRYMAN.—Since I find that as yet little is known of what may be accomplished with the use of the "Pure Culture Starter," and also seeing that inquiries are being made in regard to it through the columns of your most valuable paper, I will give to those who are desirous of giving it a thorough trial, a brief explanation in regard to the preparation and use, as well as of the cost of the starter.

It can be procured from Creamery Package M'g Co., Chicago, Ill., and also from Chr. Hansen's Laboratory, Little Falls, N. Y.

It is usually bought in bottles which contain it in the form of a powder and the directions go along with each bottle, the regular price of which is \$2. This may at first thought appear expensive, but it is in reality, very cheap, provided that it is kept at a distance from any sources of contamination, for this starter continually reproduces or repeats itself.

Now, after having repeated the starter according to directions, it is expedient that a suitable apparatus be at hand with which to pasteurize the milk—that is, have an apparatus with which you can heat 100 pounds of milk to 175 degrees Fahr., or, it may be heated to the boiling point without perceptibly injuring it. After having stood at that temperature for about an hour—or, if the milk be heated to the boiling point, several minutes would be sufficient—cool quickly to 86 degrees Fahr., and add your previously prepared starter of which five to eight pounds will suffice.

Introduce this starter into the milk which arrives first at the factory, thereby inoculating it with the desired species of bacteria contained in the starter. It will thus be propagated in the whole of the milk immediately after being received into the vat.

In warm weather when the starter is added as just explained, it is advisable not to heat the milk until it has all arrived at the factory, thus avoiding over-ripeness of the milk.

Now, from the starter which has just been added to the milk, take, say five to eight pounds for inoculating the next batch of pasteurized milk which is to serve as a starter the following day.

In this manner we could use this starter for an indefinite length of time, were it not for contamination, which will finally introduce some undesirable bacteria into the milk, and will call for a newly prepared starter. That is, another bottle of lactic ferment must be prepared and used.

Now, fellow cheese-makers, I can not say too much in praise of the "Pure Culture Starter," and I am not giving it any more than its just deserts when I say that I have not had one pin hole or gassy curd since I began the use of it. This means consi-

derable the present season, when "cows eat everything but grass" as Instructor Aderhold well expresses it.

Upon short reflection it will be conceded that the state annually loses an enormous sum of money on the so-called "off-flavored goods,"—butter and cheese—and far worse than that, a reputation that cannot be easily redeemed.

Again, it must be granted that a vast amount of instruction is annually given in regard to the handling and treatment of pin holey and gassy curds, and that a means whereby these difficulties could be overcome, would doubtless prove a great blessing to the dairy interests.

I will now add that I feel assured that the starter will partly, if not entirely, overcome some of these difficulties, and that the general use of it will eventually lead to the consumption of far more cheese than is at present consumed, and bring correspondingly higher prices for same.

I believe that the time of its general adoption in all butter and cheese factories is not far distant.

Furthermore, I would suggest that every butter and cheese maker give it a thorough trial and report the results of his experience through the *Dairyman*, which furnishes a most excellent means for communicating dairy knowledge.

The Bible says, "Love thy neighbor as thyself, and I would most emphatically say to the cheese maker, "Help others if thou wilt be helped."

JOHN MICHELS.

Fond du Lac County, Wis.

The same subject continued.—Ed. HOARD'S DAIRYMAN:—In reply to the inquiry about lactic ferment would say it is prepared and sold by Chr. Hansen's Laboratory. A starter is prepared by pasteurizing a small amount of milk—from four to twenty pounds—and when the milk is cooled to 80 degrees, the ferment is added. This is done in the morning and by the next morning the milk should be clabbered, which is then called startoline. If fifty pounds of starter is wanted, that quantity of fresh morning's milk is pasteurized and enough of the startoline added to clabber the milk by the next morning. Experience will tell how much to use. Fifty pounds of pasteurized milk would require about two pounds of startoline. This starter is used and a small portion of it retained to plant in some pasteurized milk for the next starter. This propagation can be carried on till the flavor of the starter gets "off" when it should be renewed. A starter prepared in this way may smell slightly cooked, but leaves a perfectly clean mild acid taste in mouth.

Its properties for controlling flavor are indeed astonishing and with its use the acid in curd will develop more uniformly in a given length of time one day with another.

Neenah, Wis. E. L. ADERHOLD.

FARMERS' FAMILIES.

Although the dwellers in the country lose many of the advantages the city affords, as regards churches, schools, and society, the opportunities to attend intellectual entertainments, and to observe the ways of the world; the loss is compensated, in a great measure by the more natural way of living, the fresh air of Heaven, the delightful contact with nature, and the devout aspirations such environments bring to the thoughtful.

None have such good facilities to bring up a family to be God fearing and useful members of society as farmers.

"Example goes before precept" is always a true and wise proverb, but it especially applies in the case of a farmer's care of his family; his occupation is a purely domestic one, his family comes under his immediate control, in some respects even more so than the family of man whose business calls him from home.

To try to enforce the necessity of correct habits without practising them is the height of folly.

Children, when quite young, are close observers and judges of right and wrong: for a father to insist upon his son being temperate, and to be intemperate himself, will make the boy look upon him as a hypocrite who does not believe or practise what he preaches. How can an idle man expect his family to be industrious, or a careless one that his sons and daughters should grow up with habits of carefulness?

For a man to teach his children verbally, that lying and dishonesty are heinous sins, and cheat in a horse trade, doctor his milk or "Deacon" his produce—(Deaconing is an American slang expression for placing the best fruit on the top of the measure) is illogical and absurd.

The training of a farmer's family should begin with their earliest years; as soon as the little one begins to notice, it begins to love and take interest in the things of nature, and even then he is not too young to be taught to be kind to the dumb animals about the place.

To unmercifully beat a dog or a horse deserves punishment, but if it is done in the presence of a child the offence is augmented a thousand fold, for the child has seen an object lesson which he never forgets and is made, by frequent repetition of such barbarity, at last to enjoy it. The boy who has a cruel parent is to be pitied. (1)

The enormity of the sin of cruelty is lost sight of by him because it is committed by the one he naturally looks up to as an example; such a parent is also to be pitied, because if his son's heart is hardened, no one knows how cruelly he may sometime treat the very one to whom he should be a comfort, and who should have taught him by precept and example, to be kind, not only to him, but to all God's creatures.

To teach a child a natural habit of kindness, it is well to give him something to call his own; a chicken or perhaps a pig or sheep which he can tend, watch and take a special interest in, and the produce of which will form a nucleus for a fortune for all we know, if placed in the bank to the little one's credit; thus, at the same time a habit of saving will be inculcated, together with kindness and tenderness of heart.

The following true story will illustrate this: Tommy, four years old, was given by his mother, a sitting hen, and told that if he would be kind to her, feed her, and attend to her, that she, and her brood should be his own. Pleased with the prospect, he did this faithfully, and every chicken was a pet. But alas, they could not all be kept, and in due time had to be sent to market, this was a sad blow to the little fellow, but he was taught that it was inevitable, and in the natural order of Providence. The money they brought was placed in the saving bank to Tommy's credit; this kept on

(1) Thank you, the lesson is sadly needed here. In the Townships, the barbarous treatment of the draught-oxen used to be horrible.—Ed.

for several years until a sheep was purchased with part of the proceeds, her produce was used in the same way for several years, until a calf was bought, and her produce similarly appropriated. When Tommy was twenty one he had money enough saved to start him on a small farm which he managed, with the stock thereon, with such skill that he was looked upon as the model farmer in his locality. In due time he married the girl of his heart, and their family became proverbial for their kindness and prosperity.

Tommy's younger brother took the old homestead, his sisters were well married, but our friend was the most prosperous of the whole, and never had anything from his father's estate except the keep of one animal and her produce which never was missed. He used to boast that he owed his start in life to an old hen and the moral training her care involved.

We are apt to say it is difficult to keep our young people on the farm: it is true we cannot expect to make them all farmers, and it is well to allow a young person to follow the bent of his inclinations, for many a good mechanic has been lost on a farm and *vice versa*. But the more we encourage those whose tastes are for Agriculture the more likely shall we be to make them good farmers and contented with their lot, thus keeping them at home. Great mistakes are made by many in this respect; they think that as soon as a boy is strong enough he must work, and so he should, but not for nothing. Perhaps his board and clothes will be all that he can earn for some time, but he should be made to understand that he is earning them, and not receiving them as a matter of course, as he did when he was too young to earn them, and that value is received and given. As he grows stronger and able to earn wages, if he concludes to remain on the farm, why should he not receive the same remuneration as would a hired man if it would pay to engage one? If the farm can afford to keep a hired man why can it not afford to pay the son of the proprietor if he desires to take that position. It is not fair to a young man to keep him working until he is twenty five or twenty six years of age without any stated salary, and to oblige him to ask for a quarter if he wants to take his girl to the circus; he is discouraged and dissatisfied, and cannot be blamed if he kicks over the traces.

Recreation should not be denied to our young men; it is necessary to their health and the true development of muscle and character; to deny a young man little privileges such as taking a horse for an occasional drive, or keeping the check-rein too tight is not wise. If this is done it is not a wonder if the young fellow takes the horse or perhaps does worse after the old man's back is turned. If a farmer is situated so that he can send the son, who is to be a farmer, to an agricultural college, he should by all means do so. Farming now is reduced to a science, and to keep pace with the times it is absolutely necessary that a farmer should know, at least, the rudiments of advanced agriculture, which will be a basis for the farther knowledge he will acquire in practice, and until he starts for himself he will be of great assistance at home.

The farmer's daughter, will be naturally more under the control of the mother and will, girls not being as a rule so wayward as boys, be likely to submit to the influence of her loving tuition and advice; girls, having a

kind and considerate father and good mother, seldom fail to make good daughters, sisters and wives.

They, no less than the boys, should be encouraged to love all the farm animals and to take an interest in their comfort.

Household economy should receive special attention, and every girl fitted to be a farmer's wife, whether they ever feel that capacity or not; such training will be useful in after life, because a woman who can conduct a farm household will be well qualified to rule in any other.

There is no reason why a farmer's daughter should be debarred from participating in the feminine amusements, fancy work, the divine art of music, painting and literature, as long as they do not interfere with her legitimate home duties, and are not indulged to an extent that would be too expensive for the moderate income of her parents. A farmer's daughter has as much right to be a lady and an accomplished one too, if she has the capacity, as the daughter of a millionaire.

Refined ideas can injure no one, and true pleasure will result from their acquirement.

Correction of the children should be undertaken by one of the parents with the approval of the other; the child will not be benefited by a reproof administered by one, while the other takes part with the delinquent. Children should never be corrected when the parent have lost their temper; of course it is well to show righteous indignation at wrong doing, but, "like begets like," and if we let our children see that we have lost our temper it will arouse evil dispositions in them; therefore, let us wait until that state of mind can be subdued and not attempt to rebuke them while it lasts. Speak quietly to the child, with firmness and kindness, pointing out the grievous consequences of bad conduct, and the offence is not so likely to be repeated.

Harsh words, angry looks, continual scoldings, are not nearly so well calculated to sink into the heart as kind and loving exhortation and advice. If your children love you, they will obey you and feel your displeasure; if they fear you, their obedience will be due to that sentiment, they will be obedient only when they think punishment will follow disobedience, and no lasting effect in after years will result.

It is unfortunate that some of the rising generation are in the habit of asserting themselves a little too freely and do not quite so much respect their seniors as might be desirable. This is perhaps the result of the advantages they enjoy of so liberal an education as they at present receive. If a youth gets the idea into his head that he knows a little more than his father he may be led to look upon him as his inferior, and when this occurs, it is greatly to be deplored. Respect for the aged should never be lacking in a young person and when parents see it disappearing they should point to the saying of the old Latins: "*Moderata in adolescente est signum bonum.*"

The responsibilities of a farmer with a family are tremendous, he is responsible for their proper training to the God who gave them, responsible to them, as to the way he has taught them to live among their fellow men, and in the sight of that All-wise and All-merciful Being, responsible to his country for their bringing up to become good and useful members of the body politic. For, are not the farmer's sons the very bone and muscle of society. The more honorable, active, and intelligent our

farmers are the more we shall prosper and grow, and if we are faithful to our trust, as the parents of the coming generation of farmers, we shall have done very much to make Canada one of the brightest gems in the British crown, and the pride of the glorious realm of our most gracious Queen who, as wife and mother, has set us so brilliant an example.

Finally we shall gain the hearts, the best obedience, and the respect of our families by showing them that the chief end and aim of our lives is their temporal and eternal welfare; that we have not been toiling all our days for ourselves alone, but for their good; and if we perform our duties faithfully, our children's children will bless our memories long after we are laid to rest, all trials, toil and responsibility ended, and our life work accomplished.

Ainsi soit-il.

GEO. MOORE.

The Farm.

A PERMANENT PASTURE

EDS. COUNTRY GENTLEMAN. — What are the best grasses to sow for permanent pasture for cattle in Dutchess County, N. Y., on hills, where the soil has small stones mixed with it?

E. L. C.

Sow, some time during August, the following mixture per acre: 6 qts. timothy, 2 lb. orchard grass, 2 lb. tall meadow fescue, 2 qts. red clover, 1 qt. alsike clover, $\frac{1}{2}$ qt. white clover.

If the ground is most thoroughly prepared and the land rolled after the seed is sown, so that the clovers will come immediately, they will be established before winter, and there will be little or no danger of freezing or winter-killing. On heavy clay soils, clover does not stand the winter well if sown late in the season. Almost everything will depend on putting the land in very superior condition. By this is meant that the harrowing and surface culture shall be sufficient to pack the lower part of the land, while preserving an inch or two of very finely divided earth at the surface.

Many farmers succeed in getting clover to stand through the winter on lightish soils, although sown as late as the 10th of September. It is customary throughout New-York and some of the adjoining States to sow clovers in the spring, but during the last year or two there have been many failures in getting a stand of clover with either winter or spring grain (1). It is difficult to discover just what the matter is. This being the case, the safest way is to seed in early fall, and do everything possible to furnish the plant with a mellow, moist seed bed and sufficient plant food to start it with vigor. In a few years, when the timothy and other grasses have tillered, the clover will measurably disappear, although some should always be kept in a permanent pasture as a host plant for the grasses, as they usually suffer for the want of nitrogen.

When the clover measurably dies out, it can be introduced by sowing in the spring upon the grass, which should be harrowed most thoroughly with a fine-tooth spike harrow and rolled. If this is done well and early about every third year, some of the clovers which are so beneficial to the growth of the grasses may be kept in the permanent pasture.

(1) And yet there is "no such thing as land becoming clover-sick."—Ed.

We wish we knew what to say to emphasize the need of a better preparation of the soil for these minute seeds. The need of fine tilth has been emphasized so often in the COUNTRY GENTLEMAN that it seems almost superfluous to add anything more, but in looking over the fields while taking a journey in the country during the last few days, we are satisfied that nine times out of ten the short crops are due to poor, and abundant ones to good, culture. I. P. R.

CLOVER RUNNING OUT

EDS. COUNTRY GENTLEMAN. — Can you give me a suggestion as to the continued failures in this region, a fertile farming valley of western Maryland, in getting the bottom lands set with clover? Formerly this could be done with very little trouble; in fact, before the days of fertilizers, it was the principal hay crop. Now, while the uplands set well in clover, it seems impossible to get any success in the lowlands, where it comes up only in spots.

This particular farm is in a high state of cultivation, producing enormous crops of wheat, timothy and corn, and is farmed with a view to scientific principles, using best of fertilizers, but no good results in clover, although we sow from fifteen to twenty bushels every year.

H. A. H.

Rawlings, Md.

The question raised by "H. A. H." is very difficult to answer. Not only in Maryland, but in New-York as well, much clover seed has failed during the present season, and clover is becoming more and more precarious as a hay crop. (1) Some farmers in Central New-York sow clover seed with timothy at the time of sowing winter wheat, with satisfactory results. By this method, the plants get a stronger hold upon the soil and are able to withstand adverse conditions which always prevail from the time of the blossoming of the wheat until it is harvested. The heavy crop of wheat at this time is taken from the soil in large quantities both water and plant food. The young plants are shaded and the weather is usually dry. This makes it very difficult for the young seeds to maintain themselves until the wheat is cut and showers moisten the ground. On clay land, it probably would not do to sow clover at the time of seeding to wheat, and as most farmers believe that better success is secured by sowing in the spring, it has become almost the universal practice.

One is led to suspect, from the many letters that reach us on this subject, that possibly the land is becoming what is called "clover sick," although so far as we know nothing of that character as ever been noted in the United States, although it is quite common in England. (2)

The letter implies that commercial fertilizers have been used on the low as well as on the high land. Without knowing the character of the land, or the crops and treatment which have prevailed heretofore, it is safe to recommend that commercial fertilizers containing a high per cent of phosphoric acid be used, and that the wheat seed be less liberal than heretofore, (3) so

(1) But, "there is such thing as the frequent repetition of clover unfitting the land for its growth"—Ed.

(2) Ah!

(3) *Amia!* If the seedling is thin, the tillering in spring will make the plant as thick or thicker than if the seeding had been thicker.—Ed.

as to give the young plants a chance for their lives during the critical period of June to July.

It is possible that the land is too rich in nitrogen, and clover does not take kindly to such lands. Or possibly a longer rotation—that is, one in which more cereals are taken off before an attempt is made to reseed, might obviate all the difficulty.

There are some indications during the last year or two that we have a fungus enemy of the clover plant, which attacks the young leaves when quite small, causing them to "damp off."

It is entirely impossible to state just what the trouble is without careful experimentation, and that should be commenced at once. The man who is on the ground knows the difficulties, the character of the land, the seasons and the climatic influences, and he should be able to find an answer to this question, and, having found it, he should not "let his light remain under a bushel."

How would it do to plow the stubbles immediately, fitting the ground on the surface superbly, and sow clover mixed with timothy, about two of the former to one of the latter, at once? If success were secured, a good crop of hay would be the results next year, and no time would be lost, if a failure, then the land could be reseeded and put into corn or some other spring crop.

We are very much interested in this problem and hope that the questioner will keep us fully informed as to his successes and failures in the future. I. P. R.

THE SOWING OF WINTER WHEAT

EDS. COUNTRY GENTLEMAN. — There are four most important things to consider in regard to the sowing of the winter wheat. These are the preparation of the land, which consists of the plowing, fertilizing and harrowing, possibly rolling; then the selection of the seed, the sowing of it, and lastly the after treatment of it.

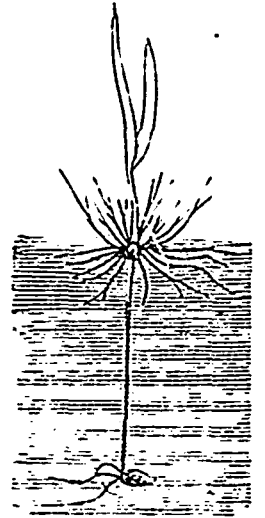
It is a common practice to sow the wheat on the oat stubble, (1) on farms where what is called the four course rotation, of wheat, grass, corn and oats—is practiced, but this is not such a simple method as the three-course of wheat, clover and potatoes. This is evident at first sight, for the oats make and exhausting crop, and always leave scattered grain on the ground, which grows with the wheat as a weed, and takes the nutriment from it at the very worst time possible for such a weakening process. If this is to be avoided the land must be plowed twice, against which extra work there is no objection, except on the score of the labor of it, (2) but it will quite certainly add much more to the yield of the wheat than this cost, so that it is advisable that it be done where the wheat follows oats. But the clean mellow soil left by a potato crop, with the residue of the clover still in the soil, and that of the liberal fertilizing of this crop, make the best possible condition of the soil for the largest yield of the wheat. In many cases this goes up to 50 bushels to the acre, and rarely less than 35, without any special fertilizer for it, the whole in the rotation going to the potatoes—which, an account of the fine culture, brings the pleasant income of \$200

(1) Probably, as bad a practice as well can be imagined.—Ed.

(2) And the loosening of the land: wheat wants a firm bed.—Ed.

or more to the acre. Thus with 10 acres only, on a 30 acre farm, worked on this system the whole receipts from the potatoes go to profit, the other crops paying all expenses.

The plowing for wheat should be thoroughly well done. The soil must be fine and mellow, but need not be deeply so. The habit of the wheat plant make this necessary. The illustra-



Germination and Tillering of the Wheat Plant.

tion of the roots of the plant shows this. (1) The seed may be two or three, or 5 inches in the soil, and the spire appears at the surface forming a bulb from which spread several other spires, five or six, or it may be twenty, and as many as forty, or even more when there is room for them in thinly-sown seed, as two quarts to the acre. And in time the deeper roots, which are few and weak and only serve a temporary purpose, disappear, and the surface roots in time fill the soil to a depth of three or four inches, and as the plant grows stronger and the soil has been well plowed and is filled with food for the crop, the roots spread and go down as deep as they will find the food easy to reach, or until they have enough for their wants.

Either after or before plowing, or at both times, the manure and fertilizer come. Manure is better turned under to a reasonable depth, but it is indispensable that the plowing be done by lap furrows laid on edge so that the soil and the manure between the furrow slices become evenly mixed by the harrow, and that the young plants shall find ample food as soon as they need it. The fertilizer in this case is best sown on the surface, but if the dependence is solely upon it, it should be drilled in the row with the seed. This may be explained in this way: At first the young plant—like a young animal—is weak and needs the food put into its mouth, as might be said, that it may get all it needs without any difficulty until it gains strength to forage for itself. (2) The young wheat plant finds in the soluble fertilizer this available food at the instant it is wanted, and thus it grows luxuriantly and all the sooner becomes able to throw out the permanent feeding roots, analogous, to the first teeth of the young animal, by which it gathers the food it seeks, and finding it, grows apace and spreads far and wide wherever the food tempts it. Just here it may be remarked that it is hardly credible that plants are possessed of instinct as animals are—that is, the

(1) This was fully explained in the first volume of this Journal, 1879, p. 69, with engravings of the coronal and seminal roots. Ed.

(2) All nitrogenous fertilizers should be sown on the top in spring.—Ed.

ability to act from some process akin to the mental, or to some intelligent purpose; but it is true that plants turn to the light, and send their roots to water or food in the soil, not by selection of these means intelligently, but for the reason that the supply of food and light found increases the growth, and so the roots spread more where the food is than in infertile soil, and the same with the leaves. Thus the farmer's purpose should be to furnish the needed food in precisely the places where the roots can get it as soon as they need it. Suppose the manure has been plowed under by a flat turned furrow-slice, four or five inches thick, and is thus buried out of reach of the first roots, it will either be necessary to put the seed down equally deep in the soil, or supply fertilizers liberally for the first growth of the germ, or the young plant may die before it is able to reach the food, then beyond its ability to find. This matter well studied will settle this part of the business.

The selection of the seed is of equal importance, for as we have been taught, good seed sown in good ground yields hundred fold. Plump heavy seed is indispensable for a similar product (1). This selection of seed is the most effective means, with the best cultivation, for the improvement of varieties; and here we see again the analogy between vegetable and animal life. The feeding, and the breeding to make permanent the improvement made by the first, are hand and hand in the culture of plants and of animals as well. So the best kinds of seed only are to be selected for sowing in the best cultured soil. A well-known seed grower whose success in this special art is a household story on the best farms, began his work in this way with wheat the heads of which were two inches long, and ended it with the production of a grain weighing twice as much for the number of seeds, and with ears on the stems eight inches long. The produce of such seed under his good culture has been equal to seventy bushels per acre, and the grain has weighed 68 lb. to the bushel. A farmer procuring similar seed, or the best he can, and cultivating the land in the best manner may doubtless equal the quality of the seed but we may be very sure if he sows such seed on poor soil, the produce will be no better than the common run of the grain, just as the starved Jersey calf is nothing like the cow of which it is the progeny. Feed and breed must run together, and while it is true that feed will do a great deal, and in time approach the quality of the high bred stock, yet time is to be spent that will cost more than the seed will. So it is best to get the best possible seed by purchase.

The sowing depends entirely on the character of the plant. It has been found that three inches deep is the best, and experience shows that only the drill is able to secure this even depth. But broadcast sowing has done equally well when the seed has been spread skilfully and has been well covered by the harrow. With the broadcast seed sower and the sixteen foot seeding harrow, the drill is surpassed in the amount of work done in a day. But the drill is a great saving of labor and does the work far better than an unskilful sower could do it.

H. STEWART.

(1) We have grown splendid crops from poor seed, especially from barley grown in the English fens and taken to the chalk-soils.—Ea.

FROM SOUTHWESTERN NEW-YORK

EDS. COUNTRY GENTLEMAN — The season is one of remarkable growth of vegetation, the crops apparently trying to make up for lost time in the spring. Even the hay crop was more delayed than damaged by the drouth. Some thought they must begin haying at the usual time, and so began the latter part of June. Of course they cut only a meagre crop. If these persons had waited two or three weeks, they might have cut double the quantity off the same ground. The hay crop may be delayed by dry weather, and even look as though it were dying, but abundant rains may afterward alter the crop surprisingly.

The aftermath in all meadows is becoming abundant, and in some cases will have to be fed off, especially where a quantity of fodder corn or other supplement to pasture has not been provided. Several of our neighbors are raising corn fodder, and their methods of growing it, as well as the results, are worthy of notice. One had one and a half acres of sod in a good state of fertility, and this was heavily manured from the cow stable. It was then fitted and drilled thickly with a large growing variety of corn. In eight weeks from sowing he had corn measuring 10½ feet high, and so thick that a hen could penetrate it but slowly. The quantity of fodder produced by this land will be enormous. Others plant thickly in drills wide enough apart to cultivate with a horse. The best method of growing it is somewhat hard to decide but whether or not to grow it is easily decided. It is certainly better to grow this crop for cows than to turn on meadows and keep them eaten till winter.

The best time for cutting is till an unsettled question. One has begun feeding it in less than eight weeks from planting, and he finds it exceedingly heavy to handle, showing a content of a large quantity of water. But he says his cows have gained much in their mess since he began feeding. When it is to be fed during several months, it is necessary to begin before the corn is at its best. Before it is cut and cured for winter, it may be left till nubbins are formed. This is the stage for ensilaging corn, I suppose, but not having a silo or ever having seen one, I am not posted on this point. Planted corn has made an immense growth, and the fodder secured in this way will eke out the hay crop.

The weather for several weeks has been such, most of the time, as to favor highly the development of potato blight. Occasional days of cool, bracing, north winds have probably so far kept the blight in check. For several years, the fungus has not troubled our potatoes, but of course it may come at any time when atmospheric conditions are right. A circumstance which made me think the blight might come was the molding of bread within a few hours, showing a great degree of humidity and a warm atmosphere. This fungus grows are of such rapid development that sometimes a field of potatoes can be smelted a long distance, as the leaf rolls are opened by the disease and exposed to the atmosphere.

The excellent condition of the potato crop generally, will if it continues to digging time, bring the price to a low point. But as blight is reported from some quarters and drouths from others, we shall look for a discounted condition of the crop in the next government report. Of course we do not

want disease to come upon our own crops, but all would like to have a good price made by some means.

Hardware dealers report an advance in the price of all their goods except tin-plate and screws. The cause of this advance will, if it is due to increased wages, produce an advance in the price of farm produce. If due to a combination of capitalists, we may not look for much change. Where prices are raised in a legitimate manner, all are honestly benefited, but where unnatural and illegitimate methods are employed, some occupations must be injured. We are willing to pay a little more for our hardware if we can get better prices for what we have to sell.

CLARK M. DRAKE.

Steuben County, August 10.

TWO FENCES

THE READY-MADE FENCE COST—

80 rods wire fence in the roll, at 60c.....	\$48.00
Paid agent for setting same.....	8.00
2 end posts.....	2.00
40 posts at 20c.....	8.00
Labor setting posts.....	2.00
	—\$68.00

THE HOME MADE FENCE COST—

80 lb. No. 9 wire, at \$2... \$1.60	
400 lb. No. 11 wire, at \$2.05.....	8.20
Staples.....	30
2 end posts.....	2.00
40 posts at 20c.....	8.00
120 oak strips at 1c.....	1.20
Labor, 4 days, man and helper, at \$2.....	8.00
	—\$29.30

Difference in cost.....\$38.70

Two years ago, attracted by the advertisements of a certain wire fence, I bought 80 rods and engaged the agent, to whom I was referred by the maker, to put up the fence. It is a good-looking fence, and satisfactory enough except in one or two respects, which time discovered. The fence is of woven wire, and if a horse gets his foot through it, the upright wires catch and cut the hoof. The colts rub against it, and in time learn to swing in it as in a hammock, without injuring themselves, but somewhat warping the fence.

It suggested itself, on these accounts, that a somewhat stiffer support at wider intervals would be better. Last year another 80 rods of fence was put up at right angles to the above, in constructing which we used No. 9 wire for the top strand with eight No. 11 wires below. The posts were set 2 rods apart as in the first. At a distance of eight feet apart we stapled oak strips, which make it impossible to spread the wires, the fence, after the test of last winter's cold being as stiff and firm as when first made. A bull and other cattle are on each side of it, and although the two bulls sometimes lock horns through the fence they have never hurt anything.

We were so much pleased with the success of this fence, and its cheapness, that we have just built 240 rods more, with a few changes. We have put ratchets on the end posts and have set the small posts 4 rods apart, using instead of the oak strips, cabled wire uprights which cost two cents each, and give the fence a neater appearance.

W. A. WILSON.

Marion County, Ind.

SOME NOTES IN LA BRESSE.

EDS. COUNTRY GENTLEMAN — A visit to the Halles Centrales or great markets of Paris in the early morning is very interesting, and reveals something of that marvellous organization which is essential to the feeding of a great city. Here we find almost every form of animal and vegetable food, dealers and buyers alike characterized by great activity, and together providing for the needs of consumers, who, a few hours later, will find on their tables delicacies of all kinds.

Among poultry, all of which is dead, many kinds may be noted. Some of an ordinary type for common needs and common pockets, while others are of a higher class and command bigger prices. The latter embrace birds of the Faverolles type, from Seine-et-Oise, large and fleshy, together with the dainty *petits poussins*, choice morsels for *gourmands*, exquisite *Laféche*, *La Mans* and *Courtes Pattes*, from Southern Normandy, and *La Bresse* from the departments of Ain and Saône-et-Loire. Probably the latter will first command attention by reason of their peculiar shape, their marvellous quality of flesh, and their fineness of bone. But if we think of purchasing, our breath will be taken away, the demand varying from 25 to 40 francs for the finer specimens. And if we visit the south and southeast of France, sojourn on the Riviera for health or pleasure, we shall find great quantities of fowls partaking of the same shape of which more anon — though, happily, they do not make quite the same demand on our pockets as at Paris.

Recently I have spent a week in the La Bresse country, returning with wider ideas as to the possibilities of poultry-keeping, when properly carried on, and the desirability of seeking to produce the best qualities. A few of my observations may, therefore, be acceptable to your readers.

In the first place it may be explained that the La Bresse country lies at the west of the Jura mountains, north of the Rhone, and to the southeast of Burgundy. Its capital is the old City of Bourg, which is on the main line from Paris to Mont Cenis, or Geneva, and the first stopping place for fast trains after leaving the trunk route from Paris to Marseilles, say about 40 miles from Macon. Bourg is now chief city of the Department of the Ain, as the designation La Bresse is no longer used officially for this district. But La Bresse poultry are not confined to Bourg, as at the north, in the adjoining department of Saône-et-Loire, around the town of Louhans, fowls of this race are largely bred, and probably to an even greater extent. The country is undulating with high hills and mountains both east and west. It is very fertile, producing, in addition to the usual cereals, maize, buckwheat, roots, grapes and first-class qualities of fruit. There is all that intensity of cultivation which is characteristic of French agriculture, and in driving about the country one is struck by the fact that scarcely an inch of room is wasted. Small farms prevail, a place of 50 acres being regarded as large, and most of the farmers are owners as well as occupiers though there are many tenants under the chief "propriétaires." The people are evidently a thrifty race, both men and women being hard workers, looking personally after every detail, and believing in the virtue of little things. From what we could learn, they are, as a rule, comfortably well-off, even where their houses belie such a belief. While some of the dwellings are clean and

tidy, they are very plainly furnished, and many an English laborer's cottage has more of comforts than the houses of farmers in La Bresse. Others there are which lack even the most ordinary household goods, have beds and deal tables, and they are by so means attractive.

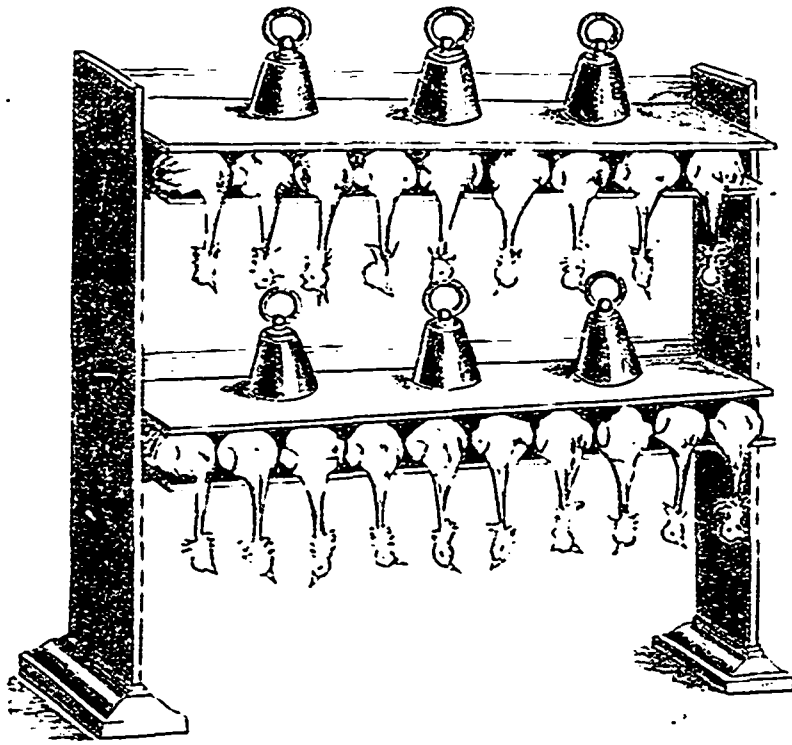
The houses in many cases are of a single story, have long roofs, and very wide eaves, the latter sometimes projecting three feet beyond the walls. There is an object in this arrangement. Maize is largely grown, and the cobs are strung together in huge bundles, three to four feet in length, and hung to dry under the eaves. This gives the houses a pretty effect, and I have not met with the same system before. At first they looked very strange, but on a near view proved picturesque in the extreme.

As will be gathered from what has already been stated, poultry form an important part of the live-stock. I saw in Louhans market on one day upwards of ten thousand live fowls on sale, and at Bourg several hundred women and men, principally the former, were offering their dead poultry. As one drives about, chickens seem to

Variété de Louhans. The latter are said to be the better layers, and their eggs are larger in size, but the former are thought to produce the finest quality of flesh. In appearance both are light and active in habit, but with remarkable length of body, very light bone, longish neck and legs, and a single comb. The hens very rarely sit, but they can scarcely be termed non-sitters. The length of body, or keel, combined with flesh forming qualities, explains why it is that they prove such magnificent table fowls.

One or other of these types prevails in the district around Bourg and Louhans respectively, but they are by no means confined thereto, as the Louhans type can be found near Bourg, but only here and there, and vice versa. Crossbreds may be met with, but their introduction has not proved a success. No other breed has been met with to give the same qualities to the same perfection.

STEPHEN BEALE.



PRESS FOR POULTRY AS USED IN S. E. ENGLAND.

be ubiquitous. They are under no restriction, but allowed to wander over the fields, both arable and pasture, and amongst the vines and fruit trees, wherever they like. But from this it must not be imagined that great numbers are kept on each farm. Many of the smaller people only rear 50 or 60 per annum, ranging up to 500 on the larger places, this latter number being quite exceptional. But on a moderate sized farm of rather more than 20 acres, I was told that the sale of eggs and poultry amounts to over £80 in the twelve months. Probably not one penny had been spent on food, but everything required had been produced there, corn meal and milk.

The La Bresse fowls are very distinctive in type, and great attention is paid to purity of race. Again and again I was assured that no fowls equalled it in quality of flesh, in rapidity of growth, and in other economic properties. Even apparently small external points are regarded carefully, and I think the people are right in so doing. These points are simply signs or marks indicating purity of race. There are two varieties, each of which has its advocates, namely, the white or gray, known as the Variété de Bourg, and the black, known as the

REPORT OF MM. G. A. GIGAULT AND J. D. LECLAIR

(Continued.)

It is possible that the cows absorb from the air slight portions of this smell: when they graze in pastures where garlic grows the milk tastes garlic, and so, if they get large quantities of swedes and turnips, the milk will easily assume the smell and taste characteristic of these plants. In certain localities, good butter has been made when turnips were given with hay and grain, and in this case the turnips constituted the greater part of the food, but in the majority of cases, despite all the care, the butter had an aftertaste. The surest way is to give other vegetables, like mangels or carrots, to the milch-cows and the turnips and swedes for fattening purposes. (1)

(1) If the butter is made "Devonshire fashion," there is no danger of the milk having bad smell or taste, provided the turnips or swedes be given immediately after milking. A small piece of nitrate of potash put into the milk-pail and milked upon, will do no harm. A. R. J. F.

Kraft folder is the common name given to the grains, mixtures, cake, etc. It is only during the past twenty years that roots have been raised to serve as food for cows, and it is only during the same period that the kraft fodder has been so much in use, when the cows calve in the fall. Since this mode of feeding has been practised the number of milch cows has increased, co-operative butter factories have been established, and have spread over the whole country.

Of the different kinds of grain used as food for cows, rye, barley, and oats are the most general. Wheat was only used when the price was sufficiently low, and no bad result was noticed therefrom. In some places, small quantities of peas and beans are used as part of the grain mixture (the *Blansaed*, in Danish). Peas and beans are highly liked on account of their large proportions of albuminous matter, but it is generally admitted that peas, and especially beans, have a bad effect upon the quality of the butter. They are supposed to make it dry and bitter.

Up to date Maize has never been used as food for cows; it is given to horses and pigs. However, experiments made last year have proved that we may give the milch cows a little over a Danish pound of meal made from Indian corn without affecting the milk or butter. A large consumption of rye exists. This is generally one of the cereals which most may be relied upon for large fields and which is raised in large quantities. Still, rye is not considered a good food for milch cows, because it makes the butter dry and bitter, and in some cases it was found that the milk of cows fed on rye or on rye bran had a characteristic taste.

A few years ago it was thought that rye was not so good as barley for pigs, but the experiments made by Dr. Fjord have shown that rye is just as good food as barley for them. At present, in consequence of these experiments, rye is used in large quantities in feeding cattle and horses and in small quantities for cows.

As barley and oats may be raised together, so are they given mixed and ground: in fact, the oat is looked on as a purgative and favorable to the production of milk, while barley moderates the purging effect of oats or mangels. It is conceded that of all grain oats gives the finest products. Oats produce a great deal of milk and have a good influence upon the butter.

Bran is the shell of rye or wheat. Although not used as food for man, it is very good for cattle. In fact, more value is set on it than on an equal weight of grain; this, however is doubtful. In fact, when Dr. Fjord made his experiments on pig feeding, he found that rye bran was not worth as much as the same measure of rye. It is to be hoped that similar experiments will be made with wheat bran and with the other kinds of grain used in feeding milch cows.

Whatever may be the result of these future experiments, bran, and particularly wheat bran, is a good and healthy food that must be used more and more, as long as the price does not rise too high, that is, in relation to other kinds of food.

Experience shows that rye-bran does not suit milch cows, because, like rye, it acts unfavorably upon the butter. On the other side, wheat bran is excellent for milch cows, when it is fresh and of good quality, but not when mouldy.

Cows like wheat bran, very much and it is admitted that it produces, as do oats, a milk and a butter with good

flavor, and that it makes the butter firmer.

Cake is the by-product of the preparation of oils from different kinds of oily seeds. The most important of cakes are made from rape-seed-palm-nut, coconut, sunflower seed, groundnut, cotton, hemp, etc.

For the cow's health and the quality of the product, it is important that these cakes contain neither sand nor seeds of weeds, and that they have not begun to spoil, i.e., they must be fresh and sound.

The chemical analysis of cakes only indicates their composition; but a microscopic examination shows whether or not they contain any foreign matter. In this country, for twenty years back, a great amount of rape-cake is used, in feeding milch cows, and experience shows that this food, given in certain quantities—say 1 lb. per day—gives a aromatic flavour to the winter butter; consequently, this butter can compete on the market with butter from grasses in other countries where cows may be allowed to graze, while we must keep ours in the house.

In his work on feeding, Mr. Svendsen speaks thus of rape cake: "When the winter butter shows a tendency to become brittle, and wanting in softness, the remedy is to augment the ration of rape cake, and we think that it is the *piquant* taste of this food that gives such excellent flavor to the butter." It may be said of these cakes that they are indispensable in the feeding of milch-cows, and that moreover, when they cost less than their theoretical nutritious value, as much as possible should be given of them. But if given in excess they would produce digestive troubles and have a bad effect on the churning. Principally the *piquant* component parts produce these bad effects. The troubles of digestion are scarcely to be feared when there is no *mustard* in the cakes, and if the cows are accustomed, little by little, to receive large quantities of these cakes, say 2 or 3 lbs. The effects are also noted in the churning, when the butter does not gather in large grains. In examining the cream, one would think it had been whipped into foam, and excessively small grains of butter of irregular form, are found among bubbles of air. This could be obviated by cooling slowly during churning.

It is hard to say if this churning obstacle arises from the oil in the cakes or from some other substance. However, it is probably to be attributed to those harsh tasting oils, because when milch cows eat large quantities of white cabbage, cabbage leaves, radishes or turnips (which contain a good deal of bitter matter) the same inconveniences in churning are encountered. In short, we may say that the cakes should be given with caution; commence with 1 lb. and augment them by a quarter or half a pound.

After finding out that the oil contained in the rape-seed cake gave a good flavor to winter butter they commenced raising, in Jutland, rape seed, and, instead of cake, they give rape seed, whole or ground, in proportion of 10 to 30 kvint (Danish measure) per cow; but the result of this trial was not very satisfactory.

On account of the large consumption of these cakes, bad ones are often sold on the market. In a number of co-operative creameries, it is a rule that certain patrons should give daily to their milch cows 1 lb. of rape cake, so that the milk and butter may be of good quality. Therefore, in many cases, it happens that patrons buy

rapo cake that is so adulterated that the milk is colored and the cows fall ill. To be good, the rapo cakes and other cakes should be thoroughly dry, light, and of greenish color, but not yellow or deep brown. Even though the taste be fresh, they may contain a little mustard. (1) A good way of testing the quality is to grind a small quantity, mix it with hot water and cover it. After a little while, if the cake is good, there will be no smell of mustard or any other bad odor. The cake is adulterated when prepared with impure or damaged seed, or when it has begun to spoil.

Cake from the palm or coconut gives a milk rich in fat.

The palm-nut cake has long been in general use, and it is believed that the cream produced churns well. It is worthy of note that cake made from the palm-nut and coconut have not an injurious effect on the taste or flavor of the butter firm and hard; consequently, it is principally used when the cows are fed on clover and other green fodder.

Cocoonut cakes are hard to keep; they are very spongy, they draw humidity from the air, grow rancid easily, take on a bad odor, and consequently do not suit milch-cows.

The sunflower-seed cakes are imported from Russia, where the sunflower is raised in great quantities. A few years ago some importers said that these cakes gave the butter a nauseous and greasy taste and a smell as of American oil. But of late we have found that first choice butter can be produced by giving a pound of sunflower cake per day to each cow, as long as the cake is good and fresh. A good sunflower cake has a certain taste of nuts, and cows like it very much when given in small pieces.

The ground-nut cake (*tourteau d'arachide*) is very nourishing; it was in great use a few years ago, but it was found that the butter therefrom, even the winter butter, became spongy and soft. For a few years back, however, it has been given in a portion of 1 to 2 lbs. per cow daily, and mixed with good hay, roots, etc., that is to say, in a ration well composed, and the butter resulting therefrom is of good quality.

Denmark does not use much cotton cake. The most given to milch cows is a pound or a little over per day.

Before concocting rations for milch cows, in each case, should be taken into consideration the different fodders raised on the farm, as well as the qualities and prices of the different kinds of food found on the markets. On no pretence should any kind of food, more or less damaged be bought. It should be tested; the cows should have, too, an abundance of good, pure water. The fodder should be cut at the proper time, and given to the cows in good condition.

As to butter, the best thing is to always have plenty of good hay; thus, the butter will be nearly always of good quality. If the water is bad and the fodder damaged, it is impossible to have good products, even by adding to the fodder good grain, bran, or oil cake.

When green fodder is used, or else roots or other purgative food, considerable quantities of other food should be also given, such as grain, bran, cake, which re-establish the digestive equilibrium. So, we give a pound of rapo cake, with a little oats or mixed grain, and first-quality bran, if the cost is not too great.

(1) The seed of the *charlock*, *cadluck*, or wild mustard—*sindpis arvensis*, probably. A. R. J. P.

WINTER FEEDING.

(Translated from Dr. Svendsens' Book on Feeding.)

The winter feeding of cattle is supposed to begin when the animals are taken in from pasture. Yet, the winter rations are commenced two or three weeks before that time. When recourse is had to that rationing in a judicious way, very little difference is noticed in the yield of milk. The date for beginning this new régime cannot be positively fixed. At the end of autumn, the best cows should get different kinds of grain, bran, cake, in addition to the pasture, and the rations should be increased as the grass decreases, or grows less rich.

In selecting the different grains, bran, or cake, to be employed during the winter months, in the first place the price of these articles should be considered. Still we must remark that certain of them are considered indispensable. Of these, we might first mention rapo cake, which, despite its often high price, should never be set aside, in view of the fact that it can with difficulty be replaced by others. When this cake is given for the first time the quantity should be very small.

After the rapo cake, wheat-bran should always form part of the food of milch cows. Even if the wheat-bran were of high price, it should never be left out; in any case it is profitable to use it, if it costs no more than barley and oats, and if this is relatively low, the ration should be increased beyond the ordinary quantity.

Grains (*drèche*) is another alimentary substance, that apart from the good smell it gives to other food, is of itself rich and digestible, and as it is generally cheap, it should certainly be used for many reasons. Besides, we have many varieties of cake from which to choose. Experience has taught that cake, made from cotton and sunflower seed, the ground-nut, cocoonut and palmtree, is very excellent food for milch cows. The three kinds first mentioned are of about the same value; the cocoonut cake generally is very dear; the palmtree cake has an excellent effect on the butter.

Barley and oats should be used, if the cost is not too great. It often happens that the price of barley and oats is higher than that of wheat; it is then preferable to sell the grain and buy bran.

It must not be forgotten that food is more relished when it includes several different ingredients, and, for that reason, it is better to make up a ration composed of small quantities of different kinds of food, than to give larger quantities of a smaller number.

Roots should always be given in abundance. The root-rations should begin the end of September, and at that period the leaves or tops may be given, though not in too large quantities. In the first weeks of October the root-rations may be slightly augmented, and, in the middle of the month, a full rationing of vegetables may begin, because they are all ripe at that period.

Hay should always form part of the ration from the first of the winter's diet. At that period there is often a disordered digestion with the animals, and for that reason it is well to give hay, without counting that this feed is more valuable than in winter. In the spring, too, it is well to give hay. Straw may also largely enter into the early winter feeding.

In some places, where large herds are kept, the cows, after they have calved, are usually classed according to their yield of milk. That classification, according to the milk value

of each head, is based upon the principle that the feed should be proportionate to the dispositions of each animal respectively. Theoretically, this is exact; but is the object in view thus attained? It is difficult to say. It is perfectly well known that certain cows that give a large quantity of milk in the first period after calving, give but a small yearly yield, because they run dry quickly, and remain dry a long time, whilst others, without being great milkers, give, however, a good amount all year round. For this reason it is wrong to place those cows in the second and third class at the time when they give the most milk, for full feeding may influence the yield of milk, not only then, but also for the remainder of the year.

It has often been found that a cow which receives, say 8½ lbs. of grain, of bran or cake, can generally produce 26 lbs. of milk, and that she can give a larger yield on receiving a fuller ration; and it is undeniable that, in all cases, a full ration will produce a greater annual yield. It is a well known fact, that the best cows in a herd are not only those which can answer to good feeding, but also those that can give a higher profit with a less amount of food.

The classification according to size is excellent, for a cow weighing 1,100 lbs. requires more food to support her than one that only weighs 880 lbs. It is well to give cows, after their first or second calf, less food than to adult cows; first, because they are not yet sufficiently developed, and next, because it is well to avoid increasing, by heavy feeding, an inclination to fatten.

For mixed rations of milch-cows, it is impossible to indicate exact recipes that would suit all conditions, and serve as guides in the choice and quantity of feed to be given. Experience proves that the same food will not suit under all circumstances.

Great circumspection is needed, when there is a question of adopting new varieties of food, to proceed little by little, and gradually, and not to calculate on great results at once. As a general rule, long observation, before coming to a decision on any new food, is necessary. The effect of the food on a cow should be the subject of careful study; only by this means can the most suitable rations for all conditions and all time be discovered.

By comparing the different rations used for years we can perceive the changes accomplished. Thus, roots have taken a front place, while grain, bran, and cake have slightly fallen off, because it has been recently established that a cow is not able to assimilate the same quantity of grain, bran and cake, if the ration of roots is doubled or tripled. Besides, the introduction of several kinds of cake has produced another change that allows of feeding from several different standpoints. To ordinary food may be added another kind; but, generally speaking, the following precepts should not be forgotten: 1st, that mixed rations should be as varied as possible; 2nd, that the "Kraft Fodder," grain, bran and cake, is in great part composed of cake; 3rd, that roots may be given in large quantities, without disturbing the digestion of the cows, or injuring the quality of the butter.

TREATMENT OF THE CREAM BEFORE CHURNING.

The greater part of the cream received in the Danish creameries is made into butter. Both sweet and sour cream are churned, but here we are not concerned with sweet cream, but with butter made from acidulated cream.

The reason why the practice of ripening cream obtains, is partly because the churning of ripened cream gives more butter, but principally for the sake of the improved flavour and aroma thus obtained.

Makers have often stated that proper ripening tends to make the butter keep better; but this is doubtful. On the other hand, it is certain that, under certain unfavourable circumstances, ripening (when injurious bacteria are present) may be the cause of the inferior quality of the butter, and that it contains numerous micro-organisms which rapidly bring on injurious transformations; while proper ripening is a certain indication that the cream is what it should be.

Ripening chiefly consists in fermentation by means of lactic acid; this has latterly been, and is still more now, the subject of the earnest investigation of bacteriologists. It has been proved that many kinds of bacteria possess the power of converting the saccharine matter of the milk into lactic acid, and it is beyond doubt true that, in practice, many concur in the ripening of the cream.

(To be continued.)

COMPETITION OF AGRICULTURAL MERIT.

The competition of Agricultural Merit will be held, in 1896, in the counties of:

Bagot, Beauharnois, Bromé, Chambly, Chateauguay, Compton, Drummond, Huntingdon, Iberville, Laprairie, Missisquoi, Napierville, Richelieu, Richmond, Rouville, Shefford, Sherbrooke, Stanstead, St-Hyacinthe, St-Jean, Vercheres and Yamaska.

In accordance with the regulations of the Council of Agriculture, those persons wishing to take part in this competition must enter their names at the Department of Agriculture and Colonisation on or before the 1st May, each year, on blank forms, which will be sent to them by the department at their request.

In late years, a certain number of persons tried to get their farms inspected by the Judges, after the competition was opened, under pretence of not having heard before that the competition was to be held in their district.

We are anxious that, in future, there should be no misunderstanding on this point; and, therefore, no entry will be accepted after the lapse of the delays fixed upon by the regulations of the Council.

NOTES AND NOTICES.

Marion & Laberge, No. 185 St. James Street, Montreal, send The Inventor's Crown free to any inventor asking for it.

We would draw attention to the sale announced in the advertisement of the ISALGIER GRANGE FARM, Danville. These herds are well known, their representatives taking many prizes wherever shown. Amongst the lots offered for sale will be some of the principal prize winners; the number offered is so large that everyone should be able to secure what they want. The date of sale is October 15th.

The Hon. M. H. Cochrane, Hillhurst, will also hold a sale of Shropshire and Dorset-Horned Sheep early in October, particulars of which will be announced later.

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For sale on the farm of Revd. F. P. Côté, curate of St. Valerien, Shefford County, Calves of this year, varying in prices from \$10 to \$15 according to age. Also, a few registered cows.

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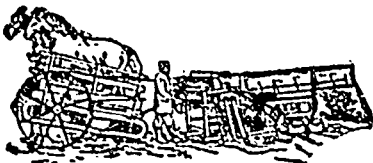
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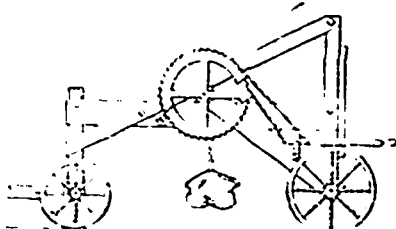
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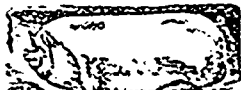
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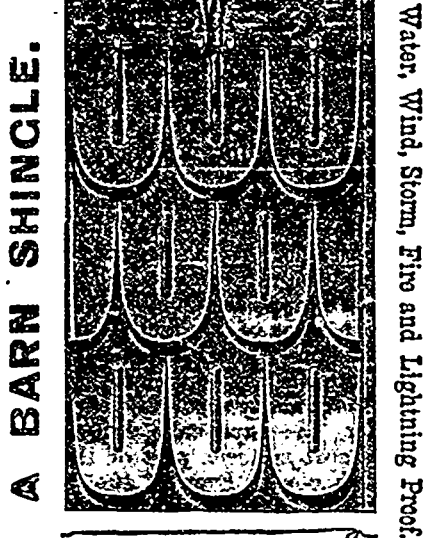
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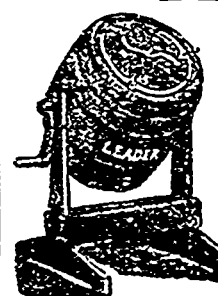
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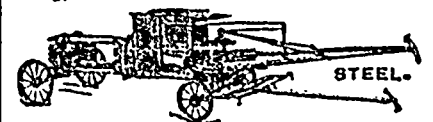
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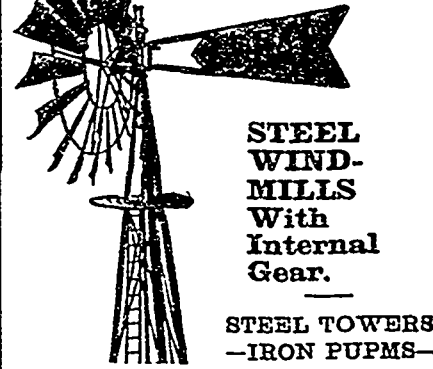
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