

Technical and Bibliographic Notes / Notes techniques et bibliographiques

Canadiana.org has attempted to obtain the best copy available for scanning. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of scanning are checked below.

Canadiana.org a numérisé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de numérisation sont indiqués ci-dessous.

- Coloured covers /
Couverture de couleur
- Covers damaged /
Couverture endommagée
- Covers restored and/or laminated /
Couverture restaurée et/ou pelliculée
- Cover title missing /
Le titre de couverture manque
- Coloured maps /
Cartes géographiques en couleur
- Coloured ink (i.e. other than blue or black) /
Encre de couleur (i.e. autre que bleue ou noire)
- Coloured plates and/or illustrations /
Planches et/ou illustrations en couleur
- Bound with other material /
Relié avec d'autres documents
- Only edition available /
Seule édition disponible
- Tight binding may cause shadows or distortion
along interior margin / La reliure serrée peut
causer de l'ombre ou de la distorsion le long de la
marge intérieure.

- Additional comments /
Commentaires supplémentaires:

**Continuous pagination.
Some pages missing.**

- Coloured pages / Pages de couleur
- Pages damaged / Pages endommagées
- Pages restored and/or laminated /
Pages restaurées et/ou pelliculées
- Pages discoloured, stained or foxed/
Pages décolorées, tachetées ou piquées
- Pages detached / Pages détachées
- Showthrough / Transparence
- Quality of print varies /
Qualité inégale de l'impression

- Includes supplementary materials /
Comprend du matériel supplémentaire

- Blank leaves added during restorations may
appear within the text. Whenever possible, these
have been omitted from scanning / Il se peut que
certaines pages blanches ajoutées lors d'une
restauration apparaissent dans le texte, mais,
lorsque cela était possible, ces pages n'ont pas
été numérisées.

THE ILLUSTRATED
Journal of Agriculture

Montreal, March 1, 1896.

Table of Contents

NOTES BY THE WAY:

Cake	299
Canadian cattle	299
Milk-fever	299
Best food for calves	299
Weaning calves	299
Turning calves out to grass	300
Lime	300
A new churn	300
Lucerne or Alfalfa	300
Kent sheep	300
Hampshire-downs—II	300
Mangels	300
Cotton-cake	300
Price of cheese in England	300
Prof. Shaw on sorghum for sheep	300
Roots	300
Carrots	300
Rape	300
Spring lambs	301
Tasmanian apples	301
Influence of the moon on the weather	301
Top dressing	301
Food and butter	301
The "Block-test"	301
The Smithfield Club Ex	301
Lucerne	301
Shorthorn dairy-cows	302
The new photography—II	302

COMPETITION OF AGRICULTURAL
MERIT:

Judges' report	302
----------------------	-----

ROUVILLE FARMER'S CLUB:

Dr. Gignon's report	302
Fall ploughing, Macfarlane on	304
"True h-roism", Geo Moore on	304
Feeding cattle twice a day, Geo. Moore on	305
The West-Shefford creamery's sales '95	305
Does Bee-keeping pay—F. W. Jones on	305
M. Dubord's Henhouse—III	306

BREWERS' GRAINS:

Dr. McEachran on their qualities	305
Dr. Girdwood on do	308
The Editor's opinion and experience on do	308

THE POULTRY-YARD—A. G. GILBERT:

Selection of breeding stock	309
To obtain fertile eggs	309
FARMERS' SYNDICATES OF P. Q.	309
MARK-LANE AND CATTLE MARKETS	309
Prices of pigs at Calne bacon-factory	309

HOUSEHOLD MATTERS:

Women farmers	309
Recipes	309
Expectation of life	309

SWINE:

Cooking corn for pigs	311
-----------------------------	-----

THE HORSES:

The primitive horse, — Auzias-Turenne on	311
Best way of improving our horses, — Bou- thiller on	312
The Chitmark Flock of Hampshire-Downs	312

MANURES:

Top-dressings	313
Do—Prof. Shatt on	313

THE FARM:

Hops—(by the editor)	313
Maple-sugar	313

Notes by the Way.

Cake.—Or meal, if it pleases any one to call it so, as we saw in the last number of the Journal has fallen very much in price. So much cheaper is it than it was eight or ten years ago, that the computation of values of cottonseed or linseed-cake published in the reports, &c., of the stations in the United States need correction.

In that useful publication, Stewart's "Feeding animals," the *theoretical value* assigned:

To cottonseed meal is \$2.30 per 100 lbs. or \$46.00 a ton;

To linseed-meal, \$1.81 per 100 lbs. or \$36.02 a ton;

To flaxseed, \$2.47 per 100 lbs. or \$49.40 a ton.

Now we perfectly agree with our friend, Mr. Wm. Ewing, that, in spite of the chemists, "we never could see how it is possible for cottonseed meal to be as digestible as linseed meal"; for every one knows that, owing to its constipating quality, the amount of cottonseed meal given to cattle must be restricted to at most four or five pounds a day per head, while, of linseed meal, 14 lbs. a day used to be the ordinary ration of fattening beasts in the Eastern counties of England, when we were farming there. And however much inclined we may be to stick to our old friend crushed flaxseed, we must confess that, with linseed-cake at \$22.00 a ton, we should prefer using the meal, that requires no preparation, to bothering ourself with crushing and steeping the flaxseed.

Flaxseed.—Of course the seed must have fallen in value proportionately to the fall in the value of the cake or meal. But what an immense price Mr. Stewart puts on flaxseed! Flaxseed, or linseed as we English call it, weighs something like 416 lbs. the imperial quarter, or 52 lbs. a bushel, so, at the price given by Mr. Stewart, the bushel of linseed should be worth \$130. We thought, even as long ago as 1885, plenty of linseed at Sorel for 70 cts. and 80 cts. a bushel.

With linseed-meal to keep up perfect digestion, pease-meal to give firm solid flesh, roots or silage for succulency, and good straw for "roughage"; feeding well-bred stock for the butcher ought to pay even now, in spite of the competition of the Western ranchmen. We grieve to say so, but though our house is supplied by one of the best Montreal West-end butchers, we have not tasted a piece of tender beef for many a day. Old cows and working oxen are not likely to give tender meat.

Canadian cattle.—Monsieur Couture, in a letter to the *Journal d'Agriculture* à propos of an article by M. J. B. Plante, warns people not to imagine that "deep red" is the usual colour of the Canadian Cow.

"On the contrary," says M. Couture, "that colour is an unfailing sign of impurity of blood, and shows that there must be a cross of Ayrshire, Shorthorn, or especially Devon, in the family." He always refuses entry to the herd-book to any so styled Canadian cow if she is deep-red in colour. Mr. Couture mentions another error in M. Plante's essay: that good butter-cows are never white. "The colour has nothing to do with the richness of the milk. There are Jerseys that are quite white, as there are Shorthorns of that colour, and yet, in spite of that, some of them give very rich milk.

"And," he proceeds, "it is by no means wise, by way of causing a higher appreciation of the value of the Canadian cow, to depreciate the qualities of the other breeds of milch-cows; this should be most carefully avoided. The plain truth should be told about them, and it is this: the Canadian cow is of all the breeds that we have in this country the one best suited to the Canadian farmer, because she is the

easiest fed, she has the best health, and gives the most milk from one calving to the other, and this milk is almost as rich as the milk of the best butter-cows.

It is true that the milk of the Jersey is, in general, the richest of all milks; that the Ayrshire, particularly in summer, gives a great flow of milk; let us add, if we choose, that cows of both these breeds cost too much for their keep, and do not pay so well for it as the Canadian cow, and we shall be within the bounds of truth: but we must not go beyond that."

Milk-fever.—If a cow is, as she should be, dried off about 6 weeks before calving, care should be taken to watch her dejections, and if any signs of costiveness appear, a mash of bran and linseed meal should be given daily up to the birth of the calf. An occasional dose of Epsom-salts—1 lb.—with some cordial admixture of ginger, carraway seeds, &c., will do no harm, if the cow is in high condition; but, in our experience, the crushed flaxseed has generally; we may almost say invariably; answered every purpose.

If the *placenta*, or afterbirth, does not come away within a few hours after calving, a weight, of about 2 lbs. attached to it will, if it is not rotten, hasten its separation. Why let the cow eat the placenta? Nobody seems to know, and yet a writer in *Hoard* says she ought to be allowed to eat it.

The calf.—As we have often said in this periodical, do not on any account let the cow even see the calf; if she is prevented smelling and sucking it, she will not know its voice; take it away quietly as soon as it leaves the dam; there will be no hollowing or bawling about if you do, and the mother will settle down to her rest and food at once.

Milk the cow as soon as she is quieted; cover up the calf with soft straw in a warm place well away from the cow, and do not trouble yourself to dry it, as that only serves to glue the hairs together; if left to itself the moisture will soon evaporate and the hair be left dry.

In former days, the new-born calf used to be sprinkled with salt and the cow was encouraged to lick it, for the purpose, it was said of giving her appetite for the mash that was always administered. An absurdity, of course, for, if the cow is all right, she will take the mash freely enough, as her labour will be sure to have made her pretty thirsty.

If you want to prevent your cows giving a large flow of milk, let the calves suck them for twelve or fifteen weeks. That is what the Hereford breeders did. We have often seen great big lumps of calves that would weigh from 300 to 350 pounds, running about in the Shropshire meadows tugging away at the cows! There is such a thing as *habit*; if a calf takes eight quarts a day from its dam's udder, that dam is not going to trouble herself to produce twelve quarts; consequently, she will not get into the *habit* of giving more than the calf needs, and the bad habit she will insensibly acquire she will infallibly hand on to her descendants. From all we hear, the *Galloways* have suffer-

ed from the same cause. However, this practice has, we believe, fallen into disuse with every breed, except where pedigreed herds are kept. There, the only use made of the cows being to produce calves, as soon as possible after calving the cow is dried off, and no doubt the calf is all the better for it.

How many days usually intervene between conception and delivery? Lord Spencer's table, a most trustworthy one, runs as follows:

A RECKONING TABLE FOR THE CALVING OF COWS.

When Bull'd.	When calve.	When Bull'd.	When will Calve.
Jan 1.	Oct. 13.	July 16.	April 27.
— 15.	— 27.	— 30.	— 11.
— 29.	— 10.	Aug. 13.	May 25.
Feb. 12.	Nov. 21.	— 27.	— 8.
— 26.	— 8.	Sept. 10.	June 22.
March 12.	Dec. 22.	— 24.	— 6.
— 26.	— 5.	Oct. 8.	July 20.
April 9.	Jan. 19.	— 22.	— 3.
— 23.	— 2.	Nov. 5.	Aug. 17.
May 7.	Feb. 16.	— 19.	— 31.
— 21.	— 2.	Dec. 3.	Sept. 14.
June 4.	— 16.	— 17.	— 28.
— 18.	March 30.	— 31.	Oct. 12.
July 2.	April 13.		

Best Food for Calves.—New milk, 3 times a day, about 8 quarts; for the first ten days or so; then gradually substitute skim milk with a trifle of boiled flaxseed, or what is better, crushed flaxseed steeped in plenty of boiling water. As the calf gets on, say, at 6 weeks old, a little pease-soup, *strained*, may be added, but the crushed flaxseed is the main point. Avoid cottonseed meal for calves as you would avoid poison. Do not tie up calves: let them be kept separate, if you please, but at liberty. Castrate the males at a month or six weeks, taking care that they are not suffering from either too costive or too loose a state of the bowels at the time. Heifers are never spayed in this country, but in England it is a common practice. They thrive amazingly after the operation, and there is no animal fetching so high a price on the London market as a spayed "home-bred" heifer, if well fattened.

Weaning calves.—Calves should, of course be weaned from milk gradually, and not before they are from 3 to 4 months old. We have no experience with *wey* as a calf-food, but with the addition of the flaxseed and pease-meal, it would answer well, if it is sound: we do not fancy any sour food for calves until they are well on to 6 months old. In our own breeding days we used to take great pains to use the skim-milk in a perfectly fresh state; and always warmed it up to some 90° or 95°: more calves are affected by "scour" from cold milk than from any other cause; ground oats unsifted, too, are very apt to produce diarrhoea; the husk of that grain seems to produce a *peristaltic* action of the bowels. The best cure for the complaint is "Dwight's mixture," in doses of from 30 to 50 drops according to age. Mr. Tuck, Messrs. Dawes' farmer, at Lachine, in 1889, found it most useful among their Jersey calves, of which previous to its use, a large proportion died, supposed to be from the too rich milk of their dams; but that is doubtful.

Turning out to grass.—Calves should not be let run with the cows at first. Keep them in the orchard, so that they have a shelter of some sort or another to ward off the scalding rays of our very powerful sun. If calves are properly fed, there is no danger of their being lousy; but should the parasite peculiar to the calf, and there is such a thing, attack one, an emulsion of coal oil and strong soap suds will easily get rid of the beasts.

Lime.—Strangely enough, in the part of England with which we are best acquainted (Kent) lime in the form of burnt or quick lime is hardly ever used on the land. There is chalk (carbonate of lime) in abundance to be had for the drawing, but farmers seldom or never use it, though not forty miles off, in the neighbourhood of Reading, Windsor, &c., in Berkshire, the autumn sees hundreds of acres white with chalk. What does lime, in any form, do for the soil? 1. It supplies food to the plant, but it very seldom happens, and then only on very neglected farms, that there is not sufficient lime naturally in the soil to supply all that any crop requires; 2. lime sweetens sour land, rendering harmless certain compounds of iron which it neutralises; 3. it cooks, so to say, the organic matters in the land, thereby rendering them so much the more easily assimilated by the plants; 4. it sets potash free from the mineral portion of the soil, for there is in most soils, but especially in clays, any amount of potash but in such a condition that it is not available as plant-food. Lastly, lime lightens, by disintegration, heavy land, and causes sandy soils to become more adhesive.

A new Churn.—A novel way of making butter has been introduced into England by its inventor, a Swede named Solenius. The milk is heated in the Pasteuriser up to 160° F. and runs thence into the skimming chamber of the machine. As fast as the cream is disengaged, it rises into the churning chamber, being cooled down to 50° as it passes by means of very small cooling frames, through which iced water is constantly passing, and which revolve with the skimmer at the rate of 6,000 revolutions a minute. The cream is driven through a tube pierced with tiny holes, from which it emerges on to each successive layer of cream as it rises, and, as its force is great, converts it into butter by concussion. The butter, in granules, falls through a tube together with the buttermilk into a tub. A spatula, of wood, then stirs the mixture up and down for a few minutes, and the butter is taken to the worker and the process completed. The whole operation does not take longer than is taken by the ordinary separator.

Green-meat; How to sow; Should wilt.—*Lucerne* or *alfalfa*, is a very valuable fodder plant, but it is better suited for turning into green meat than for hay or pasture. Some American writer, in the Bulletin of the Ohio Station, recommends sowing from 20 to 30 pounds of seed. We have grown lots of it and always found that 15 pounds was enough. "No crop is to be expected the first season," continues the bulletin, "but when it comes up, the mow should be passed over it to nip off the weeds." We used to sow it with the barley-crop, and always found it did well. After the second year, very energetic harrowing in the late fall will destroy

most of the weeds, and will not injure the lucerne. No use trying it in a damp corner, surrounded by bush, and with a damp subsoil, as a friend of ours did at Longueuil. It wants a free circulation of air, and liberty to send its roots down four or five feet into the subsoil. Mr. R. H. Stephens, of St. Lambert's, wrote to us, in the year 1879, to the following effect:

"We began cutting lucerne on Monday last, June 1st; it is now 2 to 2½ feet high, and, yet, up to Monday, we have had no rain for 4 weeks. Last year, we cut it for the second time on June 21st. We got four crops during the season."

R. H. STEPHENS

5 June, 1879.

The land we should select for this crop we should treat thus: taking a field that grew potatoes in 1895, we should sow it this year, 1896, with roots of some kind—swedes or mangels—heavily manuring it, and making it perfectly clean. In the fall, plough it a fair depth in as wide stitches (lands or ridges) as the soil will bear, draw out the water-farrows with great care, and let it lie till the snow is gone and the land is fairly dry in the spring; then, work it well with the grabber, harrow, and, if needed, with the roller, drill in the usual seeding of grain, and harrow again thoroughly. Next, sow 12 lbs. of lucerne seed to the arpent—15 lbs. to the imperial acre—cover it with the chain-harrow or the lightest set of harrows you have, and when the plant is fairly up, pass a roller of it and work is done.

A good deal of labour and trouble, no doubt, but when you consider that, if the land is properly prepared, and the seed good, lucerne will lie out for from six to ten years, it seems to us that the crop must pay a good percentage on the outlay. We are waiting, impatiently, for the snow to go, to see in what state it will leave the lucerne on the Seminary farm in Sherbrooke St., Montreal. Of course, it was sown just where it ought not to have been sown, i. e., just under the drip of the trees, but it looked so well all last summer, that it will probably stand, and our readers shall have the earliest notice possible as to its condition in April.

When lucerne is cut for green-meat, it should lie in the swathe for six hours or so, to wilt. It may be fed off by cattle or sheep, but they must be watched while grazing on it, for it is mighty apt to "blow" them. It is at its best just as the bloom appears, but becomes sticky soon after it expands. Why people will bother themselves about growing—or rather trying to grow—*sacaline* and *lathyrus silvestris*, which do not seem to be of any good anywhere, and neglect such plants as *lucerne* and *sainfoin*, both of which have been successfully cultivated in all sorts of climates and on all suitable soils for more than 100 years, is rather a puzzle. Sainfoin is the plant above all for limestone soils.

Kent sheep.—In our last number there was an engraving of a couple of Kent or Rowney-Marsh sheep, none of which breed has been ever seen, we believe, on this continent. They have been vastly improved, we hear, since we left the old county, but, ever then, they were a remarkably useful sheep; very hardy, able to stand the driving rains and winds of that bleak, exposed district, shearing a good close fleece of combing wool, and though not equal

to the Downs as mutton, their flesh was far superior to any Leicester, Lincoln, or other long wool meat. (1)

We have said so much about *Hampshire-downs*, in previous numbers of the Journal that we need not expatiate here on their merits, but merely call attention to the charming engraving of a lot of lambs of that breed, for the original of which we are indebted to that exquisitely got up periodical "Farming," published at Toronto.

Mangels for spring-food.—All sorts of stock are fond of mangels, but their greatest usefulness is for spring-food for cows and ewes after parturition. We never heard of their being given to horses, but if there are neither carrots nor swedes at hand, there is no reason why, when succulent food is needed, horses should not have some. We were told, in 1853, by a very successful Essex farmer, that he never gave mangels to his pig cows, as, from a somewhat costly experience, he found that they caused them to miscarry! The farmer in question, Mr. Cottingham of Little Chesterford, had been originally brought up for the medical profession, and was thoroughly trustworthy.

Cotton-cake.—"For growing stock and milch cows," says "Farming," "cotton-cake is peculiarly adopted, but for young calves or for very young stock of any kind, it is not advisable to use it on account of its indigestibility. Feeders often give the preference to the undecorticated kind of cake, on account of its greater astringency, which render it very useful to obviate a scouring tendency among cattle or sheep grazing on young, luxuriant pasture," or, as we said above, in wet seasons on any kind of pasture. We prefer linseed-cake or meal, in spite of the theoretical superiority of the cotton-cake.

The price of cheese in England.—Fancy *Cheshires* are hard to buy holders asking 80s to 84s (\$19.20 to \$20.00) a cwt. Fine *Cheddar*, which is getting scarce, is worth 60s to 66s (\$14.40 to \$15.84). *Double Gloucesters* sell for 46s to 56s (\$11.00 to \$13.44). The choicest quality of *Canadian Cheddars* are worth 45s to 46s (\$10.80 to \$11.80).

Stock-feeding on potatoes.—Professor Shaw, late of the Ontario Agricultural College at Guelph, has been lecturing the Minnesota farmers on stock-feeding. He does not approve of growing potatoes as an exclusive food for cattle, for, when used in large quantities, they only being about 7½ cents a bushel, whereas when fed moderately they return 15 cents. A lot of 16 sheep were shown that had been pastured for nearly six months on an acre of land! The increase in weight showed that they had in that time paid twenty-two dollars for their keep = \$1.37 a head, or rather more than 1/10 of a cent a day. So it took each sheep about a week to add one pound of live-weight to his frame that is, supposing sheep to be worth in Minnesota 5 cents a pound as they stand. We are not precisely told what crop they were grazing on during the 6 months, but from what is said in the latter part of the report, we gather that Mr. Shaw is a great believer in sorghum: "By experimenting here, we have found that one of

(1) About August, when the Downs are getting scarce, the Kent mutton is in high favour in the London district. Very thick on the loin.—Ed.

the best articles for pasture is sorghum, particularly for sheep. It is quite a new discovery, but from the results of our experiments, I predict that it will come into quite general use for pasture."

Roots; Change of food.—Do people ever reflect upon the autumn treatment of stock? Does it seem rational to take cattle into winter quarters, after they have been for six or seven months on grass alone, and at once, suddenly, without any preparation, put them on dry, hard food? If there are many farmers in this province who despise the root-crop, surely they must see that cattle need some succulent food or other mixed with their "roughage," to gradually accustom them to the enormous change that their digestive powers are about to undergo. The cheapest food, in the long run, is that which agrees best with the animal, and unless some succulent food is given to an animal just off the pasture, it is sure to go off its feed, and suffer accordingly. Cattle, sheep, horses, it is the same with every kind of stock.

Carrots.—Their cultivation; horse-hoeing; cost of hoeing.—As the White Belgian will certainly produce from 3 to 5 tons an acre more than any red-carrot, and is just as good for horses as any kind, we do not see the use of growing any other. The analysts make a trifling difference between the digestible constituents of the white and the red kinds, but it is so slight as not to be worth attending to. Besides, red-carrots have to be dug up, but the White Belgian stands so well out of the ground, and, if the horse-hoe has been kept regularly at work as long as its passage did not injure the crop, is so easily pulled up, that the harvesting of the crop is a very easy job. The growing of this plant is simple enough: steep the seed for 24 hours; let it drain in a bag, which hang up in a warm place till the seed is "chipped," that is, till the little white lamp at the end of the seed makes its appearance; sow in drills 24 inches apart, manured with well rotted dung, and roll after the seeding with a light roller. A few ounces of turnip-seed mixed with the carrot-seed will indicate the rows and let the horse-hoe get to work within ten days after sowing. Horse-hoe close up to the rows: no fear of disturbing the plants if an inch on each side of the row is left unmoved. To single, use a 3-inch sharp hoe—part of an old scythe-blade answers well—; out out gaps in the rows so as to leave bunches about 5 or 6 inches apart; use the hoe both ways, i. e., thrusting from you and pulling towards you, children follow and separate the bunches, leaving the best plant standing; keep the horse-hoe going particularly in the hot season, as deep as possible; edge-hoe when needed. By *edge-hoeing*, we mean hoeing with a 6-inch or 7-inch hoe on each side of the row of carrots, leaving the middle between the rows to the horse-hoe, whose business it is. A man in practice will edge-hoe an acre a day easily. Lastly, sow early, and not less than 4 lbs. of seed to the imperial acre. The singling and edge-hoeing ought not to cost more than \$4.50 an acre, and the probable crop, on suitable land, being about 800 to 1,000 bushels, the cost for the two operations, taking the lower yield, would be a tiny fraction more than half a cent a bushel!

Raps.—The *Karmer's Advocate* of London, Ont., says that Mr. W. G. Pottit, of Freeman, Ont., states that "he has had gratifying experience in

feeding his Shropshires on rape, and that, as long as he keeps sheep, he will never be without it again." Four hundred to five hundred pounds of bonedust, costing \$7.50, and six pounds of seed, at 10 cents a pound, suffice for an acre. Land to be ploughed a fair depth, in the fall, harrowed and grubbed, till fine, in the spring, the seed sown broadcast and bush-harrowed or chain-harrowed in, and rolled last of all to finish with. Simple enough, is it not? And, yet, how few farmers will take the trouble to grow the crop. We still hold, as we held 20 years ago, that the outlying fields at the end of our long, narrow farms, will never be brought into good condition till this valuable plant has become one of the regular occupants of the province. No hoeing required, no expense of harvesting, and the land left after the sheep in the best possible order.

Spring lambs.—A well known butcher of Montreal bought, on Monday, February 3rd, four spring lambs, for which he paid \$28.00, an average of \$7.00 a piece! One of the four he sold to a butcher at Ottawa for \$10.00! Must pay, one would think; for two very fair tegs, as we should call the lambs of last year, can now be bought for the price that one of the four cost.

Tasmanian apples, of the finest quality, have been for some years exported to England, but we hear that a cargo, has been shipped to British Columbia, so that a very curious meeting has taken place on the Pacific Ocean: a cargo of apples on its voyage from Canada to Australasia met a cargo of apples on its voyage from Australasia to Canada!

The influence of the moon on the weather, which we have been asked to

touch upon, is a rather deep subject for the general reader, involving the use of a great many scientific terms. Suffice it to say, that whatever power the moon may exert upon the earth's atmosphere and the aqueous vapour suspended therein, is due to her position in what are called the nodes, or, in other words, to her movements about the ecliptic, upon her position relatively to the sun and the earth, and the coincident stage of solar activity.

Top-dressing.—The results of the experiments on manure, conducted by Mr. Shutt, at the Experiment farm at Ottawa, must by this time have convinced many a sceptic that the belief that, by exposing the manure to the influence of the sun and wind a large part of its valuable constituents must inevitably be dissipated, is not founded on reason, therefore, we shall take it for granted that the universal practice of England, and the frequent practice of all the best farmers in Northern Europe, are not erroneous, but founded on well established beneficial results which have been noted by farmers for many a series of crops, and have become part of a regular system of husbandry.

What crops to be top-dressed.—With us in the South-East of England, the sun has not so much power as it has here in Canada. Still it is warm enough during half the month of June, July, August, and the first half of September; quite hot enough, indeed, to dry up any amount of dung that is spread on the land: and, yet, the crops tell of its effects!

The principal crops that are top-dressed, with us, may be said to be three: permanent meadows and pastures; fall-wheat, sown after a non-manured crop; and young seeds; the usual rotation, in brief, being; roots, grain with grass-seeds, hay (2 crops), wheat. The roots would be dressed with half dung, half artificials, part of them fed off with sheep eating cake or grain, or both, the other half drawn into the yard for beasts. Where the sheep fed off the roots the young seeds of the 3rd limb of the rotation would not be top-dressed; but where mangels or carrots were grown, that are never fed off where they grow, the seeds are, we may say invariably, dunged in the winter of their first year, and we have seen, as a equal to this treatment, no less than three heavy crops of red-clover cut for hay in one summer, a superb crop of fall-wheat following in the next season.

The dung is carted on to the young seeds in the winter when the land is

How to prepare the mizen.—The dung used for top-dressing meadows should, as a general rule, when the farm is situated at distance from large towns and consequently not over well supplied with manure, be subjected to some sort of preparation. This is what we should recommend: let all the rough stuff, such as the cleaning out of ditches, the scrapings of the yards and court round the house, the refuse tops of swedes, carrots, &c., any bits of old mortar rubbish, &c., &c., be got together in a handy place, and laid down, in a regular form, square or oblong, about a foot to 18 inches deep. On to this layer cast the dung fresh from the yard, not forgetting to mix the fæces of the different sorts of animals together. Spread the dung level, breaking up any lumps, and when the heap is about two feet deep, make the horse and cart draw up on to the dung and unload on the part already delivered. Keep the sides neatly trimmed, and the mizen regularly built, so that shape and pressure may conduce to regularity of heat. When finished, the mizen should be about four feet high. Cover the top with at least 6 inches of the earth round the stance.

When the heap has stood for a few days—depending on the season—, it should be turned, not roughly or care-

Smithfield Show.—As noted in last issue of *The Farmer*, the champion of the Birmingham and Smithfield fat shows was Frederica, bred and fed by Queen Victoria. This score one more for the Scotch Shorthorn. The dam of Frederica was bred by Duthie, of Collynie, and her sire, Volunteer, was also a pure Cruickshank. The beasts next to the championship, both at Birmingham and London, were also sired by Ringleader, bred at Collynie, crossed on a polled Angus cow. It was only after a long discussion that the Queen's heifer at London won the championship from Lord Roseberry's polled Angus-Shorthorn, Fluffy, sired by Ringleader. But there is a second test at London which practically overrides the decisions of the show ring. The block test is meant to show which animal shows the finest carcass, lean meat of firm quality being the standard of merit. In this case a Scotch Highlander came 1st and the Galloways got all the rest of the money prizes. Prime Scotch, Shorthorn, Galloway, Polled Angus, West Highland and crosses about filled all the top line. The live championship for males went to a Hereford, but Sussex showed much better beef. In sheep, the Lincolns when killed, turned out worst, Leicesters next, then the other English breeds. At a year old they make good mutton, but at two years they are

much too fat and tallow. The Scotch took all the honours; Blackface 1st, Cheviot next, then the crosses. These breeds are naturally slower to mature and have in consequence a much better proportion of lean meat. The leanest and finest carcass of the lot weighed 130 lbs. (1)

—o—

LUCERNE.

Just found the following article on this crop in the *Eng. Ag. Gaz.* It is

not very different in its views from what we wrote above. And, again, from the same paper, in answer to correspondent:

Top-dressing grass.—If grass is top-dressed with dung in summer will any of its valuable constituents be lost before the grass is able to appropriate them?

Ans.—It is not probable that any portion of the valuable constituents of the dung will be lost, as the young grasses will appropriate them as they are liberated. The young grasses will need care and it would be well to dress them as often as possible with road-scrapings and other forms of "dirt."

Lucerne.—Two articles on the Cultivation of Lucerne in the new number of the Royal Agricultural Society's Journal recall attention to a subject of considerable importance to which we have alluded several times in the past. Dr. FREEM remarks, in his article on the cultivation of lucerne in England, that it is surprising that a crop possessed of such excellent credentials as a conservator of nitrogen and a resistor of drought is not cultivated

(1) Very good flavour the Black-faces, but not enough fat for a Southern Englishman. Ho.



HAMPSHIRE DOWN RAM LAMBS,

The property of Mr. Jas. Flower, Chilmark, England.—(From *Farming*.)

hard with frost and there is no danger of the land being cut up with the narrow wheels of the tumbrils, not by any means because there is any fear of doing the same job in summer.

When done.—It is in summer that the meadows within a reasonable distance from the great metropolis are top-dressed. Hundreds of carts may be seen every morning throughout the year returning, after having delivered their loads of hay, from the markets, loaded with dung that will be within an hour or two upset on the meadows, as soon as the hay is carried, say, about the second week in June. These hay-farms, at Uxbridge, Hounslow, Finchley, grow nothing else but hay—all permanent grass, the land is never ploughed, and the crops are always abundant, as, indeed, they ought to be, though they may vary a little according to the season.

Fall-wheat is sometimes top-dressed when, from paucity of dung, it has not been convenient to manure the previous crop; for instance, when it follows beans which have taken the place of clover in the rotation to avoid the too frequent recurrence of that very capricious plant.

lessly, but inside out, mixing the top and bottom layers of rubbish and earth together, and throwing the lumps, broken up, into the centre. In from ten days to a fortnight, the manure will be ready to be put on the land and, may be used whenever it is convenient to the farmer to undertake the work.

As for composts, we have no doubt of their utility; but we hardly think that where labour is so dear as it is here, it will pay to make them.

Food and butter.—On the question of the value of some sort of succulent food for butter production, C. E. Chapman stated in a New York Farm Institute that he had tested sixty herds and had found a higher per cent of butter fat and more milk in every case where succulent food in the form of either roots or ensilage was fed.—*Hoard.*

The "block-test."—Kind of the writer of the following to allow that: "at a year old the English sheep make good mutton." The Sussex beast was always a great favourite with South country butchers.

more extensively than it is in this country. We believe no other forage crop produces an equal quantity of highly nutritious food, and food which is relished by all classes of live stock whether in a green state or as hay.

In France and some other European countries, in Argentina, in the United States, and in Australia, lucerne is extensively grown, its acreage in the three countries last named having increased rapidly in recent years. As compared with nearly two million acres grown in France, only 24,219 acres are under lucerne in Great Britain. This is nearly double the area of ten years ago; but it is still a ridiculously small acreage for one of the most valuable of all forage crops. There may be something in the climate of Scotland to account for the growth of only 37 acres in that division of Great Britain; but, even if lucerne were grown only on soils unquestionably suited to it in England, its acreage might well be ten or twenty times as much as it is, especially now that temporary pasture is in favour.

We have never been able to account for the neglect of lucerne in this country except from one cause—namely, the persistence with which those who write upon it recommend an almost prohibitive method of cultivation. Growers have been instructed to drill the seed, and to hoe the crop two or more times in each season, at least for several years after sowing it. This method of treatment makes lucerne the most expensive of all crops of the pasture kinds, instead of being—considering its prolonged existence—about the cheapest. Of course, this expensive method of cultivation is not adopted in the countries where lucerne is grown on a large scale. As Mr. GIBSON says, in his article on the cultivation of the crop in Argentina, some of the finer grasses come up under the shelter of the lucerne, but this is not regarded as a disadvantage. On the contrary, a little variety in the herbage is regarded as beneficial to stock. Rather than have to hoe the crop, some grasses should be sown with the lucerne to cover the ground quickly and keep weeds from growing. In Guernsey and Alderney splendid crops of lucerne and perennial ryegrass may be seen growing, and in some cases these temporary pastures contain also a mixture of clovers and various grasses. Any plan is better than the hoeing system, because cheaper. Mr. C. S. READ is quoted by Dr. FREEMAN in support of this view of the case. Speaking at the Farmer's Club in February, 1895, Mr. READ said:—"My idea is that, instead of growing it in rows and going to the bother and expense of attempting to hoe it (which is an exceedingly difficult operation), you had better sow it as thick as you can, and then harrow it. Harrow it after the first year, and you will get rid of the small grasses and weeds with which it is encumbered at very much less cost and as well as if you hoed it."

In Argentina, Mr. GIBSON says, it is usual to sow 13 lbs. to 15 lbs. of seed per acre. In some cases a good plant has been obtained with half the lower of these quantities; but the climate and soil of most parts of Argentina are particularly well suited to lucerne, and even there it is considered good policy to sow 13 lbs. to 15 lbs. In this country, if sown alone, 20 lbs. of seed per acre would be better, for the sake of covering the land quickly; but much less would do with grass seeds. The high appreciation of the crop in Argentina is shown by the

plan described by Mr. GIBSON as commonly adopted by the owners of large estates in order to get land laid down with it. They let portions of their land to Italian colonists for five or six years, taking a small portion of the produce as rent, on condition that in the last year of wheat growing, lucerne, the seed of which they provide, shall be sown with the wheat. After this the colonist has to quit, and in this way the landowner gets his land broken up and laid down with a valuable forage crop at a small cost. We say at a small cost, because Mr. GIBSON declares that the share of the grain crops taken by the owner does not cover all the expenses as a rule. Such a calcareous and comparatively dry soil is best suited to lucerne, Mr. GIBSON has found it growing well, or fairly, in all classes of soils in Argentina, but not standing many years in damp situations. On a favourable soil he has seen a lucerne pasture still flourishing thirty years after it was planted. In England Mr. READ has found the crop doing fairly on clays and other soils not considered fit for it. Some care is needed in grazing stock on lucerne, lest they should gorge themselves upon it and become "blown"; but this is true also of clover and other highly nutritious forage crops. We know of few experiments better worth trying than the cultivation of lucerne on various soils and in different climates.

Shorthorn dairy cows.—This famous breed of cattle, of which we regret to see that, in spite of their being the best liked by practical English farmers of all dairy cattle, *Hoards Dairyman* has no good word to say, is still more popular than ever. They are to be found all over England, but the best strains of blood are in the Northern counties. What follows is from the *English Agricultural Gazette*:

SHORTHORN DAIRY COWS—Can you tell me which are the best markets for buying Shorthorn dairy cows? I notice that at Kirkby Stephen last week in-calf cows made up to £24. I have been told that big, good, heavy-milking Shorthorns are to be bought at Kirkby Stephen, Penrith, Kendal, and other places in that neighbourhood.—W. T. H. [You can hardly go wrong over the Northern Counties. Kendal or Kirkby Stephen Auction Mart, in Westmoreland; Carlisle, Cockermonth, Penrith, Wigton, in Cumberland; Lancaster and Ulverston in North Lancashire; Helli-field, in Yorkshire. At the Ulverston Auction Mart recently calves have been selling up to £25. Up to the past few years Cumberland farmers ran more upon flesh, but have given more attention to milk in recent years. If desirous to found a herd of such cattle, personal inspection of farms in a neighbourhood would be satisfactory, for then something might be ascertained as to the sires and dams of the animals selected.—R.]

The new photography.—Some ten years ago, lecturing in the county of Maskinongé, we said that the age of miracles was over and done with; but now it would seem that inventions of almost miraculous effect are of every day occurrence. Among these inventions, nothing seems to us more marvellous than the new photography. As will be seen by the engravings we borrow from the *Star and Witness*, opacity offers no obstacle to the passage of the *cathode ray*, by means of

the *Crookes' tube*. (1) Observe the bones of the hand photographed as if they were bare of flesh, the *pince nez* in its *stui* or sheath; the wooden handle of the bradawl not obscuring the iron shaft of the tool. The invention is in its infancy at present, but there seems to be no doubt that in a very short time it will be of the greatest use in the diagnosis of many diseases, and in the inspection of recondite fractures. (2)

COMPETITION OF AGRICULTURAL MERIT.

THE JUDGES' REPORT

(Continued.)

MR. DAN. DRUMMOND'S FARMING.

On the *light* part of the farm:
1st year—Oats after pasture or meadow.

2nd and 3rd years—Hoeed crops dunged each year.

4th year—Grain, with twelve pounds of clover and two gallons of timothy to the arpent.

Then, mown two years and fed one.

On the *heavy* land:

1st year—After oats, he ploughs a shallow furrow with the *sulky-plough*, and then grubs it across. (3)

2nd year—Maize with interred dung. Maize and *horse-beans* do very well on heavy land.

3rd year—Oats with 12 lbs. of clover and 2 gallons of timothy to the acre, and then 3 to 4 years hay, and 3 years pasture.

Mr. Drummond has this year 15 arpents of potatoes, *horse-beans*, &c.

Any farmer can find in the preceding instances some one or another that will suit his soil. The progress of agriculture would be much intensified if farmers understood better how to treat their land properly.

DIVISION OF THE LAND INTO FIELDS.

The most profitable way of dividing farms into fields is a matter deserving earnest study. Care should be taken by all farmers to arrange their fields in such a fashion that a good system or rotation of crops may be pursued, plenty of alleys left through which to shift the stock from one part to the other without damage to the new grass or other crops. An avenue, or lane, throughout the entire length of the farm is indispensable.

Though we do not give plans of all the remarkable divisions of farms we saw this year, we note, however, than of Mr. Watson, North Georgetown, which was published at p. 20 of the report of '91; the plan of Mr. Doig's farm, at p. 57, report of '90; and the plan of M. Damien Pilon's farm, of which, on account of its great ingenuity we would like to publish an engraving.

FENCES.

We shall speak of fences in the chapter on general management. The neglect of this point is unpardonable. How many quarrels, lawsuits, how much bitter feeling between neigh-

(1) Mr. Crookes (not *Crooke* as the papers spell his name) is one of the leading chemists of the day. He translated Georges Ville's book on manures, but is, alas! what few men of science are—a *spiritualist*.—Ed.

(2) Since writing the above, the accounts of the practical utility of the discovery are astounding.—Ed.

(3) By "*sulky-plough*" may be meant a three-furrow plough. In the original, the phrase runs: *la charrue à roues (sulky-plough)*.—Ed.

hours, arise from this cause? How many fields of grain, of roots, are damaged by the neglect of fencing? A progressive farmer, who has a neighbour careless on this point must suffer untold pangs.

We cannot sufficiently praise the pluck of those who while carting off stones from their land have utilised them by building with them firm, stout walls: they may well be proud of such fences.

This year, the competitors have been very careful, generally speaking about

CLEARING OFF WEEDS,

though these troublesome things occupy a great deal of space on too many farms. Still, there are not so many to be seen on the farms we have inspected. The fact is, the best way to attack them is to have a good system of rotation, with plenty of hoed and root-crops, and an abundance of clover.

If a farm is, unfortunately, infested with weeds, they should be prevented from starting into life, or, if they come up, they should be destroyed. We shall, then, give instances of both these cases, and earnestly intreat our people to strive with all their energy to get rid of this curse which, in many places, threatens to take entire possession of the land.

It would be as well, too, if every municipality were enjoined to deal firmly with the careless farmers, seeing that it is rather awkward for one man to go to law with his neighbour on such a plea as that his weeds infect his land. People do not like to put the law on this matter in force.

Mr. Ogilvie gets rid of the mustard (*cadluck*) on his land by means of a summer-fallow.

M. Hormidas Lapointe kills *couch-grass* by stable-cleaning and two successive root-crops plentifully manured.

Mr. James Drummond says that the *ox-eyed daisy* is a biennial, and that it can be destroyed by pulling off the flowers before the seed is ripe.

Mr. Matthew Moody cleans, every year, a piece of land by sowing buckwheat early; this is ploughed in, and another sowing of the same grain for seed is made, followed by two years' potatoes.

Messrs. Dan. Drummond and Duncan McLachlan grow maize, followed by 12 lbs. of clover to the arpent the next year.

Mr. Nichols grows maize, or pasture, with 3 feet between the rows, to be able to clean the soil the better.

M. Max Mercier makes a fallow (what we call a *bastard* fallow, probably.—Ed.) and sows buckwheat on it for ploughing in green. (1)

THE FARMER'S CLUBS OF ROUVILLE COUNTY.

DR. GRIGNON'S REPORT.

(Continued.)

Orchards on heavy land—Ladies at the lectures—Indian corn—Fattening hogs for bacon—Winter butter-making—Fall-calves—Summary.

THE ROUGE-MONT FARMER'S CLUB.

There are 100 farmer's families here; 40 members of the club, and only one cheesery, which is not much patronised.

(1) When we lived at Lachine, the Messrs. Dawes tried this plan, and a nice mess the samples of oats and barley were in the next season: the grain was allowed to ripen.—Ed.

Dairy-butter.—There is a good deal of competition among the farmers as to who shall make the best and the largest quantity of butter. Several have hand separators, which are well liked.

M. Pierre Paquette has a hand-separator, he sells all his butter for 25c a pound, and attributes his success in great measure to his way of packing it. It all goes to St-Hyacinthe, in pats of $\frac{1}{2}$ lb each, in ice boxes, so that it is always firm and of a uniform appearance. He grows a great many roots. Last year, he had fourteen hundred cabbages (*choux moelliers*) which he found very nutritious, but he grows no more of them as he found they made the butter taste (1). M. Paquette prefers the white *Vooges* carrot for cows.

Every season he uses superphosphate and finds it answer.

Thanks to the *bouillie* Bordelaise, M. Isidore Laprise grow such superb *Fameuses* that M. Ephrem Cabana offered him \$2.50 a barrel for them as they hung on the tree.

An orchard on heavy land.—M. Che Mennier, of St-Césaire, has some apples trees 20 years old, and the fruit is very fine, though on heavy land. No use trying to persuade him that apple-trees will not do on such a soil. Really, apples ought to be grown everywhere, and every farmer ought to feel it his duty to have some. On heavy land, if the drainage is perfect, and the soil improved by putting a load or two of light earth—gravelly or sandy—into the hole in which the trees are set, success is certain. And what a source of revenue it would be for the Province!

Of the progress accomplished.—Thanks to the sensible programme sent out by the club, competitions have been held in root-growing; in the care to be taken of the dung and the cleanliness of the stables, &c; and these have caused a radical change in the parish.

THE ST-CÉSAIRE FARMER'S CLUB.

A fine, large and prosperous Canadian parish is this. There are 4 well supplied cheeseries, and the club reckons 115 members.

Ladies at the lectures.—Many ladies attended the lecture and seemed to appreciate what they heard, as they requested the lecturer to return soon. It would be a good thing were ladies to attend the lectures in greater numbers, for it is certain that would support the lecturer greatly, by persuading the men to put in practice the good advice that is given to them: when, for instance, the subject is the planting of trees and shrubs for the embellishment of the residence; the setting out of a small orchard; the making of a kitchen garden; the ventilation and the giving of more light to the cowhouse, &c.; the cleanliness to be observed in the stables and piggery; the wisdom of keeping sheep for their wool; the cultivation of flax; the better feeding of milch-cows, &c.

The shop-keepers and professional men of St-Césaire take a great deal of interest in the club and in the lectures. M. Arès (2) is the president, and M.

(1) If decayed leaves of any plant are given to the cow, her milk will taste of it, but fresh cabbage leaves ought not to have such an effect.—Ed.

(2) Of M. Arès (see the November, 1886, number of this periodical) we observed, after an inspection of his farm: "It would really be wonderful if M. Arès had not won the prize in the 'Competition of the best cultivated farms' in the County of Rouville, for I may as well say, at once, that, in spite of my long experience in this country, I have never yet seen 80 acres of heavy land so well farmed as these are. I beg to say that I am not dealing at all in exaggeration, but saying what I most sincerely believe to be true."—Ed.

Demers, N. P., the secretary-Treasurer, two earnest men who are from their hearts devoted to the performance of their duties. Every year, since the establishment of the club, every pains has been taken to perfect the programme of operations, by no means regarding the farmer's club as a simple machine for wiling money out of the government (*carotter le gouvernement*); for, it must be confessed, there are places, though they are becoming scarcer, whose sole object it is, in establishing clubs, to get into their hands the funds forming the grant that is assigned to them. In some parishes, the people tried to capitalise these annual grants, to use them for the purchase of clover-seed; and did I not even one day sur-

Mr. R. Savage made a silo which he filled, very successfully, with clover, and many of the farmers intend to; and inspect it.

Bacon hogs.—M. Napoléon Arès is feeding 18 hogs on roots, potatoes, whey, and barley-meal.

M. Damien Ouimet has also 18 hogs fattening. He grew 18,000 tobacco plants.

M. Alfred Gingras is fattening 16 hogs, and M. Anthime Arès (1) 14.

They are all intended for smoked-bacon, and are not to exceed 200 lbs each when fat. All these breeders agree in saying that, at that weight, their pigs will not have cost them too much.

Sheep.—M. Alfred Gingras sold a ewo

fatten more easily, and the flesh is butter. He has sold some at \$4.00 a head. Ram lambs, registered Shropshires, he has sold for \$5.00 a piece: not dear, certainly.

The county exhibition, organised by the Agricultural Society, was thoroughly successful this year, but to what was it due? to the farmer's clubs having so greatly improved their stock. If there were 82 fine hogs on the Rougomont exhibition ground, it was to the clubs, it was due, as I was told by several farmers. This is, doubtless, why the clubs and the agricultural society of the county appear to assist each other, instead of the reverse.

Winter-creamery.—There is an idea afloat of buying the village cheesery and putting in a set of butter-making apparatus for the purpose of making butter during part of the winter. Several farmers told me: "Cheese no longer sells well, and the demand for butter is increasing, and we have plenty of roots for the cows. But we have no fancy for feeding cows, for what shall we do with the milk? While, if we had a creamery, we should be glad to take all possible care of the cows, and make butter up to February and March." These men were right. I proved to them, by figures, that a creamery taking in 5000 lbs. of milk a day would yield a clear profit of \$475.00 in 5 months. In some places, instead of dividing the profit among the shareholders, it is employed to meet the cost of the carriage of the milk. M. Ludger Audet has 8 cows, due to calve in January.

THE ABBOTSFORD FARMER'S CLUB.

The population is mixed, and intelligent, and the farming might serve as a model. In the small American colony, there are nearly 50 siloes.

M. J. B. d'Arcy is profiting by the reign of low prices in increasing his herd of cows. "Cows are needed here," said he, "for the land is poor. Six years ago, I bought a farm so poor in the yield of hay that its owner was obliged to buy fodder every year.

"Nowadays, I keep twice as many cattle as he did, and yet I sell 25 tons of hay every year. Last year, I took the second prize for the best cultivated farm, and this year I took the first prize."

This good farmer grew,

ON TWO ARPENTS OF LAND,

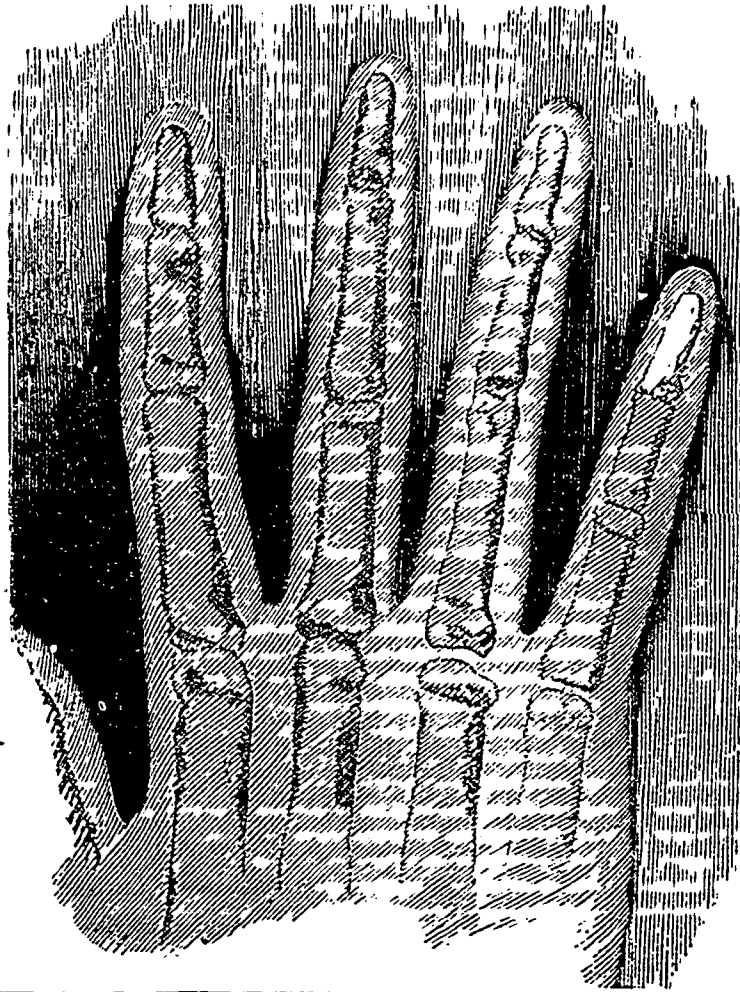
60 bushels of maize, 20 tons of pumpkins, and 5 bushels of haricot beans.

M. Xiste Archambault grew 10 tons of pumpkins, and gives 400 lbs of them at a meal to 30 head of cattle. He had, besides, $\frac{1}{2}$ arpent of yellow-eyed beans (*à hile jaune*), which grow well when mixed with maize.

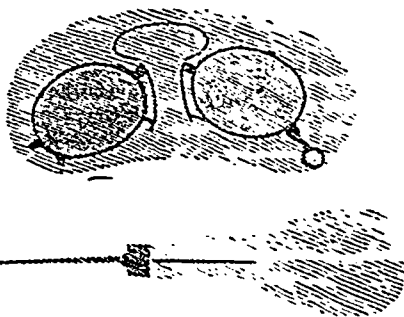
Winter-butter.—During the last two years, Mr. George Roach and others have been carrying their milk to St-Hyacinthe—17 miles. What heroic courage! And there have not been snow-storms fierce enough to turn them back from reaching that town! Henceforth, there will be no more of such hardships, for a creamery has just been built at St-Paul. Cows, in this district, calve in the fall.

It was while they were in the habit of drawing their milk 17 miles in winter, that these people found out that making butter in winter paid better than making it in summer. Bravo! this problem, then, seems to have been solved. No body can henceforth say that MM. Beaubien and Gigault have been preaching in the desert, when they advised farmers to practise winter-butter making.

THE NEW PHOTOGRAPHY.



PROF. COX'S HAND AS PHOTOGRAPHED.



BRADAWL AND PINOZ NEZ.

prise the people of a whole parish, engaged in a secret diabolical plot to divide the money-grant between them! A plot base enough to lead to the imprisonment of the whole gang!

Progress made:—Competitions of green-fodder crops, of roots, of taking care of the manure, of clean, pure grain; of experiments in the liming of land, of the yield of milk; of the most carefully kept orchards &c., &c., and many other things of like nature.

More than a thousand bushels of maize were sown last spring, of which crop M. Napoléon Arès harvested 316 bushels on his farm:

that weighed 210 lbs. He is a dealer as well as a farmer. He strongly advises the castration of the male lambs. (2) After castration, they grow heavier,

(1) We rather fancy this M. Anthime Arès is the same who, at the age of 14, won at the ploughing matches a first-rate Scotch plough. The furrows on his father's farm were beautifully regular, as we said in our report to the Department (p. 166, No. for November, 1885), "I have seen none so well ploughed during all the time I have been in this province."—Ed.

(2) So have we, at least 20 times in this periodical; but uncut lambs, the flesh of which is always red in color, and rank in flavour after August, still come to market!—Ed.

M. Joseph Blanchard's orchard.—Bouillie-Bordelaise again — How to prepare and use it.—On October 8th, at 6.30 A. M., I crept quietly into the fine orchard of M. Jos. Blanchard, whom I surprised hidden between two heaps, one of fameuses, and the other of baskets. He was packing his apples in the baskets, which hold a peck each, and for which he gets 30 cts apiece, equal to \$1 20 a bushel. From this must be deducted the following sums: 45 cts. a dozen for the baskets, the cost of the gauze to cover the fruit; the freight, which M. Blanchard complains of, very justly, as being excessive, viz, 29½ cts the cental for a distance of 30 miles. However, the apples return him a dollar a bushel, net, and that is a very decent price. "Last year," he said, "I was grieved at the sight of my apples; they were few in number, spotted, shrivelled, and more like little scabby toads than like apples. I decided, then, to use plenty of the bouillie-bordelaise this year, and now just look at the apples!" I was never more surprised than at the sight of these apples; all fine and sound; the branches bending almost to the ground under the weight of the fruit. Nevertheless, I was not a little disturbed on the sight of the leaves and apples, both of which were still covered with dried Paris-green.

M. Blanchard smiled at my terror, and taking an apple, wiped and ate it. There is not the least danger, said he. I ate two or three myself, and no ill effects followed: "Now," said M. Blanchard, "to prove to you how necessary it is to spray the trees liberally, look at the underneath part of this branch that has not been sprayed." The upper part of the apples which the bouillie had reached was sound and free from blemishes, but the underneath, which had missed the spray, was slightly spotted. "I should now be glad to see some non-sprayed or insufficiently sprayed orchards," said I "and to compare the apples with yours." "All right," said he, "just jump over the fence." We did so, and found ourselves in the Caré's orchard.

Was I surprised? rather! The apples, though they had been sprayed once, were far from being as fine as those of M. Blanchard; they did indeed look like "little scabby toads." Still, the "Summer-Calvilles," were a fine crop, and they keep well, ever up to January. The pears, too, were very good.

M. BLANCHARD SPRAYS HIS ORCHARD 5 TIMES

The first spraying should be done before the buds open, as soon as the sap begins to run, when the bark begins to turn green. Do you ask; why? To destroy the gray, ash-coloured fungus, the "tigresur-bois," which pierces the bark, and other insects. The trees are to be sprayed with a mixture made strictly as follows:

No. 1.

Lime, 4 lbs.
Blue vitriol, 4 lbs.
Water, 40 gallons.

The second spraying is to be done before the flowers expand, with the preparation,

No. 2.

Lime, 4 lbs.
Blue vitriol, 4 lbs.
Paris-green, 4 oz.
Water, 40 gallons.

The third spraying, with No. 2, should be made during the week after the blossom fall; the fourth, a

fortnight after that, with No. 2; and the fifth, about the 12th July, still with No. 2.

Having asked M. Blanchard if all this trouble paid, he told me that, last year, he only got 15 cts a bushel for his apples, instead of \$1.00 that he got this year, and that the crop of this year was three times as large as the crop of 1894.

Cultivation, &c., of the orchard—The perfect management of the orchard struck me very much. The land at the foot of every tree had been turned over and levelled, every stem had been scraped smooth, no old bark, the true nest of insects, was extant. Ashes and lime, as well as dung, had been used as top-dressing at the foot of each tree.

Varieties—Besides the *Fameuses*, I admired some *Winter-St-Laurents*; they were very fine and would look as well at the *Fameuses* as market.

Ben Davis are very hardy, keeping till June.

Three trees of *Yellow Transparent*, six years from planting, produced, this year \$8 00.

The *Wealthys* are superb and productive, but they drop off too soon.

Winter-Strawberry is an immense and delicious kind. I weighed one myself—14 oz.—; it measured 13 inches round. A fine sight these apples when on the tree.

Some have been sold for 5 cents each.

His common apples M. Blanchard dries. Indeed, I observed in the kitchen trays near the stove, on which slices of the fruit were drying. It takes a bushel of fresh to make 6 lbs. of dried apples, that sell for 6 cts. a pound. They are pressed into small square glazed boxes.

The pruning is done in spring, when the wounds are dressed with *shell-lac*, which M. Blanchard prefer to *grafting-wax*.

According to him, the *canker-worm* gets among the roots the first year and cuts the large ones; the next year it, reclaims the tree; and for that reason, the roots have to be often laid bare for the purpose of destroying this savage foe.

M. Blanchard uses the *Lewis* sprayer, and likes it very much.

Besides the apples, he gathers a great deal of honey from his hives.

In leaving this intelligent farmer, I felt convinced that M. Blanchard, though not the hardest worker, is not the farmer who makes the least profit out of his farm: there is no fear of scarcity ever invading his abode.

THE ANGE-GARDIEN FARMER'S CLUB.

The parish and the club are both good ones, and the farmers are well disposed.

The sowings of roots and maize are very much on the increase. Chaff-cutters are to be bought this winter for the purpose of cutting and mixing fodder, to be fermented, for the cows.

More hogs will be fattened, and more fruit-trees set out.

The Rev. abbé Côté, agricultural missioner, having lectured on the fertilising elements of the soil, many of his hearers wish to have copies of the table for study.

SUMMARY.

In the county of Rouville: Since the establishment of the Farmer's Clubs, greater care is taken of the cows, the cow-houses are better looked after, and the orchards better managed; a hundred times as much root-crop and maize is sown, more hogs are fattened, and a beginning has been inaugurated of making butter in winter.

If this spirited improvement continues at the same rate during the next ten years, this county will have quadrupled in value.

(From the French.)

(Signed, DR. W. GRIGNON, C. A.)

FALL, OR RATHER, WINTER PLOUGHING.

In my former notes, I said that, possibly, if it was mild or open weather, there would be some farmers ploughing at Christmas. Well, my prediction has been verified, and some even were at it on the 30th Dec. The year 1895 has been rather remarkable in many respects. A good harvest, the best for many years, an extra year for corn and roots, very dry, and it closed with a hurricane, doing a good deal of damage in many places.

There has been a considerable breadth of ploughing done, some ditching and draining, but not nearly what should have been done. I consider draining one of the most important parts on a well worked farm.

WINTER DAIRYING.

There is quite an increase of this branch of industry especially in Huntingdon County. The cows must feel thankful, if such could be possible, for the great improvement in the stables and care during the cold winter season.

If cows are to give milk they must have warm quarters, must not be allowed to stand on the lee side of a barb wire fence for shelter when the thermometer is below zero, and perhaps have to go down to the river for water. Such treatment does not ensure a great flow of milk. Quite a storm has arisen, on the other side of the line in New York State, about tuberculosis. Many think that in olden times cows were hardier than now, when they are kept in warm stables, but no doubt moderation in all things is the wiser plan. Let the stables be well ventilated; do not allow the cows out at all in very cold weather: but on fine days a little exercise will do good.

A SUCCESSFUL CREAMERY.

I enclose you a report of one of the largest creameries in this province, and possibly in the whole Dominion.

I hope you will have room in your paper for the report. Over 3 millions pounds of milk in 8 months! This creamery runs the whole year, nearly \$22,000 were paid out during the 8 months. There must have been well on to another million lbs of milk in the other 4 months. I hardly think there has been another creamery in the whole of Canada that has done so well.

PETER MACPARLANE.

Chateauguay 3rd. Feb. 1896.

"TRUE HEROISM."

Honor and fame from no conditions rise; Act well your part, there all the honor lies.

Heroes are generally supposed to be found only where danger threatens. The general who leads his army to victory is a hero; the admiral who defeats the enemy of his country on the High Seas is a hero; the explorer who discovers a new country is a hero; the fireman who rescues the unfortunates from the burning ruins, the person who perils his own life to save that of a fellow creature from drowning, these are heroes. But there are also heroes in the common affairs of life. Webster defines heroism as bravery or unselfishness. A man can be brave in the battle of every day

life, can be unselfish without proving that he is so by any special acts of daring, or of intrepidity. A farmer, contrary to generally preconceived ideas can be, and often is, a hero.

The pioneers of this Province who came here with small means, but strong will, and a good axe, when there were no roads and when they had to carry their provisions many miles on their backs, and submit to all the inclemency of the rigorous climate, and yet in face of all these, apparently insurmountable, difficulties cleared the land and succeeded in bringing it into such a state of cultivation as to enable them to bring up large families who are now respectable members of society, while themselves are comfortably provided for in their old age: these men were heroes. These men were as heroic in their humble way as the general who saves his country's honor by arms, for like him they only did their duty in that state of life to which they were providentially called. And although the necessity for such undaunted courage and endurance as our forefathers displayed and suffered no longer exists, there is still an opportunity for a farmer to be a true hero. Let us compare him with the soldier, and we shall find that he must possess many of the same qualities.

A farmer, on however small a scale is a general of a division and must have the courage to be a leader as far as his own little domain is concerned. A good general will see that the equipment of the part of the army which he commands, is complete, the accoutrements always in good order and ready for immediate action. The tools on the farm are the farmer's accoutrements and we cannot call him a good farmer if he does not keep these in the best working order and convenient for use. A general sees that his men are well victualled and as well provided with quarters as circumstances will permit because to keep them in the most vigorous health and strength is all important. A farmer's little army are those whom he employs, whether they belong to the human or brute creation. Therefore, he must see that they are properly treated and fairly dealt with to keep them efficient. A general never goes into action without studying well his plan of attack and defence. A farmer will do nothing without due and mature consideration of the probable results. He will study well the action and habits of the enemies he has to contend with, and be prepared to receive their assaults with a full determination to subdue or exterminate them.

Weeds, insects, fungous growths, and diseases of animals or plants must be understood and promptly battled with by all the means known to modern scientific research, and experimental demonstration, and in no case must they be allowed to get the victory by neglect or inattention.

A farmer like a good general will scoff at the idea of defeat, if repulsed occasionally by unpropitious seasons and failure of a crop; he will not lose heart but will, like Grant "fight it out on the right line if it takes all summer." One of the great qualities of true heroism is not to acknowledge defeat. The little bugler who was taken prisoner, when brought before Napoleon after sounding the "advance" was asked by the Emperor to blow the "retreat" and he promptly replied there is no such thing in the British army.

The analogy between the hero in the Art of War and the one in the most peaceful avocation as to the leading qualities necessary to belong

to both, such as, strict despoiture in all things, promptness in action, kindness of disposition (the bravest have always been found to be the kindest), may be carried still further into detail, but suffice it to say that even a farmer can and may be a true hero, and this should teach our young men that there is nothing pusillanimous in the profession, but that each one should make up his mind to attain to excellence and not be content with mediocrity. What we want at the present time are men of will—energy, action, firmness—who will learn all they can, practice what they know, and be heroes in the battle of progressive agriculture.
GEO. MOORE.

FEEDING CATTLE TWICE DAILY, AGAIN.

Dear Mr. Editor,

I did not intend to revert to this subject again, about which we can agree to differ, but in your foot note to my last article you in a manner throw down the gauntlet by stating that Mr. Drummond feeds his cattle five times a day, and which I am surprised to hear. I am quite aware that, from a British point of view, frequent feeding of animals is considered a necessity, I know how it is myself. When I arrived in the United States, over 30 years ago, I had always been accustomed to my five meals daily and you can judge of my dismay when the custom of the country out me down to three I thought I should inevitably starve, and longed for the "Flesh pots of England," but I soon fell into the habits of my American friends, and found that I could thrive upon the three meals better than I formerly could on five. Habit has a great deal to do with comfort and healthy development, and if we can habituate our cattle to less frequent feeding with as good a result, surely the economy of time is worth consideration. I know that Mr. Drummond's herd is always in splendid condition, which is certainly a strong argument in favour of his practice, but if other feeders can produce cattle equally thriving who adopt the twice a day method, how are the facts to be reconciled.

At some seasons of the year every hour of every person engaged on a farm is of the utmost importance, and if the cattle take up most of one man's time to feed them that will be some loss. Say, for instance in the busy time of preparing and seeding in the spring, before the cattle are turned out to pasture the person in whose charge they are will have no time to help in these operations if he has to run off every two or three hours to feed the cattle, whereas, if they were all cleaned, milked, fed, and watered by eight or nine o'clock and allowed to rest without being disturbed until five P. M., he would have six good hours to work on the land. I should like if possible to obtain a number of opinions pro and con on this question. In the meantime I have collected a few with the practical results obtained by twice feeding and with your permission will quote some of them.

Col. J. H. Taylor of Cookshire county of Compton, who bears the best reputation as a successful feeder in the county, says over his signature. "For years I have only fed my cattle, twice daily and I am quite satisfied that the results are entirely satisfactory. The quantity of milk being increased and the quality fully maintained. I consider it the most common sense method of feeding after thirty years experience.

Mr. Charles R. Beach, Whitewater Wis.,: "We have been feeding silgo to 26 cows from which we make butter; 23 gave milk the whole time, 17 came in since October and seven are farrow and strippers. The daily rations of these cows have been 45 ensilage 12 quarts wheat bran, 10 lb. hay fed in two rations, morning and night, no feed in the middle of the day. The daily yield of butter has been 27 to 28 lbs., requiring, 18 to 18½ of milk to 1 lb. of butter."

Mr. Conno in *Country Gentleman* writes, "we practice a regular system of feeding. After milking we give their ration and water, we then sweep the manger dry and leave them alone until before milking; we give grain again; then, we milk them and give them hay. About 8 o'clock we clean out the manger and give them water. In 1888 we average 1800 quarts of milk per cow and in 1894 by the improved methods adopted it had raised to 3754 quarts per cow.

No less an authority than *Hoard's Dairyman*, March 22 '95 in recommending a formula for a ration—adds—Divide the hay and grain into equal parts and feed half in the morning and half at night, give cows plenty of time to ruminate, by which we mean do not keep feed before them all the time.

R. W. Ellis, Somerset, Co. Me., also writes in *Hoard*, March 8th, 1895. "We fed through December fourteen fairly good Jersey cows and heifers, a part of them fresh in milk, and part strippers, 700 lbs. of ensilage from sweet corn fodder with the ears taken off for the factory, 70 lbs. mixed hay, 70 lbs. cotton seed meal, 30 lbs. shorts daily, at two feeds morning and night and they gave us an average of 240 lbs. of milk per day, which tested 5½% butter fat.

This evidence can be multiplied in every direction (1), and I must admit that I am surprised at the number of farmers whose cattle are in the most satisfactory condition and whose practice is to feed only twice a day.

I have no wish to prolong the controversy, on this subject, especially if no practical result is to be obtained, but if so I think it would be well to ask for some further correspondence.

If, as I think, time can be saved without detriment to our animals, surely that is economy; for time is money and economy is the root and ground work of success.

GEO. MOORE.

(1) And so can the other system of feeding more frequently, Mrs. Jones to wit.—Ed.

Correspondence.

Dear Mr. JENNER FUST,

I notice the following query in your Journal this month:

"Does any one know from what language the word *grieve*, used in Scotland to denote a farm bailiff, is taken? Danish?"

The following, clipped from *The Yorkshire Post*, answers the question, which I notice has been under discussion in that Journal for some time past.

PRÆPOSITUS.

"An extract from the Court Rolls of the Manor of Wakefield relating to the parish of Halifax states that John Hoyle, of Lightcliffe, was elected Præpositus, or Greave, A. D. 1485. According to a well-known Yorkshire archæologist there were twelve land owners in the three townships of Hipperholme, Lightcliffe, and Brighouse, and the office of Præpositus was appointed, annually, by the superior lord, for the purpose of collecting his rents. I assume that the word "Greave" is derived from the Saxon *Gerefa*."

Your obed't. Serv.,

HENRY R. GRAY.

Præpositus = an overseer. Thank you very much, Mr. Gray, for your kind attention. By the bye, there is a Mr *Grieve* in the House of Commons, M. P. for the N. Riding, of Perth.
Ed.

DOES BEE-KEEPING PAY?

This is a question I am asked a great many times by those contemplating going into the keeping of bees. Speaking from my own experience and observation extending through a great many years, I can unqualifiedly answer that it *does* pay well to those who are adapted to it and are willing to give it the attention and care it requires. It must be conducted on the modern system, and the bee-keeper must thoroughly understand the nature and habits of his charge. Many people have an idea that all one has to do to raise honey, is to purchase a few colonies of bees and some hives to start with, the bees will then board themselves, increase, and store honey without further effort on their owner's part. When they try the experiment

they find they are mistaken. It requires labour, knowledge, judgment, method, attention to details; in fact, bee-keeping is not an occupation a careless or indolent person should engage in with the expectation of reaping a large reward.

I know of many bee-keepers who yearly on the average realize from three to six dollars profit per colony, from large apiaries consisting of from 80 to 175 colonies of bees. Individual colonies in many instances have been known to yield a return of twelve and fifteen dollars in honey alone, in one season, but of course this is exceptional. Some years will prove less profitable to the beekeeper than others, as is the case in all kinds of pursuits depending upon the seasons for success. Some years, the flowers will be more abundant than others, or other conditions may result in a greater or lesser return for the labour bestowed, but taking one year with another, there is no rural occupation one can engage in with greater hopes of success, if rightly managed, than bee-keeping. It does not require a large amount of capital to start with, it takes nothing from the fertility of the soil, it requires attention only part of the year. It is an advantage to the fruit-growers and farmers through fertilizing many blossoms that but for the aid of the bees in carrying pollen from one flower to another would remain barren. There is a satisfaction and pleasure derived from watching the labours of the bees and caring for them that is wonderfully fascinating to a great many. It is an occupation that harms no one, it is capable of being expanded to a great extent, it offers an important source of income to a great many. It is a subject attracting considerable attention of late. The Dominion Government has established Experimental Apiaries at nearly all the Experimental Farms, the one at Ottawa in particular being especially complete.

I do not by any means advise every one to go into bee-keeping, but I would say to those who are willing to study up and learn how to manage bees as they should be, and who are not afraid to work, that there is a good opportunity open to them. The price of honey is fair, and there is a good market for a good article. On the whole, after taking everything into consideration, the amount of labour required, the capital invested and the returns likely to be realized, there are few or no pursuits the farmer or country resident can engage in with

RETURNS OF BUTTER AND CHEESE FACTORIES.

SEASON 1895. ONLY BLANK AUTHORIZED BY THE DAIRY ASSOCIATION OF THE PROVINCE OF QUEBEC. (West-Shifford Creamery.)

Total milk received each month.	Month.	Sales as follows: Average sale.	Sale price.	Butter or cheese date shipped from factory.	Total milk included in each sale.	Total butter or cheese in each sale.	Yield by 100 lbs. of milk.	Gross proceeds of each sale.	Cost of make and expenses of each sale.	Total paid to patrons for each sale.	Paid to patrons by 100 lbs. milk each sale.	Date of payment of each dividend to patrons.	REMARKS.
	April	18.67		May 5	279219	16899	3.91	2034.49	283.22	1751.27	63	May 10	
	May	15.31		June 5	440782	18970	4.30	2205.10	491.45	2413.65	54 8	June 10	
	June	16.44		July 5	535039	23389	4.18	3680.86	580.72	3100.14	58 2	July 10	
	July	17.5		Aug. 5	465736	20119	4.33	3534.39	521.37	3013.02	64 7	Aug. 10	
	August	17.74		Sept. 5	337611	16188	4.79	2871.64	514.20	2157.44	72 7	S-pt. 10	
	September	18.64		Oct. 5	335336	16568	4.94	3088.66	435.01	2653.65	79	Oct. 10	
	October	23.3		Nov. 5	373806	19215	5.14	4476.78	496.87	3979.91	1.06 6	Nov. 10	
	November	20.42		Dec. 5	250751	13585	5.41	2774.27	346.42	2427.85	.96 8	Dec. 11	
	Totals				3018280	134013		25366.19	3560.26	21796.93			
	Average						4.57				72 2		

M. Dubord's Model Henhouse, at Beauport, Quebec.

FIG. 1—PLAN A. B.

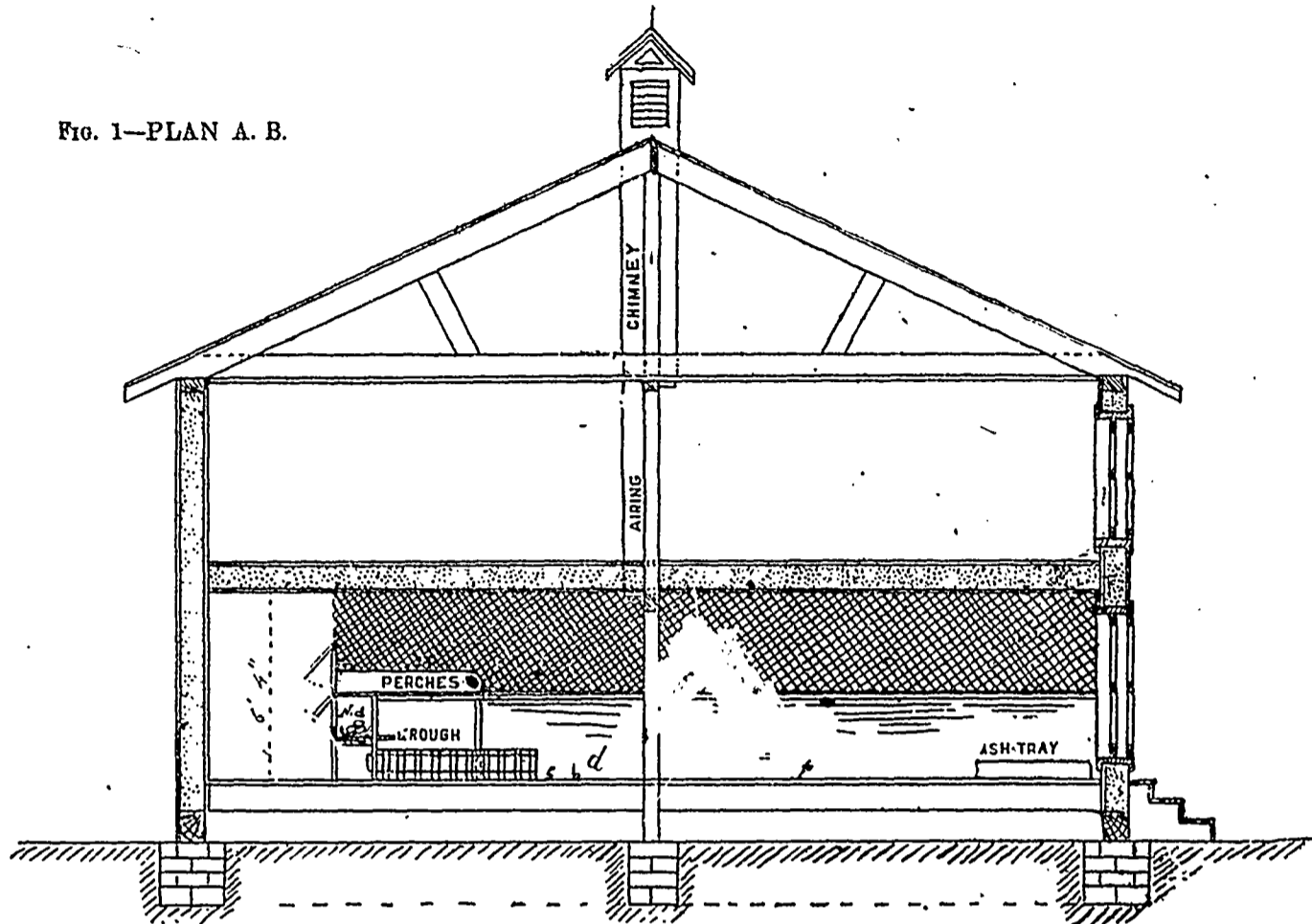
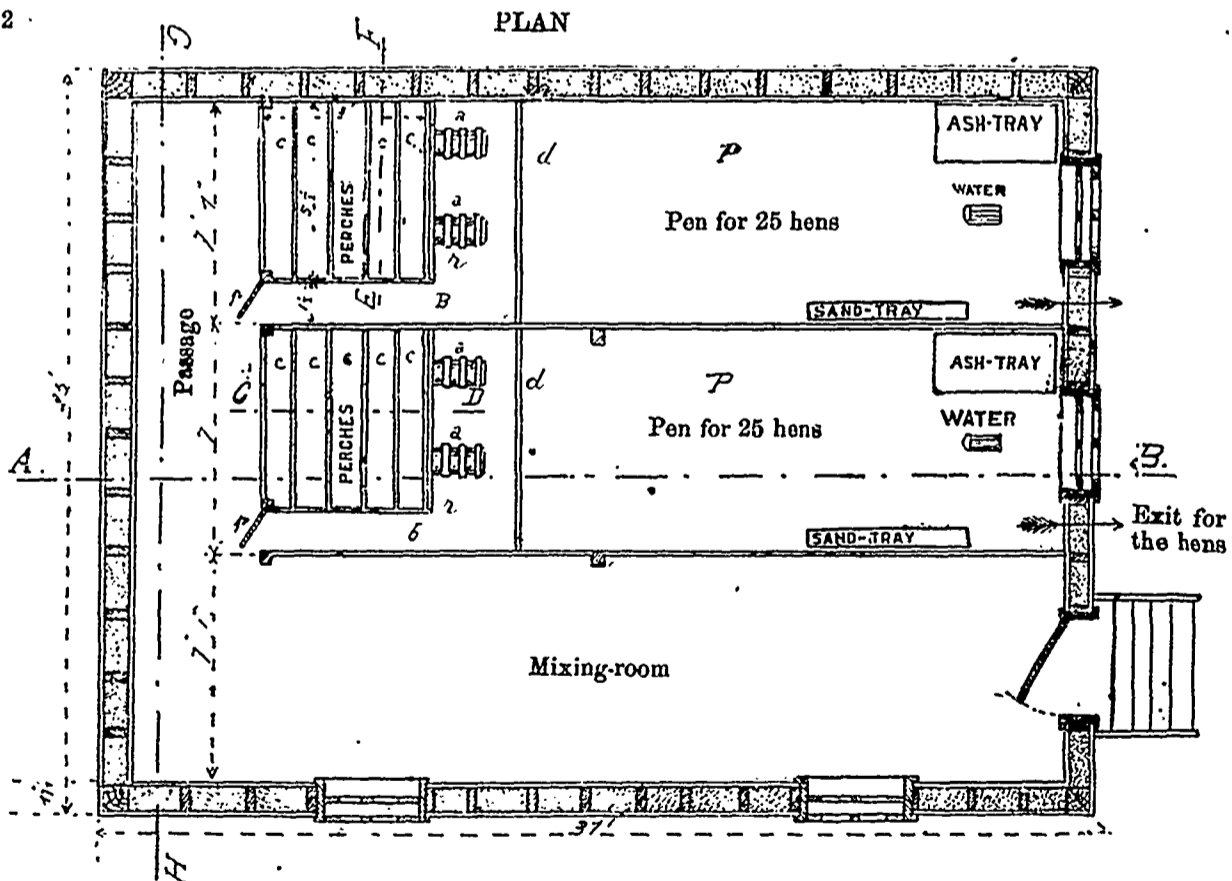


FIG. 2



greater hopes of success. But let it be well understood before he embarks in it extensively, that he must understand his business to succeed in this as in anything else. It may be learnt by reading up one or more of the various text books on the subject, by subscribing to some good bee-journal, by visiting other bee-keepers near him, and combining these with experience and work with the bees themselves, beginning on a small scale and gradually increasing as he feels sure of his ground. F. W. JONES, Bedford, Q.

A MODEL HEN-HOUSE.

Temperature, ventilation and light.— Food.—Crushed bones.— Fittings.— Value of poultry-dung.— Bone-manure.

Last January, we had the pleasure of inspecting the hen-house of M. Dubord, on his property at Beauport. Engravings of the building and the fittings of this establishment for the production of eggs in winter will be found at pp. 306, 307.

TEMPERATURE, VENTILATION AND LIGHT.

In entering into the large hen-house of M. Dubord, containing at present 225 head of poultry, but built for 300, the visitor is chiefly struck by the pleasant temperature of the house, and the purity of the air. We looked for the stove that spread such an agreeable warmth about—a temperature of 58° to 60° being the average throughout the winter—but M. Dubord explained to us that the 225

fowls were themselves the cause. The numerous windows all had double sashes, and each sash double panes of glass—4 panes in thickness.

The walls of the house are carefully built and boarded inside and outside with tongue and groove boards. The interval between these is 9 inches, and is filled up with sawdust. The ceiling is treated in the same way.

As to the purity of the air, that is secured by a good ventilator as well as by the perfect cleanliness observed.

The house is cleaned out, the dung taken away, and the floor under the perches disinfected every day.

THE FOOD OF THE POULTRY.

Each yard or division holds a group of 25 to 30 hens. The food is as follows:

Morning.—1 lb. of *moulée*; the composition of which will be given hereafter; and from 1 to 2 pounds of meat and crushed bones. The meat and

- 200 lbs. of bran;
- $\frac{1}{2}$ bushel of pease;
- $\frac{1}{2}$ " " beans;
- $\frac{1}{2}$ " " flaxseed.

If this mixture does not satisfy the fowls, they must be hard to please; but they do well on it, and prove its efficacy by the number of eggs they lay in the very heart of the Canadian winter.

The morning-meal—*moulée*, meat and bones—costs $1\frac{1}{2}$ to 2 cents for the 25 hens.

them; and the whole cost amounts to 6 cents a day.

Besides the sand in a great flat tray, there is always plenty of ground oyster-shells and broken white quartz, of which hens are very fond; in fact, the whole flock consume several bushels of quartz every year.

THE BUILDING AND ITS DIVISIONS.

The building is 66 feet long by 30 feet wide.

sion. In the engraving, 2, only two of them are shown.

Each compartment, 26 x 7 feet, holds 25 hens, and is divided into two principal parts by a board *d* six inches high. The larger, *P*, (v. fig. 2), contains the chaffed straw for litter, the ash-trough, water-tub, and the crushed quartz trough; and in this division the hens take all the exercise they need.

The smaller division, *r*, for which see figs. 1, 2, 4 and 5, contains the

FIG. 3—PLAN G. H.

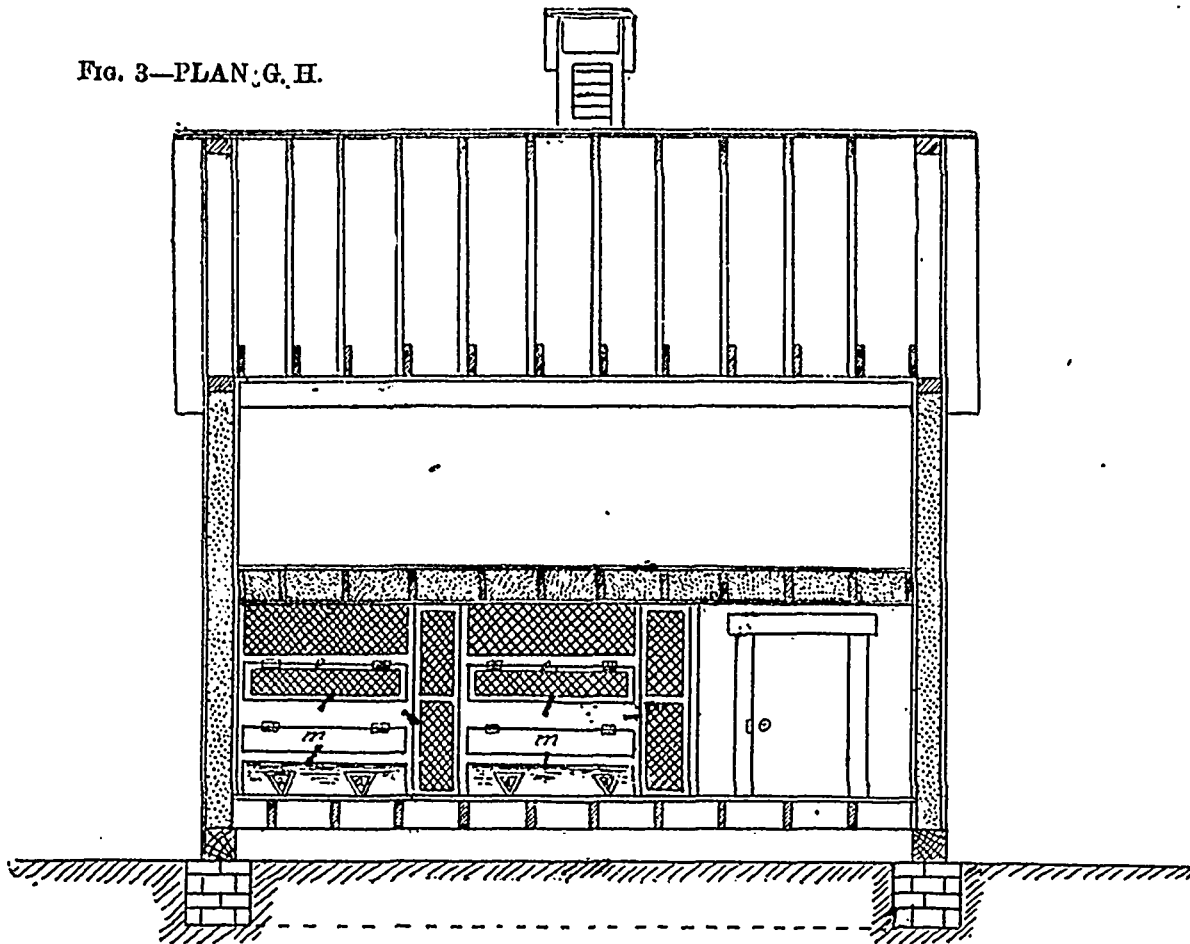


FIG. 4—PLAN E. F.

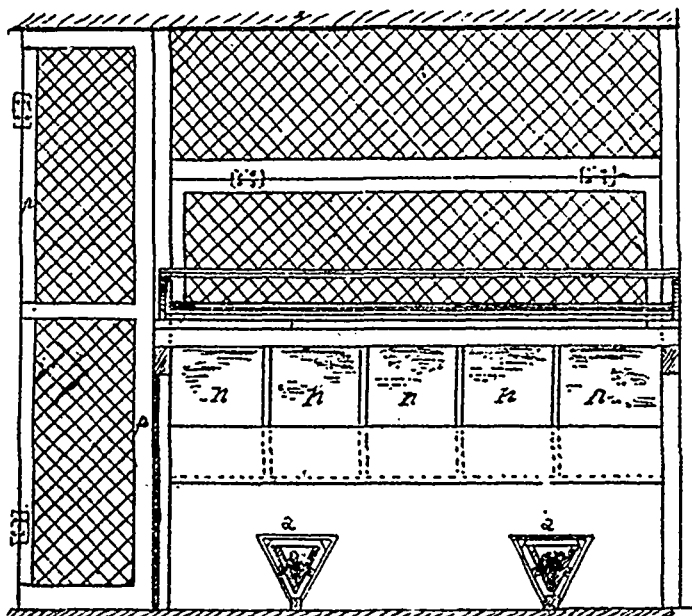
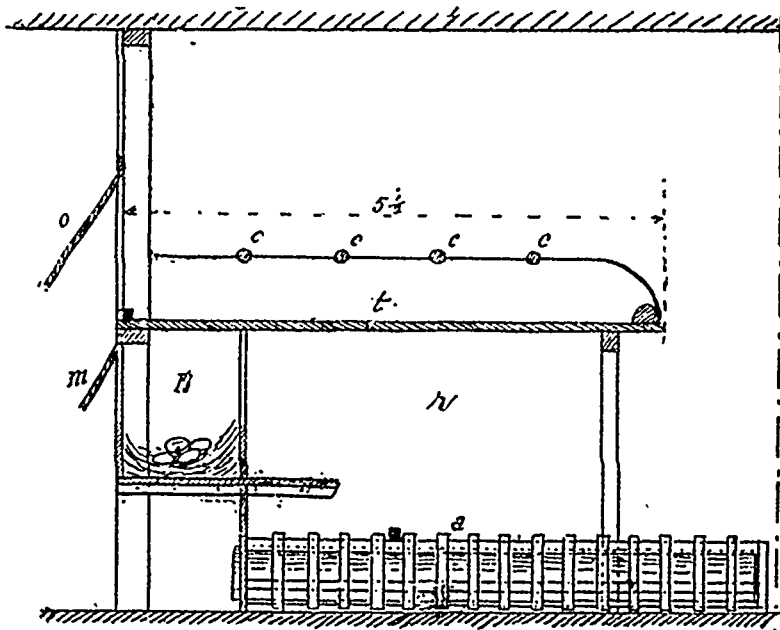


FIG. 5—PLAN C. D.



bones are generally got from bullocks' heads, costing 6 cents a piece, and the bones are crushed by the "Manx mill."

The *moulée* is thus compounded:

- 2 bushels of wheat;
- 2 " " corn;
- 2 " " buckwheat;
- 2 " " barley;
- 6 " " oats;

Noon-meal:—Rather more than a quart of wheat, corn, and barley or buckwheat, thrown on to the straw. Cost, 2 to $\frac{1}{2}$ cents.

The cost of the day's food of 25 laying hens is about 5 cents. Add 1 cent for cabbages, mangels, and other roots; which are suspended by a string in the middle of the compartment to give the hens exercise in jumping at

Fig. 1 is a transverse section, showing the two storeys and the frame of the roof. At present, the first floor is only arranged for 300 hens. But before long the second floor will be fitted up, and as many more hens will be kept.

The first floor is divided, lengthwise, into ten parts or yards, with a passage along the front of such divi-

nesses, perches, &c., and must be described in detail, as it is most ingenious and perfect in construction and plan.

First, the floor of this division is covered with sawdust; two very long troughs *a*, V shaped and moveable hold the food; they are drawn in to be filled and replaced by the passage, so no one has to go into the hen-house. To prevent waste and the

fouling of the food, the troughs are guarded by a frame of small laths.

A little above the two troughs are the nests or laying places, *n, n, n*, five or six in number (see figs. 4 and 5), into which the hens get through fairly large openings.

It is not necessary to enter the compartment to collect the eggs; all that is needed is to raise a board, *m, v*, fig. 5, which closes all the nests by the side of the passage, and keeps them dark enough.

Above the nests stretches the floor, *t*, 5½ feet wide, and about 8 inches above it are the perches, *c, c*. While the fowls are at roost, their dung falls on the floor, and is taken away daily without any one going into the compartment, for it can be raked up with a hoe, or any other suitable tool, by raising the plank *o* (fig. 5.)

The door *p*, by the side of the nests and perches, and extending the whole height of the house (fig. 2, 3, 4), gives entrance to the compartment; by this door, all the sweepings of the litter &c., are withdrawn, and the poultry attended to if anything goes wrong.

The compartments are separated from one another by close partitions (of boards) from the bottom upward, two or three feet high, and thence to the ceiling by a lattice-work of laths and wire, as in fig. 1; thus, there is a free circulation of air in every part.

In front, *i. e.*, on the side of the passage (*v*, fig. 3 and 4), the doors opening into the compartments, as well as the rest of the partition, are also of laths or wire.

Each division receives light directly from a large window (fig. 1 and 2). Level with the ground is a large opening, closed in winter and only open in summer, by which the fowls can go and take their pleasure in the open air in their summer yards.

Still more light is given to the house by several windows opening on the large passage.

POULTRY DUNG.

M. Dubord gets a great quantity of rich manure from his 225 hens so well fed as they are. What falls from them, when at roost, on to the boarded floor is free from all admixture with foreign matters, and is carefully kept in barrels. The litter contains the rest of the droppings. M. Dubord uses a great deal of it on his large garden, and sells the rest at a good price. His last onion-crop gave a yield of 600 bushels an acre, some of them weighing nearly 1½ lb. a piece. Seven of his pumpkins went over 100 lbs. each!

BONE-MANURE.

We said that M. Dubord's poultry receive a large feed of bone-meal daily, it is one of the best food to make hens lay in winter; and we wish to draw the attention of farmers to the value of this system of feeding:

The raw crushed bones are by the digestive powers of the fowl converted into a phosphatic, nitrogenous manure, assimilable by plants, and, from that point of view, the stomach of the fowl constitutes itself into a most economical laboratory for the preparation of bone-phosphate of the best quality.

Let us, then, keep as many laying hens on our farms as we can manage to get together, and give them all the bones we can collect; we shall, to begin with, get plenty of winter eggs, which always sell well, and our hens will manufacture for our use an incomparable phosphatic, nitrogenous manure.

(From the French).

IT IS GOOD FOR CATTLE.

The Question of Brewers' Grains as Fodder Discussed by Learned Men. (1)

The statement of Dr. Laberge in the Herald to the effect that the feeding of brewers' grain was injurious to cattle caused the following letter to be sent to Dr. McEachran.

Montreal, February 15th, 1896.

Dear Sir, — We, the undersigned brewers of Montreal, beg to call your attention to the enclosed extracts which have appeared in the Montreal newspapers during the past few days, regarding the unwholesomeness of brewers' grains as food for cattle. Would you kindly give us your opinion as Chief Government Inspector of Stock for the Dominion of Canada on this matter.

Signed, Wm. Dow & Co.
John H. R. Molson & Bros
Dawes & Co.
H. A. Ekers.

To DUNCAN McEACHRAN, Esq.,
D. V. S., F. R. C. S.
Chief Inspector of Stock for Canada.

THE REPLY

Dr. McEachran replied as follows: Dominion of Canada, Dept. of Agriculture, Office of the Chief Inspector of Stock

Montreal, Feb. 15th, 1896.

Messrs. Dow & Co.
John H. R. Molson & Bros.
Dawes & Co.
H. A. Ekers.

Gentlemen, — In reply to yours of this morning inclosing newspaper cuttings, on the subject of feeding brewers' grains to dairy cattle and asking me to express my opinion, in writing, to you on the subject, I beg to say that there is not a deleterious in the draft as sold by brewers to the cattle feeders. In the process of brewing grain of the best quality only is used; it is deprived of some of its starch and probably to a certain extent of its albuminoids, thereby lessening its nutritive value, but the residue is in no way rendered unfit for food and can in no manner produce injurious results on the health of the animal eating it or on the milk produced by them, other than would result from any food deficient in certain nutritive elements, nay, I would further state that the boiling to which it is subjected would effectually destroy any injurious germs, such as fungi or smuts, which occasionally are found in raw grains.

So far, therefore, as the functions of the Board of Health are concerned in interfering with the sale of this valuable bye product of the breweries, it does not appear to me to be justified on the ground of preventing disease; on the contrary it would be an unwarranted interference with two important commercial industries, brewing and dairying. Nor would such action be local in its effects, for there are no less than 10,000 head of beef cattle fed in the distillery byres of Canada every year on grains which, unlike brewery grains, have undergone the process of fermentation, and consequently would be much more likely to contain various products of fermentation, yet we do not find that they prove injurious to the health of the cattle. (2) The Board of

(1) From the Montreal Daily Newspapers.
(2) Our own experience at the Kingston Distillery (Morton's) agrees with this. — Eo.

Health are to be commended on the signs of awakening interest in the milk question; it has a very important bearing on public health, and in this they may rely not only on the sympathy but the active co-operation of the public and professional men of the city.

Yours truly,
Signed, D. McEACHRAN.
Chief Inspector of Stock.

DR. GIRDWOOD'S OPINION.

In reply to a letter sent to Dr. Girdwood on this important question the following was received.

Chemical Laboratory,
Faculty of Medicine,
McGill College.

February 15th, 1896.

To Messrs. Dow & Co.
J. H. R. Molson & Bros.
Dawes & Co.
H. A. Ekers.

Gentlemen, — In reply to your letter calling my attention to the paragraphs which have been in the daily papers stating that the Health Department are investigating the milk supply and having it analyzed for Bichromate of Potassium, and that steps have been taken to stop the use of brewers' grains for feeding cows.

Bichromate of Potash is such an active poison that it should not be allowed to enter into articles of food, and the milkmen, if such there be who use it, should be punished. The use of brewers' grains is quite a different matter. I can see no objections whatever. The brewer obtains the best grain on the market; by the process they are put through in brewing all germs that might possibly be present are destroyed.

Brewers' grains are not like distillers' grains which have undergone fermentation, and may thus contain all kinds of germs, good, bad and indifferent. Brewer's grains, in respect of ferments, are better, coming as they do direct from the hot mash tun, than the ensilage now so much extolled and used for feeding cattle, and which is stacked in close piles and does undergo a kind of fermentation, and which if examined would be found to give ferments of different kinds in abundance.

Yours truly,
Signed, G. P. GIRDWOOD.

Brewers' Grains. (by the Editor.) — We have had as much experience in the use of brewers' grains for milch-cows, horses, swine and ewes as most people. Our family's private brew-house, in Kent, England, was what a brewer would call an eight-quarter one, *i. e.*, we mashed 64 bushels each brewing. The whole of the grains — exhausted malt — was given to the stock on the home-farm. The same was done with them at Sir Percival Hart Dyke's private brew-house, of about the same calibre, at Lullingston Castle, Kent, and Mr. Jenner, of Wenroe Castle, Glamorgan-shire, S. Wales, pursued the same plan. These are instances of the use of grains that came under my own personal observation in England, and in no one instance did we ever hear the slightest insinuation that the effect of grains as a food was injurious to cattle.

Every London milkman, in my day, used at least 150 bushels of grains per annum per head of his cows, and we never heard of any harm arising to the cow or to the customers of the milkman from such food being used.

At Burton-on-Trent, to day, hundreds of thousands of bushels of grains, of

which there is generally an over-plus in the winter, are bought by farmers in the neighbourhood and trodden-down firmly in siloes or tanks for later consumption.

A more modern plan is now being pursued in some of the great London breweries: the grains are desiccated, *i. e.*, deprived of most of the water they contain, and sold in that form.

In Canada, we ourselves had a brewery, for some eight years, at Chambly. It is no exaggeration to say that the farmers of the neighbourhood were crazy after the grains, and crowded up the office on brewing-days to a most inconvenient extent. We never heard the slightest hint of any injury arising from their use by cows, or to the human consumer of the milk produced.

What are the processes by which barley is converted into grains? Briefly, they are these:

The barley, always carefully selected, (1) is steeped in water for from 50 to 70 hours. It is then put into *couch*, allowed to germinate on the floors, in beds gradually thinner and thinner, being turned at regular intervals to encourage the growth of the *acrosipire* or plumule up the back of the grain, and when that is sufficiently advanced, the barley is put on the *kiln*, dried, deprived of its rootlets or cummins, and after crushing, is ready for the *mash-tub*.

In the *mash-tub* the crushed malt is mixed with water at a temperature of, say, 170° F., and, after standing some two or three hours, the extract or wort is let off into the boiling-back. Then more water is sparged, or sprinkled over the malt, which water permeates the mass, and rejoins its predecessor in the boiling back, or copper, and, under the name of *wort* goes through the usual cooking with hops and the fermentation with yeast, until it becomes beer. The whole process of making *grains*, from the first mixing with hot water to the end of the running off of the last sparge, does not occupy more than from 5 to 5½ hours. At what part of this process does the change take place that renders the wholesome *grain*, barley, become the highly deleterious feeding material *grains*? It would puzzle any one to tell.

The changes that take place, in the brewer's *mash-tub* are as follows: About 15 minutes after the hot water and the malt come in contact, the marvellous principle called *diastase* begins to do its work of converting part of the starch of the malt into gum and sugar. The brewer would be very glad if the greater part of the albuminoids of the barley could be got rid of, as he does not care to have too much fermentative matter in his worts, and in *malting* about ⅓ of the albuminoids of the barley are lost.

AVERAGE COMPOSITION OF BARLEY AND OF GRAINS. (Wolf.)

Barley.						
Water.	Ash.	Albuminoids.	Fibre.	Other Carbohydrates.	Fat.	Value per 100 lbs.
14.3	2.2	10.0	7.1	63.9	2.5	\$0.95
Brewer's grains.						
75.2	0.3	5.9	3.9	13.2	1.5	0.36

(1) Best malting barley from the Saate, and from Moravia, is now worth in England, 4s shillings a quarter of 8 bushels, heavy grinding barley, 2s shillings. — Eo.

We agree entirely with the two letters that precede this article. With reference to the "destruction of *Jungi* or *smut* by the heat in the mash tun," we beg to say that we have taken the temperature of the worts hundreds of times as they were running off, and never found them less than 150° to 152°; the heat of the whole mash—malt and hot water mixed—was 20 minutes after the mashing was finished and the tun covered, about 158° to 160°, a very curious rise in temperature being always observable at that time.

The Poultry-Yard.

The Breeding Season—Selection of the breeding stock—Proper number to breed from—How to obtain fertile Eggs—Treatment of the sitting hens.

(A. G. GILBERT.)

The season for mating and breeding is now upon us. Success or failure in results depends upon the way in which the fowls are mated. The aim of the farmer should be to better his stock of layers, by careful mating, every year. The usual slipshod method of allowing a certain number of male birds to run with the hens, regardless of results, is a positive hindrance to progress. How so? In this way. That without care in selecting the best to breed from, no uniform excellence in laying, or flesh making, can be obtained.

SELECT THE BEST TO BREED FROM

The farmer should make it a point to pick out from his stock the best shaped and most prolific layers. If they are yearling hens they should be mated with a two year old cock. If two-year-old fowls, a vigorous yearling male should be used. If possible, the male bird should come from a family of great layers. Having picked out his best layers and mated them with a carefully selected cock, or cockerel, he is likely to go on from good to something better. As like is said to beget like, the carefully selected male and females are not likely to give unsatisfactory offspring. The farmer will have a greater number of fertile eggs and the chickens will make rapid growth and vigorous development. A little thought given to the subject of proper mating; a little exertion made to secure this desirable consummation; a little more intelligence and trouble at the right time, will add many more dollars to the purse in the fall of the year, when the April and early May cockerels should weigh four, or, five pounds each and the pullets making ready to soon add to the egg yield. With careful treatment and regular feeding the cockerels should make development at the rate of one pound to one pound and two ounces per month. This weight may not be attained the first month or six weeks, but the gain in later months will make the figures quoted, about right.

THE PROPER NUMBER TO BREED FROM.

It has been stated in previous pages the proper number of hens and the different breeds to mate up, but it may be admissible to repeat the figures on the present occasion.

Light Brahmas,	1	do	7 or 9	females.
Buff Cochins,	1	do	5 or 7	do
Plymouth Rocks,	1	do	9 or 11	do
Wyandottes,	1	do	do	do
White, or, Black				
Minorca,	1	do	11	do
Leghorns,	1	do	11	do
Andalusians,	1	do	11	do
Javas,	1	do	7 or 9	do

If the laying stock are confined to limited quarters, a lesser number of females will do. Or, if an early mating is required for early fertile eggs for incubator use, half the number of hens will be answer. In the latter case and indeed in all cases the rule should be to keep the male bird away from the hens until the breeding pen is made up.

On the other hand where the farmers, hens have an early run out, the full number of hens mentioned, and even a larger number, in the case of the Mediterranean class may be allowed. Much depends upon circumstances governing different cases.

HOW TO OBTAIN FERTILE EGGS.

Having picked out the best in shape and size and the best layers in your flock, the next aim should be to have them put into the pen in the proper condition. Care should be taken not to have the Plymouth Rocks, Brahmas and Wyandottes too fat. These breeds put on fat very easily and eggs from overfat hens are not likely to be fertile, nor are the chicks, if any are hatched, likely to be strong upon their legs. If the hens selected have been laying well all the winter, it will be well to give them a rest and, if at all possible, a run out, before the eggs from them are saved for hatching purposes. All eggs hatch better after the hens have had a run out, after the long term of artificial existence during the winter season. The writer has however, had some exceptional experiences in the case of 11 White Plymouth pullets and a cockerel and 4 White Java hens and a yearling cock. In both cases, although the hens laid well all the winter and were mated early and their eggs set early, the percentage of fertile eggs was large and the chickens grew vigorously. All this no doubt was owing to the constitutional vigour of the strains the fowls came from. Cat green bone is an excellent ration for feeding to breeding stock. The hens will eat no more of it than is good for them, and it contains shell making as well as egg making material.

KEEP THE SITTERS IN A QUIET PLACE.

The sitting hens should be kept in a place by themselves. Close by them should be a trough containing food, a dust-bath and water to drink. There will be no inducement then for the sitters to go any distance to find food and drink. Canadian corn is the best food for early sitters, because it fills the crop quickly and early eggs will not stand much exposure to cold. Seven minutes is quite long enough for the hen to be away from the nest. If you have all she wants handy, she will not be much longer off the eggs. When the weather is warmer mixed grain is the best food. But the object of the farmer should be to have early chicks, for they mean early cockerels for market, and early pullets for layers. The treatment of the newly hatched chickens and the proper way to cause their rapid and vigorous growth, will receive consideration next month.

FARMERS' SYNDICATE OF THE PROVINCE OF QUEBEC, Office: 23 St. Louis Street, Quebec.

President: His Grace Mgr. L. N. Begin.
General Secretary: Ferd. 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.

MARK LANE: Prices current; Jan. 13th

WHEAT, per 504 lbs.; British	s. s.
White.....	28 33
Red.....	27 31
London flour per 280 lbs.....	27 —
Barley, foreign.....	16 44
Malting English.....	30 38
Grinding.....	16 21
Oats, English per 8 bushels...	15 29
White pease.....	32 33

FOREIGN.

Wheat—Manitoba.....	27 29
Canadian white pease.....	27 28
London Cattle market, Oct. 14th:	
Milch cows, per head. £15 to £23	

BEASTS.

Scotch.....	s. d.
Hertsford per stone of 8 lbs..	4 6
Welsh (runts) " " ...	4 2
Shorthorns " " " ...	4 2
Fat cows " " " ...	3 6

SHEEP.

Small Downs " " ...	5 8
Half brods " " ...	5 6
Calves " " ...	5 4
Pigs " " ...	3 6

BUTTER.

Fresh, (Finest factory) per doz. lbs.....	14 15
English Dairy-butter, fresh...	10 13
Irish (creamery).....	11 5
Danish.....	11 2

CHEESE.

Cheshire per 112 lbs.....	74 80
Cheddar, finest.....	56 66

BACON.

Irish.....	49
Canadian.....	36
Hams, Danish.....	54
American.....	48
Irish, small.....	100
HAY, per load of 2016 lbs.....	86
Prime mesadow.....	90
STRAW, per load 1296 lbs.....	40
Best.....	40
Hops from 40s. to 105s. per 112 lbs.....	40 110

Prices of Pigs at Calne.

Present prices for prime pigs, in lots of not less than 10, on rail within 100 miles of Calne:—

Prime Stores.	Thickness of fat in any part of the back.	Price per sc.
6 to 10 lbs to 20 lbs.	2 1/2 inches and under	7s 0d
Under 10 lbs.	Not exceeding 2 1/2 in.	6s 6d
Under 11 to 10 lbs.	Not exceeding 2 1/2 in.	6s 0d
Under 12 to ..	Not exceeding 3 in.	6s 0d

Any pigs outside these limits of their value.
Half-track—2 pigs. Whole track—25 pigs.
CHAS. & THOS. HARRIS, & Co., Limited, Calne, Wilts, Eng. (1)

(1) Messrs. Harris & Co. do not seem to want only 1/2 of an inch on the back as Mr. Laing does!—Ed.

Household-Matters.

Women Farmers—Recipes—Expectation of life.

In these days of progress nothing is surprising, so we are quite prepared to hear of women out West who have taken up, and become quite successful in farming.

It is not every woman who can, or has the strength of mind or body to do this. It requires a strong will, with a determination to overcome all difficulties which may beset her path, and what she cannot do herself she must be able to show people how it is to be done, and not only show but superintend the work.

To give an order is one thing, to see it carried out is the secret of success, especially where one has to deal with an uneducated mind for there are some parts of farm work that must be done by the labouring man, and herein lies often the secret of women's power over man. A man will give an order and expect to have it carried out, without staying to see it done, and really this ought to be all that is necessary, but bitter experience often nowadays shows how hopeless it is unless the mind is educated to the work.

I well remember superintending the planting of some trees once, and dear me! how grudgingly every spadeful of earth was dug out, so as to get plenty of space and depth for the tree to thrive in, it really was too funny for anything seeing that the man was paid by the hour, but womanlike I stuck to my post and got the trees planted as I wished. There are men who have the power of command so great that fear of being detected will cause their orders to be strictly carried out, and of course a man working on his own property would be likely to do his very best.

One has only to look at the large Institutions carried on by women to show what they can do. Where can one find things more economically carried on in than the Sisterhoods entirely conducted by women? They leave nothing to chance; but where work is being done, there, close by, is one to see all orders faithfully carried out.

Now, a woman to carry on a farm successfully must have either have been brought up on one, or have the happy faculty of picking up the knowledge required for doing so. Farming with plenty of money, where experience can be bought, is often a dead failure, a shrewd woman will think twice about it. I did hear of two ladies, with plenty of money to back them, who for want of some fresh excitement, having travelled all over the continent, spoke of buying a farm, as it would be so nice to have chickens, pigs &c., to see round them: that was their idea of farming. There is no doubt about its being a very delightful occupation, to watch the bursting of the plants through the soil, the excitement of picking the weeds out from choking the tender bud, then, again picking out the weak so as to give the vigorous plants plenty of room to develop to their natural size, these are some of the delights of farm life.

The wonder is that some more young girls do not try to start a market garden, there are so many things they could grow that pay well, as they would readily be given a bit of land to try on and in time might see their way to owning a farm. It would be far preferable to rushing to town; often finding themselves exhausted and having to return home with impaired digestive organs through unwholesome

food and tight lacing, as witness the large waist that comes to town and the small one that returns home.

Boston Rolls.—Soak half a cake of yeast in a little warm water during the preparation of the flour &c., strain before mixing with the rest

4 cups of flour into which rub in one desert spoonful of lard.

1 desert spoonful sugar, 1 salt. Flower, sugar, and salt to be sifted well.

One and a half cups of warm water, to be mixed with one cup of milk.

Mix the whole well with a knife till it does not stick to the basin, do not touch it with the hand. Cover up to keep warm, and when nicely risen, cut in pieces and just touch the side of each bit with a feather, or brush just touched with butter to prevent sticking, or made into a loaf is very good indeed for toasting.

A Wrinkle for Everyone.—Each little wrinkle running up and down a piece of Fibre Chamois acts like a hoop in making your skirt or sleeves stand out properly, but to do so it must go around the skirt or sleeves and therefore you must always cut the Fibre Chamois across the goods. It is so wide that this is easy, without any necessity for joining.

In these days, when perspiration is so apt to soil dainty gowns, it is well to know that such stains may be easily removed by sponging the pieces with warm water into which ammonia has been poured. When quite clean follow with a sponging of fresh cold water, then press with a hot iron until dry.

Bleaching muslin.—There are many housekeepers who would like to use the fine unbleached muslin for pillow cases, sheets and underwear, but do not do so because "it looks so common." It is cheaper than the bleached muslin, lasts longer, and is so easily washed. The old-fashioned process of laying it out on the grass to bleach is so slow and trouble some, that not many care to try it. The following method will not injure the goods, and leaves them beautifully white with very little trouble:

For every five pounds of cotton cloth dissolve 12 oz of chloride of lime (which may be obtained at any drug store) in soft boiling water. When cold strain it into a sufficient quantity of water to cover the goods. Boil the muslin 15 minutes in strong soap suds, wring out in clear, cold water, then put it in the chloride of lime solution from 10 to 30 minutes with frequent stirring and turning to allow the water to penetrate every part of the goods alike. Rinse well and dry the goods, then scald in clear, soft water and dry.

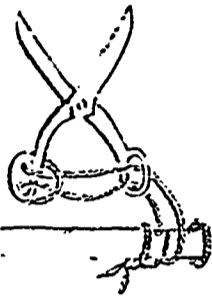
Many prefer to bleach the cloth before it is made up, others make the pillow-cases, sheets and other plain articles first, and bleach them afterward. Either way is equally successful and one need only consult their own convenience in the matter.

Chloride of lime is also useful for removing fruit stains and iron rust from cloth. Wash the cloth and apply a weak solution to the stain. The parts subjected to this operation should be subsequently rinsed in soft, clear warm water without soap and immediately dried in the sun. [Mary.]

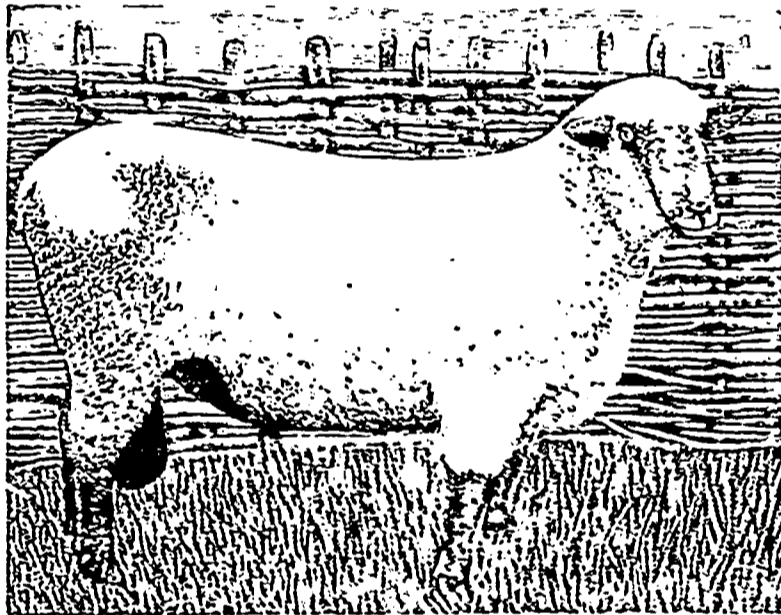
A Good Homemade Cough Candy.—An excellent cough candy is made of slippery elm, flaxseed and sugar. Soak

a gill of whole flaxseed in half a pint of boiling water. In another dish put a cupful of broken bits of slippery elm and cover this also with boiling water. Let these stand for two hours. Then strain them both through a muslin cloth into a sauce-pan containing 1½ pounds of granulated sugar. Extract all the liquor you can, stir the sugar until it is melted and then boil it until it turns to candy. Pour it out at once, when it reaches this point, onto greased papers. This is the old-fashioned rule. The candy is more palatable if the juice of 2 lemons is added to it after it has cooked for ten minutes.

THE SCISSORS ENTANGLED.



This is an old but a capital puzzle. A piece of double twine is fastened to a pair of scissors, as shown in the cut, and both the ends are held with the hand while some person extricates the scissors from the twine.



Hampshire Ram, Cambridge. Winner of "Royal Cup," Darlington, 1895; also five firsts at great English Shows this season. Imported and owned by Standard Meat and Live Stock Co.

For Hands That Perspire.—Powder ordinary starch as finely as possible and use frequently. Also rub round the palms with a cut lemon after rinsing in water without soap, and dust with subnitrate of bismuth or powdered starch. Or a powder can be made in this manner: Powdered starch, an ounce; subnitrate of bismuth, an ounce; powdered tannin, a quarter of an ounce.

The Cold Water Fad.—The cold water fad is essentially English, for the icy plunge is a punishment to Americans, and therefore, according to our medical men, wrong for us. Tepid and warm baths help us most, while for the face the water must be as hot as we can bear it to produce the best results. (1)

One thing and Another.—Some idea of the heart's enormous power may be

(1) For all that, we would not give up our daily cold tub for anything. We began its use in the year 1842! Lots of the better class of New-Yorkers tub every morning. Eo

gained from a statement that it forces blood through the arteries at the average rate of 12 feet per second.

The largest 124 cities in the country show a steady, uniform decrease in the average size of the family.

The statistics of life assurance show that in the last 25 years the average of man's life has increased 5 per cent, or two years, from 41.9 to 43.9 years.

A New Salad.—If you want a new salad and the nicest sort of a one, use the crisp inside leaves of the lettuce and slice oranges into them. Pour a French dressing over it all and when you eat it with toasted crackers and cream cheese you will discover that there are still some new good things left under the sun.

Tan colored shoes may be cleaned with a soft muslin rag dipped in water which has been softened with a few drops of ammonia. Rub some Castile soap on the cloth before applying. When dry rub with a flannel cloth to give the shoe a fine polish.

If you have squeaking boots, which are the horror of yourself and the whole family, take them off and place them all night soles down in a dish full of linseed oil. After the process life will be quieter.

It is said glass may be cut into any shape by cutting under water. Ordinary glass cut into an equilateral triangle makes the best of all boxes, and may be used for trinkets afterward by putting a silk pad at the bottom. Two pieces of the same size are needed in triangular shape, one for the bottom, one for cover. Three pieces an inch and a half high for the sides. Bind every edge with ribbon. Fasten the pieces together at corners by sewing neatly through the ribbon, which must be held very tight over the glass. For hinges, to hold cover to box, bows of baby ribbon answer. Candies look doubly pretty in these, cut celluloid with a sharp knife or it will split. —*Far and near.*

If a tablespoon of kerosene is put into four quarts of tepid water, and this used in washing windows and mirrors instead of pure water, there will remain upon the clean surface

a polish no amount of friction can give. (1)

A teaspoonful of ammonia to a quart of water makes an admirable mixture for cleaning windows, lamp chimneys, and any kind of glassware.

Powdered charcoal, if laid thick on a burn, causes the immediate abatement of the pain. A superficial burn can thus be healed in about an hour.

Electric Bug Killer.—The last novelty is an electric annihilator of moths, flies, and the like winged nuisances. It is an extremely simple though efficacious arrangement, consisting of an incandescent electric lamp, placed inside a large glass globe, which is coated externally with a mixture of honey and wine or any other suitable sticky mass. Close the windows of the room, pull down the blinds close the doors and make the room as dark as possible. Turn on the current, and a couple of hours later you will be surprised to see a lot of insects sticking to the said glass globe. The victims may be then "removed" with hot water, and the device is set afresh.

EVERY once in a while I run across in the literature of the day some article which strives to prove that the present generation of women is more subject to premature weakness and ill health than its predecessor. I use the word "strives" because in all that I have read on this subject I have never seen one statement which attained to the dignity of proof. In writing, it is one thing to make a statement, but quite another thing to prove that statement a fact.

Now, if these writers would take the trouble to look into the actual state of affairs they would find, as I have found, that just the reverse of their deductions is true. The most careful statistics conclusively prove that the general health of woman today is somewhat over fifteen per cent better than it was sixty years ago. The average of woman's life is five years longer, and the percentage of infant mortality has perceptibly decreased. In the older of our American States this is particularly true, and it is from them that we must trace the tendencies of the general community. In the country, in villages and small towns, the general health of woman is shown to be better than in the larger cities, where naturally more dissipation enter into life and necessarily shorten it. The untimely hours, their irregular diet, the unwholesome pastries and confections, and the excessive excitement in which city women are more liable to indulge, are naturally not conducive to the longest life. Physicians of repute have often told me that the social whirl in which the women of our large cities move lessens their lives by from ten to twenty years, its attendant excitements being the most fatal part of a social career for a woman. But since the greater part of our American population resides away from the cities the higher mortality among city women cuts comparatively only a small figure. Taken as a nation, one thing is absolute and cannot be gain-said: The average of woman's life is today longer than it ever was in the history of the world, and her general health is, as I have said, fully fifteen per cent better.

(1) Many years ago, (1866) a man used to wash windows with fusel-oil from the old Morton's Distillery at Kingston. He used so much that we found out he drank some of it. He did not live long. A fact!—Eo.

There is nothing better for a nervous low-spirited nature than outdoor life and a genuine love for growing things; to go out as soon as one is up to see how many new rosebuds have opened, or what is to be the color of the new pansies, or what variety there is in the sweet peas.

Do not allow your boys to make the mistake of thinking—and do not think yourself—that winter is only a season for idle waiting until the time for sowing crops comes round again. When winter is so regarded, it becomes only a time for loafing and that does no man any good. Read, study, think and plan so that you may be prepared to start in for a better year's work than you have ever done before.

When a Child Asks Questions.—When a child is old enough to ask questions he is old enough to be answered truthfully and intelligently. There are many things which it is difficult to explain so as to render them comprehensible to a young child, but whatever is said should be absolutely true. "Teaching Truth," a little book by Dr. Mary Wood Allen, is of great assistance. Do not forfeit a child's confidence by an attempt to evade the issue, putting him off with half-truths.—December Ladies' Home Journal.

Swine.

COOKING CORN FOR HOGS.

Experiments not successful—Hogs in meadows—Care of their manure.

EDS. COUNTRY GENTLEMAN.—In reading Mr. Stahl's recent article on cooking feed for hogs, I was reminded of some former experience of my own in that line that may be worth reporting. Some 40 years ago, before coming to this region to grow old in the country, I had read of the somewhat noted "Clay experiments" on cooking corn for hogs, where in it was stated that corn fed whole and dry produced about 10 lbs. of grain per bushel, corn meal considerably more, boiled corn more yet, and ground and cooked about 19 lb. to the bushel.

I entertained no doubt that this information was authentic and reliable, for aside from the high source of its emanation, the theory of cooking as suggested by Mr. Stahl appears scientific and logical. So when myself and partner started into farming in this country about 30 years ago on a rather large old farm, we set out to revolutionize the prevailing system here in vogue in feeding hogs. We built a good and convenient Yankee hog house, with pens with up-to-date feeding troughs along two sides, with space between, in which we made the handiest and most economical cooking arrangement imaginable, and yet at an insignificant cash outlay. And if that sort of thing were much wanted, it would be worth while to give a specific description of it, as it was in some respects quite superior to any thing of the kind that I have ever seen, either home or factory made.

Our idea was, that by having the animals warmly housed and well bedded, we could tend and fatten them in winter with little more loss than earlier, and have the advantage of

putting them on the later market, which was usually the higher. And then, if by cooking we could nearly double the output of product, why, we could beat our neighbors out of sight, beside furnishing a good object lesson, which was no slight object in view. It looked like a sure good thing in theory; but in practice "the best laid plans of mice and men gang aft a-glee," and the profits failed to materialize. Our practice in cooking was to charge up the tank towards night with 9 bushels of shelled corn and 30 pails of water, put on the cover, and make a fire that would get it boiling before bed time, when we would put about three large sticks of wood into the furnace, adjust the air supply to slow combustion, and leave till morning, when we frequently found it still boiling slowly and the corn so soft as to be easily mashed between the thumb and finger. It seemed an ideal feed. I frequently ate a handful or it myself, and the hogs seemed to like it. But the upshot of it all was that the hogs gained very slowly. They dallied along until nearly March before getting in good shape for market. I soon after sold my interest in the farm to my partner.

fattening animals in this country, but a very small fraction of the elements thereof ever gets returned to the land in any form or manner. It is a constant process of abortion from the land and transmission to the sea. The favorite way of feeding here, where the conditions permit, is to select a piece of dry ground sloping to a creek and fence in a sufficiency of it, including a section of the creek for water. Then every smart shower washes all filth into the creek; and good riddance to it, is the sentiment incited; none seeming to realize that the said filth is of the life blood of the land. And this is the practice not only of the owners of the large level and more productive farms, but it is the same with the occupants of the poor, washed clay-ridge farms. The comfort and prosperity of the animals, with greatest convenience and least care and labor, is all that is considered.

C. S. OSGOOD.

(Montgomery County, Mo.)



TRIO OF JERSEYS. (From the N.W. Farmer)

He used the cooking apparatus to some extent in feeding cattle and hogs for two or three years, until the rats partly undermined the walls of the furnace and the chimney, when he cleared all out; and among other uses for the boiler, he for many winters after used it on his horse sled as a family vehicle in which to ride to town and church, &c.

My latest practice in feeding previous to retiring from farming a few years ago, was to turn the hogs into a meadow large or small. They won't exercise too much when fall fed. I started early and fed green corn, stalks and all, moderately at first, then later husked ears thrown in quantity on the poorer parts of the field. This system proved highly satisfactory to me, as I retained on the farm the two thirds to three-fourths of the elements of all the corn fed, and yet secured quite as much gain on the animals fed as did my neighbors, who looked for and received nothing but the animal gain and allowed all these excreted elements to be washed into the creeks and thence into the sea, or else deposited in places where they could be of no use. And the waste in that direction in all this western country is enormous. Of all the millions and billions of bushels of grain fed to

great Desert cavalier, that Emir so renowned among all the dwellers in tents, Sid-El-Hadj-Abd-El-Kader. The lines recall involuntarily the songs of the Greek poets, in which the wind is fabled to have impregnated the marvellous mares of Thessaly.

What was he like, "this offspring of the wind"? Had he the form, the strength, and the swiftness of his descendants of to-day, or, in passing through the long succession of ages, has he degenerated from the ancient type? Did he resemble our modern thoroughbred, or did he only arrive at that superb uniformity of proportions after man had devoted his attention to his improvement through a succession of years? These are deeply interesting questions, and very hard to answer.

For us, there came from the hand of the Creator the most splendid of the animal creation; he who inspired the glorious language of Job, he who conveys to your mind the dazzling effect of the beautiful, when you see him, by some good chance unseen by him, as he freely roams his native desert.

But, since he was made, left to himself, he never ceased to degenerate slowly until the time came when the earnest attention of man, which is indispensable to the horse, began to restore him to the splendor of the primitive type.

If we turn over the ancient manuscripts, it would seem that, at the earliest date the primitive horse was exclusively employed as a beast of burden. Indeed, it is hopeless to search the works of hoar antiquity, the *Rig Veda*, for instance, the sacred book of the Hindoo, for any allusions to the horse as an animal to be ridden. His build was doubtless too light, then; still, in the *Zend Avesta*, there is some hint of his being sometimes mounted. The Book of Job, next, which is said to have been written 2,700 years before Christ, mentions once "the horse and his rider." Homer, who is supposed to have died A. C. 970, relates how Ulysses and Diomed rode to the ships of Rhesus and seized them (Ill., B. II.); but this

is an exception; for in no other part of the Homeric poems is the horse mentioned except as a harness horse, for drawing the chariots of war.

From all this it would seem that the primitive horse,—at least the one that man took possession of for the purpose of domesticating him—was at first too weak, too slight in build, to be fit to carry a man, and that his usefulness was, during many ages, necessarily confined to draught.

Herodotus, A. C. 484, relates that the Sigyaym, a wandering tribe of the country north of the Danube, had innumerable herds of small horses: "They are clothed with rough hair, five fingers thick, and though too puny to carry a man, they display vast agility when yoked to the chariots of their masters."

Near Macon—France—more than 30,000 skeletons of the earliest type we have of horses have been found; their height varies from 13 to 14 hands; head strong, with powerful jaws and teeth. "They, doubtless, greatly resembled the *tarpan*, a sort of wild horse, sprung from the domesticated horse, that roams the borders of the Caspian Sea." (Isaac Taylor.) (1)

(1) Whose book, on "Names and Places," should be in the hand of every one who cares about our ancestors and their abodes.—Ed.

The Horse.

THE PRIMITIVE HORSE.

HIS CREATION—THE MACON SKELETONS—AMERICAN HORSES—CORTES AND HIS MEN.

"When the Almighty designed to create the horse, he said to the South wind: 'I am about to produce from thee a creature; compress thyself.' The wind obeyed; then came the Angel Gabriel who presented the wind before the divine Majesty. From it the Almighty formed a dark-bay horse, exclaiming: "

"I name thee *Horse*, I create thee an Arab, and I impose upon thee the colour dark-bay. To the forelock that falls between thy eyes I conjoin good fortune; thou shalt be the lord of all the other animals; wherever thou goest, man shall follow thee; effective in pursuit as in retreat, thou shalt fly without wings; on thy loins shall rest riches, and prosperity shall be conferred through thy intervention."

Such was, practically, the creation of the horse, at the beginning of this world wherein we live, according to a

Lastly, the bits made of stag-horns, as were those of bronze found at Morin-gon and in Auvergne, are hardly more than $3\frac{1}{2}$ inches long (i. e. from cheek to cheek): regular ponies' bits; ponies unable to support an ordinary man's weight. Small and stunted, immoderately hairy, with a head out of all proportion to the rest of the carcass, it needed generations of domestication, of good food, of thoughtful crossings, to convert these ponies into horses of a more powerful form, nearer in looks to the modern, perhaps, than to the primitive type. And yet, we find traces of their existence still in 1593, at Strasburg, in the essays of Elisée Reeslin, von Haguenau, when he speaks of the nimble, surefooted action of the little wild horses of the Vosges; he even compares them to the Alpine chamois.

When Columbus discovered America, he found no horses there, and we do not know of the slightest vestige of them remaining, not even a sketch of one in the drawings of "Cliff dwellers." Jean de Pontrecoart was probably the first man who rode in New-France, and thus surrounded himself with a superstitious dread on the part of the natives: It was the armoured chargers of Cortes that won the battle of Tabasco and gave to Spain the empire that Montezuma dared not dispute with the gods, as the Spaniards seemed to him to be.

In our days, the wild horses on the banks of the Plata are all sprung from old domesticated stock, as are the *tarpan*s of the Caspian, and cannot be traced as types of the primitive race; but the great traveller, Prejevalski, has very recently discovered, in the desert of Dyrngavin, in Southern Siberia, and on the borders of China, a wild horse, that seems really to resemble the primitive horse. Low in build, it has short ears, the head is coarse, the hair long, especially on the legs; in a word, identically like the rough draughts of the quaternary epoch discovered by M. Pietke in Southern France, on the antlers of the reindeer or on the tusks of the mammoth. It is only distinguished from other horses by its having those queer scabrous lumps on the hind, as well as on the fore legs. A specimen of this animal was received at the Museum of the Academy of Sciences, at St. Peterburg, in 1881. Privalski only succeeded in killing it after a chase after the herds of 15 to 20, which were always under the rule of an old stallion.

There is a vast difference between these animals, isolated on one of the wildest slopes in the world, and the grandeur of the Arab or the thoroughbred. And the reason is that the "Son of the wind" only really returns to the form in which he left his Creator's hands under the protection of man, surrounded by man's assiduous care, by his genuine affection: and does the horse not repay him a hundred fold for all he receives?

"For prosperity and blessings are wedded to the forelock of the horse, and the days passed with him are not to be reckoned among the days of life."
—(Al Koran.)

R. ATZIAS TUBENNE.

THE QUICKEST AND MOST ECONOMICAL MEANS OF IMPROVING OUR HORSES.

No danger of horses disappearing—Ontario breeders—Thoroughbreds vs. Standard-breds.

Whatever one may read in the newspapers about the superseding of horse labour and locomotion, by elec-

tric or other motive power in the future, farmers may rest assured that the day is probably very far distant when the coachman or groom will give place to the engineer or some other governor of machinery, or that horse-labour, on Canadian farms at any rate, will give place to motive power. In some respects, horse labour may be costly, but as a rule, it is to be depended upon, and possesses advantages which cannot belong to any kind of machinery. With many others, I do not think that if electric or other carriages come into fashion, they will have any appreciable effect on the number or prices of good horses, either here or in Europe. The substitution of electricity for tram car horses has in no way affected the price of good horses. The introduction of locomotive machinery in cities does not mean, by any manner of means, the substitution of machinery for horse labour on our farms, and, as far as the improvement of horseflesh is concerned, wherever people care to improve the breeding of horses, it has had the beneficial result of rendering valueless the cheaper grades of horse flesh, and thus putting a stop to the over production of very inferior animals and compelling farmers either not to breed at all or to breed a better class of animal than heretofore, a result very much to be desired. The mere non-production of inferior animals would in itself after a while result in a decided improvement by means of the survival of the fittest.

We have quasi-commissioners, appointed by a kind government that professes to wish to assist the farmer in the improvement of his cattle, sheep, pigs and poultry; *Why should not somebody look after the interests of horseflesh?* Considering that last year 5000 horses were shipped from Canada to England, without counting those sent to the States and the local traffic, and that it is only good horses that can be sold at all, it would seem that the improvement of the breed of horses in Lower Canada is a matter worth some consideration. It is all very well to talk of the paying dairy cow, the economical pig, that fattens on what is thrown away from the kitchen, the 100 per cent profit hen, and the *golden footed* sheep, but how on earth could we till our fields without horses. And while a good horse costs no more to keep than a bad one, does he not do his work twice as well? He can be sold at a fair price, while the other cannot be given away; why not then try to improve our horses? They are very bad at present, and there is room for improvement *with a vengeance*. We have not seen as yet many serious or effectual attempts in this direction, but there is no reason why we should not profit by the errors of our ways and try to do better for the future.

There are a great many more good horses bred in Ontario than in Quebec, although there, too, there is room for improvement. They began with good sires, but have committed the mistake of selling too many of their best mares. Being a horse-breeding population, they had adopted the very simple but very effectual means of using as many thoroughbred stallions at low prices, throughout the country, a thing which has been done in every country under the sun, where good horses are generally bred, except in the United States and Lower Canada, where the accursed craze for the Standard Trotter has driven out the thoroughbred stallion, the only one fit to be used for the general improvement of any horses.

At the last exhibition in Toronto, the writer saw 17 thoroughbred stallions exhibited alone. At the Hoohe-laga Spring Show in Montreal, there was exhibited one solitary one. Although the Ontario farmers continually sell off their best mares, and therefore have put a stop to the constant improvement of the breed of horses, almost all the best mares leaving the country, still, in Ontario, the general improvement has been as great from the extensive use of thoroughbred stallions of the right stamp, so that the dealer can always rely on obtaining from the Ontario farmer, if not in one section, then in another, a very fair sample of a carriage horse, that sometimes turns out to be a very fair saddle horse, or weight carrying hunter. And these are horses that, up to the day they are sold, have been doing every kind of work on the farm and doing it most efficiently too. I beg leave to suggest as the most rapid, the plan most economical, and the most efficient at the present moment of improving our very inferior breed of horses, as found in Lower Canadian farms, the acquisition and extensive use of as many *thoroughbred stallions of the right stamp as possible*.

There is no doubt whatever that situated as we are, with our non-descript class of mares, we can obtain good results sooner in this way and effect a general improvement of the breed more rapidly than in any other way. The thoroughbred stallion will get a better class of animal out of an inferior mare than any horse of any other breed. Basing the most largely and most truly bred of all breeds of horses, he is much more likely to transmit some of his good points than any stallion of any other breed.

There is no doubt whatever as to the much cheaper rate at which at the present moment reliable thoroughbred stallions can be purchased. Thoroughbred stallions can be purchased at a much lower rate than hackneys or coachhorses, or heavy draught stallions, so that if you must confine yourself to one kind of stallion for the general improvement of horses in the country, thoroughbred stallions are much cheaper than any others. This is the most efficient means of producing a general improvement in horseflesh, as no animal gets a better foal out of inferior and non-descript mares than the thoroughbred stallion.

The result of the extensive use of thoroughbred stallions would be the production on our farms of a well shaped 15.2 to 16 hands animal, weighing about 1200 lbs. varying in quality, according to the breeding and shape of the mare, from fair looking carriage horses to very stylish looking ones. These horses would be quite suitable for all kinds of work on our farms, and would always be salable at a fair price for export to England or the States.

As proof of the fact that thoroughbred stallions can at the present moment be purchased more cheaply than hackneys, coachers or heavy draughts, I quote prices of some sold at auction in Toronto two years ago:

Admiral, \$550.00, Gettysburg, \$350.00, Vergen, \$600.00, Trinity, \$250.00, Fred Lee, \$260.00, Raveloc, \$85.01, Centano, \$360.00, Idaho, \$125.00.

Farmers should bear in mind that thoroughbred stallions broken down for racing purposes, if free from hereditary defects, are as eligible for breeding purposes, even if perfect *cripples*, as far as racing is concerned, as the *soundest* horse that ever stood, and that for this reason, they can always be purchased very cheaply indeed, whenever their racing performances have

not been sufficiently promising as to ensure their retention at the racing stud at high prices.

If of the proper stamp, as to shape, their merit as a race horse does not prevent them from being the most eligible animal for the general improvement of horses throughout the country. Although not recommending this as the most scientific method towards attaining the highest pitch of excellence, a good thoroughbred stallion will get out of quite a common car-horse mare, a very superior animal, that will sell at a very fair price and that will do on the farm any sort of work required of him with perfect efficiency. While leaving to breeders the work of breeding very high class horses, only to be obtained at high prices, I can assure farmers that the general practice of breeding to thoroughbred stallions will quickly result in a decided improvement in the horses bred on our farms, and that if those, who wish to go in for breeding more extensively than others, will only keep some of their best mares to breed from again that the progress of improvement will go on most perceptibly and increasingly.

C. F. BOUTHILLIER,

"Bleury" Ste Thérèse,

Sept. 1895.

THE CHILMARK FLOCK OF HAMPSHIRE DOWNS.

On the next page and on page 301 we give a couple of illustrations of some Hampshire Down sheep the property of Mr. James Flower, Chilmark, Salisbury, Wiltshire, England. The first illustration is one of eight ram lambs, winners of the Challenge Cup at Salisbury in 1895, the coveted prize of Hampshire Down breeders. These rams are a grand lot, and were, when photographed, only six and a half months old. The second group are three shearing ewes, champions in 1894 and never beaten.

This flock, which was registered in the first volume of the Hampshire Down Flock Book, has been in the present owner's and his late father's possession for upwards of fifty years. During that whole time it has, of course, through having been practically under the same management, been, we may say, continuously bred upon the same lines, the greatest care having been always taken in selection on both sides, and the result has been a great flock likeness and the greatest propensity of the sires to impress their very valuable characteristics on all flocks wherever they are used. There are about 1,000 ewes generally kept for breeding, and there are, of course, the ewe legs, which number from 350 to 400, thus, so far as females are concerned, purchasers can always rely upon finding there an excellent selection. Of shearing rams, but very few are ever kept; perhaps 15 or 20 in all, for Hampshire Down breeders now invariably use ram lambs on the majority of their flocks.

The prize record of this flock for the past year, 1895, will show what a flock it is, for no flock unless it was a first class one could show a record of nine first prizes and three champions, besides other prizes, at only five shows, and these won in the largest and strongest competition in the world. These prizes were won at the Royal, Royal Counties, Bath and Wiltshire, England, and other shows. (F. ng.)

Manures.

TOP-DRESSINGS (1)

Mr. Shutt's experiments—Loss of nitrogen—Exposure.

Many men, many opinions. Some times, in a difficult question, science decides, sometimes practice, but when science and practice both agree, who shall oppose them.

Our readers are doubtless aware that the editor of this periodical differs entirely from those who hold that, although in a moist climate like the climate of England top dressing may be productive of favourable results, in a country like Canada, where the summers are so hot and dry, there is only one really profitable means of employing manure namely ploughing it in. And, we are happy to find that, besides the support our tenets on the matter meet with from many first rate practical farmers, Professor Shutt, the chemist of the Ottawa experiment-farm, has conducted a series of experiments, on the loss of nitrogen experienced by farm-yard manure by exposure, which leaves no doubt upon the matter. As the professor puts it tersely: "We may therefore safely infer that the loss of ammonia through volatilisation on the field is extremely small."

Mr Shutt, as will be observed in the subjoined article from his pen took a certain quantity of "well rotted manure, after fermentation," and, after spreading it, in a thin layer, on glass, "exposed it every day to the sun for a month:" the manure was of course protected from the rain. The amount of nitrogen was carefully noted before and after the experiment. Now, let us see what was the loss of nitrogen incurred by the trial layers.

NITROGEN IN FARM-YARD MANURE:

No.	Manure.	Per cent.	Amount per ton in pounds.	Per cent lost on exposure.	Value at 17c. per lb.
1	Well rotted; after fermentation.	10.3	103	10.3	\$17.51
2	Rotting during fermentation.	9.8	98	9.8	16.7
	Before exposure.	10.3	103		
	After exposure.	9.8	98		

Perhaps, it would be as well to compute the loss of nitrogen on a large scale, supposing ten tons to be a fair dressing for an acre of land. We must bother our readers, here, with a few more figures:

Before exposure ..	10.3 x 10 =	103 pounds of nitrogen, at 17 cents	\$17.51
After exposure ...	10.1 x 10 =	101 pounds of nitrogen, at 17 cents	17.17
			0.34

That is the loss of nitrogen in ten tons of farmyard dung spread over an acre of land and left exposed for a month, without rain, would amount to the insignificant sum of 2 pounds, equal in value to 34 cents! We need hardly observe that if rain did fall during the manure's exposure to the air, the leaching of the dressing would be washed into the soil.

Reprinted, by request, from June No., 1893.

In the second example, where the dung was in active fermentation at the time of its exposure, the loss of nitrogen was a little greater than in the previous instance; but, even then, it was but trifling: Taking again the ten tons to the acres, we see that:

9.8 x 10 =	98 pounds of nitrogen, at 17 cts. =	\$16.66
9.3 x 10 =	93 pounds of nitrogen, at 17 cts. =	15.81
		.85

This, it appears to us, ought to settle the question, as to the profit of top dressing, and it only remains to take care that dung is not deprived of its most valuable constituent, nitrogen, before it is applied to the land, the other manurial elements, such as potash and phosphoric acid, are not capable of volatilisation, so no loss of them can be incurred except by leaching. The italics in the subjoined article of Professor Shutt are ours; we desire greatly to draw attention to the fact that, before rotting, the plant food in farmyard manure is with difficulty appropriated by the crop it is intended to nourish.

By a printer's error, at p 76, April No., the requisite weights of nitrate of soda and sulphate of ammonia for an acre of mangels were transposed. The passage should read: "300 lbs. of sulphate of ammonia or 400 lbs. of nitrate of soda." Strictly speaking, if the latter is of the purest quality, 300 lbs. of sulphate of ammonia should contain as much nitrogen as 380 lbs. of nitrate of soda; but the latter is rarely to be had here in a perfectly sound condition.

TREATMENT OF MANURE

From a Scientific Point of View—Valuable Letter by the Chief Chemist of the Dominion Experimental Farm.

Loss of nitrogen if manure heap is dry—To make good manure, moisture and warmth are necessary—Air must permeate the heap.

When stables and cow houses are badly kept or there is a deficiency of litter, ammonia is abundantly developed, and being extremely volatile much is lost. This ammonia is formed by the fermentation of the urine—carbonate of ammonia being produced at the expense of its urea. Urea is that component of urine which holds the nitrogen. While carbonate of ammonia is volatile, it is also extremely soluble in water, and hence it is that the greater escape of this valuable material occurs when the manure heap is allowed to become dry. In order to rot manure and render available its plant food, this conversion to a greater or less extent must take place, and moisture and warmth are requisite. If the heap be kept constantly moistened, preferably with its own drainage fluid (or if necessary with water only), no appreciable loss of ammonia need be feared. Manure must not, on the other hand, be kept in such a packed condition that the air cannot ferment it, else—as we shall see later on—but little fermentation can ensue. These are the principles to be followed in the economical fermenting of manure.

When well rotted manure is spread on the field, preparatory to being ploughed in, it cannot of course have this care bestowed upon it. Does it then when so lying on the field lose any of this ammonia? To answer this

question the experiments about to be described were made this summer.

Two samples of manure were taken, as before stated; one during fermentation and while the heap was very hot—the other after fermentation had apparently ceased and the heat subsided. Careful estimations of their nitrogen were at once made. These two samples were then spread in a thin layer on panes of glass and exposed to the sun every day for a month, being protected from rain. Being in comparatively thin layers, no fermentation took place after the experiment was begun, the manure soon becoming hard and dry. Any loss then that might occur would result from the volatilisation of ammonia formed in the manure before the experiment. As far as the answer to our question is concerned these conditions are the same as those after spreading manure in the field—since in the latter case previous fermentation would be arrested, and fertilising material washed from the manure by the rain would be received and retained by the soil. Any loss that might occur through volatilisation on the field would also take place on the glass plates of our experiment. At the end of the month the amount of nitrogen in the samples was again taken, with the results set forth in the above table, which also shows the value of the manure in nitrogen before and after the experiment.

The Farm.

HOPS.

(Continued.)

Poling - Earthing - Manures - Diseases - Ripe hops best.

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

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

Immediately after poling, pass the grubber through the yard, taking care not to injure the young bine. As soon as this is long enough to reach the poles, it must be tied to them. This is another ticklish job, the selection of the proper bine to tie can only be depended on by those who have had long practice. If they are not tied at the right time, the bines will twist up together, and a great many more than are required will run up one or two of the poles, so that much injury is done, and many of the heads are broken off in separating them to tie up to the poles. All pulpy, rank growing bines should be pulled out; they climb fast, having their joints far apart, but they don't branch downwards or hop well. Three bines to a pole—9 to the hill—are sufficient: In Kent, they are generally tied with rushes, but old matting, or sedge, will do.

Some growers only give two poles to a hill and enormous crops have been seen under this treatment; but the fact is, that in what is called hop-year, any treatment will do: three poles are the safest. It is not necessary for the tiers to wait until there are three bines for every pole long enough to tie, but they should begin as soon as some will reach the poles, and go round again, keeping them tied up as they come to length, and when every pole is furnished with three bines the remaining ones should be pulled up, unless one or two are spared for fear of accidents. The bine should be well tied to the pole at the bottom where it first reaches it, but care should be taken not to tie very near the head of the bine,—rather tie below the second joint. After the poles are all furnished with bines, the tier has only to see that they run up properly, tying up the heads that are hanging far away from the poles; for after a high wind, many a hundred will be found broken away, and there is no good trying to put them to rights until the wind stops, for many, in a still time, will get back of their own accord, so great is the desire of the plant to cling to something. Don't tie tight, but let the rush or other material be fastened in a slip knot, to allow for the bine swelling. Lastly, clear out all the fresh grown shoots, and all the surplus bine, and strip the leaves and branches from the lowest 18 inches or two feet: this latter process, however, appears to us to be a doubtful one: many of the growers we knew never practised it, and, at best, it must injure the plant by depriving it of its natural mouth. The idea was, that by clearing away the lower growth, the land dried sooner after rain, and mould was less likely to occur. You will soon find out what mould means. Keep the grubber going all the time, until the barr is coming into hop, especially after rain, for if the land once becomes crusted and bound down with sun following hard rain, good bye to your prospects of a crop. Hops won't stand being played with. Hand-hoe round the hills, and keep the land perfectly clean. A Kent or Surrey hopyard in August is worth a long journey to see.

Earthing the hills.—A small mound of earth is put on the top of the bine between the poles, taking it from the alleys, and filling up the space between the poles. This process is essential for several reasons: to stop new shoots from coming out of the hills, and to keep weeds from sprouting. It also helps to keep the poles steady, it causes the bine to swell and provide new cuttings for the following spring; and it improves the crop for another year, inasmuch as where the bines

were earthed the previous year, they do not shoot out and come as forward, but they are more productive in hop, and branch more than those not earthed. Keep on the grubber, and dig the hills again, if the earth is at all bound by rain followed by hot sun. A rapid way of working with the fork, and one which we have always adopted in the cultivation of cabbages and tobacco, is to plunge the fork as deep as the spines will go into the ground, and pressing upon the handle as a lever, not turn the earth over, only break it up: the fine earth will, thus, be left atop, and the surface will admit the air and rain without caking.

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

Manures—It would frighten most of our readers, were we to tell all about the way in which our Kent and Surrey men manure their hops. Fifty tons of dung in the winter, and 120 bushels of sprats in the spring, are no uncommon dressings—cost for the two, \$75.00! As regards this country, all we can say is, that you can't overdo hops with manure. Guano is too dear for us, bone-dust made into a compost with earth, moistened and turned over once or twice; cottonseed meal; blood, tankage &c, from the abattoirs; all are good in their way. The dung should be spread over the whole ground, and ploughed in, the lighter dressings should be given to the hills and hoed in, not too deep.

Diseases of the Hop—In this division we include the insects which injure the hop-plant. First, the *worm*, which cuts off the plant just under the surface. The only cure for this pest is to put pieces of linseed, or other cake, about the size of a small nut, in the hills. Mr J. C. Charnock, formerly of Lennoxville, whose prize-essays in the Journal of the Royal Society of England are not so well known here as they deserve to be, is the inventor of this deadly trap. The brutes gorge themselves with the cake, and meet a not unearned grave in the very scene of their intended depredations. The general trap is a potato cut in two, which is to be visited every day and the beasts destroyed. It would be too often neglected, here, I fear.

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

The Aphis—The hop has its own aphis as the hen and the dog have their special fleas. No sooner has the bino outgrown its devourer, the beetle, than down comes the *hop fly*, and the leaves, in a week or two after their first advent, are covered with lice and nits, as the eggs are called. The leaves are sucked dry; the juices of the whole plant is extracted; and the excrements of the prodacious villains mix with the moisture of the morning dews, and, falling on the leaves below, form that sticky composition called *honey dew*. The head of the plant droops, from want of sap, and dies; the lice, having by this time gone through their various changes, die, too; the leaves dry up, turn a rusty black, and fall off; and few, if any, of the bines survive

to produce hops. Six or eight weeks suffice to produce all these ravages. One curious thing is, that a hopyard infested with a phides one year, is sure to be free from them the next. The Lady bird and its progeny feed upon the aphis, and great is the joy among our hop growers when a host of these appears. There is no preventive against the attacks of the aphis: good cultivation and plentiful manuring will sometimes enable a hopyard to persist in yielding after it has done its worst, but sometimes from producing too much sap, the beast is enticed to remain longer, and less time is left for recovery. The effects produced by the aphis and its progeny are commonly known among hopgrowers as the *blight*.

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

As an old brewer, we hope none of our readers will pick their hops until they are fully ripe. Green hops may attract the eye of a tyro, but an accomplished workman won't look at them—there are not many such in Montreal.—When the seed is brown and firm; the leaves of the cones have a brownish tinge at the edges, and the hand feels fall if it grasps a few cones and presses them together; the hop are ripe. The seed should be abundant, not that it is of any use in brewing, but because the more abundant it is, the more abundant is the *lupuline*, or yellow powder, called by England brewers *condition*, in which the whole virtue of the hop lies. When the hops are ripe, the lupuline plentiful, and the whole well dried, the cones will almost vanish on being rubbed between the hands. *Unripe hops never weigh well*. It is an absurd mistake, into which many people fall, to suppose that green hops impart less colour to our fine pale ales than fully ripe ones. On the contrary, there is more danger of colour from the former, though, in point of fact, if the malt is pale, the little colour hops can give the beer won't be perceptible to the most accurate eye. Some years ago, there was a discussion on this subject between the Kentish hop growers and the London brewers, and the former carried their point, declaring, as a body, that for the future they would pick no more unripe hops to please any one. The use of sulphur, too, is absolutely useless: it may hide defects, such as splotches on the leaves, but it can only deceive the eye, while the nose and the sense of touch will

easily set the real judge right. While seeing that your hops are fully ripe, take care that they are picked before the frost attacks them. Like tobacco, ripe hops will bear a slight frost without injury, but in late seasons, I have seen hops in a heavy soil, in a too shaded spot, severely damaged.

ARTHUR R JENNER FURZ.

(To be continued.)

MAPLE-SUGAR.

SOME IMPROVED METHODS AND UTENSILS FOR MAPLE SYRUP AND SUGAR MAKING.

The Indians and early settlers made maple syrup and sugar, using the stone gouge in tapping the trees; the boiling being done in kettles or pots. These primitive methods have now altogether disappeared, except perhaps, in some remote settlements, where the potash kettle, hung on a rail, may still be found. Thinking that a description of a modern sugar camp, as we find them in many sections of the maple country, would be interesting at this season when such work is near at hand, I will describe such a bush. Perhaps some of your readers are enlarging or improving their sugar camps and may profit by this article. We shall not describe any particular camp, but the description given is drawn from an observation of the methods used in many of the best maple camps in both Quebec and Ontario.

The sugar house, located on a side hill, if possible, so that the sap may be emptied by its own gravity, should have battened or matched sides, so that it will be tight unless the doors and windows are open. It should be divided into two separate compartments, one open on one side for wood, and the other the main boiling room. A partition with roller door separates the two, so that the dust arising from the splitting of wood, &c, need not enter the boiling room. The dimensions of a house may be adjusted to the needs of each camp. A well proportioned house, which we know of, is 16 x 32 ft., the wood shed being 12 x 16 ft. and the boiling room 16 x 20 ft. A large ventilator is built through the roof over the centre of the boiling room where the evaporator stands, with slats so arranged that they will not permit rain or snow to enter, but allow the steam to escape freely.

Evaporators have now largely superseded the cook-pans and heaters, which a few years ago were in such general use. They are a great saving both of labor and fuel. The evaporator is made of heavy tin and consists of four, five or more pans, placed upon an iron or brick arch. The sap is conducted from pan to pan by siphon connections, which clarify the sap as it passes through, (there is no dipping to be done) and is drawn off from the last pan as syrup. Just over the fire box, where the sap enters is a large pan with a corrugated bottom, which nearly doubles the boiling capacity. In this pan the sap is run about two inches deep. The rear pans all have plain bottoms, and are so arranged that we never run over an inch and a quarter of sap in them, our motto being: "The shallower the sap, the more rapid is the evaporation, and the more rapid the evaporation, the lighter will be the color of the product." The rear pans are interchangeable, and by shifting them daily the trouble with the lime or nitre deposit burning on the pan is

avoided. The evaporator has an automatic self-regulator through which the sap enters, and after adjusting the regulator to the depth of flow desired, there is no more feeding to be done, except to see that there is plenty of sap in the storage. For sugaring off, a plain pan twelve inches deep is used. This may be used on the evaporator arch in place of one of the rear pans, but it is better to have a small arch or stove for this purpose.

The majority of evaporators are set on iron arches. A few farmers who have plenty of stone or brick at hand, lay a deep foundation and build brick arches. But owing to heavy frosts and the undermining done by the woodchuck, brick arches give considerable trouble, and iron arches have come into almost general use. These arches are manufactured and sold with the evaporators if desired. Evaporators vary in price according to the make and size used. The most improved can be bought complete with iron arch for \$70.00 suitable for 300 to 500 trees. There are a number of different sizes made, ranging in price up to \$260.00 for a 5 x 20 ft evaporator and arch, which is capable of handling the sap from two to three thousand trees, so that one can buy to suit the size of his camp.

It is important that the sap should come into contact with nothing but metal from the time it leaves the tree until it is drawn from the evaporator as syrup, or poured off into moulds to cool into sugar. Metal spouts have therefore come into general use. They are either of tin or of cast iron. The tin are more easily cleaned, and they do not require as large a hole as the iron spout, so that the tree is not injured, but heals over readily where it has been tapped. The most improved tin spouts are sold for \$1.25 per hundred. Sap pails made of tin are hung on the spouts by means of a wire hook or loop for the purpose, or by a hole punched through the pail just under the rim. These pails are provided with covers to keep out the leaves and dirt, as well as water from rain and snow. Wooden covers, securely fastened to the pail, so that they cannot be blown off by a strong wind can be bought for \$6.00 per hundred. By painting the opposite sides of the cover different colors and reversing the covers as the sap is gathered, these covers become self registering, and a mere glance will show the gatherer which buckets have been emptied. But a square wood or round tin cover answers this purpose well and many use them altogether.

For gathering the sap a tank made of galvanized iron or tin is used which holds three or four barrels. It is securely fastened on a sled or broad stoneboat. Some empty their sap pails right into the tank as they drive about, others carry the sap from the trees to the tank in gathering pails made to hold four or five gallons. When this tank is filled it is drawn to the sugar house and the sap lot into the storage tank—another galvanized iron or tin tank, which holds 10, 15, 20 barrels according to the size of a man's camp.

Some sugar makers still use the heater, which is a pan with long flues extending downward from the bottom of the pan into the arch. These heaters are placed at the rear of the arch, the object being to utilize the heat as it passes through the flues on its way to the chimney, but as this necessitates deep boiling and the heating of the sap for some time before rapid evaporation begins, it produces a dark and inferior quality of syrup and sugar, which must take a second place upon the market in competition with the

clear, light colored article. Besides, these heaters are difficult to keep clean and free from lime and other impurities and unless they are properly cleaned, the product will become darker and darker each year. This same objection applies to all pans with deep flues.

Canada produces a surplus of maple syrup, and the sugar is shipped in large quantities to the United States. As improved methods have been adopted there, it is important to all Canadian producers that they get the best apparatus obtainable, so that their goods will bring good prices. At this time, when most farm produce is selling at remarkably low figures, it is interesting to note that maple syrup and sugar have brought unusually high prices of late. Much of the sugar made in the spring of 1895 sold for 8, 10 and even 12½ cents a pound, in quantities, for shipment to the States, and the outlook is for high prices again this spring, as the people are learning to appreciate this incomparable sweet. (1) Maple syrup sells for \$1.00 per gallon for fine light colored goods, and in some sections even higher prices are realized.

W. H. BARBER, Montreal.

(1) Wild strawberries, made into jam, with maple sugar not too much refined, is in our opinion the finest preserve in the world next to guava jelly. We mean jam, emphatically, not a few strawberries "nantes in gurgulo vasto," of syrup.—Ed.

NOTES AND NOTICES.

CONSUMPTION CURED.

An old physician, retired from practice, had placed in his hands by an East India missionary the formula of a simple vegetable remedy for the speedy and permanent cure of Consumption, Bronchitis, Catarrh, Asthma and all Throat and Lung Affections, also a positive and radical cure for Nervous Debility and all Nervous Complaints. Having tested its wonderful curative powers in thousands of cases, and desiring to relieve human suffering, I will send free of charge to all who wish it, this recipe, in German, French or English, with full directions for preparing and using. Sent by mail, by addressing, with stamp, naming this paper, to W. A. NORRIS, 230 Powers' Block, Rochester, N. Y.

The use of Hall's Hair Renewer promotes the growth of the hair, and restores its natural color and beauty, frees the scalp of dandruff, tetter and all impurities.

Boils and sores indicate impurities in the blood. Ayer's Sarsaparilla eradicates humors.

Windsor Salt

Purest and Best

Windsor Cheese & Butter Salt.

Has during the season of 1895 given the best satisfaction on account of Purity, evenness of Crystal and SPLENDID working qualities

It is now used in all the largest Cheese Factories and Creameries in Canada.

Windsor Salt Works, - Windsor, Ont.
6 95-121

MONEY FOUND—BY BUYING FROM US. If you WANT FRUIT TREES, 2 ROSES, SHRUBS, etc., drop us a line (do it now), and we will send you FREE our 1895 catalogue. It's full of the choicest kinds. **Globe Nursery Co.** 5 96 f. Rochester, N. Y.

I. J. PARNELL Spring Road, P. Q.
Breeder of —

Leicester Sheep and Improved Yorkshire Swine.
Two Sows and one Boar 3 months old for sale. Orders booked for fall letters. 10 95-41

THOS. IRVING, Importer and Breeder
Clydesdale Horses & Ayrshire Cattle,
NORTH GEORGETOWN, P. Q.
6-95 121 (Howick Station, G.T.R.)

FOR SALE—COMMON SENSE BOACH, BED BUG and RAT Exterminator, in tins, 25c., 50c. and \$1.00. Money returned if it does not clear your house. 71 Main Street, Montreal. 7-95-12

FREE!

We direct special attention to the following remarkable statements.

For 25 years I was almost totally deaf, could not understand a word; had to carry a slate so that people could "talk" to me. In one week after commencing Aerial Medication, I surprised my friends by discarding the slate. I steadily improved, and now can hear the slightest noise, and I can understand conversation perfectly.



EDWARD E. WILLIAMS, Lea 1, S.D.

For 35 years I suffered most intensely from Catarrh in its worst and most complicated form, and words can not express my gratitude for the wonderful cure I obtained from the use of Dr. Moore's treatment



J. C. CARRITHERS, Riverton, A. I.

For 20 years I had Catarrh, was very Deaf 16 years. Dr. Moore cured me and fully restored my hearing in 1892



MRS J. BASTICK, Shelby, N. C.

I was cured of one of the very worst cases of Fetid Catarrh, by Dr. Moore in 1887, and have felt no trace of the disease since.



A. G. FREEMAN, Parker's Lake, Ky.

Medicine for Three Months' Treatment Free.

To introduce this treatment and prove beyond doubt that it will cure Deafness, Catarrh, Throat and Lung Diseases, I will send Medicines for three months' treatment free.

Address, J. H. MOORE, M. D., CINCINNATI, O. 1-96 3 f m.

POULTRY

BARRED PLYMOUTH ROCKS.—Eggs in season, from 3 first prize breeding pens at Montreal Show, Feb '96. Price cockerels for sale to improve your stock. W. C. FIFE, Box 76, Montreal West.

SILVER WYANDOTTES—From celebrated Hawkins' breed. Eggs from prize winners, Montreal 1896, \$2 per setting of 13. Few good cockerels \$3 each. R. W. REFORD, Ste-Anne de Bellevue.

PLYMOUTH ROCKS—Barred and White, and WHITE WYANDOTTES. "Monitor" and "Bristol" Incubators, 60, 100 and 200 eggs. T. COSTEN, 10 6 Notre Dame St., Montreal.

A. BEYCE, 110 St. Francois-Xavier St., Montreal, Que. Breeder of Barred PLYMOUTH ROCKS. My birds are sure prize winners. Birds for sale; also eggs for setting.

TO POULTRY KEEPERS—Our "Silica Grit" is best and cheapest in the market for all kinds of Poultry. **SILICA SAND & GRAVEL CO.** Tel. 2144, 16 Mill St., Montreal.

LARGE ENGLISH BERKSHIRES—For sale.—My stock is from the prize herds of J. C. Snell and Geo. Green, Fairview, Ont. Prices reasonable. **AUG. CONVERSE,** mch ap m Upper Melbourne, Que.

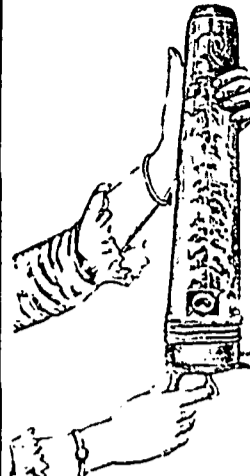
FOR SALE—Six Ayrshire Bulls, out of Good Milking dams, and prize-winning sires, ages from one month to two years. Address, **The Charlemagne and Lac Ouareau Lumber Co., Ltd.** mch ap m Charlemagne, Que.

FOR SALE—By the Waterville Farmers' Club, Que. A two-year-old pure bred **HOLSTEIN BULL**, registered. Price, reasonable. Address, **J. B. M. St-Laurent, Sec.-Treas.** Mch

TO FARMERS.—We will furnish RELIABLE INFORMATION enabling you to raise 300 bushels of potatoes per acre, where you now produce 110 bushels. Fertilizers are a help, but Fertilizers and Information combined are conditions of success. Will send you ½ ton of a well-known brand of Fertilizer for \$20 for 1½ acres including our information, or information alone, \$1. **B. L. NEWELL & CO.** Fertilizer Materials, 623 LaSalle Street, Montreal. Mch

The Laing Packing & Provision Co.

LIMITED.
PORK AND BEEF PACKERS, MONTREAL.
Offices, 329 & 341 St. Catherine Street.
Packing House, 95 to 111 Patriciens St.
Slaughter House, East End Abattoir, (on C. P. Railway.)
Buyers of Live Hogs and Cattle 6 95-121



The DURAND Fire Extinguisher

Manufactured by THE DURAND FIRE EXTINGUISHER CO., (LIMITED)
Is pre-eminently the most efficient Fire Extinguisher ever placed before the public. It will immediately arrest the progress of a severe fire. It is easy to handle and operate, a child can use it as well as a grown up person, and they should be in every household.

The great value of the Durand Extinguisher for Manufacturer, Public and Religious Buildings, is already well appreciated, and many such buildings are provided with a number of them. The Durand Extinguisher is approved by all competent authorities, amongst others: M. P. Benoit, chief Fire Dept., Montreal; J. H. Carliac, chief Fire Dept., Vancouver; B. C. O. Coombs, Dept. Public Works, chief Inspector for Dominion; A. H. Bass, Provincial Architect, from Government Inspectors, etc. The Durand Extinguisher has already demonstrated its efficiency on many occasions when used in an emergency, among others may be cited the following, where prompt use of Durand Extinguishers prevented large conflagrations and saved much valuable property.

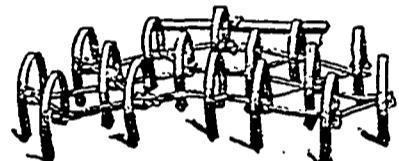
Polovina Hotel, Sault-au-Recollet. F. H. Duboc, of Duboc, Desautels & Co., 1613 St. Catherine St. Albert Jet & Upholsterer, 1243 Ontario St. John Millin & Son, 1325 St. Catherine St. Gravel & Bonlard, St. Lawrence St. R. Beaulac, manufacturer of church ornaments, Notre Dame St. J. A. Boies, furniture mfr., St. Anne de la Pêrade. Toussaint & Larivière, Sault-au-Recollet. Ladite's Benevolent Institution 31 Berthelot St. Montreal. Revd G. M. Pailleur, curate, Maisonneuve. Mme G. Cyr, 447 St. André. O. Daboia, sub-chief, Fire Station No. 4. O. G. N. Vallée, St. James Bonaventure Dpt. Ferd. Mailhot, St. Jean Deschallons.

All of whom give certificates of their excellent working. By providing your premises with a sufficient quantity of Durand Extinguishers you may lower the cost of your insurances. The Company also manufacture Extinguishers of larger sizes, 2 and 5 gallons, especially for the use of Fire Departments of cities, villages and municipalities to take the place of Babcoks or other apparatus of that kind. The Montreal Fire Department have already purchased 12 of the 5 gallons size. For Prices, &c., add res.

Glass Fire Extinguisher, same as cut above, \$24 per doz. Large prices given on application.
THE CANADIAN FIRE EXTINGUISHER CO. Ltd.
Offices and Work-ho., 7 & 9 St. Peter Street, Montreal

A Set of Hustlers

are the PLANET JR. Farm Tools. They put farm work on a modern business basis,—a week's hoeing done in a day, three times the crops on the same land. The No. 8 Horse Hoe is a dozen tools in one, width or depth changed instantly without stopping the horse. The PLANET JR. Book for 1896 tells all about these famous tools. Sent free if you write to S. L. ALLEN & CO., 1107 Market St., PHILADELPHIA.



Have you seen Doré's Spring Tooth Harrow

WITH 16 TEETH, —
And Steel Frame fastened with strong iron clips and cross rods ½ inch. These Harrows are made in two sections, and are the strongest

offered in this market. Ask for our prices, before purchasing elsewhere.
6 95-12 J. B. DORE & FILS, Laprairie, Qué.

WHY? SURELY YOU KNOW!

EVERY	EVERY
COW	CALF

— DURING —
MARCH, APRIL, MAY

SHOULD HAVE HERBAGEUM
If you Want the Best RESULTS.

The Beaver Manufacturing Co.
GALT, ONT. Sole Manufacturers.

Farmers, Gardeners & Florists

SHOULD USE THE
NICHOLS CHEMICAL CO.'S FERTILIZERS.



It increases crops from 25 to 40 per 100 and in many instances doubles them. POTATOES are much less liable to rot. CORN yield more. TURNIPS, BEETS, VEGETABLES mature earlier, give greater returns when these Fertilizers are used. HAY and GRAIN of all kind are greatly improved.

NO BAD WEEDS, or FOUL SEEDS, go with them like farm yards manure.

Every one who cultivates Flowers, Garden or Field, should use them.

1000 Farmers will tell you it pays 100 per 100 to buy those Fertilizers.

— SELLING AGENTS: —
R. J. LATIMER, Montreal. LATIMER & LEGARE, Quebec. LATIMER & BEAN, Sherbrooke.

Blood Will Tell...

When an animal is all run down, has a rough coat and a tight hide any one knows his blood is out of order. To keep an animal economically he must be in good heart.

Dick's Blood Purifier



Is a necessity where the best results from feeding would be obtained. It tones up the system, rids the stomach of bots, worms and other parasites that suck the life blood away.

Nothing like Dick's for Milch Cows.

For sale by druggists, at general stores or sent on receipt of 50 cents.

DICK & CO., P. O. BOX 482, MONTREAL.

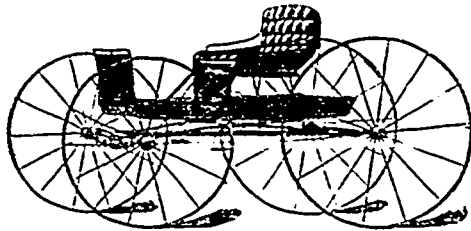
E. LEONARD & SONS Engines and Boilers

For BUTTER & CHEESE FACTORIES ... And all uses ...

The MOST ECONOMICAL Engines and Boilers built. Perfect in operation. Also.—Portable Engines and Boilers, on skids and wheels. Write for prices and particulars.

169 COMMON ST., - - Montreal, Que.

SLEIGHS, CARRIAGES, HARNESS.



Everything for the HORSE and STABLE.

Largest Manufacturers in the Province.

BEST QUALITY, LOWEST PRICES.

Handsome Illustrated Catalogues furnished to dealers. Farmers should see that they get VEHICLES AND HARNESS of our manufacture, NOT WORTHLESS IMITATIONS.

E. N. HENEY & CO. 337 St. Paul Street, Montreal.

N. F. BEDARD CHEESE COMMISSION MERCHANT

AND DEALER IN BUTTER AND CHEESE FACTORY SUPPLIES.

"PRESERVATIVE," The Best Preparation to keep any food substance in its natural and fresh state without requiring ice and without affecting the taste, quality or flavor.

SOLE AGENTS IN CANADA FOR THE SALE OF

The Celebrated "B'dor" brand Rennet Extract, Cheese & Butter Coloring

Also the renowned "Empire State" Milk Can.

The Jones Cheese Hoop For Gang Press.

The "Mikado" and "Empire" Cream Separators.

All kinds of machinery utensils and supplies necessary for the complete organization of a Cheese and Butter Factory together with the latest improved tools will be FOUND IN MY ESTABLISHMENT,—also, Bottoms, Headings and Hoops for Cheese boxes and Hand machines for the making of boxes. ALL AT MODERATE PRICES.

Ask for my illustrated catalogue and price list before purchasing elsewhere.

N. F. BEDARD,

Bell Telephone 2461 P. O. Box 62

30, 32 & 34 Foundling Street, Montreal.

SELECT SEEDS!

William Ewing & Co.

SEED MERCHANTS

142 MCGILL STREET, - MONTREAL.

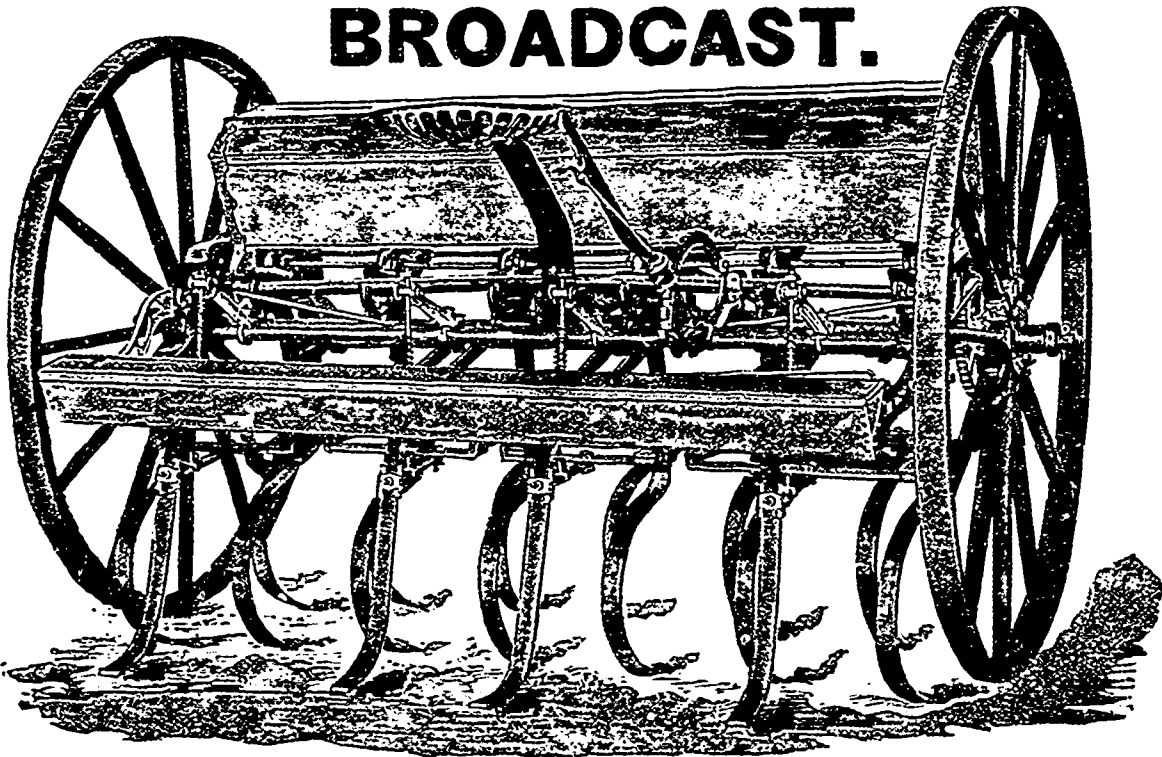


NOVELTIES in Garden and Flower Seeds. VEGETABLE SEEDS of every description. Garden and Farm TIMOTHY SEEDS—Choice Lower Canadian, our own Special Brand. CLOVER SEEDS and GRASS SEEDS of the finest grades. SEED GRAIN—Special attention given to New and Improved varieties. ENSILAGE CORN—The most complete stock in Canada of Esilage Corn, Horse Beans, Sunflower Seed and Forage Plants. FLOWERING BULBS, DECORATIVE PLANTS, FLOWERING SHRUBS, ROSES, FRUIT TREES, &c., &c. SPRAYING PUMPS, Insecticides & Fungicides. FERTILIZERS—A full line of Capeton and other Fertilizers. FARM and GARDEN MACHINERY & TOOLS. EWING'S CALF MEAL—Cattle & Poultry Soice. PURE GROUND LINSEED MEAL—Specially close quotations given on application.

Our Illustrated Catalogue mailed free on application.

TIMOTHY and CLOVER bought on sample. Correspondence invited.

BROADCAST.



OUR BROADCAST SPRING TOOTH SEEDER is in 4 sections and is a first-class Machine in every respect.

Having a LARGE GRAIN BOX, Improved Grass Seed apparatus, Important New Improvements this year. Do not fail to buy our Seeder as the best is always as good as any, specially when IT DOES NOT COST ANY MORE.

Our Set Lever Harrow is beyond all doubt the best machine for the purpose which has yet been manufactured. We can also supply the PLAIN SPRING TOOTH STEEL HARROWS to those who find the price of the Set Lever Harrow more than they care to pay. See our Local Agent.

MATTHEW MOODY & SONS,

MONTREAL OFFICE: 10, 12 & 14 LeRoy Street.

HEAD OFFICE AND FACTORY. TERREBONNE.

Special Discount to Cash Buyers

OF THE DUPLEX FEED MILLS

For Grinding Oats or Corn.

The JOHN ABELL

Engine and Machine Works Co.

10 95-12 (LIMITED) Toronto, Ont.

THE REV'D TRAPPIST FATHERS, Oka, Que.

APPLE GRAFTS ON BIRTH ROOTS, .. \$3.00 per 100 ..

Varieties:—Transparent Yellow, Duchess, Wealthy and other choice varieties.

We are doing ourselves at the monastery, the seed plot of these roots. Good judges of apple-trees ordinarily select them, because they are as well grafted as those of United States and Ontario companies, and further they have the advantage of being more suited to the rigorous climate of our Province.

IF OUR AGENTS DO NOT PAY YOU A VISIT, please write to us before buying elsewhere. You will have reason to congratulate yourselves.

The REV. TRAPPIST FATHERS, Oka, Que. 1 90 3, fm

ROBERT NESS, EXPORTER AND BREEDER OF CLYDESDALES English and French carriage horses, Shetland Ponies and Ayrshire Cattle.

A few choice young bulls for sale. 6-25-121 Woodside Farm, Howick, P.O., Que.

CANADIAN OFFICE & SCHOOL FURNITURE PRESTON ONT

FINE BLANK OFFICE, CHURCH & LODGE FURNITURE. SEND FOR CATALOGUE. 1-95 121