

Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. 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 filming, are checked below.

L'Institut a microfilmé 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 filmage sont indiqués ci-dessous.

Coloured covers/  
Couverture de couleur

Coloured pages/  
Pages de couleur

Covers damaged/  
Couverture endommagée

Pages damaged/  
Pages endommagées

Covers restored and/or laminated/  
Couverture restaurée et/ou pelliculée

Pages restored and/or laminated/  
Pages restaurées et/ou pelliculées

Cover title missing/  
Le titre de couverture manque

Pages discoloured, stained or foxed/  
Pages décolorées, tachetées ou piquées

Coloured maps/  
Cartes géographiques en couleur

Pages detached/  
Pages détachées

Coloured ink (i.e. other than blue or black)/  
Encre de couleur (i.e. autre que bleue ou noire)

Showthrough/  
Transparence

Coloured plates and/or illustrations/  
Planches et/ou illustrations en couleur

Quality of print varies/  
Qualité inégale de l'impression

Bound with other material/  
Relié avec d'autres documents

Continuous pagination/  
Pagination continue

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

Includes index(es)/  
Comprend un (des) index

Title on header taken from: /  
Le titre de l'en-tête provient:

Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/  
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 filmées.

Title page of issue/  
Page de titre de la livraison

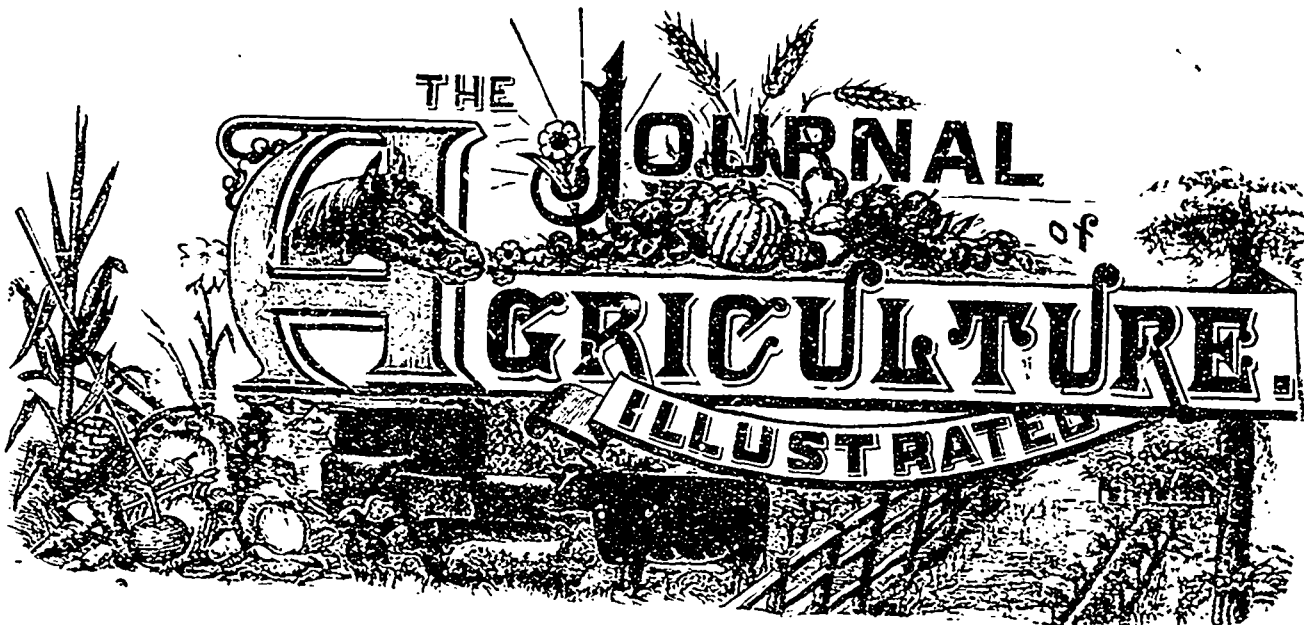
Caption of issue/  
Titre de départ de la livraison

Masthead/  
Générique (périodiques) de la livraison

Additional comments: /  
Commentaires supplémentaires:

This item is filmed at the reduction ratio checked below /  
Ce document est filmé au taux de réduction indiqué ci-dessous.

10X	12X	14X	16X	18X	20X	22X	24X	26X	28X	30X	32X
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Published for the Department of Agriculture for the Province of Quebec, by EUSEBE SENECAI & FILS, 20, St. Vincent St. Montreal

Vol. VII. No. 1.

MONTREAL, JANUARY 1885.

\$1.00 per annum, in advance.

**Table of Contents.**

First Steps in Farming—Young Man's Department: Liquid Manure .....	1
Our Engravings .....	3
Cabbage culture .....	3
The Vegetable Garden .....	3
Breeds of British Sheep—XVI .....	5
Wheat—Nitrogenous Fertilizers .....	6
Sawdust in the Stable .....	6
Should Farmers breed to Thoroughbred horses .....	7
Veterinary Department .....	8
Eastern Townships Agricultural Association .....	9
The Poultry-Yard .....	11
A general purpose Barn .....	12
Ensilage on the Fry System .....	13
Useful v. Pedigree Dairy Cows .....	14
How to keep June Butter for Winter use .....	15

**First Steps in Farming—Young Man's Department.  
LIQUID MANURE.**

(Continued)

LINCOLN COLL, SOREL, DEC. 10th 1884.

Yesterday I visited one of my neighbours' cow-stalls, and I confess I longed to set to work on them. No straw, nothing but filth, and how the unfortunate woman (*très grande dame, par exemple*) whose duty it is to milk the poor creatures can bear the unavoidable whisks of their foul tails, I do not see. Surely, gratuitous sawdust within a quarter of a mile cannot be an expensive form of bedding! I grinned with pleasure, when returning to my own pets I found them clean and comfortable; and I came to the conclusion, that, at M. L.'s at least, a tank would, as Mr. Barnard puts it, save 75 0/10 of the liquid manure. I avow, frankly, that, up to the time mentioned, I did not think any decent farmer would dream of keeping his stock in such a state—it was really enough to make even an enthusiast like myself despair of his country. Next week, I shall try to extend my observation, and I do hope to find some few *habitants* whose views are more enlightened than M. L.'s. It is truly sad, for the man is decidedly intelligent, better educated than the general run of farmers, and by no means without means.

And having thus freed my mind of a burden too heavy bear, I will give a few directions as to the building of tanks, the form of drains, and the construction and method of using the liquid-manure cart; and, first, of the drains.

*The drain* should be circular in shape, and laid with a considerable fall, as liquid-manure is always more or less *studdy*: it should run as straight as possible from stalls to tank: any corners, even if rounded off, invariably check the flow. Gratings should be placed to intercept any pieces of straw on their road to the tank.

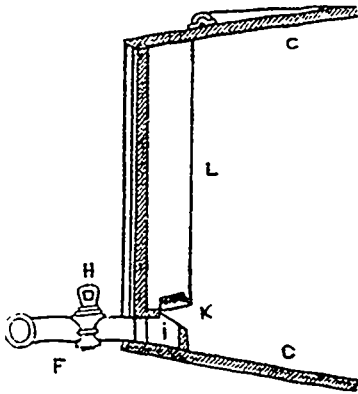
*The tank.*—There are several things to be considered before beginning to build. When a tank is made deep, like a well, the lower part must be made very strong, to resist the hydrostatic pressure of the fluid within it, and, of course, will be so much the more expensive in construction. A tank, then, should be built shallow, not more than four or five feet below the sole of the drains which bring the liquid-manure. In this climate, the tank must be either placed under the stable, or it must be covered in some way out of reach of the frost. In no case must it admit any water, either from above or below. Where the subsoil is clay, it should be puddled, or rammed, and if a spring, however small, shows itself, a drain should be formed to get rid of its water. A *manhole* in the roof will afford easy means of access for the purpose of cleaning out the tank.

As to the size of the tank, that depends upon the sort of farming practised and the number of cattle kept, but in a rough way, 1000 gallons for every cow kept will be enough = 162 cubic feet. If enlarged tanks are required, it is better, because cheaper, to have parallel rows of narrow tanks than to extend the length or breadth. In a series of such tanks, the common walls support the arches on both sides.

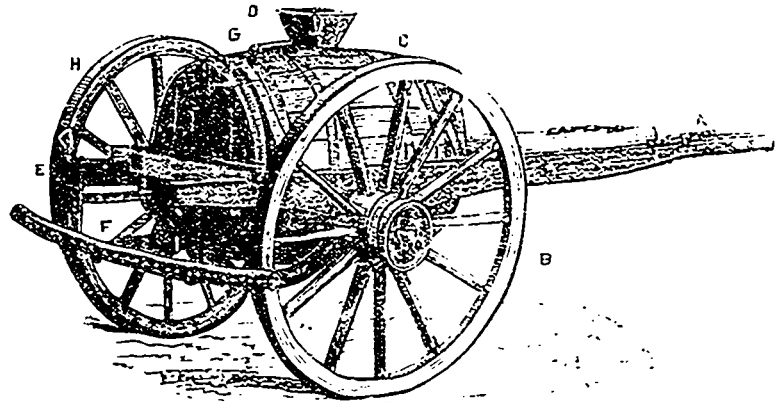
*The pump,* for I suppose nobody would now-a-days dream of lading out liquid-manure with a pail, the pump, I say, should be made in the "chain" form, that is, with a series of small buckets revolving on an iron chain. The ordinary valve and plunger of the common pump would soon clog up with such viscid stuff as liquid-manure. A small trough from the spout of the pump to the mouth of the cart will be found handy.

Where the liquid manure is used to moisten the covered dung-heap, the pump will, of course, be arranged to as to deliver the contents of the tank on to any part of the mixture at will. In this case, a drain should be laid, as I mentioned above, to carry back any superfluous liquid to the tank, and the entrance of this drain should be grated.

*The liquid-manure cart.*—I am at present building a cart to draw the ammoniacal liquor of the gas-works on to this farm. Now, this liquor is said, by the manager, to contain six ounces of ammonia per imperial gallon! Too good to be true, I fear; there must be some mistake in the calculation, or else a puncheon—120 gallons—would manure an acre of land: i. e., it would give 45 lbs. of ammonia, equal to 2 cwt. of sulphate of ammonia, or to  $2\frac{1}{2}$  cwt. of nitrate of soda, or to  $4\frac{1}{2}$  cwt. of the best Peruvian guano! Still, even allowing two puncheons to be necessary to supply the above-named quantity of ammonia, it must be a cheap application, as the carriage— $\frac{1}{2}$  a mile—is the only cost! Pray do not suppose that ammonia alone can produce a full crop; by no manner of means, but if the roots have been well done, and there is a good sod (ley) to be turned under, a dressing of 45 lbs per acre of ammonia before ploughing will make you open your eyes in the following autumn.



The apparatus for regulating the discharge of liquid manure. Fig 1.



The liquid-manure cart Fig 2

The cart, then, is nothing more or less than an old whiskey puncheon, mounted on a pair of wheels, with a wooden trough, pierced with holes and swinging from a stud, for the more equal distribution of the contents. This arrangement I prefer very much to the tube as shown in the engraving, No. 2 and for this reason: the distributor always remains in a level position, whatever may be the inclination of the ground over which the cart has to pass, and, therefore, always distributes the liquid uniformly; whereas, in a fixed distributor, the liquid is discharged with the greater force, and therefore in greater quantity, on the lower side, for the time being, of the uneven ground.

The tap may be made of brass or of iron, but in all cases I recommend that a rim or flange be welded on to the mouth of the tap, to admit of a short hose being tied on to it, the end of which hose should reach to the distributor. The hose should be made of very stiff canvass—unless the material be very stiff the latter part of the contents of the puncheon will not run as quickly as could be wished. The engraving No. 2 shows the arrangement of the apparatus for regulating the discharge of the liquid. It is a simple flap-valve heavily loaded. This valve, when closed, stops the discharge, and when lifted, the liquid has a free passage to the distributor. The opening of the valve is effected by a small chain attached

to the flap, rising to the top of the cask at *g*, where it passes over a small roller, and onward to the fore-part of the cart, where it hangs ready for the driver to set off or on at pleasure; *f*, is the stem of the tap, *h*, a stop-cock, *i*, the chamber, and *l*, the valve, which is the common leather-flap or clack-valve, well loaded with lead, *cc* is part of the cask, and *l* the chain attached to the valve, and passing over the small roller *m*.

If a tube, as in fig. 1, is used, it must have the ends removable at pleasure, for the purpose of cleaning out the thick stuff, which will be constantly stopping up the holes of the distributor. On this account alone, the open trough will be found infinitely preferable. The holes in the trough may be bored first, and the boring followed by a red-hot iron, otherwise they will close from the swelling of the wood after being moistened.

If I could afford it, I should build my liquid-manure cart with a cranked axle, to bring it nearer the ground, for the convenience of filling. Most of the carts I saw before leaving England were square in shape, but they were always leaking, and in this climate a cask is handier, as the hoops can be driven tighter with ease, and it is certainly cheaper, a whiskey puncheon in good order only costing about four dollars. As

it takes about four days to accumulate a puncheon full at the gas-works, I am obliged to set apart a cask and wheels on purpose, or else the ordinary carriage of the dung cart might be used, the body being removed pro tempore. The mode of fastening the puncheon to the carriage is as follows: The cart fig. 1 is a mere skeleton, consisting of the shafts *aa*, 14 feet in length. They are connected by a fore and hind-bar, placed at such a distance as will just admit the length of the cask, while the width between the shafts is suited to its diameter. The axle is bent to nearly a semicircle, to receive the cask, and to the axle are fitted two common broadish cart-wheels, *bb*. The cask *c* is suspended on to straps of hoop iron, the ends of which are bolted to the shafts, and the same bolts pass also through the ends of two lighter straps, which pass over and secure the cask firmly in its place.

The holes in the trough should be about one-eighth of an inch in diameter, and about one inch apart. As the holes are always constant in size, any alteration in quantities to be discharged must be secured by accelerating or slackening the pace of the horse.

ARTHUR R. JENNER FUST.

I want about a thousand pounds of brown sulphuric acid, delivered at Sorel by the end of April. Bones I have plenty

of from the College, and, after trying superphosphate from Montreal, I have determined to make my own in future. It seems to me I get my manure pretty cheaply at Sorel—bones, gratis; ammonia, gratis; gas-lime, gratis; village dung, 10 cents a load, equal to about 30 cents a ton; ashes are a difficulty, as the people burn coal a good deal, but I fancy I can get enough for 10 acres (200 bushels) at 20 cents a bushel—not all hardwood, but mixed; and last, though by no means least, the liquid and solid dejections of about 60 human beings. Of course I have to bribe the College cook to take care of the bones, and that officer is so often changed that I fear the bribes will amount to a good round sum at the end of the year. Still, whatever they cost they will be genuine, which the Montreal superphosphate was not.

I have been experimenting on the production of milk. I find that the same food exhibited in different modes produces different quantities; e. g.:

5 cows 3 pks carrots, and q. s. Hungarian grass-hay give 26 qts a day	
5 " " " " " " ; 5 lbs mixed meal dry	30 " "
5 " " " " " " +5 " " " wet	35 " "
5 " " " " " " +3 " " " dry	" "
	and 2 " wet ..... " 35 " "
5 " " " " " " +5 " mixed with hay-chaff wet with boiling water.....	" 34 " "

The *wet meal* was simply pease, oats, and linseed ground together, and stirred up thin with cold water; the cows seem to thrive best with the last mixture, though there was a slight diminution in the yield of milk; they are all stale, having calved at least 6 months ago. I do not think that where good milk is wanted it pays to boil stuff for cows. If I wanted a lot of thin stuff, I should boil everything, roots and all. I do my mixing in a primitive fashion: the chaff-cutter, one of the "hide-rollers," cuts the straw and hay into an oblong box 6 feet x 4 feet x 1 foot, (my man cuts enough for the 5 cows in 10 minutes); the 35 lbs of meal are scattered over the chaff, and the whole sluiced with 14 gallons of boiling water, the mess, covered with old sacks, is left to steam for half an hour, and then given, warm, to the cows. A little salt is added occasionally. The milk is really rich, and the colour all that can be desired. As the boys go home for a month's holidays on the 18th inst., I shall have an opportunity of making butter, a sample of which I will send to the Department at Quebec for judgment.

Mysterious diarrhoea from time to time among my cows! And I can't account for it, as the carrots ought not to cause it, and the proportion of linseed, one in seven, is very moderate. My neighbour thinks that it must be the Hungarian grass; but then, he knows nothing about it, having never seen that herb before. I suppose he thought he must say something or other.

There is a good Berkshire boar in the town. Barring a flock or two of white in the wrong place, and being rather short, he is not to be sneezed at. If I can get a couple of Mr Dawes' sows, I will give the boar a chance to see what he can do—he looks as if he had been bred *in and in*, and, therefore, he is probably impressive. I am tired of trying to fatten the pigs of the country: the first two I slaughtered I over-judged by 20 lbs a piece, a thing I never did before in my life.

The rape-fed mutton was considered to be very good. One ewe-lamb, in particular, was a perfect picture; the meat striped in alternate fat and lean, and of very superior flavour. Next year, if things go on well, I hope to turn out sixty couples—ewes and lambs—and give them four months of it, instead of seven weeks; but this year has, necessarily, been

a muddle; I did not know where to go for my stock, and those who had sheep for sale asked extravagant prices for them, taking me for what is singularly called a *flat*.

I have just finished looking over the Agricultural essays at Lincoln College. They vary in quality, but the best, by G. Massey Baker, though faulty, considered as a composition, shows that the writer has a good memory and has paid great attention to my lectures; this, of course, is the chief thing desired, indeed, everything else must give place to it.

The weather has been charming since the beginning of the month, except a horrible couple of rainy days on the 6th and 7th. Just enough snow for sleighing, but it will soon out through unless more comes.

A. R. J. F.

### OUR ENGRAVINGS.

*Liquid manure cart.*—Figs. 1 and 2.

*A general purpose barn.*—Figs. 1 and 2.

The articles on these engravings will explain their purpose.

### CABBAGE CULTURE.

R. Brodie, Jr., who resides near Montreal, says the land most favorable for growing early cabbage, is a well-drained black, sandy loam, facing the south, to which has been applied seventy-five tons of well decomposed manure, made of three parts of horse manure and one of cow manure. This is applied in autumn and moderately plowed in. It is plowed a foot deep early in spring. The seed is sown in hot-beds the first of March; the plants set in other hot-beds the first of April; set out the first of May; and have made good cabbages for market the middle of June. Winter varieties are grown in the same way and set out the middle of June. Montreal ships enormous quantities of cabbage as far as Boston, New-York, and to other places. (1)

### THE VEGETABLE GARDEN.

Keep the garden clean. Remove old vegetables, useless stumps and vines to the hog pens or rot heap, and preserve disused stakes and poles for next year's garden. Keep growing crops (as spinach, German greens and corn salad) in vigorous condition, and thin them if required. Have at hand boards for frames, sashes, thatch or other covering material, and be well prepared for frost. Avoid coddling up your vegetables, old or young, much in early winter, else they will suffer when severe weather sets in. Although I winter over a set of young plants of cabbages and cauliflowers, I do not think it pays; I can do better with hot-bed raised spring stock. Keep your crops as much together as you can. By preparing your ground now for early crops by manuring, spading or plowing, you will save yourself much work in spring.

**ASPARAGUS.**—Many farmers do not cut off the old "grass" till spring, but I cut over mine in October and burn the grass.

**JERUSALEM OR SUNFLOWER ARTICHOKE.**—Before hard frost sets in, lift and store them like potatoes. They are hardy, and part may be left in the ground till spring. But few people care for them or grow them as a vegetable.

**GLOBE ARTICHOKE.**—My patch has kept up a constant succession of heads since the 23rd of June. The plants I raised from seeds last March, began bearing about the first of September. Before hard frost sets in place a heavy mulching of leaves or litter over the crowns, as these plants are not very hardy. The young sprouts earthed up and blanched like

(1) And to Sorel as well, I regret to say.

cardoons, which they much resemble, are also used as a vegetable, but, like cardoons, they are mighty poor eating.

**BEANS**—When Limas have been destroyed by frost, gather all the ripe beans and preserve them for winter use; they are capital eating: remove the poles and straw. Last year I had lots of snap beans till well into December. They were sown early in September, a frame put over them in October, banked around with hot manure, and covered over with mats in November. I have made the same preparation this year. Among many sorts, my two best beans are Early Mohawk and Valentine; the first with long flat pods, the last with shorter and rounder ones. I grew lots of yellow-fleshed beans, as Black and Crystal Wax, but no cook would use them, and, indeed, so long as I get green-fleshed ones, I, myself, will not use the yellow ones.

**CABBAGES, CARROTS, BEETS, SQUASHES AND POTATOES.**—All farmers know as much about wintering these as I do.

**BRUSSELS SPROUTS.**—From the end of September till Christmas these are in their prime. Till the end of October we may gather them from the open ground. Then lift and plant them thickly in a cold frame or pit, banked around and covered to keep hard frost out; or in the cellar. They are a nice vegetable, but it is hard to get a good strain of them.

**CAULIFLOWER.**—May be treated like Brussels sprouts. They head well after being lifted. Last year I placed mine thickly into cold frames, and covered well, and I had cauliflowers till mid-winter. Broccoli is hardier, but not so much favored as cauliflower.

**CELERY**—I am using early celery; have a succession fully earthed up, the before January crop "handled" and earthed up once, the late crop "handled" only. The before-January crop I shall earth up fully, late this month; the late crop I shall not earth up any more till about the middle of November, when I shall lift and store it in ridges. I am growing some 8,000 heads, but those who grow only a few hundred, may lift and store them in earth in boxes in the cellar.

**CHEVIL.**—Grown for salads and flavoring, is quite hardy. So long as frost and snow permit you can cut from out-of-doors; in severe weather from a cold frame.

**CHICORY OR WHITLOEF**—Used as a salad. Lift and preserve the roots over winter, and from time to time plant a lot in pots or boxes, and grow them in a warm room, hot-bed or greenhouse, but you must grow them in the dark, and this is done by covering with another pot or box.

**CORN SALAD.**—I sowed mine about the first of September. It is quite hardy, and will come into use in early spring. For winter crops I grow in hot-beds.

**CUCUMBERS.**—Treated like snap beans. I shall get them from frames till December, after that from seeds sown a month ago in the greenhouse.

**ENDIVE.**—I transplant this thickly into cold frames in dry weather, keep dry overhead, free from frost by covering, and it will last till February. But who, having lettuce, wants to eat endive?

**GARLIC**—From sets in spring was harvested in July, bunched and hung on pegs in the barn, there to remain till used. Frost does not injure it.

**HORSERADISH.**—Before hard frost sets in in November or December, I dig up a lot and store it among sand in the cellar. One-year-old roots—six months rather—only are used; two-year-old roots are unfit for use.

**SCOTCH AND GEMAN KALE**—From summer sowings, are now large curly masses. They shall stay where they are till used, or if I need the ground before then, shall lift and store them thickly in some sheltered corner, and scatter some thatch over them. September sowings are for spring use, and are well cultivated to get them into nice stocky plants. Six

weeks later I may scatter thinly some straw or thatch over them.

**LEEKs**—Shall stay as they are till the beginning of December, when I shall lift and store a lot in a frame for convenience in gathering in winter; the remainder shall remain in the patch and be deeply mulched between the rows with dry leaves.

**LETTUCES**—I shall cut from the open ground till November; after that from cold frames till January, and from then till the end of April from hot-beds. I have many sashes now filled with lettuces two to four weeks old, for stock for late winter and spring work. I use improved Tennis Ball for frames; and outside I have Hammersmith Hardy, Green and Brown Dutch planted in warm sheltered places, hoping they may survive the winter, and come in early in spring.

**NEW-ENGLAND SPINACH**—Can be used as long as you preserve it from frost. It is a very good vegetable.

**OKRA.**—If you have dried some pods, there is more bother in protecting the plants from frost than they are worth.

**ONIONS.**—I shall plant a few sets this week. Look over those you have stored by and remove the decaying ones. About the middle of next month see to covering them up from frost. Never touch onions while they are frozen.

**PARSNIPS.**—I leave them in the ground till there is danger of them getting frozen in, and lift enough to do me through the winter, leaving the balance in the ground till the end of winter. Keep them over like carrots.

**PARSLEY**—From seeds sown in frames in August, and from roots of last spring's out-door sowing, lifted and planted in cold frames, I get a constant supply of till spring, only I must cover up enough to exclude frost, and keep the plants dry over head in winter.

**RADISHES.**—California, Spanish and Chinese, I grow a few of for winter use, and store them in sand, but they are not much appreciated. Therefore after October and till May I have to keep up a supply of the summer kinds, as French Breakfast and White-tipped, in hotbeds, and in the summer months out-of-doors. Radishes to be good must be quickly grown.

**RHUBARB**—Can now be lifted, put into half barrels, boxes, baskets, or anything else that will hold the roots, and as occasion requires, be brought into warm quarters in winter.

**SALSIFY AND SCORZONERA**—I lift and winter in the same way as carrots.

**SEAKALE**—Is easily though seldom grown here, but it is becoming more common. From November till asparagus comes in April, with a little trouble, we may have seakale. Lift the roots in November, store them in sand in boxes, the cellar or frame, away from frost, and by introducing a few now and again into warm quarters, and covering as advised for chicory, they respond cheerfully, and we get kale in a few weeks.

**SORREL.** The larged leaved is grown for salads, and treated as chicory, only there is no need of having it so white.

**SPINACH.**—About the first of September I sow all the spinach seed of all of the varieties that I have left over, in rows a foot apart, in rich ground. My reliance for spring greens is on the prickly seeded. Before winter sets in I use freely of it; then scatter some clean straw over it to keep sunshine from scalding it. It should last me till well into May, if I do not need the ground for other crops before that time. Straw with any grain in it is apt to harbor field mice, which are extremely destructive to the patch by plowing it into a network of "runs."

**TOMATOES.**—For some six or seven weeks to come I expect to get them from frames treated as for snap beans, and after that from pots in the greenhouses. W. FALCONER.

*Glen Cove, N. Y.*

A very sensible article, written evidently by a practical man. We don't get half enough vegetables in this province, and the seasons are cut unnecessarily short, fall digging and manuring would lengthen them considerably.

My cabbages are keeping very well. They are simply piled in long ranks 10 feet by 4 feet, and though frozen hard, they thaw out after 3 days in cellar and are as good as can be. I fear from what I hear, that hundreds of thousands will be planted in the district next year. The price will tumble down to a couple of cents each, and the cows will get the majority. Poor things, how astonished they will be.

Brus-el sprouts I never have succeeded with here. As for winter radishes black & , let those eat them who will. I am too careful of my digestion to meddle with them.

A R J F.

### Breeds of British Sheep--XVI.

#### CONCLUSION.

In the series of articles now concluded, all the breeds of sheep known in England, whose numbers are sufficient to give them any importance, have been described. As stated at the outset, the object has been to consider the circumstances under which each breed has been produced and developed, in order that the American farmer may judge which is most likely to be suited for the particular conditions of his own situation; for it seems but reasonable to suppose that each would succeed best here where the circumstances were most like those under which it had been brought to its present perfection. My remarks have been based upon personal observations in the respective localities, using from other sources such historic data as throw light upon the origin of the different varieties and the means employed in their development. In describing each breed, I have stated as correctly as possible its desirable qualities, and also those that seemed to be objectionable, in order to present each one fairly to my readers. I am led to believe that this attempt has been measurably successful, from the large number of commendatory letters that have been received from admirers of different breeds, as well as from those who have a general interest in the subject. None have objected to my statements. But a number have written to make inquiry as to *the best* breed. I have been careful to avoid comparisons in the articles upon the particular breeds, but it seems proper that now, in conclusion, there should be given, in answer to the inquiries received, the judgment in reference to the various breeds to which my observations have led me. In doing this, I do not assume to be any high authority upon the subject, but ask that the opinions offered shall carry such weight only as the reasons given in their support shall warrant. The investigation of this subject was undertaken with the view of diverting a portion of the agricultural interest of Westchester and its adjacent counties from the one production that has come to almost monopolize the farmers' effort in this section—that of milk for the city of New-York. The distribution of the milk in the city has long been largely in the hands of irresponsible and characterless middle-men, who have caused the farmers to suffer great pecuniary loss and endless annoyances. Railway companies charged rates for transportation that exceeded those of the passenger traffic. Abortions and other difficulties occasioned great loss in the dairy herds. The business was overdone, and consequent injury resulted from an almost constant over-supply. The opinion was entertained, and now more strongly than ever held, that the production of high-quality mutton and the best lambs would be found profitable, and that the demand for such now existed without an adequate supply, and that this demand would steadily increase. I wished to learn what breed of sheep was best fitted for this business, and therefore determined to make the examination myself. I interred upon the inquiry without the slight

test prejudice either in favor of or against any breed. Through the kindness of friends in England, every facility was given in the prosecution of the undertaking.

With the immense and constantly increasing production of wool in Australia, South America and our Western States and Territories, we cannot hope to find profit in growing wool in our Eastern States. Flesh is therefore the first and almost the only consideration. As a lamb four or five months old is worth in the market about as much as a mature sheep, it seems useless to keep anything but breeding animals beyond that age. Therefore that breed of sheep that will give the greatest number of pounds of lamb, at or under six months of age, must, other things being equal, be the most profitable breed. These other considerations are hardiness of constitution, freedom from disease, ability to take all kinds of food, and to get along fairly well under the often trying circumstances of our severe drouths, docility, and the character of the ewes as mothers.

The Scotch Black-faces and the Cheviots are specially suited to certain mountainous and semi-mountainous districts, and the Romney-Marsh sheep are fitted for wet lands, but none of these are wanted for the particular purpose indicated. All the long-wools are deficient in the quality of their flesh. For successful management they all require very high feeding, and they cannot stand our protracted drouths. We are therefore brought to the consideration of the Down breeds. The Oxfordshire-Downs are too nearly long-wools for our purpose. But three breeds remain—South-Downs, Hampshire-Downs and Shropshire-Downs. The former two are the only breeds in England, except the Mountain breeds, that carry no Leicester blood, and it has been changed, but I believe not proven, that the finest South-Down strains have had a Leicester cross. Bakewell brought the Leicesters to their great perfection by close in-and-in breeding. Against this, nature always protests and she does it by refusing to give young, or by giving them such enfeebled constitutions that they shall not perpetuate their kind. We see this result, in a degree, with the Leicesters to this day. But how shall we decide between these three Down breeds, all so good? The South-Downs have attained great perfection *only* in the hands of a comparatively few wealthy and noted breeders. They do not maintain their quality on the average farm in England, and never in America. In England great want of uniformity is observable as it also is here, and their numbers are not increasing there. While their quality of flesh is unexceptionable, there isn't quite enough of it. We need a large and a stronger breed, and one with more vigor of constitution.

Hampshires and Shropshires I believe to stand ahead of all other breeds as mutton sheep suited to our Eastern States. They have about the right size, they mature quickly, give strong, hardy lambs, and their flesh is as good as can reasonably be desired. In England they are increasing in numbers, and are occupying new fields more rapidly than any other breeds. It is to the disadvantage of the Shropshires that they carry both Leicester and Cotswold blood. *The Hampshires have none of either.* The Shropshires are the more mixed breed, and consequently they show a want of uniformity. You often see animals that are almost Leicesters, and others almost South-Downs in the same flock. The greatest objection to this is found when we cross the breed upon common ewes, as we must largely do in the production of market lambs. A breed may keep reasonably near its type when kept strictly by itself, but may lack prepotency when crossed upon other stock. Here is the weakest point with the Shropshires for practical purposes. The cross-bred lambs are too uncertain. *It is not so with the Hampshires.* They stamp their character upon their get, from whatever stock it comes, with remarkable force. The lambs from very coun-

mon ewes by a Hampshire ram, will generally be very uniform in the Hampshire type. In English shows we find the prizes for cross-bred sheep very generally going to a Hampshire cross. It was strikingly so last year.

In no other breed in England did I see such uniformity in the various flocks as with the Hampshires. The 33,000 examined at Ilsey fair have already been spoken of. This is chiefly owing to the fact that the breed has not been specially developed by a few wealthy admirers. It has never had such. It has come up in quality in the hands of the rent-paying farmers themselves; and this, too, is the reason why it has but recently attracted much attention beyond its own section. These was no one specially interested in pushing it into notoriety. This method of development has given the breed an element of great value, for its standard can be maintained here better than with those breeds whose fashionable strains have been produced by more artificial means. While there are now some leading Hampshire breeders, there are no particular strains of blood.

In hardness of constitution, in freedom from disease, in ability to withstand grief, whether of exposure or of shortness of feed, in general "useful" qualities, in excellence of flesh, in the strength and vigor of the lambs and their quick development and fitness for market, in the motherly qualities of the ewes, in their docility, and especially in their prepotency when crossed upon other breeds, or upon the commonest stock, I believe that the Hampshire Downs combine more valuable qualities than does any other breed. I concluded my investigations in England in the opinion that this is the breed for our Eastern States, and from what I know of its record in this country, I have found no reason to change my opinion.

*Mt. Kisco, N. Y.*

JAMES WOOD.

I agree with every word of the above. Mr Wood has thoroughly studied his subject, and has given perfect expression to his ideas. Now, we shall see what price the Hampshire ram lambs fetch at the Guelph annual sale. I hope to have a full account of the flock there ready for an early number of the Journal.

A. R. J. F.

### Wheat—Nitrogenous Fertilizers.

BY SIR J. B. LAWES, BART., LL. D., F. R. S.

There is nothing which shows more plainly the great poverty of the soil on which my permanently unmanured wheat is grown at Rothamsted, than the small proportion of straw which the crop contains. In our ordinary wheat crops the relation between the straw and grain is about 100 straw to 60 grain. The unmanured crop of the present year gave for each 100 pounds of straw 90 pounds of grain, while some of the highly manured plots gave very nearly equal parts of straw and grain. In the latter case the straw, having abundance of food, continued to grow almost up to the time of harvest; while in the former, the plant at an early period, finding that the supply of food was short, used what little there was as far as possible in the production of its seed.

The unmanured land yielded barely 13 bushels per acre this year, while last year the produce was 14 bushels. Last year the highest produce grown by any artificial manure was 43½ bushels per acre; this year it was 44½ bushels—the yield therefore of the two seasons is very much the same.

In order to produce double the crop which was grown on the unmanured land, or on the land which receives minerals alone—that is to say, to produce 26 bushels per acre—has required an application of 200 pounds of salts of ammonia. This manure supplied 47 pounds of nitrogen, while the increase of crop would not contain 20 pounds. Very early in

the spring when the crop began to grow fast, the color of the leaf showed that the supply of nitrogen was not sufficient to produce a very luxuriant growth, and, as no drainage took place after the manure was applied, I fear we must come to the conclusion that a considerable amount of nitrogen is destroyed in the soil.

It has already been established that while there are ferments which nitrify, there are other ferments which convert ammonia and nitrates into nitrogen gas. This is a most serious matter when we have to deal with so costly a substance as nitrogen; and though some day, when our knowledge with regard to these ferments becomes more advanced, we may possibly be able to prevent some of these losses, at present we have not arrived at this point.

In our barley experiments we appear to have less loss than in the wheat. While the wheat soil is firm and compact, owing to the autumn sowing and the winter rains, the barley land is light and porous. For the wheat crop we do all we can to produce a firm seed bed, while for barley, on the other hand, we do exactly the reverse. The absence of air in the soil has been proved to be destructive to nitrates; it is therefore possible that the greater losses which occur in the case of wheat, as compared with barley, may be due to this cause.

In the States where so much spring wheat is sown, it would be interesting to know whether a top-dressing of nitrate or ammonia applied to spring wheat, would give more increase than when applied to autumn sown wheat. Of course the manures should be applied to both crops together. But probably it would only be as an experiment that this would be interesting, as looking at the present price of wheat, it is more than doubtful whether the increase of crop would repay the cost of the application.

The large increase of straw which these manures give us, is of considerable value in England, while in the States it is frequently an incumbrance which has to be got rid of. (1)

### SAWDUST IN THE STABLE.

*From the New England Farmer.*

A few years ago there was a very strong prejudice against the use of sawdust for bedding cattle and for absorbing the liquid manures of the stable. Many men who owned saw mills were afraid to use their mill dust for fear it would spoil the manure, or the land. It was contended that sawdust made worms to eat the potatoes and cut off the roots of the corn. It was also said to burn the manure, and some thought it would permanently poison the land to which it was applied. Pine sawdust was deemed specially dangerous on account of the pitch it contained, and as proof we were asked to notice that nothing will grow under the dense mat of needles which annually fall from the boughs of pine trees. Other farmers who found straw bedding at twenty dollars a ton rather too expensive for free use but who were determined to keep their animals clean and comfortable when in the stalls, have persevered in their experiments with sawdust till they have lived to see very much of the prejudice against it removed. Men who once refused to use sawdust made at their very doors, now go miles to obtain it for bedding cattle and horses.

It is possible to use it in excess of needs, and to apply the manure improperly. Green sawdust will heat rapidly when used for horse bedding, and the heat may injure the manure unless it is spread thinly, kept wet, or trodden down

(1) I don't presume to add a word to this article—reason why!

A. R. J. F.

-olid by hogs, or other animals. It has been thought to cause humors upon the skin of horses, which may be true in a few instances, but is certainly not a general complaint. Sawdust that is left out in the weather and is constantly wet, may be clean enough as bedding, but it is not a good absorbent. It should be stored under cover and kept as dry as possible. Green sawdust piled under cover will heat itself dry in a few weeks of summer weather.

It may be used in cow stables merely to dust down the floors to keep them looking neat, or it may be spread deeply, two or three bushels to an animal, for making a soft bed, the soaked portion being removed as occasion requires. We would not use manure for topdressing mowing fields when large amounts of sawdust have been mingled with it in the stables. Such manure is comparatively light and will not lie as close to the surface, nor rot as rapidly as would manure that was mixed with sand or dry loam. Sawdust manure will be best ploughed or cultivated into the soil, where it will be kept moist and decay rapidly. That it is poison in any true sense of that term, we do not believe. We have applied manure in which it formed a liberal part, to all kinds of farm and garden crops with no ill results whatever. It neither creates nor attracts worms of any kind. We have used it one year old in hot bed soil, and found the plant roots running through it and clinging to the particles of rotten wood as if they were bits of bone. Rotten sawdust is too near akin to wood mould and the dust around rotting tree stumps, to be in itself injurious when properly used. A member of the Franklin Farmers' Club once drew a load of sawdust and dumped it in a heap in one of his fields, and after spreading it about so it was not more than three or four inches thick, ploughed it in without seeing any ill effect whatever, but a slight improvement in the crops after two or three years when the dust had thoroughly rotted.

We have used pine needles in the same way, ploughing them into the soil of a corn field without being able to see any special effect whatever. Still we make no claim that there is great value in sawdust as manure, but only that it is a most excellent absorbent and perfectly safe to use in reasonable quantities.

I have tried sawdust as an absorbent, and I am perfectly satisfied that whether for horses or for cattle, it answers perfectly. Green sawdust, thoroughly saturated with the urine of horses, may heat too much, but I don't think it is likely that any one sufficiently wide awake to carry this material to his stables will be idiot enough to allow it to accumulate under his animals to any inconvenient degree.

Breeds fleas, does it? Bosh!

A. R. J. F.

#### Should Farmers breed to Thoroughbred horses?

To answer this question intelligently one must know something of the farmer in question. If he has a fine lot of pure heavy draught mares he will of course make more money by going on with the production of pure Clydesdale, Shires, or Suffolks. But to take farmers throughout Canada as they come, there are very few heavy draught mares to be found on their farms. They have more of the more finely-bred smaller sized animals, such as if crossed with a good-sized, stout, heavy-boned thoroughbred will be very apt to produce a thoroughly good "general purpose" horses, in the literal sense of the term. The great want among Canadian horses is more of the warm blood of the race horse. In all the lighter classes of horses people look for a fine blood-like top, graceful carriage, and light elastic motion. Coach-horses are brought over from the old country and bred to our common cold-blooded mares with the most pitiful results. The foal

has, perhaps, a fine graceful outline and looks well when standing still, but ask him to move, and a Galloway bull would "make a show of him," so far as action is concerned. He has the same heavy "wooden" action that characterizes the heavy draught horse, though his gait may be a trifle smoother and more uniform. There is no spring, no "go" in him; he is essentially a mechanical horse. He will at all times eat more than he will earn no matter how cheap hay and oats may be, and the only way his owner can "get even on him" is by selling him to some one who cannot tell a good horse from a fairly executed counterfeit. There is always some sort of a market for these "flatachers," but it is equally true that there are always fools who can be swindled by confidence games, and no respectable breeder likes to sell animals that will not give his customers satisfaction. And it is not merely the production of horses that will sell well that the breeder should look to. He who would keep up with the times must keep improving. To do this he should always be trying to breed up toward a higher standard. Any horseman knows that, for his bulk, the thoroughbred can do more in the way of muscular effort than anything else of the horse kind. He is of material superior to that in any other breed. His whole make up is superior to that of the cold-blooded animal. Break him thoroughly to farm work and he will do a third more in the same length of time on a given amount of food than any cold blooded horse of the same weight and same degree of maturity. In stating this fact it is assumed of course that the horses are handled by horsemen. There are, of course, some who handle horses, who, though human beings, are not possessed of either mental or moral qualities at all equal to those of the average thoroughbred horse, and as a rule such men have a bad time with thoroughbred horses, while thoroughbred horses have a still worse time with them. Assuming, however, that horses be handled by horsemen, what we have already stated will always be found to be true. And the more this high quality is infused into our horses the better, so long as other important and necessary qualifications are not sacrificed. We must preserve a marketable size at all hazards, and substance must not be overlooked. The limbs too must be kept strong, and the hoofs must not be allowed to become so brittle or so thin that they will not sustain the weight of the "superstructure." Let the breeder keep these provisions constantly before his eyes, and then the more warm race horse blood he has infused into his stock the better. Every cross will give more courage, more quality, finer finish, greater endurance, more activity, higher speed, more graceful carriage, and a longer period of vigor and usefulness.

Breeders, especially in Canada, are, as a rule, too eager for immediate results. A farmer takes some old plug of a native mare that bends her knees well and can show a "butcher-cart" turn of speed, and breeding her to a trotting stallion hopes to produce a Maud S. The foal comes, and he squanders the price of an ordinary horse in buying shin boots, arm boots, cuff boots, quarter boots, bandages, toe weights, side weights, patent bits, rocker shoes, &c., for her, besides what he pays some incompetent ignoramus for training her. She finally squares away and begins to go. Presently she will show quarters fast enough to "break a watch," and with more conditioning she manages to show some splendid half-mile trials. The breeder thinks that fame and fortune are now within his grasp, and he begins to ask himself what he will say to Mr. Bonner when that insatiable absorbent of fast trotters comes to offer him forty thousand dollars for her. Before entering her in the grand circuit, however, he thinks he will give her a little race here in Canada, with the distinct understanding that she shall



not receive a mark lower than 40. She goes to the front at a great rate, and at the quarter in 37 she has half a dozen lengths of daylight behind her. At the half in 1.20 she has not quite so much to spare, and in the fifth furlong her owner's heart travels rapidly toward his throat, for a certain old ringer has his nose at the mere's wheel, while two or three more are close up. To his horror he sees his own driver plying the whip; the next instant his mare's nose is in the air and she is soon out of the race. She cannot settle to the trot again, and she has the flag dropped in her face as she comes down the stretch. A longer and more severe preparation does not produce any more favorable results, and if her owner labors with her to the end of her days he will never see her trot a mile out creditably. She has neither the courage, the muscle, nor the conformation to make a staying trotter. A man would be considered a lunatic who would enter a cold-blooded horse against thorough-bred in any race longer than three quarters of a mile, and yet many people appear to think that warm blood is not necessary to the make-up of a successful trotter. It often happens that an animal of unknown pedigree becomes a fast and lasting trotter, but no one ever knew a horse known to be essentially cold-blooded to distinguish himself either on the trotting or running turf.

In breeding a common mare to a thorough-bred horse of suitable size and substance the farmer has all the chances in his favor. Should the produce be a colt he will be useful as a general purpose horse from his three-year old form up to the time he is sold, and he will be found to have quality enough for almost any market for which his size may fit him. Half-bred horses are always in demand at fairly remunerative prices, and there is a perhaps not a commodity in the horse market for which there is more continuous demand. Half-bred mares are extremely valuable in the stud, especially if they are not undersized. One of these can be bred to a trotting stallion with reasonable chances of securing a fast and lasting trotter, to a coach horse for the reproduction of his kind in an improved form, or to the thoroughbred for the production of the ideal hunter or saddle hack. Indeed, the thoroughbred cross is almost sure to give back value in one shape or another, though the foal in its first year may be one of the most unpromising ever dropped on the farm.

We do not advise farmers who have heavy mares of Clydesdale, Shire, or Percheron blood to leave off the lucrative employment found in the production of draught horses; but there are very many mares in this country that are not large and coarse enough to be profitably crossed with these enormous draught horses, and if these were persistently bred to big stout thoroughbreds the result would be many thousands of dollars in the pockets of Canadian farmers and horse-breeders every year.

*The Canadian Breeder*, from which paper we extract the above article, is a new publication, the first number having made its appearance in August last. Mr. Beatty, the manager, is too well known in both provinces to need any introduction from me.

The article is worth attention, particularly in the Eastern Townships and generally in the districts of the pure French country. The *wreeds* with a turn of speed of the one, and the ponies of the other, should give place to the stamp of horses described in the above. Mr. Beatty has expressed fully what I have tried to impress on the agricultural mind for some years, *keep the best atop*.

A. R. J. F.

#### VETERINARY DEPARTMENT:

*Under the direction of Dr McEachran, F. R. C. V. S.*

##### ON CLOTHING AND CLEANLINESS.

The skins of our domestic animals coated as they are with hair, do not, as a rule, require much additional covering, and

it is only the fine breeds, with delicate skins and accustomed to be covered, that do not resist the effects of cold atmosphere. Habit leads to the necessity for horse clothes etc. etc., which animals would not need if always exposed, provided they had sufficient room to move and a certain amount of shelter, which is essential to all animals on the occasion of severe storms. Veterinary surgeons have often striven to overcome the strong prejudice which all persons connected with the stable have of keeping animals excessively warm, both at the expense of air to breathe and air to circulate around an animal's body. A sleek skin is thus obtained at the expense of a sound constitution, and there are no animals so delicate as those submitted to the very extraordinary system of management permitted by individuals who themselves delight in fresh air, sponge baths, light clothing, and constant exercise.—Extremes should always be avoided.—The error which the ordinary stableman commits is to regard clothing as heat giving, whereas it confines the natural heat of the body, which is produced in direct proportion to the activity of the breathing and circulation. No animal should be swaddled so as to prevent its bending its limbs, and lifting its head, and seeking warmth in exertion. No animal should be permitted to shiver in the cold, and it is a wise rule to adopt, that every creature should to all appearance be comfortable. We find animals, like human beings, removed from a hot to a cold climate suffering much, unless clothed in the latter. But whatever animal has to be clothed it should never be oppressed with heavy sheets, such as we find piled one over the other, on our hunters and fashionable coach horses. As the best material to keep a body warm is that which carries the heat off with greatest difficulty so do we find that all substances such as wool and feathers which imprison a considerable amount of non-conducting air round an animal, are those which are best calculated to maintain the heat of the body. Thus it will be seen that a light lined sheet thrown over a common horse rug, has a layer of air beneath it which is an admirable non-conductor. We obtain the largest amount of heat with the least possible inconvenience to the animal in that way and it is for this reason that in banding the cold limbs of a sick animal the bandages should be put loose round the limbs, and not rolled round as if it were intended to nip the animal's legs in two. Hay and straw bands should be also rolled round the limbs when required, and a very desirable way of favouring a healthy exhalation by the skin, and still keeping sick animals warm, is to place a layer of straw between a horse's skin, and a common rug. We look upon clothing in changeable and cold climates as essential, especially for horses; but at the same time we are anxious that it should be employed with judgment, and especially that the groom's labor should not be saved by such a preposterous practice as that of cutting a horse's natural coat off, and making up the deficiency by means of sweltering and unhealthy horse-rugs. (1) The clothing used for animals is not often beaten, brushed, or washed, but it is very essential to attend to cleanliness in this way. We have known of the most violent irritation of the skin kept up to a great extent by foul clothing. In order to keep a horse's skin in good order, it is indispensable to give him exercise; and, occasionally, exercise calculated to make him sweat. This facilitates the cleaning of the skin of effete material in the shape of waste scales which cannot otherwise be easily detached; and by attention to the rules laid down as to clothing and not overfeeding, animals are found to live to a good old age in perfect health.

(1) If Dr McEachran had done as much hunting in England as I have, and had found the inexpressible comfort of a clipped horse on a damp, muggy day, a state of weather so common in that country, he would own that there are exceptions even to his rule. Even my ten plough horses were clipped and did all the better for it.

A. R. J. F.

Baths cannot be used much, except for small animals. Washing the skin, the feet and legs more particularly is a plan to be recommended for horses, but care must be taken to dry them thoroughly, for if this is neglected grease or some of the other skin diseases is certain to result.

**GREASE.**

An inflammation of the skin at the back of the fetlock and heels, on which small pustules form, yielding a nasty discharge : it is associated with a febrile condition and varies considerably in intensity.

Symptoms of general disorder usually precede swelling of one or more legs and especially of the skin at the heel ; the hind limbs are more frequently seized than the fore, and the swelling extends upwards over the back of the legs. There is much heat, stiffness and pain. This disease often assumes a chronic character, when the heat and pain are no longer so marked, but the skin is constantly moist and feels greasy, owing to a fetid and thick discharge, which dries and mats the hairs together, producing scabs, which accumulate and form a solid layer on the hairy legs of cart horses. The limb affected with chronic grease is apt to become enormously enlarged, and the skin acquires great thickness. The causes of grease are numerous, low-bred horses especially those with abundant hair on their limbs, and bred on damp marshy lands, are very liable to its attacks. Wet and dirt are the most exciting causes. In some wet seasons this disease is so prevalent as almost to assume the form of an epizootic.

The treatment varies much according to the stage of the disease. Hot poultices should be first applied to remove scabs and soften the skin. After poulticing for two days the following liniment should be applied twice a day.

Glycerine .....	2 ounces
Sulphate of Zinc .....	$\frac{1}{2}$ drachm
Carbolic acid.....	$\frac{1}{2}$ "
Water.....	1 pint

Care should be exercised not to use too much water so as to render the skin sore and thick. Wet should always be avoided except it intervals when caustics and astringents have to be applied, which is only when the disease assumes a chronic form and ulcers form. In addition to local applications, the animals must be treated constitutionally by occasional purgatives, regular exercise, and, in inveterate cases, by the internal administration of arsenic in four grain doses daily, for upwards of a month. Great care must be paid to cleanliness of skin.

C. McEACHRAN.

**EASTERN TOWNSHIPS AGRICULTURAL ASSOCIATION.**

A public meeting was held in the City Hall on Tuesday last in order to obtain an expression of opinion from the farmers of the district with regard to the objects of this proposed association. About 40 or 50 gentlemen—representative farmers from various places, near and at a distance—were present. Mr. C. A. BAILEY was voted into the chair, and Mr. R. H. TYLEE acted as secretary.

Mr. R. N. HALL, as chairman of the committee, opened the proceedings. He said, the subject of a district show had been brought up at the recent meeting of the Ploughman's Association, but before that it had been discussed for years. He had since corresponded respecting it with several agricultural societies in Ontario; and had concluded that it would

be better to make it a joint-stock association. The committee, with him, thought it most desirable to carry out the plan on joint stock principles, yet that was only their theory : they had no power to do more than suggest. A former meeting had been called in that room and the project had been then very well received. But when they appealed to the Sherbrooke people for subscriptions, these naturally replied, "Suppose we do exert ourselves, we can't make it a success unless the farmers are willing to take hold and help it." It was gratifying he thought to see such a representative meeting to day—of representative men from far-away localities. The object of the meeting, he continued, was to see whether our ideas are practicable. We wish an expression of your opinion even if it be unfavorable. The meeting has not been convened in order to take up your time by going into details, but to get an expression of your views. Mr. Hall then quoted some statistics that he had accidentally met with in a newspaper, respecting the Vermont State Agricultural Society, that showed that these societies were a financial success. As to the division of the financial burden, he said, the project was started by Sherbrooke, and Sherbrooke would in the first place get the benefit of it, no doubt; but it would in other ways be quite as much to the benefit of the farmers, A sum of \$2,000 has been already subscribed in Sherbrooke, but we have not pressed for more subscriptions until it is known how the farmers will support the project. My own opinion is that Sherbrooke should take about a half of the stock; but the farmers ought not to let the management go out of their hands. If you, the farmers, do your share I am satisfied that Sherbrooke also will do its part.

The Secretary read letters of regret from several gentlemen unable to attend the meeting Mr. James Miller, of Ulverton, wrote that he thought the project an excellent one, and that Sherbrooke was the proper place for such an organization; Hon. Mr. Cochrane expressed himself as in favor of it and stated he would give it his support; and Mr. S. C. Stevenson, Sec'y of the Council of Arts and Manufactures, and Mr. W. H. Lynch of Danville, gave similar encouragement.

HON. J. G. ROBERTSON, in reply to a question, said it was rather premature to state the view the government would be likely to take of the project. For him-self he entirely approved of it, and he hoped that the Legislature at the next session might be induced to encourage it. Its success would depend however upon the farmers: if they took hold of it, he felt sure it would be successful.

It was then moved by C. C. COLBY, Esq., M.P., seconded by S. FOSTER, Esq., Knowlton,

"That in the opinion of this meeting, the establishment of an Agricultural Association, with permanent grounds and suitable buildings, at Sherbrooke, open to competition for all, is highly desirable and deserving of our support."

In speaking to the motion MR. COLBY said the resolution did not require much speaking to. It contained a proposition that was self-evident. He would not take up their time about that; but would offer one or two suggestions. Agriculture, he said, was at the bottom of all business in the Townships; yet it was obvious they could never succeed in raising grain as is done in the West. We have to give our attention to those things in which nature has specially endowed us. We have the advantage of proximity to our market, but on the other hand we have the disadvantage of long winters; and we must adapt our products to these conditions. We have excellent grass lands and water; and it is absolutely necessary that we get the best possible return for every ton of hay we grow. For if it be true that a ton of hay fed to an animal of one class will give a return 50 per cent. greater than if fed to an animal of another class, then it

is absolutely necessary that we should have the best class of animal, for by feeding only such we increase the value of our hay from \$8 a ton to \$12. Farmers are learning that they must look to the excellence of their products. We see this in a general improvement of agricultural products: the farmers have already learned much. How are they to learn more? Object lessons are the best lessons in life. We are not so much impressed by reading books as we are by seeing the objects. Now the farmer is a stay-at-home. He does not travel about so much as many of us do. And there is nothing that will give farmers the desired knowledge as these exhibitions. The advantage of a well managed agricultural exhibition lies not in the prizes but in what the farmer learns there. He benefits a great deal more than to the extent of the mere prizes. It is as an educator that the agricultural exhibition attains its best results. The farmer sees there what he wants. It brings the anxious buyer and the anxious seller together. Farmers confined to one locality don't know, what is doing in another. In Stanstead County, for instance, the farmers thought they were as good as any, and knew as much as any, in Canada; yet the President of their Agricultural Society, who lately went to Brome, was free to confess that he saw there a vast improvement over some things in Stanstead. Nothing will so tend to promote the good of agriculture as a permanent exhibition; and the gentlemen who have inaugurated this movement have done well not to confine their project to Sherbrooke. Sherbrooke, by the construction of railways, has become the centre of the Townships—as it should be. Stanstead has been isolated from Brome by the Lake; and both Stanstead and Brome have suffered from the separation; but this project will bring both together. I should like to see an annual gathering of the two. As Sherbrooke is situated, it is within easy reach from all surrounding points; and it is about equally convenient for both Stanstead and Brome to reach it by rail. It is a common centre. In the proposed exhibition opportunity should be given for the sale of cattle as well as for their exhibition. It should be a fair. A permanent fair of this kind, where it was known that products would be for sale would bring buyers from a distance. (1) With these advantages I think this project should, and will commend itself to the farmers, if it is properly presented to them. This is difficult; but it is for their advantage to do it. They may say "It is all for Sherbrooke," but the exhibition must be somewhere and it is better here; and I quite agree with Mr Hall that the farmers should become interested in it, and that it should be held at Sherbrooke, as being the most convenient place.

MR. S. FOSTER, in seconding the motion said he felt flattered at the compliment paid to Brome. Such an exhibition as that contemplated would soon become a matter of necessity. Brome has been cut off from Sherbrooke, but as the W. & M. Railway was about to be opened he thought this would bind the two districts together more closely. It was an important object to secure to the project a large measure of support; and for himself, he would do what he could to further it. He referred to Judge Dunkin's valuable services to agriculture in Brome; spoke of the Brome Shows, of their success; and of what might be done with the two shows together. He would give the present project his hearty support and thought a few others from the District of Bedford would do so also; but he feared it would be but few. He quite agreed with Mr. Colby that Sherbrooke was as convenient as any point in the Townships. It is the principal city, and that is greatly in its favor. That the exhibition would be a success he had no doubt; and he gave the enterprise his support and best wishes.

It is precisely what I have been advising for the last 3 years. As a rule, farmers have no idea as to the value of their products.

A. R. J. F.

MR. R. H. POPE thought there was not much more to be said about the general principle of the case. In the past we were satisfied with small exhibitions; but as the country grows older we require something better. The farmer can't make money out of the premium list at an exhibition: it is the advertising he gets that benefits him. The speaker would not limit the association: that was the only objection he had to the resolution. He would not limit it to the Townships, but would open it to the world; and he begged to move an amendment to the effect that it be open to the world.

MR. HALL explained that there was no intention to limit the association to the Townships, although the "Eastern Townships" appeared in its name.

MR. R. W. HENEKER, as a member of the committee, desired to add his testimony to the fact that the intention was not to limit the operations of the association in any way.

MR. POPE thought there ought to be something in the name of the association to show that it was open to the world.

MR. HALL and MR. COLBY both thought it would be a pity to lose the distinctive name "Eastern Townships" out of the name of the association.

The resolution was then read and amended by striking out two or three words which seemed to limit the scope of its operations.

MR. HALL resumed the discussion by speaking of the cattle market. He explained in connection with this part of the project that it was hoped it would lead to a series of permanent cattle fairs being held in Sherbrooke. The idea suggested was that the last day or thereabout of the show should be a day for the sale of cattle.

MR. J. A. COCHRANE had much pleasure in expressing his hearty approval of the project. We have plenty of good stock in the province and he thought it high time that the farmers came forward and showed what they could do.

MR. E. H. LEBARON was not prepared to speak regarding the feeling of his neighborhood (Hatley) in the matter. He himself was in favor of it; but their agricultural society not having met lately he could not say what the attitude of the other members would be. He was pretty well persuaded, however, that the number that would take hold of the project would be somewhat limited. People in Stanstead are very careful: he thought perhaps 15 or 20 persons in the county would subscribe to the stock and as many more would become exhibitors. For himself he was quite anxious that the project should succeed, and he would bring it up at the next meeting of their association. He thought the locality of the show a good one; and that there could be no adverse feeling about that; but he was of opinion that Sherbrooke would have to bear a good share of the necessary outlay in establishing it.

MR. D. A. MANSUR did not think there was a farmer in the Townships but what would say the enterprise commends itself. The only question that occurred to his mind was, how far could the farmers contribute to its success? If not started on a scale that would prevent them, he had no doubt it would receive the support of the greater part. He thought that such an enterprise would succeed best where the district shows are most prosperous. He had no doubt such an exhibition would attract large numbers from the States. He should be glad to see it a success, and know of no place better suited to it than Sherbrooke. And he knew of no men better able to make it a success than the men who have charge of it.

HON. J. G. ROBERTSON hoped it was clearly understood that the association would not interfere with the local societies. It did not; and it would be well if all of these societies that meet this month should give an expression of opinion on the

project. He thought it would receive more support than Mr. LeBaron seemed to expect.

MR A. O. KELLAM referred to the cattle fair held at Guelph, at Christmas and Easter, as showing the usefulness of such an institution. People went there to buy from the cities far and near. It was a great object to farmers in outlying districts to know that there was a cattle market at hand and that no man need take his cattle home, if they are at all fit for market; and it would add remarkably to the usefulness of the institution if it was known to be on a broad scale where business was meant. It would be a great thing for all to be able to say "I am sure of a sale there." Our interest in Compton, Stanstead, and the other surrounding counties is to encourage Sherbrooke. We can get there from any part in an hour or so, and in fact we almost live there. He thought Compton No. 1 would give up their show and put up their money into a district show, and that the farmers should become large stock-holders. It might not pay dividends, but the farmers would reap the benefit indirectly through the show.

The resolution as above was then put to the meeting and carried unanimously.

It was thereupon moved by MR. T. A. KNOWLTON, seconded by MR. A. STEVENS.

"That the principle of the plan suggested by the Provisional Committee of the Eastern Townships Agricultural Association, for organizing and maintaining such an association, meets with the approval of this meeting." (1)

MR. R. H. POPE thought that as farmers ought to be the principal stockholders in the association, it would be as well that the committee should organize meetings in the several localities.

MR. HALL stated that that was contemplated. It was proposed that a small deputation of the Sherbrooke members of the committee should arrange for and attend meetings in these several localities.

MR. COLBY again spoke as to the distribution of stock. While Sherbrooke would undoubtedly be expected to contribute to the stock, he felt satisfied that the farmers would do their share if the price would permit. [In answer to his question it was here stated that the shares were only \$10 each, which fully met an objection Mr. Colby was put to suggest, under a mistake as to their value.]

MR. KELLAM would go further, and suggest that the share should be lower still—\$5, instead of \$10 each. He thought this would spread it out better. Many will give \$5, to see the project succeed. But,

MR. HALL said the matter had been given a great deal of attention, and they had come to the conclusion that \$10 a share was low enough. It might be that many would give \$5, but the association did not want only their money—they wanted the personal interest of the farmers in the matter. Besides, any change now would invalidate the subscriptions already made.

This closed the discussion and the second resolution, as above, being put to the vote was carried unanimously. A vote of thanks was then tendered to the chairman and the meeting dispersed.

THE POULTRY-YARD.

THE PRESERVATION OF EGGS.

EDS. COUNTRY GENTLEMAN—Since I wrote you last week there has been published in the Field newspaper a letter by

(1) A most excellent movement, worthy of all encouragement.  
A. R. J. F.

Mr. W. B. Tegetmeir, giving the result of an examination made by him of the preserved eggs at the late Dairy Show. For the purpose of this examination he had been permitted to take away two eggs out of each lot. These he tested thoroughly, and I give a summary of his remarks thereon for the benefit of your readers. I explained last week that they had been kept from the 8th of last July to the 8th of October, and as it was at least three days after the latter date before Mr. Tegetmeier could possibly made the examination, the period during which they had been kept was more than three months. And it is to be remembered that these were the three worst months of the year, namely, July, August and September, and that this year we have had a season of the most intense heat, such as we have not experienced here for many seasons. Therefore, this experiment was sufficiently trying to satisfy the most exacting, especially as the eggs were kept in the offices of the Dairy Farmer's Association, and under no such favorable conditions as would be the case in the cellars or store closet of a farm house.

The lots of eggs entered for this competition were thirty-one in number, and in each lot there were two dozen eggs. Seven were packed in common salt, which in some cases had previously been thoroughly dried. Respecting these Mr. Tegetmeier says:

"The eggs when broken were alike in quality: the salt had absorbed a rather large portion of the waters of the albumen, or white, consequently there was a considerable air cavity at the larger end, the presence of which was evident by the sound produced when the eggs were shaken. The white was thickened by the loss of the water, but otherwise very little changed, and the eggs were perfectly good for pastry or cooking purposes, being superior to the common shop eggs obtained in London during the winter season, being free from any objectionable odor or taste."

It is evident that these eggs would not be suitable for sale, however good in cooking, for the shaking of the contents would be fatal to them in the former respect. One of the lots of eggs packed in salt had been first wrapped in thin paper, but there was no difference in the result. In addition to the seven packed in salt alone, there were three others with which salt was the actual preservative. One of these was packed in sand and salt, another in a mixture of slaked lime and salt, and a third had been first coated with a solution of gum arabic, and then packed in salt. But the result was the same in all these cases, as when the plain salt had been used.

One lot of eggs was preserved by the use of gum alone. The plan followed was described by the exhibitor: "Eggs dipped into a strong saturated solution of pure gum arabic: operation twice repeated. Eggs thoroughly dried, then wrapped in paper and packed in bran; eggs three days old." This is a somewhat troublesome system, but the result showed them to be well preserved, and the white was more natural in appearance than the previous lots, consequent upon the gum having prevented any evaporation.

Three lots of eggs had been coated with melted wax or paraffin, but it is remarkable that these were all decided failures. When the wax was removed, the shells were found to be more or less discolored, and on opening, the insides were mildewed and the contents spoiled. This is all the more surprising, as the lot which won second prize at Birmingham last December was preserved in the same way, and by the same exhibitor as one of these. The system then answered very well indeed, but this time has been a failure. One other lot of eggs had been wrapped in oiled paper, and then dipped in boiling resin, but they were unfit for use.

Four more had been coated with fat or oil, and one of these obtained a second prize. This lot had been painted over with melted beef and mutton dripping, and then wiped

with a cloth. Another had been rubbed well with butter; yet another "painted with salad oil and packed in sand," and fourth also painted with salad oil, but wrapped in paper and packed in flour. Other three lots had been first buttered or oiled, and then packed in salt. All these seven collections had been preserved satisfactorily for cooking purposes, but as no evaporation had taken place, the white was characterized by more tenuity than in those where the pores had not been actually closed. One of those preserved by oil and salt was awarded a second prize.

Three lots were preserved in liquids. One was in pure lime-water; another in lime-water, with a very small quantity of salt; and the third in the following: "Twenty quarts of water, one ounce of saltpetre, one pound of salt, six tablespoon-fuls of quick lime, boil the water and saltpetre and salt twenty minutes, and pour that hot upon the quick lime; the next day put in the eggs, and keep the pot covered in a cool place."

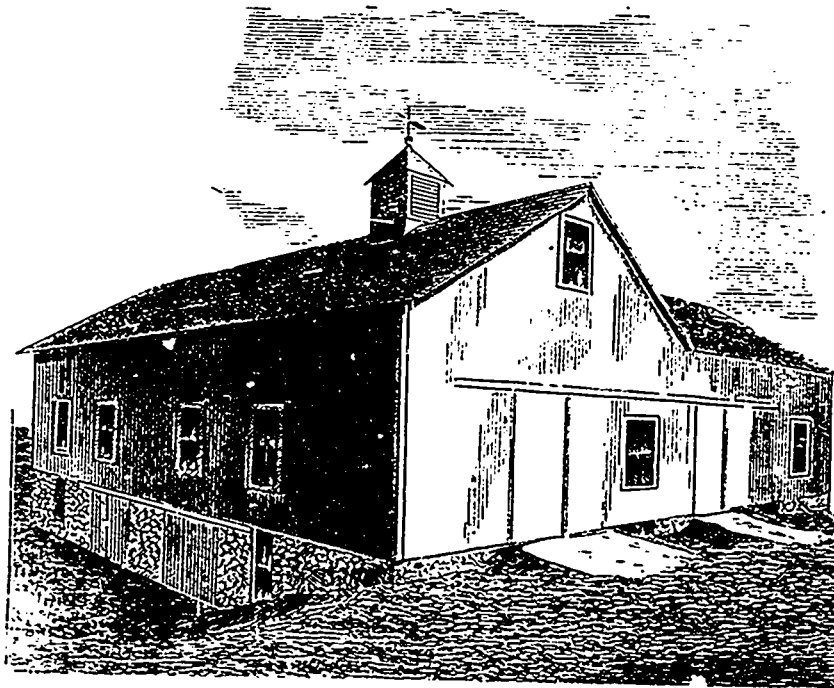
even under the most unfavorable conditions, and be first rate for the kitchen.

(11 H—, England, Oct. 23. STEPHEN BEALE.

A GENERAL-PURPOSE BARN.

The plan of a general-purpose barn with basement, shown at fig. is original with me, as I have never seen any building like it. It was built ten years ago. It is sided with pine lumber. The size of timbers used for the frame is as follows:

Sills, posts, and beams.....	7x8 inches
Purlin posts, beams, and plates.....	6x6 "
Girders, studs, and braces.....	4x4 "
Rafters.....	3x5 "
Joists.....	3x7 "
Length of posts.....	18 feet



FRONT VIEW.

These lots were well preserved, and very good indeed for cooking. There had been little or no evaporation, and yet the white was less watery than in those preserved with fat or oil. When wiped dry, they had just the appearance of shop eggs. The limewater process is that used so largely abroad and it would almost appear as if it was the best system. One lot was kept in an egg cabinet, standing small end downwards on perforated shelves. These were fairly preserved. The other lots do not require any special mention.

Thus it will be seen that many of the systems used are good for the preservation of eggs, even through a hot, oppressive summer, but only for cooking purposes. Of course, there are thousands and millions of persons who would be quite content to eat of these eggs. But they do not realize what a fresh egg is, and its superiority to one even a week old. I had hoped that this experiment would have indicated some system by which eggs could be preserved so as to be fit for table purposes, but this is not so. It does show, however, that there are three or four ways in which they can be kept,

The frame is thoroughly braced; the girders and braces are framed in by mortises and tenons, and pinned. The land on which it is built descends to the south, so that, by grading, the north wall stands against the bank, which is as high as the top of the wall, the building of drive-ways being in this way rendered unnecessary. Underneath the whole structure there is a wall eight feet high and two feet thick, except the cross-walls on each side of the manure vat, which are only a foot and-a-half thick. The manure can be drawn from the vat at any time, as it never freezes, by backing into it from the shed, the ground beneath the shed being level with the bottom of the door of the vat. The bottom of the manure vat is made something like the bottom of a caldron kettle, except that it is more oblong, and is made water-tight by being paved with cobble stone, and the application of two

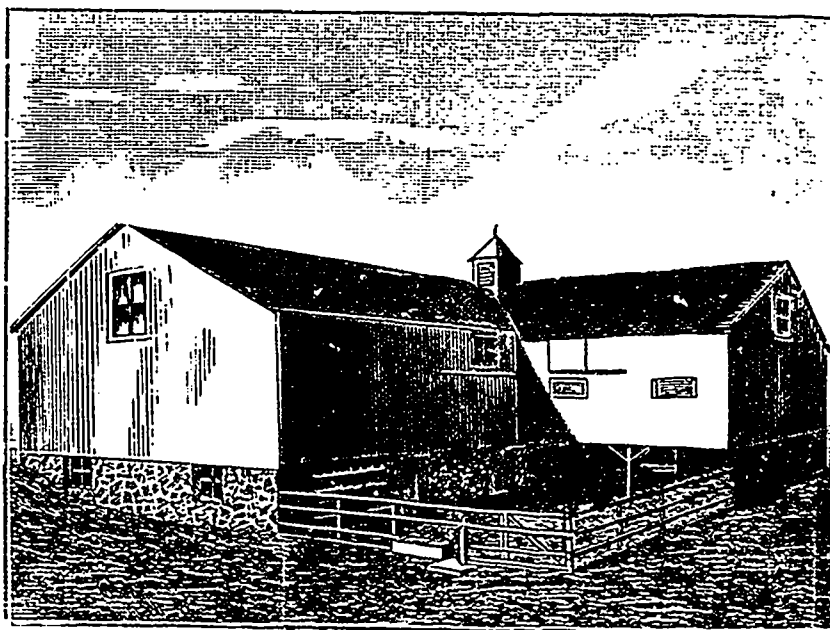
(1) I find that eggs packed in a saturated solution of lime keep for 6 months perfectly. well enough to eat plainly boiled. If poached, though, they break on coming in contact with the boiling water. A. R. J. F.

coats of hydraulic cement mixed with sharp sand. The cow stable floor is of two-inch plauk laid in cement. The gutter is four feet four inches from the stanchions, and is 12 inches wide and six inches deep. It is level and water-tight. Dry muck is used in the bottom of it as an absorbent of urine.

There is a wall three feet wide behind the cows. The manure is thrown into the vat through wooden windows in the wall. These are made in two equal parts and slide past each other in the frame, so that should the vat become full as high as the lower half, this can remain shut and the upper half be lowered for the admission of the manure. The windows are two feet wide, and extend from the top of the wall to within two feet of the floor. There is an inch partition of pine lumber between the stable, hennery and sick room.

Eggs never freeze in the hennery. A large window in the south end extends from the top of the wall to within eight inches of the floor. A small door, one foot square, at

The walls and ceiling are boarded with maple lumber. This, with the wire cloth over the slats, makes it proof against mice and rats. On each side of the barn floor the walls are boarded, on the west side three feet high to the top of the breast girder; on the east side, nine feet high to the floor over the horse-barn. The horses are fed from the barn floor through two doors hung just above the mangers, so as to drop down from the top. The fodder for the cattle is passed from the barn floor through a door hung at the top to the breast girder, and opening back into a box in the mow made open at the bottom. The granary is made rat- and mouse-proof by using maple lumber for the floor, the walls, and over-head. The bins are made so that the boards in the end next to the alley can be removed. Standards four inches wide and one-and-a-half inch thick, fastened to the floor and to the joists over-head, are nailed to the 1½ inch-thick boards used for the sides of the bins, so as to project each way to hold the boards used in the ends; the lifting of the grain over the top of the bins, is in



BACK VIEW.

the south end lets the fowls in and out. A feed box in the centre holds six bushels of grain, is self-feeding, and the fowls cannot waste the grain. Fowls occupy the sick room when it is not required for sick animals. It is also used for holding sand and gravel for fowls, and for mixing the hen manure with plaster, loam, muck, and road dust.

The horse-barn, carriage-room, corn crib, and granary, shown in Fig. are each nine feet high. The carriage-room and corn-crib are over the open shed. The horse-stalls are over the manure vat. The stable is cleansed by dropping the manure through the two trap doors into the vat beneath, and it is there mixed with the cow manure, muck and plaster; heating and unpleasant odors are thus avoided. The stalls are double-floored. The end of the top floor next to the maager is slightly elevated. There is an inch partition of pine between the horse-barn and the carriage-room. The corn-crib is slatted across the bottom, and over the slats is coarse wire cloth. There are two sliding windows (for sliding horizontally) on the west side near the top, thus creating a draft from beneath, causing the corn to cure nicely.

this way avoided, and it is more convenient to shovel the grain into bags, and to sweep or clean the granary.

The room above the horse-barn, carriage-room, and corn-crib, with hay mow and scaffold is ample for storing 85 tons of hay or grain.

Madison Co., N. Y.

S. A. DAVIDSON.

#### Ensilage on the Fry System.

EDS. COUNTRY GENTLEMAN—We had heavy frosts in September, cutting corn and buckwheat badly. My corn and fodder was all snugly stowed away in the silo, one great advantage we ensilagists have over the farmer who waits for corn to get ripe. As I am getting well down the shady side of life, I was intending to curtail my farming somewhat this year and take the world easy, but reading your article in June about *sweet* ensilage, I endeavored to follow the directions of Profs. Fry and Miles, and I put into my barn silo

a partition, and commenced the last of June to put in grass, mixing with green oats, and continued filling during the whole of July, first one silo and then the other, keeping up the temperature to 122° Fahr. and up to 150° at times. I finished filling with corn fodder, mowed with scythes, and pitched into silo about one foot a day, as I found this quantity would keep the heat rising toward the top—no treading except about the sides. When finished, I covered with two thicknesses of tarred paper—no boards or plank, and only six inches of dirt for weight. This was examined daily, to see that all was air-tight, and snugly pressed about the corners and sides to keep in the heat, which, for a week after closing, was 130° F. Now, after a month has elapsed, the thermometer has gone down to about 90°. I have sampled the ensilage and find it of a quite brown color and a sweet, honey smell, which continues for a week after being taken out. Everything was put in uncut; yet I haven't a doubt that cutting the corn fodder would have been much better; it certainly could have been run through a cutter, and, with an elevator, put on the top of a silo much easier and with less labor, and, after the heat is once started, there would be no difficulty in keeping up temperature if there is no treading. There isn't a doubt in my mind that the heating process is the true one. There is absolutely no acid about it; there is saving in labor, and it does away with hurry and rush in filling. This season I have been all summer filling; hired but little extra help, and, I am sure saved half the expense. I used a tube to find temperature, as Mr. Fry recommended. There is no guesswork about it, for we know if the germ is killed we are sure of good results. I consider the information given us by Messrs. Fry and Mills the most important of all that has been written on ensilage, but how strange is the prejudice that exists!

My wife's brother was at home this year, after 30 year's absence, and seemed to be well pleased with the ensilage system when here, for he could see that we kept three times the stock ever kept on the old homestead in his father's life-time (his father was one of the most judicious farmers in town). He now writes me that he thinks the ensilage craze is about over; all the reason he gives for it is, that he met a man whose brother had fed more meal than was profitable, and this has been the cry about me: "The captain feeds so much grain!" They give no credit for the rich manure; all these criticisms don't have the least effect on me.

I was once, when going to the southward on the coast of Patagonia, heading by my noon observation direct for a rock, a long distance off the land, and laid down by some navigators as doubtful, but an old English officer, a hundred years before, had seen it and sounded round it in his boat. That was enough for me, and I steered direct for it, making the breakers on it just before sunset, the rock having the exact appearance ("that of a shallop bottom up"), as in the old officer's description. Knowing the value of ensilage by years of actual use of it, and seeing its effect on our cattle, I have facts that no theory or prejudice of those who know nothing about it can affect in the least. When such people want silos, they will build them; this is a free country. Old fogies will stick to old ways, but the world still moves right along. G. M. Essex, VI., Oct. 4.

Mr Fry's system of ensiling crops is doubtless theoretically correct, but I must confess that I prefer roots for my cattle. Conceive what a fidget the whole business would be: filling in a little bit to day, a little more to-morrow—cutting green meat for the cattle, and other things "I would burst a man to name." And after all, the cost of the doubtful ensilage, \$1 75 at least, is very little, if any, less than the cost of a ton of swedes or mangels.

A. R. J. F.

### Useful v. Pedigree Dairy Cows.

The most important of all the awards at the recent Dairy Show in London were made shortly before the exhibition closed, as of all things it was desirable to determine which animals are of highest value in the production of milk. Accordingly the 60 cows and heifers in the milking competition were cleanly milked to the satisfaction of the stewards, and the milk yielded by each at the morning and evening milkings on the following day was weighed and then subjected to chemical analysis. The judges, Dr. Voelcker, F. R. S., Mr. G. F. Roumieu, and Mr. E. C. Tisdall, passed their judgment by a scale of points, taking into consideration the quantity or weight of milk, the quality of the milk as represented by the percentage of solids and of fat, and the time which has elapsed in each case since calving, one point being gained for each ten days of the milking period. These results of actual performance were entirely at variance with the previous awards in the several classes made according to the standard of merit by inspection. Thus, of the pure-bred shorthorns the first and second prize milkers, together with the reserve cow, were those shown by Mr. I. N. Edwards, of St. Albans, which were lost without mention in the prize list of the inspection judges, and in milking they beat the champion shorthorn Mr. Louis Ponsonby's Lolla. Of shorthorns, not eligible for the herd book, the best milker was Red Cherry, a cow shown by Mr. Joseph Phillips, of Peterborough. *She was also the winner of the champion prize as best milker of all the breeds in the show.* Yet the inspection judges did not give her even a commendation, though they highly commended a number of other animals in her class. The third best milker was Mr. Manoaah Walker's Cherry, also without notice in the inspection prize list. Only the second prize milker had been honoured in the prize list—namely, Mr. Abraham Stansfield's first prize Una II. Quantity of milk yielded was the most important point noted by the milking judges; next, the quality of that milk; and then, the duration of the milking period. The champion milker, Mr. Phillips's Red Cherry, a shorthorn without pedigree, has been in milk for five months; her day's milk in two milkings was 51-75 lb., containing 12-31 per cent. of total solids and 3-26 per cent. of fat. Mr. Glynn's first prize Guernsey, having been in milk seven months, gave only 20½ lb. of milk, but of such richness that it contained 14-99 per cent. of total solids and 6-28 per cent. of fat. Mr. Champion's second prize Jersey, in milk for only 1½ month, gave 36 lb. of milk, with 13-52 per cent. of solids and 3-76 per cent. of fat. Captain Ross's first prize Welsh cow, in milk only one month, gave 46 lb. of milk; and Mr. Thomas Birdsey's second prize shorthorn-and-Ayrshire cross, in milk three weeks, gave 37½ lb. of milk. Mr. Walter Gilbey's fine Dutch cow yielded at her two milkings in the day no less than 52½ lb. of milk, but this of the poorest quality of any tried, containing under 2 per cent. of fat.

The above goes to prove the truth of my frequent assertion in this Journal: the shorthorn is, in England at least, the favourite dairy-cow. Dr. Voelcker, whose premature death I regret to record, and Mr. Tisdall, were both equally competent, in their different lines of theory and practice, to decide the question. The Dutch cow's milk seems to have been very poor. At any rate 5 gallons of milk a day, 5 months after calving must be considered an extra good performer, and the quality was satisfactory, too. Many judges thought that the prize for Channel Islands should have gone to Capt. Green's Guernsey instead of to the Jersey, Kilburn Maid. The Guernsey's turn will come soon enough.

A. R. J. F.

The outside leaves of cabbages are greedily eaten by cows; but with, however, a bad effect on the milk unless care is taken to feed just after milking. The bad flavor goes off

before the cow is milked again. In growing cabbages there will always be some that will not form salable or usable heads, and these can be made available as food for stock. In years of great plenty the main crop may be so used, but since the cabbage worm has come, good heads of cabbage will probably always bring too high a price to be profitably used as feed. It is well to be suspicious of a cow overfat while giving milk. She either gives little or it is poor in quality. The best milkers not only put most of what they eat in the pail, but steadily pull themselves down while being milked, no matter how highly they may be fed. For this reason the best milkers should, if possible, be dried two months or more before calving, so as to give some chance for laying on flesh. They will give it back in the pail next season.

And the same rule holds good for turnips as for cabbages.

I don't know about the invariable loss of flesh of good milkers. I have had cows giving 6 and 7 gallons of milk a day, and still keeping themselves in good order, but then they always had pease, beans, or lentils, and that may account for it. I can quite conceive that a cow fed on grains, mangels, and corn would not carry much flesh if she milked well.

Our tenants in Gloucestershire always dry off their cows about the middle of the winter: not for the sake of the milk the following year, but to improve the chance of the calf. There, the calves fetch from \$12.00 to \$16.00 each at 10 days old.

A. R. J. F.

#### How to keep June Butter for Winter use.

It is a fact well conceded by all good judges of butter, that butter made in June is better flavored than that made in any of the eleven other months. It is, therefore, very important that every one should know how to keep the June product for winter use. Here is one way:—Pack the butter solidly in stone crocks to within an inch of the top; level it, and out a piece of white muslin and spread it over the top; then fill to the top with common salt. Dig a hole in the ground on the north side of some building, or in the shade of some tree; or, if this is inconvenient, the garden will do; let it be deep enough so that when the crock is covered, the earth on top of it will be not less than 18 inches thick. In this hole place the crock; over it put something that will turn off the water if any leaches down to it. An old tin pan turned over makes a good cover. Pack on the earth, leaving it rounding, like an ant-hill, to carry off the surface water. If this work is done in the garden, plant over the top a tomato vine, or a few beans, or anything, to shade and keep away the torrid rays of the sun. The work is then finished, until one wishes to take out the butter any time before severe frost. This method I will warrant to keep butter perfectly sweet until winter, if proper care is taken. An old acquaintance of mine tells me he has practised this plan for years, and when he lived on the farm he used to take up his butter in November, and sell it for 40 cents per pound, whereas, if it had been disposed of when made, he could not have realized more than 15 cents. This is also a good way to keep canned fruit during the summer, if one has not a proper place for the purpose. Put the cans in a box and bury it as the above, if canned in glass.

Another method is to pack the butter as before; then take a good sweet barrel (a pork barrel will be as good as anything, if sweet), in it place the crocks as closely as possible (small crocks will pack better than large ones), placing one on the top of the other until the barrel is nearly full. Then make as strong a brine as salt will make; scald it so as to skim off all impurities; when cold, fill up the barrel. If the head can be put in and the brine turned through a hole in the head, all the better. Let it stand in the cellar or in any cool place until wanted, and take out one crock at a time as it is needed. This is a little more expensive way, but it answers every purpose. The brine will not salt the butter.

WM. F. MORRIS.

#### Table Poultry and Preserved Eggs.

THE BIRMINGHAM SHOW.

EDS. COUNTRY GENTLEMAN.—The hope that I expressed in my letter relating to the table poultry at the Dairy Show, that the show at Birmingham would be better, has, I am happy to say, been fully realized, for the exhibition of both table poultry and preserved eggs at the Birmingham Show, held a few days ago, was the best that I have ever seen. The fowls were shown in pairs, alive first, and then killed before the prizes were finally awarded. But the plucking and dressing was well done, and the very best made of the birds. The eye was not offended by abraded skin, broken breast bones, or cut legs. To those who had this work to do, the greatest praise is due. It was well done in every sense of the term.

#### TABLE POULTRY.

There were eight classes given in this section. Six for pure-breds and two for cross-breds, and a total of 91 pairs were exhibited, out of which 55 pairs were exhibited for killing. The mere awarding of prizes is not of much interest to your readers, and I, therefore, will deal with the appearance and weights of the birds rather than anything else.

The first class was for Dorkings. A very good pair of whites, to which fourth prize was given, were shown; they were nice in color, and plump, weighing 9 lbs. 10 oz. This is small compared with some others in the class, but I regard White Dorkings as one of the very best varieties for crossing. One pair of colored weighing 15½ lbs. won first prize, but I have seen better in color of flesh. They were, however, very plump indeed, and the weight gave them the place. Two pairs of Silver Greys, weighing respectively 14 lbs. 2 oz. and 13 lbs. 2 oz. were shown, and very good they were, though not so nice in color of flesh and skin. Another pair of colored were exhibited, weighing 13 lbs. 4 oz., and also a pair of whites weighing 11 lbs. 2 oz., but both these lost for want of quality. It will thus be seen that in respect to size the colored Dorking stands first, the Silver Grey second, and the White third. I should have been glad to see a pair of cuckoos exhibited, and also some of the old-fashioned Sussex fowl.

A class was given to Brahmas and Cochins, probably to show their value for crossing more than anything else. The prizes were equally divided between the light and dark Brahmas, as Cochins were not in it. Of the two colors the lights were the better, though a dark won first distribution of flesh, but one of the darks was prize. I mean with regard to plumpness and very nice in color of skin and flesh. The weights of the best were: First, 13 lbs. 6 oz. (dark); second, 14 lbs. 12 oz. (light); third, 13 lbs. 12 oz. (dark); and fourth, 13 lbs. 2 oz. (light). The evenness of these weights is not a little remarkable, but it is also to be noted that the winning Dorkings were two pounds heavier than the first Brahma, and nearly a pound heavier than the second.

French breeds had a class, but were not so numerous as I should have wished. The entries comprised La Fleche, Houdans, Crevecoeurs, and La Bresse, but unfortunately the last named arrived at the show too late for competition, and were consequently not killed. La Fleche won first prize, weighing 12 lbs. 10 oz. These were a very nice pair, plump, and the flesh well distributed, though not very good in color. The two next prizes were given to Creves, weighing 10 lbs. 10 oz. and 11 lbs. respectively. In the former pair, the pullet evidently secured them the place. She was certainly a beauty, both in plumpness and color. Houdans came fourth, as they were very small (9 lbs.), but the quality was very fine, and had a couple of pounds been added, must have gone higher.



I felt specially interested in the class for Langshans and Plymouth Rocks, and should have been glad to see a larger entry, as only six pairs were shown, of which four were killed—two of each breed. The first and fourth positions were given to Plymouth Rocks, the second and third to Langshans. The winners were 14 lbs. in weight, and the best Rocks I have ever seen in point of plumpness and color of flesh. Of late this breed has not been gaining ground on this side the water, but the table qualities, as shown at Birmingham, will give it a fresh start in public favor. The fourth pair were plump (weighing 10 lbs. 10 oz.), but showed yellow flesh, always an objectionable feature here. Both the Langshans were good pairs, and weighed respectively 11 lbs. 7 oz. and 10 lbs. 12 oz.; not such good weights as I had expected. The flesh and skin were remarkably good, and the depth and length of keel very striking. In both cases the pullets were the better of the two.

As might be expected, plumpness of breast and lightness of bone characterized the Game class, in which there were twelve pairs shown, and six pairs killed. First were Brown Reds, weighing 10 lbs. 6 oz., very good both in color of flesh and skin. Both last year's exhibition, and this, one, show that of all the Game varieties, Brown Reds come out about the best for table purposes. Another pair of Brown Reds were exhibited, but they were two months younger than the others, and only weighed 7 lbs. 14 oz. They had lumps of yellow fat which militated against them. Black Reds, weighing 10 lbs. 10 oz., were chosen for second place, but they were not so nice in skin or general appearance, though the breasts were plump and good. Another pair of Black Reds were killed, and they weighed 9 lbs. 10 oz., but were not nice in color, though fairly plump. A pair of Wheaten was third, and though stated to be only 5½ months old, they weighed 9 lbs. 14 oz. These were fine breasted, and would have stood a good chance for first, in my opinion, had it not been for yellow fat, and a coarse wrinkled skin. For crossing, they seem to stand next to the Brown Reds. A pair of Whites which weighed 8 lbs 2 oz., were given fourth place, and these I liked very much, as they were plump and of nice color. For crossing, the White Game is a good variety.

A class was given for any other pure breed than the above, but it did not fill very well. To Scotch Greys were given the first and third prizes, and I was glad to see this much neglected breed obtain some slight shares of its deserts. These pairs weighed 11 lbs. 6 oz. and 13 lbs. 10 oz. respectively, but the latter were so much darker in skin and flesh that in spite of the greater weight they were thus put down. The former were extremely nice in color of flesh, and very plump. Malays were given the third place, and the pair weighed 12 lbs. 2 oz. These quite bore out the opinions I expressed respecting the pair of Malays shown at the Dairy Show, and but for the cockerel being yellow in skin, might have taken the first place. Fourth were, to my surprise, White Minorcas, as I do not regard members of the Spanish family as table fowls. They weighed 7½ lbs., and were good in flesh and skin.

Cross-breeds were shown in couples, with the sexes divided—why, I could not understand. Dorking-Brahmas or Brahma-Dorkings took off all the prizes, but it may be interesting to give the fuller particulars. First, weighed 17 lbs., and was a cross from a Dark Brahma cock and Silver Grey Dorking hens. They were good in all points, and a grand pair. Next were the same cross, but only weighing 15 lbs. 10 oz., and were not so good in color of flesh or skin. Third, weighed 15½ lbs., and were from a Dark Brahma cock and Colored Dorking hen, and fourth, weighing 17 lbs. 2 oz.—the heaviest pair in the class—were from a Colored Dorking cock and Dark Brahma hen, but these were utterly spoiled in appearance

by lumps of yellow fat. Only one other pair need be mentioned, namely, that from a La Fleche cock and Black-Red Game hen, which promise well, though this pair had not had justice. In the pairs of pullets, the prizes were better distributed, though first and second went to the progeny of a Dark Brahma cock out of a Silver Grey Dorking hen, weighing respectively 13 lbs. 8 oz. and 12 lbs. 2 oz. The La Fleche Black Red Game cross just mentioned, took third place, and weighed 11 lbs. 12 oz. But they were not well shown. Next came the produce of a Black Red Game cock and a Malay hen, weighing 9 lbs. 2 oz., and a very fine cross this is, for the birds were beautifully plump and fleshy. Among others shown were a cross from a Dark Dorking cock and Brown Red Game hen, another from a Malay cock and La Fleche hen, and yet another from a Plymouth Rock cock and Silver Grey Dorking hen, all of which were very good indeed in quality and weight. These classes indicate the breeds that will suit the American taste, and give size, so much appreciated.

#### PRESERVED EGGS.

The preserved eggs class was much better than that at the Dairy Show. The eggs kept for a somewhat longer period, but were decidedly better. This may be due to the cooler season of the year. From the end of August to December is a much cooler time than from the beginning of July to October. Thirty-four lots of eggs competed, and nearly all known methods were adopted. The winning lot had been preserved in lime-water and cream of tartar, and the second had been rubbed with butter, and packed in salt. Both lots were good and well preserved. Though not equal to new-laid, they were quite fit for table purposes. The former method, but without the addition of cream of tartar, is that used for the preservation of so many of the continental eggs which come to England. We have not yet found a method which is perfect for the preservation of eggs equal to new-laid.

STEPHEN BEALE.

H—, England, Dec. 10.

#### CHEAP FARMS

NEAR MARKETS.

The State of Michigan has more than 4,500 miles of railroad and 1,600 miles of Lake transportation, schools and churches in every county, public buildings all paid for, and no debt. Its soil and climate combine to produce large crops, and it is the best fruit State in the Northwest. Several million acres of unoccupied and fertile lands are yet in the market at low prices. The State has issued a PAMPHLET containing a map also descriptions of the soil, crops and general resources which may be had free of charge by writing to the COMMISSIONER OF IMMIGRATION, DETROIT, MICH.

We call the attention of the readers of the *Journal of Agriculture* to the Enterprise Meat Choppers advertised in our present issue. The demand for these Choppers has attained such immense proportions that the manufacturers have been compelled to largely increase their facilities for making them, and we are assured that they are now being turned out at the rate of 2,500 per week, 150 hands being steadily employed on them.

There can be no doubt as to the excellence of the Choppers, as they have been tested by the editors of nearly 100 agricultural papers, who have given them a hearty endorsement. We cordially recommend them to all our subscribers as by far the best of the kind ever introduced to public favor.