

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.

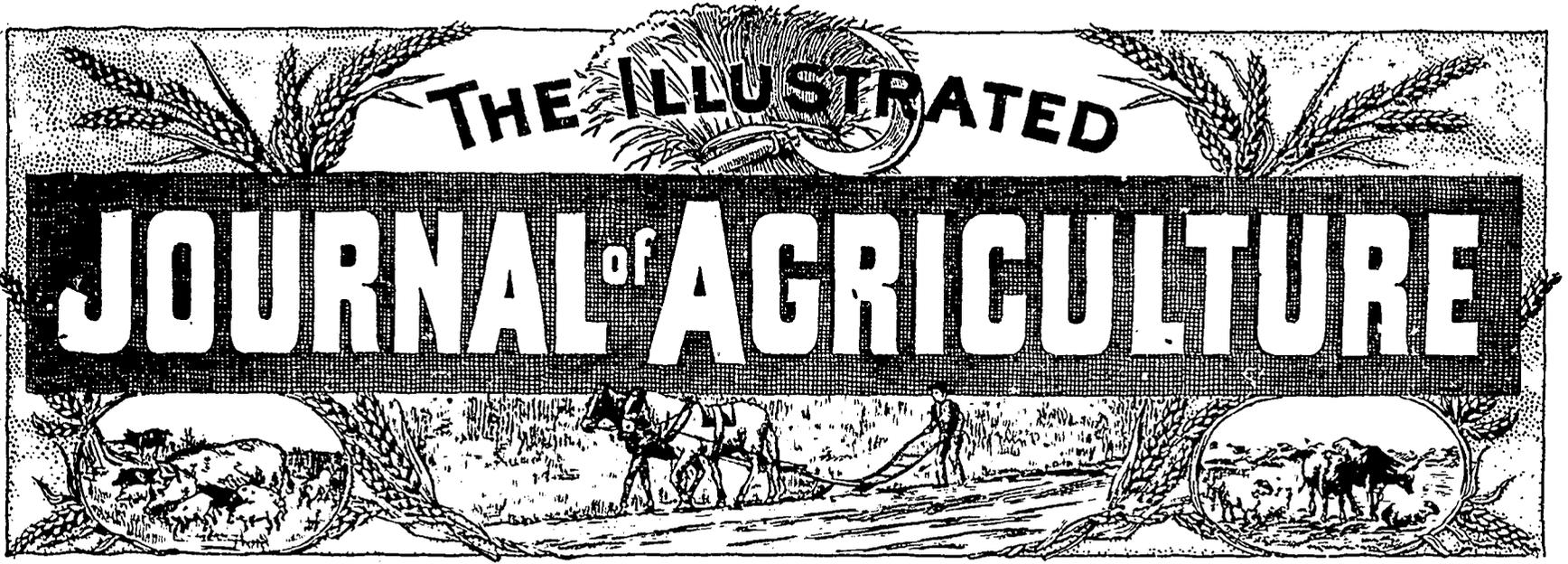
L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués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

- Coloured covers/
Couverture de couleur
- Covers damaged/
Couverture endommagée
- Covers restored and/or laminated/
Couverture restaurée et/ou pelliculée
- Cover title missing/
Le titre de couverture manque
- Coloured maps/
Cartes géographiques en couleur
- Coloured ink (i.e. other than blue or black)/
Encre de couleur (i.e. autre que bleue ou noire)
- Coloured plates and/or illustrations/
Planches et/ou illustrations en couleur
- Bound with other material/
Relié avec d'autres documents
- 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
- 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.
- Additional comments:/
Commentaires supplémentaires:

- Coloured pages/
Pages de couleur
- Pages damaged/
Pages endommagées
- Pages restored and/or laminated/
Pages restaurées et/ou pelliculées
- Pages discoloured, stained or foxed/
Pages décolorées, tachetées ou piquées
- Pages detached/
Pages détachées
- Showthrough/
Transparence
- Quality of print varies/
Qualité inégale de l'impression
- Continuous pagination/
Pagination continue
- Includes index(es)/
Comprend un (des) index
- Title on header taken from: /
Le titre de l'en-tête provient:
- 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

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

	10X		14X		18X		22X		26X		30X	
												✓
	12X		16X		20X		24X		28X		32X	



Vcl. 15, No. 12.

MONTREAL, DECEMBER 1, 1893.

\$1.00 per annum, in advance

PUBLISHED BY
EUSEBE SENECA & FILS,
 PROPRIETORS,
 20 St. Vincent Street,
 MONTREAL.

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

All matters relating to the reading columns of the Journal must be addressed to Arthur Jenner Fust, Editor of the JOURNAL OF AGRICULTURE, 4 Lincoln Avenue, Montreal. For subscriptions and advertisements address the Publishers.

TERMS.—The subscription is \$1.00 a year payable in advance, and begins with the January number.

Drs Mathieu & Bernier

Dental Surgeons, corner of Champ de Mars and Bonsecours streets, Montreal. Gas or electricity used in the extraction of teeth. Artificial set of teeth made with or without palate. Teeth repaired and restored by the latest process.

PIANOS HAZELTON DOMINION. BERLIN.
 ALSO
Eolian, Vocalion and Dominion Organs.

The largest and most varied stock. One sole price and the lowest. Terms easy. No agents. Old instruments taken in exchange for new ones. Pianos to let. Repaired and tuned. Second hand pianos of all prices. A visit and correspondence respectfully solicited.

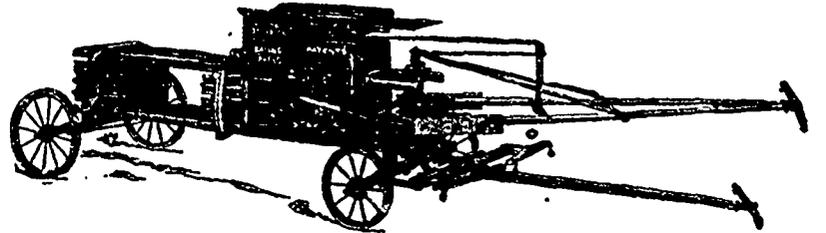
L. E. N. PRATTE

1676 NOTRE-DAME, Montreal.

The Huntingdon Agricultural Implement Works

Having bought out Messrs. P. K. DEDERICK & CO'S. Branch Factory in Montreal with Plant and Stock and move to our works here. We are now prepared to Manufacture and Sell under Special Royalty

P. K. DEDERICK'S PATENT HAY PRESSES,
 Made in every Style in Wood Frame and Steel Cases. Also Repairs from their original Patterns.



Having also bought out the Dominion Wire Manufacturing Co's Bale Tie Plant with the transfer of that portion of their business, we are now prepared to supply all Styles of Bale Ties made from the Best Steel Wire.

BOYD & CO.,
 Proprietors, Huntingdon, Que.

Selected Seeds

FOR THE FARM AND GARDEN

WILLIAM EWING & Co

(ESTABLISHED 1869)

Seed Merchants

142 McGill Street and Corner St. Henry and St. Maurice Streets

MONTREAL.

Our annual SEED CATALOGUE is now ready and we will MAIL IT FREE to all who send a postal card giving their address.

Besides a full assortment of GARDEN, FARM and FLOWER SEEDS —and ENSILAGE CORN, of all the best sorts we offer PURE GROUND LINSEED OILCAKE and COTTON SEED MEAL—prices on application.

PURE BRED

Ayrshire Cattle

I offer for sale selections from my prize herd of Ayrshires. The Females are all heavy milkers or the produce of such. At the last great Exhibition in Montreal I secured a prize in every section I had entries in and the 3rd prize for Herd. "SILVER KING" (1st prize in his class at Montreal and Hochelaga in 1892) is my stock bull, and his calves cannot be beaten. He was imported in dame by the late Thomas Brown, and his sire, grand sire and great grand sire, were the leading Ayrshire bulls of their day in Scotland, and in their turn retired from the show ring with unbeaten records. His dame was 1st as milch-cow at Montreal Exhibition and also in 1892 besides taking the diploma as the best female Ayrshire, and on both sides he is descended from exceptionally good milking strains.—Correspondence invited.

Duncan McLachlan,

Petite Cote, near Montreal.

STE. ANNE'S HERD JERSEYS

THE OLDEST AND LARGEST HERD OF
 Pure St. Lambert - Jerseys
 IN THE WORLD

85 HEAD OF THE WORLD RENOWNED

Victor Hugo—Stoke Pagis Jerseys

THE GREATEST BUTTER FAMILY KNOWN
 HOME OF THE CELEBRATED COWS.

JOLIE OF ST. LAMBERT and her three famous daughters Jolie of St. Lambert, 3rd, 4th and 5th winners of the Silver Medal, Sweepstakes Prizes and the Farmer's Advocate Silver Service Prize for the best dairy cows of any breed. Winning at Toronto, 1885; Quebec, 1887; Kingston, 1889, and Toronto, 1890.
 Gold Medal Herd Ottawa, 1889 and 1890. First prize and Diploma Herd Ottawa, Kingston, Quebec and Montreal, in competition with all the principal herds in Canada.

The Foundation cows in this herd are:
 7-16 of St. Lambert, 5726, Canada Champion Milch Cow, 16 lbs. 15 1/2 oz. butter, 48 lbs. milk per day.
 Lady Fawn of St. Anne's, 10920, Victor Hugo's best daughter, 16 lbs. 12 1/2 oz. butter 7 days, 47 lbs. 11 1/2 oz. 31 days, 2,716 lbs. milk 89 days, when 15 years old.
 Pet of St. Lambert, 3,123, 70 per cent. Victor Hugo.
 Dam of Oakland Nora, 23 lbs. 6 oz. of butter.
 Dam of Diana of St. Lambert, 19 lbs. 8 oz. butter.
 Hebe of St. Lambert, 5117, a daughter of Victor Hugo, great g dam of Mary Anne of St. Lambert, 86 lbs. butter 1 year.
 The Societies of Agriculture and Farmers desirous to improve their stock, I offer twenty young bulls of various ages issued from daughters and grand daughters of the above famous cows and sired by such great bulls as Romeo of St. Lambert, 16,600 (a most full brother to Mary Anne of St. Lambert), Victor Hugo of St. Anne's a pure Victor Hugo, Lord Edgar of St. Anne's (a son of the great Jolie of St. Lambert), and Lady Fawn of St. Anne's son a grand and great grand son of Victor Hugo. Victor Hugo 197 has now over 108 descendants that have tested 14 lbs butter per week and over.

For Prices, &c., apply to

WM. A. REBURN

STE. ANNE DE BELLEVUE, P.Q.

FARMERS' CENTRAL SYNDICATE OF CANADA

30 ST. JAMES STREET, MONTREAL.

Implements are delivered

AT THE
BUYER'S R.R. STATION

Patronized by the
CENTRAL SYNDICATE
to its members.

Feed-Cutter No. 2.—Hand or horse power, two knives with vertical blades, cutting 10 inches wide	\$26.00
Feed-Cutter No. 3.—Same with 4 knives	\$26.00
Feed-Cutter No. 4.—2 knives with vertical blades, can cut from 1 ton to 1½ ton of hay, in an hour.	\$38.00
Feed-Cutter No. 6.—Power only, with a 12 feet carrier moving in all directions, can cut from 6 to 8 tons of Ensilage Corn per hour	\$72.00
Feed-Cutter No. 6.—With Elevator	\$75.00
9 (Horizontal blades,) 4 knives, 9 inches, hand or horse power, safety wheel.....	\$37.00
11 (Horizontal blades) knives, 11 inches.....	\$3.00
12 (Horizontal blades) power only.....	\$16.00
14 Two horses power	\$60.00

Special reduction in the prices will be according to the importance of the orders.

Farmers' Central Syndicate of Canada

30, ST. JAMES STREET.

HATCH CHICKENS BY STEAM
With the Improved Excelsior Incubator.
Simple, Perfect, Self-Regulating. Thousands in successful operation. Guaranteed to hatch a larger percentage of fertile eggs at less cost than any other hatcher. Lowest priced first-class hatcher made in the Dominion.
GEO. H. STAHL, Quincy, Ill.



CONSUMPTION CURED.
An old physician, retired from practice, had placed in his hands by an East India missionary the formula of a simple vegetable remedy for the speedy and permanent cure of Consumption, Bronchitis, Catarrh, Asthma and all Throat and Lung Affections, also a positive and radical cure for Nervous Debility and all Nervous Complaints. Having tested its wonderful curative powers in thousands of cases, and desiring to relieve human suffering, I will send free of charge to all who wish it, this recipe, in German, French or English, with full directions for preparing and using. Sent by mail, by addressing, with stamp, naming this paper
W. A. NOYES, 820 Powers' Block, Rochester, N. Y.

Frank Wilson

SOLE AGENT IN CANADA

DE LAVAL CREAM SEPARATORS STEAM AND HAND POWER.

SEPARATORS REPAIRS.

EXTRACT OF RENNET.

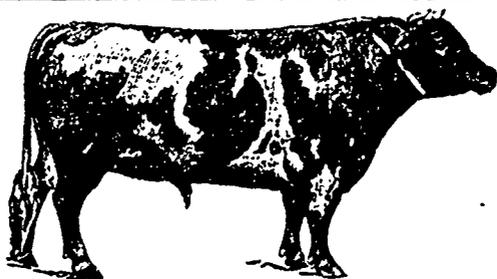
DR. BABCOCK'S MILK TESTERS.

DAIRY PARCHMENT PAPER

N° 33 ST. PETER STREET, MONTREAL.

Bell Telephone 2755.

P. O. Box 1824.



BEAUBIEN FARM, OUTREMONT, MONTREAL.
25 PRIZES Montreal Exhibition 1891-92

To Societies of Agriculture and Farmers desirous to improve their stock, we offer pure bred registered

AYRSHIRE CATTLE, Bulls, Cows, Calves, all choice Stock
PURE BRED REGISTERED

BERKSHIRE AND IMPROVED CHESTER WHITE

The Chester White is known to be invulnerable to pigs' cholera.

Pure Bred **PLYMOUTH ROCK**—Improved breed **COCKS, HENS, CHICKENS, EGGS.**

HOT-BED PLANTS OF ALL KINDS SHIPPED TO ORDER BY EXPRESS C. O. D.

APPLY TO **JOSEPH BEAUBIEN, 30 St. James, Montreal.**

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



LA CANADIENNE
Perpetual Press (Patent and Improved).

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

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

We manufacture four sizes of presses:

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

We will send this press for trial to any responsible party. Write for our Catalogue and list of prices.



The thrashing machine represented in the above engraving is our vibrating machine. It has a run of 24 inches long with teeth in steel guaranteed so that they can bend without breaking as the norway The iron work that support the drills is all in wrought iron which is very advantageous and economical as any blacksmith can make it, so that all long delays are avoided. The sieve of our vibrating machine is longer and wider than all the other machines of the same kind manufactured in Canada. This new shape facilitates the cleaning of the grain and the sieve is less exposed to spread its contents one-side. We give seven passes with this sieve. The horse power runs on cast iron rails, all the shafts of the bridge are in steel and measure 6 of an inch which represents half a line of a larger size than those employed by the other manufacturers. All the shafts in the separator, the sieve and the horse power are in steel. We never use any iron shaft. Our machine is acknowledged to be the easiest to run and the one which lasts the longest.

We also manufacture a Canvas Separator with Improved Railroad Horse Power, Railroad Upright Hay Press, Rod Upright Hay Press; Straw Cutter No. 9, 11, 13; Spring Harrows, 16 teeth; a Washing Machine patented May 1892.

We want active and responsible agents in all the localities where we have none yet. Any farmer shall find it an economy and be certain to have the most improved machine in applying to us. We allow a special discount for orders sent by mail.

J. B. DORÉ & FILS

MANUFACTURERS

LAPRAIRIE, QUE.

THE ILLUSTRATED Journal of Agriculture

Montreal, December 1, 1893.

Table of Contents

NOTES BY THE WAY:

Contributors 225, The fly plague 225, Soiling cattle 225, What to grow for soiling 225, Where to sow soiling crops 225, How to use 225, Price of hay in England 225, Hay and straw in 225, Straw 225, Cheese 226, Food and quality of milk 226, W. Indian molasses for milk 226, Crosses of cognate stock 226, Dairy-shorthorns 226, Ayrshires 226, Icehouse 226, Milk-tests 226, Scotch cattle-feeders 226, Size and food 226, Queer farming 226, The Chicago dairy-test 227, Experiment-farms 227, Beets 227, Moderation 227, Gentleness with cows pays 227, Price of cheese 227, Roots in tile-drains 227, Clover-hay 227, Ensiling sugar-beets 227, Potato-sets 227, Experiment-stations 228, Shorthorns in New-Hampshire 228

THE GRAZIER AND BREEDER:

The Jersey-cow at home 228, Breeding grade stock 228, Rape for cattle-food 229, Importation of Canada-cattle 229

GENERAL MATTER:

Isleigh Grange 230, English and American farming 230

SWINE:

Wheat and rye for hogs 230, Pigs and potatoes 230

THE HOUSEHOLD:

What open eyes see 230, Spiced-ham steak 230, Some uses for soap 231, Celery in soup 231, Celery gruel 231, Bread and butter 231, Bottled milk 231, Scalped oysters 231, Fricassee oysters 231

THE FARM:

About barns 231, Filling to the peak—large barns 231, Feeding mangels in Germany 232, Culture of beets 233, Cultivation of the soil 232, Importance of thorough cultivation 232, Guelph College 232, Wheat-crop in the States 232, Saves half the number of men 232

THE POULTRY YARD:

Care of chickens in the fall 233, Capons as brooders 233, Breeding habits of turkeys 234

THE HORSE:

The family-horse 234

THE DAIRY:

Summer or Winter butter? 231, Butter-making 233, Devonshire-cream 235, The new name for Jerseys 235

The cow's vacation 235, Butter-fat in cheese 235, A good shorthorn dairy in N.-Hampshire 235, Canadian cheese at Chicago 235, Gypsum in stables 236

ORNITHOLOGY:

The sparrow 236

VARIETIES:

An icehouse 999

Notes by the Way.

CONTRIBUTORS.

We regret to say that, of our only two contributors, Mr. Gilbert is too unwell and Professor Penhallow too busy to favour us with any communications this month.

THE FLY PLAGUE.—Among the various lessons that the past summer has afforded to the farmer is the very notable one of the protection of his cattle from the attacks of their insect enemies. Any one who has seen, as we have seen, the poor brutes seeking refuge from the myriads of the new pest, the horn-fly, rubbing themselves backwards and forwards against any over-hanging branches of low-growing trees, until their backs were excoriated and thereby laid still more open to the piercing probosces of their tiny persecutors, must have felt that turning milch-cows to pasturage, during the prevalence of this novel plague at any rate, is a vital blunder.

SOILING-CATTLE.—The best and most profitable way of guarding cattle from the attacks of the fly, it seems to us, is soiling them in a cool cow-house during the hotter months of summer. The expense of doing this is no trifle, but we emphatically believe that it will be fully compensated, in the case of dairy-cows, by the additional yield of milk thereby secured. To quote only one of the opinions expressed by writers in the agricultural papers, Mr King, of Logan County, Ohio, states positively that: "Last season, when the pest made its appearance here, my cows shrank nearly half their mess of milk in a very few days on good pasture.

I put them in the stable, and kept them there during day time, giving them a feed of millet and sweet-corn morning and noon, and turning them into the pasture only at night. They soon gave their usual flow of milk again, and kept it up right along."

WHAT TO GROW FOR SOILING.—Sweet-corn and millet are all very well, but we, in common with almost every farmer who has practised the soiling system, prefer more nitrogenous food. If a few acres of a mixture of pease, oats, and tares are sown, to succeed the first cutting of clover, which, in this part of the province, is generally fit to mow for green-meet by the 10th or 12th of June, the interval between the first and second cut of clover will be fully supplied. There is no great trouble involved in this. The autumn-ploughed manured land should be bro-

ken with the grubber, well harrowed, and the seed—2 bushels of oats, 1 of pease, and one of tares—suffled in, or drilled, pretty deep; the land harrowed again, and rolled down soundly. As soon as cut and carried to the stook, plough again, and put in, white turnips, rape, or something at any rate for the sheep to run over. Never trust to a second mowing of tares, etc., coming to anything: what second growth does come is never worth cutting, and besides, the lying idle of the land gives too much chance to the weeds.

WHERE TO SOW SOILING-CROPS.—Most writers in the papers recommend the sowing of these crops on some part of the land near the cow-house. This is an error, for, as the part of the farm on which the soiling-crops are grown must be manured, if anything worth cutting is to be produced, it stands to reason that the piece they are to occupy should be situated in that limb of the rotation devoted to the green-crop. The practice of manuring only the fields close to the farm-buildings is far too prevalent here. The rest of the farm is allowed to "fish for itself," and left almost in a state of nature, full of weeds, and commonly called in the vernacular "pacage." It is high time that this anti-economical practice—we were about to write system—be abandoned, and as this system—and system it is—of soiling will largely increase the provision of dung, it will probably induce many farmers to extend their rotation of crops gradually, until, in the course of time, the whole of their land is brought under a regular course of cultivation.

HOW TO USE SOILING-CROPS.—Mow as soon as the tares are in bloom. This, if the crop is sown the last week of April, or thereby, will happen about the end of June or the first week of July, sometimes earlier, according to the season. For milch cows, in fact for any other stock than horses, the mixture can be used as soon as it is bulky enough; but we have always observed that immature tares are apt to purge horses. Any overplus remaining from the cows will be eagerly devoured by the pigs. Allow the stuff to lie and wilt for six hours or so before giving it to the cattle. One contributor to the "Rural New-Yorker" says he can cut, haul and feed a soiling crop to 20 head of stock in half an hour! Rather a large order, it seems to us, but it is not a very long job, anyhow.

PRICE OF HAY IN ENGLAND.—Very interesting are the variations of the price of hay, both meadow and clover, in England between March 13th and October 16th of this year.

March 13th.

HAY AND STRAW.

LONDON (CUMBERLAND,) THURSDAY.—Prime picked meadow hay, 95s. to 110s.; good do, 80s. to 95s.; inferior do., 60s. to 80s.; prime clover, 100s. to 110s.; useful do., 85s. to 100s.; inferior, 60s. to 85s.; straw, 30s. to 43s. per load.—Dumbelton and Sons and J. Baker.

WHITECHAPEL, SATURDAY.—Superior picked hay, 108s. to 112s.; good hay, 100s. to 105s.; inferior, 75s. to 90s.; best clover, 108s. to 112s.; good clover, 100s. to 105s.; inferior, 80s. to 90s.;

straw, 33s. to 44s. Good hay in short supply.—J. Gingell, Son, and Cruickshank.

October, 16th.

HAY AND STRAW.

LONDON (CUMBERLAND), THURSDAY. Prime picked meadow hay, 160s. to 170s.; good do., 140s. to 160s.; useful do., 135s. to 140s.; prime clover 135s. to 145s.; useful do., 105s. to 140s.; inferior 90s. to 105s.; straw, 36s. to 52s. per load. Canadian hay, 120s. to 130s. per ton.—Dumbelton and Sons. (load = 2,016 lbs.); ton = 2240 lbs.

WHITECHAPEL, SATURDAY.—Superior picked hay, 160s. to 170s.; good hay, 140s. to 150s.; inferior 120s. to 130s.; best old clover, 150s. to 160.; good clover, 140s. to 145s.; inferior, 120s. to 135s.; straw, 44s. to 56s.—Gingell Son, and Cruickshank.

It will be observed in the above reports from two of the principal hay-brokers of the London markets: that the price of meadow-hay rose from 110s. a load of 2016 lbs., in March, to 170s. in October; and the price of clover-hay from 110s., in March, to 145s. in October: and that straw rose in price from 43s. a load of 1296 lbs., to 56s. a load. One very remarkable thing is that, whereas the best clover-hay in the London market is, in ordinary years, worth about 20s. a load more than the best meadow hay, on the 16th October meadow hay of the finest picked quality was worth 25s. a load more than the best picked clover-hay! A thing utterly unknown during the last fifty years. Straw, with the exception of a few trusses cut up with clover-hay, to be mixed with the horses' oats and beans, is used in London entirely for litter and must be quite unbroken. As our English threshing machine average about 5 feet to 5 feet 6 inches in the mouth, and consist of a simple drum and concave, without beaters; the straw is fed in sideways and comes out as whole as it went in. A pretty sight, indeed, is a London stable when the straw-plait is laid down after the horses have had their morning toilet performed.

STRAW.—Many leases and agreements, in England, forbid the sale of straw off the farm, the tenant being obliged to expend it on the land, and if, at the expiration of his term of occupation, any remain, it must be handed over to the incoming tenant. This, however, in consequence of the sad losses incurred by the farmers in general, is not often insisted upon by the more liberal class of landowners. This year, more straw will be utilised as food for cattle than ever before, it being no exaggeration to say that the hay-crop was an utter failure. With a mixture of linseed, crushed, and molasses of the coarsest description, meal of some kind,—bean or pease-meal for choice—and straw-chaff, cattle can be kept in an improving condition all the winter at a comparatively trifling cost. What roots there are, which owing to the frequent interruptions of their growth are not of much quality, will be given to the sheep. They have a hard struggle before them, have our English brothers, with wheat at 78 cents a bushel, as the average, though the finest qualities such as Talavera, Chidham, &c., of the white sorts, are worth, in the markets of Canterbury, Reading, &c., i. e., in the neighbourhood of the chalk nearly \$1.05.

CHEESE.—What a price Canadian Cheddar cheese is fetching! Fifty-five shillings a cwt. (112 lbs.) in Liverpool, when the very finest quality of English Cheddar is only worth 72sh. a cwt. Our makers deserve the greatest possible credit, and if they deserve credit, what do their teachers the Tachés, Robertsons, Côtés, Archambaults, &c., deserve? The whole body of the Dairymen's Association, in fact, have done, under very difficult conditions, work that entitles that body to the gratitude of every farmer of the province.

FOOD AND MILK.—The question of whether or not the quality of a cow's milk can be increased by feeding, is not yet settled. We had a talk with Dr Edwards, the Public Analyst, on the subject a few days ago, but as the "City-passenger-electric-car" in which we were at the time was even more noisy and more abrupt at the curves than usual, we arrived at no conclusion on the subject. In our opinion, the authority of the practical man on this question is of very great value, and as at least one of the leading theorists of the States answers the question above mentioned in the affirmative, it may be concluded that no great ridicule attaches to one who holds that, as we said in the words of the London dairyman in our last: give us plenty of mangels, straw, and brewers' grains, and we don't want no pump.

Prof. Cooke, of the Vermont Station, states that by a change of food, the percentage of fat in the milk of certain cows was raised from 4.41 to 7.20 (Hoard's Dairyman.)

Prof. Fleury, of Wisconsin, tells us that the percentage of fat in milk cannot be changed by any manner of feeding.

Mr W. D. Baker, of New-Hampshire, being evidently an admirer of the Verulamian philosophy, deals experimentally with the matter. He sends the following test of two cows to "Hoard's Dairyman."

DOES FEED MATERIALLY AFFECT THE QUALITY OF MILK?

So much has already been written pro and con upon this subject that it almost seems like "sending coals to Newcastle" to add to the discussion, but perhaps the following test may be of interest.

Two cows, grade Durhams, were selected, both farrow, having calved in April, and after coming to the barn in the fall were fed on good hay, all they would eat up clean, and four quarts corn and cob meal and four quarts shorts, daily. Nov. 25th their milk was analysed as follows:

Fat.....	3.040
Sugar.....	4.456
Casein and albumen..	4.448
Salts.....	.614

Total solids... 12.558
Quantity of milk 43.2 pounds.

November 22th the silo was opened and the cows fed ensilage morning and night and hay at noon, with the same grain ration as before. December 3d the milk analysed as follows:

Fat.....	4.06
Solids not Fat.....	8.50
Ash.....	.64

Total..... 13.20
Quantity of milk 47.5 pounds.

December 5th the feed was changed again. The shorts were dropped and

one quart of corn and cob meal and one quart of cotton seed meal fed with the ensilage night and morning and the same quantity of hay at noon. December 14th the milk analysed as follows:

Fat.....	4.236
Sugar.....	4.270
Casein and albumen..	4.525
Salts.....	.66

Total solids... 13.691
Quantity of milk 51.8 pounds.

Then, one-half pint of cheap West India molasses was added to their feed, fed with the ensilage, and after the cows were well established on this feed the milk showed:

Fat.....	4.703
Sugar.....	4.786
Casein and albumen .	3.946
Ash.....	.601

Total solids..... 14.036

These analyses were verified step by step as it was not deemed advisable to depend upon one analysis, or an analysis of one sample.

W. D. BAKER.

Elmwood Dairy, N. H.

The effect of the half pint of W. India molasses is very striking; though not great, it is of consequence as showing that sugar and other carbohydrates have more to do than to afford force and heat to the animal-economy. At all events, we find here the fact clearly shown that, in this experiment at least, the solids of the milk were raised from 12.558 oyo to 14.036 oyo, of which the fat was increased from 3.040 oyo to 4.703; i. e. from pretty poor into very rich stuff.

CROSSES OF COGNATE STOCK.—Monsieur Rolland, who is now farming the estate of his late grandfather, the well-known judge, at Ste. Marie de Monnoir, consulted us the other day on the subject of the best cross for increasing the size of his Jersey-Canadians. He himself seemed to be inclined to try the Ayrshires, but, after some argument, we succeeded, we hope, in persuading him to get a young Guernsey bull. This cross will give size to the frame of the progeny, tendency to fatten, and the colour of the butter from the heifers will have that orange-tinge that seems so fashionable on this continent.

As for the increased size, richer milk, and tendency to fatten conferred by the Guernsey cross, we have only to look at the herd of Mr. Sidney Fisher, of Knowlton, to be convinced of it. In his grade and registered Guernsey cows, the lowest percentage of fat is 5.20, while the average is 6.0. The milk is very highly coloured, even in winter.

Vanessa, from Sir John Abbott's herd, gave 6,000 lbs. of milk in 320 days, 18 lbs. of which made a pound of butter. A bull, when dressed, weighed 1,542 pounds, which, as he weighed alive 2,050, represents 75%. With such stock as this, we cannot understand why the owner of the best herd of Guernseys in the province should have reason to complain of the difficulty he has in selling his bull-calves. Mr. Fisher reports a steady demand for stock, and if he can sell his young bulls readily why should others find it hard to even give away theirs?

All the same, good as the Guernseys are, we want those dairy-shorthorns!

DAIRY SHORTHORNS.—Here is a specimen of what a phenomenal Dairy-shorthorn can do at a show, which is a very different kind of test to the yield of a cow in her own quiet stall at home:

At the milking trials of the Dairy-farmers' Exhibition, held in London, on the 9th October last, No. 60 gave an average of 77.20 lbs. of milk on the two days of the show, with a fat percentage of 3.74 and 4.77 respectively in the morning's and evening's milk—average per centage=4.25. She is a cross-bred shorthorn, by a cross bred sire out of a cross-bred dam. One day's milk the judges tested for butter, and the yield was 2 lbs. 10 oz., equal to about 1 1/2 pounds a week.

But this is of course an exceptional case. Still the three first prizes of the Shorthorn class were awarded to by no means inferior dairy-cows. as the subjoined figure will show:

Name of Cow.	Exhibitor.	Age.	Date of Last Calf.	Days in Milk.	Milk Yield.	Butter.	Ratio.
Somolina.....	Salisbury Baxendale...	8 0	August 28th.....	43	58	1 12 1/2	32.8
Lily 12th.....	James Errington.....	6 6	September 21st.....	29	60	2 1 1/2	28.6
Drayton.....	B. Merry.....	6 0	September 16th.....	24	58	2 8 1/4	23.0

The first and champion prize was awarded to Drayton: 58 lbs. of milk a day, from which 2 lbs. 8 1/4 oz. of butter were made, is not bad! Rather better than the 29 lbs. a day of the specimen Shorthorns at Chicago.

The champ. Shorthorn's marks.	126.30
" " Jersey's "	105.74
" " Guernsey's "	103.00
" " Ayrshire's "	118.56
" " Kerrics' and Dextors' marks.....	83.55
" " Red-polled's marks..	116.40
" " Cross-bred's "	171.90

If there ever is another dairy-show so well managed in every respect as the one just concluded at Chicago, it is much to be hoped that the Shorthorn dairy-cows sent for exhibition will approach a little nearer to the type of the real Dairy-cow of England.

AYRSHIRES.—The Montreal Ayrshire men seem rather put out by the observations of some of the irresponsible reporters of the Chicago Fair. The only defect to be found in the Ayrshire cattle from Canada was that "some of them were nearly white." This reminds us of Mr. Cochran's having to sell his splendid Booth bull "Royal Commander," because, as he told us, the calves of his got had too much white about them. Queer people in the States, some of them! At all events, Canada won all four Ayrshire herd-prizes!

Mrs. Jones, too; her decisions on the quality of the butter were "made from a Canadian stand-point," whatever that may be. What do they say in Chicago to Mr. Long's opinion of the butter? It was to the effect that he never tasted butter in the States that, in England, would be considered good; and Professor Long is supposed to know what he is talking about when he meddles with dairy-matter.

ICEHOUSE.—A correspondent, whose letter we have mislaid unfortunately, wishes us to give plans and description of an icehouse. This request we have complied with at page 000 of this number.

MILK-TESTS.—Monsieur Taché, the late secretary of the Dairymen's Association, writes us word that, in the laboratory of Macpherson and Taché, there have been made more than 10,000 tests of milk: "Should you be surprised if I were to tell you that, as an average, it happened that at the beginning of the season we got less than 3.50% of fat with Babcock? At present, October 11th, we are getting an average of 4.50%. The question of skim-milk cheese is at rest at last: the law of last session has put an end to it."

SCOTCH CATTLE FEEDERS.—A special cable to one of the Montreal papers says:

"The Scotch markets are overstocked with Hereford, Devon, and Welsh cattle, partly owing to the exclusion of Canadian cattle." Not at all; but because, while the South and Midland counties of England are desperately hard up for winter food on account of the long, long drought, Scotland was highly favoured by the weather, and has the largest crop of hay and of sound roots she has grown for some years. Wherefore, a thing almost unknown before has happened this fall; English breeders of high-class cattle have sent their lean beasts to Scotland to be fattened by their more fortunate brethren in that country.

SIZE AND FOOD.—That cattle do not consume food in proportion to their weight has long been a familiar fact to practical men; and, now, Mr. Valancey Fuller comes forward with a statement that some of his lightest cows eat and digest more food than the heavier ones. He ought to know, if any one does.

QUEER FARMING.—In the Western States, it seems a man and four horses, on a sulky-plough can run over—we cannot say "plough"—5 or 6 acres a day, the furrows being 16 1/2 inches wide! In Minnesota, broadcast seeders, 16 feet wide, with harrows behind, put in 18 acres of wheat a day. Well; 16 inch furrows and the seed only covered by one stroke of a harrow attached to a broadcast seeder may be cheap work,

but the wildest imagination cannot look upon it as good work. No wonder the average of the U. S. wheat crop is so low (11 imp. bushels an acre in 1893) if this is the way they treat their land in the great wheat-fields of the West. One thing is certain: it will not be long before the land will refuse to yield even the present poor crops, and the farmers—do they deserve such an appellation?—will be obliged to resort to the process so scornfully described by "A Southern Kansas lady" in an exchange:

"When I see my neighbour farmers laboriously spending the time of two men and four horses for five or six weeks putting in 40 or 50 acres, it looks like a hopeless task, even if transportation gives them an advantage of 20c. a bushel."

Well; we will with pleasure back the farmer who spends the time of two men, &c., to come out better, at the end of twenty years from the present time, than the man who scamps in the same superficies of land in ten days or so. In other words; the energetic, skillful farmer, with his painstaking process, of New-York, of Vermont and the rest of the Eastern States, will last longer than the farmer of the Western States in spite of the comparatively maiden soil with which the latter has to deal.

THE CHICAGO DAIRY-TEST.—A correspondent of the "Farmer's Advocate" is of rather a sceptical turn of thinking. He wants to know "why the finest 25 cows of each of the three breeds that had courage enough to face a public test, open to all, can only produce an average of 2 lbs. of butter a day?" "Surely," he says, "when we farmers have cows that, on grass alone, and in spite of flies, &c., will give from 1 lb. to 1½ lb. of butter a day for three or four months, we may consider that we have good cows, when the best cows in all America can only make 2 lbs. a day on high feeding and with every comfort. Why did not the owners of the cows with their 800 lbs. and 1,000 lbs. records exhibit them?"

The writer seems to forget that the wretched selection of Shorthorns pulled down the average yield in butter of the 75 cows submitted to the test to a terrible extent. And it was not very likely that the owners of the marvelous cows that tested the 800 lbs. and 1,000 lbs. as sworn to by perfectly trustworthy witnesses, would risk the lives and limbs of their valuable stock at a public exhibition. Besides, every one knows that these high-bred, full fed cows are extremely nervous and excitable; wherefore, they would not be likely to do themselves justice in so necessarily strange a place as a crowded fair.

EXPERIMENT-FARMS.—Talking the other day to a gentleman who is about to start a small experiment-farm in the spring, we tried to impress upon his mind the absolute necessity of selecting a thoroughly worn out piece of land for that purpose. Many mistakes have been made at some of the stations in the United-States from not having attended to this point. In Ohio, for instance, the experiment-farm is in the Scioto valley, chiefly what is there called "first and second bottom-land," which, in good average seasons will grow from 30 to 40 bushels of wheat an acre without fertilisers of any kind. The Indiana farm, again, is on warm, black, rich land on the Wabash river. On such soils, what earthly good can be derived from experiments never so wisely conducted?

No wonder that the managers of these experiment-farms, after having used all sorts of commercial fertilisers for many years, report that in no case has the extra yield of wheat paid for the manure.

Seeing this, we can only wonder how it came to pass that the wise proceedings of Lawes and Gilbert in establishing their first lot of experiment-plots at Rothamsted were so completely ignored by the authorities in the United-States. Sir John and his associates did not plunge into their work like a clown into a circus. They weighed matters carefully, and the first idea that struck them was that, by analysing the soil of the proposed experiment-field, they might succeed in discovering what the soil of that field required to be added to it to enable it to produce a crop. But, upon mature consideration, this plan appeared to be fallacious, although it had authority of the great Davey to back it. For reflecting that the addition of 400 lbs. of sulphate of ammonia would only increase the amount of ammonia in the soil by 1000, the acre of land being taken to weigh 1,344,000 lbs., they saw that some other plan must be adopted, for no method of analysis would enable the chemist to appreciate the difference between the soil before and after the application. Just the position we have so often maintained in this periodical.

The next question that the associates in these trials asked themselves was: In what condition should the land be to make it fit for replying fully to the enquiries to be propounded to it? Now, the answer involved the following considerations:

In British farming, some system or other of rotation is invariably pursued. What is called "a course of rotation" is the period of years which includes the circle of all the different crops grown in that rotation. Generally speaking, in a course of rotation no two crops of the same kind are grown consecutively on the same soil. Wheat, for instance, is never sown after wheat, but only after some other crop has intervened, and at such a period of the rotation as, by experience, it is known that the soil will, by direct manuring, or by some other means, have recovered its power to produce a profitable crop of that cereal.

So, looking at these considerations, it was decided to begin the experiments on land that had just been put through a course of rotation, and which was, in consequence, in what may be called a *practically* exhausted state.

Thus, it was determined to proceed by way of *synthesis* instead of *analysis*, and all the experiment-plots were selected when they were in a state of *agricultural exhaustion*; they had grown, that is, the regular number of crops which constitute a rotation: turnips, barley, clover, wheat, since the application of manure. Indeed, the plots on which the wheat was experimented on had been regularly scoured, for since the manured turnip crop, it had grown barley, pease, wheat, and oats, without any further manuring; the pease having been substituted expressly in the place of clover in that rotation.

We have therefore full reason for saying that, as every body acknowledges the conduct and management of the Rothamsted to be and to have always been the most perfect of their kind, it behoves every one who intends to set going experiments of the same description, whether in China or in Canada, to follow strictly the first essential point, as conceived by Lawes

and Gilbert: the previous *agricultural exhaustion* of the land on which the experiments are to be tried.

BEETS.—A correspondent of the "Country Gentleman," speaking of growing mangels and sugar beets, recommends the rows to be made from 25 to 36 apart, and the plants to be set out 12 inches in the row for mangels. All the best farmers in England drill mangels 20 or at most 22 inches from row to row, and set them out 10 inches from plant to plant. When we used to blame Mr. Tuck, of Lachine, for wasting space in his root-crop, his defence always was that there was plenty of land and space. True enough, but he would never understand that a crop of moderate sized roots was more valuable than a crop of great overgrown roots, or else why do the proprietors of the best-sugar factories insist upon the beets never exceeding 2½ lbs. in weight?

MODERATION.—Professor Dean, P. A. C. (what these initials mean I can not tell unless: Prof. of Agricultural Chemistry), of Guelph, holds rather strong opinions. He says, in a communication to the "Farmer's Advocate," that "The dairyman of this country need to be impressed with the fact that a cow which produces less than 6,000 lbs. of milk, or 250 lbs. of butter in a year, is not worth wasting food and labour on her carcass." Now, 6,000 lbs. a year is equal to 20 lbs. a day for the ordinary 300 days that a cow gives milk; allowing her to be dried off a couple of months or so before calving. How many cows in the hundred in either province do as much as this? More harm is done by such puerile exaggerations than their authors dream of.

GENTLENESS WITH COWS pays.—The kindest man we ever saw in his treatment of animals was a Swedish gentleman who had, for a time, a small farm at Sorel, which we fear did not increase his means. If you see a lot of cows get fidgety when their milker enters the yard, and try to hustle out of his way as if they were afraid of him, you may be sure he is not fit to be trusted with the care of pigs, let alone cows. Get rid of him as soon as you can, and your cows will show their gratitude by giving additional quantities of milk. If any one wants to see the grossest cruelty practised towards animals, they should go to Spain.

PRICE OF CHEESE.—The price of cheese, here, has been satisfactory enough during the late summer and early fall months. Fifty-three to fifty-four shillings for 112 lbs. at Liverpool must pay the makers well, as it means from 11 cts. to 11½ cts. at home. This is the price of the finest Canadian Cheddars, and we confess that we are surprised at its keeping up so, as the coal-miners are very large consumers of that kind of cheese, and we all know that their purchasing power has not been great this autumn. Almost all our "Single-Gloster" from the Vale of Berkeley goes to the South-Wales miners. English,—what Monsieur Pache calls authentic—Cheddar still retains its vogue, selling at 70 and 72 shillings per cwt. Cheshire, only eaten at taverns, restaurants, &c., is worth 80 shillings, but it should be known that the Cheshire people are liberal in weight, as well as in mea-

sure, for their cwt. is 120 lbs. and wheat is sold in Chester market by the bushels of 75 lbs., oats by the bushel of 46 lbs., and beans by the bushel of 80 lbs.!

ROOTS IN TILE DRAINS.—If you have trees growing in the neighbourhood of tile-drains, no power on earth can prevent them from, sooner or later, choking the pipes. In woods or orchards, upon ditches are better than any covered drains. We have even known pipes choked by the roots of mangels! As for cementing the joints of pipes, and trusting to the porosity of the material for the admission of the water, a heavy fall of rain, like the one we experienced here on the 28th and 29th of August, will soon show its absurdity.

CLOVER-HAY.—In Gloucestershire England, where, owing to the vast extent of meadow-land, hay-making is well understood, the following is the plan pursued in making clover-hay. The clover is cut by the machine, and allowed to lie and wither a couple of days or so, according to the weather and the bulkiness of the crop. As the leaf of the plant is extremely brittle when dried, it is worked as little as possible, but only turned once if the weather is favourable, and left lying on the ground till it is fit to carry to the rick. As soon as the dew will allow, threeswaths are pitched into little cocks on the centre one, and shortly afterwards, the hay is pitched on to the carts and stacked. This plan is not so good as the system carried out in the neighbourhood of London, where, as we have described in previous numbers of the Journal, the clover, after wilting for a couple of days is turned, put into large cocks the next day, allowed to sweat in the cock, and carried to the rick without spreading. Still, the Gloucestershire men have caught the right idea, that clover should be handled as little as possible, particularly after it has become partially dry.

ENSILING SUGAR-BEETS.—The Vermont station has been experimenting on the best way of keeping sugar-beets for winter cattle-food. The beets were cut up and ensiled between layers of straw chaff, at the rate of one part of straw to four of beets. The whole was found to be fair silage and was eaten by the stock after they became accustomed to it; but, surely, the best way to keep any roots must be to preserve them whole in a root-cellar or pit; and take them out as required for use. The chaffing of the straw, cutting the beets, and arranging the alternate layers of chaff and beets, must occupy a great deal of time and necessitate the employment of a great many hands at a very busy season of the year; whereas roots are quickly packed in a cellar or pit, and labour is always plentiful in the winter-months.

POTATO-SETS.—How many bushels of potato sets does it take to plant an acre? We saw, the other day, a curious statement, said to have been made by Professor Robertson, that three bushels were sufficient! We are perfectly certain that Mr. Robertson never said anything half so absurd. Think for a moment: at 27 inches between the drills, and 10 inches apart in the drills, the distances usually employed, it would take 2,232 sets, 10

plant an acre. You could not get that number of sets, even small ones, into three or even nine bushels. The number of bushels the writer always used in England was about 22, and he has seen no reason to vary it in this country. What does the growing, &c., of an acre of potatoes cost from first to last? Let us see:

Autumn cleaning of stubbles.

Scarifying or grubbing, twice.	\$2.00
4 harrowings.....	1.20
Gathering and burning couch, &c.....	1.50
Deep ploughing in the fall.....	2.50
Grubbing twice in spring.....	2.00
Dung, 12 tons at 60 cents.....	7.20
4 cwt. superphosphate (plain)	.00
2 cwt. nitrate of soda.....	6.00
Spreading dung, &c.....	1.00 ?
22 bushels of sets at 25 cts.....	.50
Cutting and planting.....	3.50 ?
Making and splitting drills....	3.00
3 horse-hoings.....	2.50
2 hand hoings.....	3.00
Earthing up.....	1.00
Harvesting, &c.....	8.00 ?
Root, &c.....	4.00
	\$60.90

From this large bill of expenses must be deducted one-third of the cost of the manure, its spreading, &c., amounting to something like \$6.00. This may fairly be charged to the succeeding crops of the rotation, and so, in all justice, might a good share of the cost of cleaning the stubble, and the horse- and hand-hoing of the potato-crop. The notes of interrogation appended to three of the items denote that the cost of the operations in question depend entirely upon the skill of the hands employed, i. e., whether they are or not accustomed to the work. A great deal, too, will depend upon the implements used, i. e., if good tools like the Coleman's drag-harrow the potato-planter, and the potato-harvester are used, the cost will be much less than if the work is done by hand and hoe. After all allowance made, the crop, considering it, if sold, goes clean off the farm, leaving no dung behind, does not seem a very profitable one, does it? Even 250 bushels an acre at 30 cents only amounts to \$75.00, and the average crop of the province is under 120 bushels. The expense of carting to market is not included in the above calculation.

EXPERIMENT-STATIONS.—The stations in our neighbours' country do not seem to be giving satisfaction. People complain that the appointments are too much in the hands of politicians. Again, the Americans are always in a hurry, and will not wait for the slow working out of some important problems. Let us blame the right parties, then, and not impute faults to men, tied by the leg as many of them are, that they are not guilty of.

SHORTHORNS IN NEW-HAMPSHIRE.—M. Geo. Stanloy, of Cheshire Co., N. H., seems to have a good working herd of Shorthorns. By the bye, why will they talk in the States of Cheshire County? *Cher'ie* in really Cheshire, i. e. the County of Cheshire, just as Hampshire, in England, is really the County of Southampton. v. p. 235.

The Grazier and Breeder.

THE JERSEY COW AT HOME.

EDS. COUNTRY GENTLEMAN.—How many times in calling at a Jersey farmhouse we asked to see "the Jerseys," and almost without exception, we were not understood, until finally we found that we should ask instead to see "the cows" or "the heifers." A long themselves, many of the farmers never speak of their Jerseys or their cattle; they are "the cows," or "the herd." We visited, during the week, thirty-nine herds, besides looking over a great many animals along the road. I was particularly interested in the methods of feeding, as soiling of cattle is one of my hobbies, and I thought I had accomplished a wonderful thing in keeping 35 head of full-grown cattle from the product of 30 acres of land by soiling and ensilage, but I believe the Jersey and Guernsey farmers do even better than this, in many instances keeping a cow a year from half an acre. According to the returns supplied last year to the Board of Trade, there were 2,797 occupants of land. The total number of acres, including all crops, orchards, market-gardens, small-fruit and nursery-gardens, is 20,500. The total number of horses and cattle on the farms, 14,234, of which 11,891 are cattle and 2,343 horses. Taking out the nursery and market-gardens, small-fruit orchards, bare fallow land, and land devoted to grain and other things that in no way support the farm animals, there are not, I am informed, over 10,000 acres farmed by holders or renters who keep cows; so there is more than a Jersey for every acre, to say nothing about the farm horses. A great deal of the land along the coast for half a mile back is very poor indeed; it is used for pasture, however, and, all reckoned in, I think it is safe to say that the majority of farms carry two animals for every acre of land devoted to their forage.

The Jersey farmer lives in a stone house, generally with thatched roof, which is a thing in no way to be despised. The straw is laid on like shingles about a foot thick, and when completed and trimmed it makes a very beautiful finish to the house or barn, and will last 25 to 30 years. It is warm in winter and cool in summer, and in every way superior to shingles. The barns or stables are invariably built adjoining the house, and in a great many cases are under the same roof. The care of the cows and calves is left almost entirely to the wives and daughters. If you ask the farmer the name and age of his cow, nine times in ten he must ask his wife or daughter, who, he says, knows all about them. In the morning, after milking, each cow receives about three pecks of roots previously cut and a little whole or cut hay or straw (there is very little hay grown on the island). For the cows giving milk, some times a little bran is added to the roots. The young things get all the roots they will eat and a lock of hay or straw, no grain, after this morning feeding. If the weather is fine, the cows giving milk are, about 9 or 10 o'clock, led to the field and staked out or tethered; they are given 10 to 12 feet of rope and chain, on the end of which is an iron pin about 6 or 8 inches long, which the dairymaid drives into the ground. These cows are moved two or three times a day; beginning at one end of a field they go on to the other. By this time the grass has grown again, and they begin at the

top and go over the field time after time during the year. All the young things, the dry cows, cows about to calve and those that lately dropped their calves, are kept in—in fact, the young things never go out until after they come in milk, and about 90 per cent of their feed during the winter is roots from the time they are three months old, and soiling crops such as lucern, vetches, taro and tree cabbage during the summer. The root feeding, however goes on in many cases the year round.

The cows in milk are brought to the stable about 4 P. M., and kept in for the night. During the summer months they are left in the field over night. After milking in the evening they are fed as in the morning, and what seemed to me a very large quantity of roots; nearly a bushel in some cases. Cows fresh in milk receive the greatest care. They are not allowed to go to grass for a week or more before calving, and after calving they are milked six or eight times a day (if large milkers), blanketed and only taken to the field after a week or two, and then only when the weather is fine, for a few hours in the middle of the day. They are usually blanketed when they go out for the first few times. It seemed to me that the care they take of their cows fresh in milk is going to the extreme, and I wonder if the severe checking they give to the flow of milk by reducing the feed before calving and afterwards, together with the frequent milking does not lessen the cow's capacity to such an extent that she never afterwards recovers or gives as much milk as she might or does under the treatment she receives in America.

The stables are mostly kept dark; many are very low and very badly ventilated. I could not find any one to give a reason for keeping the young things so much in the dark, except custom. I wonder if this bringing up the calves in the dark, generation after generation, has had anything to do with their color? There is no doubt that it is this early treatment that gives them their beautiful coats and chamois-like skin, which they lose to a great extent in a generation or two in America, and in England as well. The calves are fed sweet milk for a week or ten days, sometimes two weeks; then they have only skim milk, scalded bran, and are soon put upon roots and bran altogether in winter, and during the summer leaves from the tree cabbage—so called because the stalk grows to the height of four to eight feet and the leaves look and taste like the leaves of cabbage. I wonder also if the little milk the Jersey calves have at home has anything to do with the difference in growth of bone compared with Jersey calves reared in America, where they soon become coarser in bone and horn and heavier in hide and handling? This is Mr. Cooley's idea (an American breeder). Corn meal is unknown as a feeding ration for cows or calves. May it never find its way to this land, especially as a food for those most beautiful animals! I believe it has ruined more good dairy cows than anything that can be mentioned—yes, than all other things that are known or can be mentioned combined. The best man to ruin the form and milking qualities of any family of dairy cows is a man who has been accustomed to feed beefers.

For over one hundred years not a drop of foreign blood has come on the little island. Since the memory of man—in fact, to a date as far back as tradition goes—the Jersey has been

the only family of cows on the island. I asked many questions at every herd I visited, never omitting the questions of feeding, breeding and health. As to breeding, the universal answer was: "I am using a bull from one of my best cows." The general practice seems to be to son! two or three of the very best cows to a neighbor's bull, and if a bull calf is the result, it is kept until two years old at the head of the herd. The same thing is practised a year or two later, so as to keep the blood of a certain strain in their herds—a strain that was left the present owner by his father, who in turn received it from his father. If for any reason this particular family get low in numbers, it is out of the question to try and buy one. "There is not money enough on the island," said one farmer, "to induce me to part with that old cow until I get some of her heifer stock."

Many of the stables were filthy beyond comparison, low and poorly ventilated. Still, the cows seemed perfectly healthy—beautiful skins and faces, small, incurving horns; with large eyes, set very wide apart, on the outside of a broad, dishing face; hard and clean-cut under the eyes, and a muzzle like a deer, evincing a highly sensitive, nervous temperament; at the same time the eyes showed them to be the most trusting, docile of cattle. How could they help being so, treated with the greatest kindness, and talked to as if they were potted children of the household, brought up almost in the same house, reared from babyhood by the motherly hand of wife or daughter, who chide them only in words and looks for their short-comings, and seem always anxious to consult their wishes?

We enter a stable with the milkmaid who has been sent out to show us "the cows." They are all lying down; the maid goes up to one: "Come, now, Mollie, get up," at the same time patting her on the back. "The gentleman has come to see you," slapping her again, a little harder this time, and saying to us, by way of apology: "She likes her ease, sir, does Mollie." Then, "Come, now, get yourself up." "She knows it's not feeding-time, sir. She may as well get up; she can lie down again if she wishes; it won't hurt her, sir." This is said between pats on the cow's sides and back, at the same time using the most condescending tones, as much as to say: "I beg pardon, ma'am, but the gentleman has come from America to see you, and if it would not be asking too much, would you kindly stand while he looks you over." So with coaxing and patting, and perhaps a little scolding, having the necessity of the demand fully explained to her ladyship, she stands up and the examination and questioning begin. "Has she been long in milk?" we ask. "She's only a few days after calving, sir; here is her calf—as nice a heifer as you could wish to see, isn't it, sir?" "How old?" "Born last Friday week, sir, about 4 o'clock in the afternoon," &c.

BREEDING GRADE STOCK,

BY D. F. WILSON, BRANDON, MANITOBA.

Breeding animals, as practised by the breeders of pure-bred stock, is an art, but there are many farmers who believe in the improvement of their stock that have very vague ideas of the principles to be observed.

At one time a neighbor of mine was outlining his intentions with regard to his cattle. He was first going to use a

Shorthorn bull, then on the progeny a bull of some other breed (I have forgotten which), and so on with four distinct breeds fondly imagining that in the last cross he would have combined all the good qualities of the four breeds. Another farmer who heard him, summed up pretty correctly by saying, "and by that time you will have a pure-bred mongrel." In such a case as this, where there was one cross of each of four breeds, all perhaps equally prepotent, two of the great laws of breeding—heredity and atavism—would be made directly antagonistic, and no idea could be formed before hand what the progeny would be like. Now, instead of this being the case, a farmer should have an idea what the stock he breeds will be like, though

"The best laid schemes o' micoan' men gang aft a gley."

As a rule, when a farmer wants to improve his cattle, he buys a pure bred bull that he believes will suit, and uses him in his herd for a couple of years, by which time he thinks he should get rid of him, as his own get are then coming back to him. He may then buy another, though, as is often the case when money is not very plentiful, he thinks he can scarcely afford to buy another pure-bred animal so soon, and therefore uses a calf of his last bull's get out of his best cow, or else obtains a good grade bull calf from one of his neighbors. If he buys a pure bred animal again, he probably takes the first one he comes across, so as to save further trouble, or buys one because he is cheap. Now, if the farmer started right, he, when purchasing his first pure-bred bull, decided what he wanted to raise, and having settled this it would not be hard for him, by studying the characteristics of the different breeds, to decide which of them he should select from. In making this selection, care should have been taken that the animal was a typical one, also that it was one likely to beget stock of the type desired. When after two or three years it is thought advisable to get a new bull, the first pedigreed animal that is to be had is not the one to buy, just because it is a pure-bred beast, as if that was all that was required. He should be carefully selected as being suitable to use on the young half-bred heifers—one who will correct in the progeny any faults of the mother rather than perpetuate them,—in fact, as far as can be seen, an improvement on the former bull, but at the same time one of similar type; for he it remembered the first bull was bought with a fixed view, and if sight is lost of this we fall into the same error that the man spoken of who would make use of four different breeds would do, but to a lesser extent. Now, supposing the first bull has proved himself an exceptionally good one, begetting stock of a quality leaving little to be desired in a first cross, why part with him for another, and that an untried one? The second animal may to all appearance be a better beast than the first, but it does not follow that his stock will be better, for it is a well-known fact that many noted show animals have got but second-rate stock. It would, however, be unwise to disregard the law of heredity by breeding to an inferior animal because his get had proved to be good ones; it would probably be a case of atavism, and by the same law the bad qualities apparent in the bull might be expected to crop out in future generations, no matter how carefully bred. When, however, a farmer becomes possessed of a pure-bred bull that is a handsome animal and a good specimen of the breed, and begets uniformly

good stock, he need not be afraid to use him on his own get, and he will be safer in doing so than if he bought a new bull whose qualities as a sire were unknown to him, and most decidedly better than if he used a grade, which to say the least, would be a step backwards. (1)

I am aware that any one advocating inbreeding is treading on dangerous ground, but no one can deny that to it we owe the present excellence of pure bred cattle and sheep. The greatest breeder among those who brought the different breeds into prominence having practised it, we might almost say the closer the breeding the more successful the breeder. Why should not farmers follow their example to a certain extent? *The early breeders inbred to set a type*; the farmer also wants to set a type—he wants uniformity in his flocks and herds; it makes them worth more to him. When inbreeding was carried too far by some of the first breeders, it showed first in lack of fecundity; there is no need for the farmer to carry it to this extent with grade stock, but when a pure-bred male has been secured that has proved himself to be a good one, it is a great mistake to part with him, as is too often done.

The Southdowns of Mr. Henry Webb and Lord Polwarth's Border Leicesters are instances of the most successful breeding, in both of which cases no outside blood was introduced for nearly half a century. (2)

(Farmer's Advocate.)

RAPE GROWING FOR CATTLE FEED.

BY JAMES SHARP.

Now that the British ports are closed against the importation of stockers from Canada, it would be well for us to face the situation in a resolute and manly way. We are now placed on an equal footing with all nations: our cattle must be slaughtered at the port of landing, which means that every animal must be finished before leaving this country. No doubt this will be a hardship to those who raised and disposed of their cattle as stockers; but, if those cattle could be fed here and shipped to Britain as prime fat, the farmers and the country would be largely the gainers. Why should they not be finished here? It should never be said of Canadian farmers that we are unable to compete with those in the Old Land in this line, with almost every advantage resting with us, in the form of cheap and abundant feed of great variety, a splendid climate, and cattle singularly free from the contagious diseases that are the scourge of other lands. And, though a stigma has been cast on our herds by the President of the British Board of Agriculture and his veterinary experts, it cannot change the fact that pleuro-pneumonia has never made its appearance in the herds of Canada.

With all this in our favor, we should send a largely increasing number year by year. Those who have been in the habit of selling their cattle as stockers may not be able for some years to finish them for the British markets; but they can and must put them in better trim if they expect the farmers in the feeding sections to purchase and

(1) This was Booth's principle, and it answered with him; but it must not be carried too far. Ed.

(1) Jonas Webb, H. Webb's father, told us, in 1851, that he never, at that time, put ram and ewe together nearer than 6th cousins.—Ed.

do the finishing part. The farmers of feeding centres are able and willing to do a far larger amount of feeding, if stockers of the right stamp can be procured; for it is beyond dispute, that the stockers usually to be had for the past few years have been sadly lacking in two great essentials—breeding and quality. A cross of any of the special dairy breeds will never find favor in the eyes of our best feeders. (1) Though we wish to see a great improvement in breeding, still without a better system of feeding and management, no advance will be small indeed.

On great fault with many is in not providing more and better feed for their cattle in the fall months. If anything will open the eyes of our farmers, this very dry summer and fall should wake them up to make some effort for another year to provide feed in some form or other to tide over a very trying period of the year. Where land is suitable, I think rape is by far the best crop, all things considered, that can be grown for fall feeding; of course where cows are milked for butter or cheese, corn should be provided, as rape will taint the milk badly. (2) But for cattle to be fed the coming winter, we think it simply invaluable, giving them that sappy, velvety touch so characteristic of a thrifty animal, and for young cattle and cows suckling their calves nothing could be better, sending them into winter quarters covered with flesh, which, with fair treatment, will carry this bloom through the winter.

I need not go into a lengthy description of rape growing, as it has been before the farmers, through the agricultural press, for some time (3) and the mode of cultivation is generally well known. But in almost every article treating on the subject, the impression is left on the mind that rape is only of value in feeding lambs, while in fact it is of as great importance to the cattle interests.

It would be well for those in the store cattle line to set apart a field every year for the cultivation of rape. If worked properly the land can be cleaned thoroughly, and the rape being fed on the ground is of great advantage to the next crop. For those who grow fall wheat or barley where not seeded down to grass, a good way is to plough lightly after the crop is off, harrow well and sow rape broadcast, which will serve a two fold purpose—giving the seeds of weeds a good chance to sprout, and at the same time providing a nice bite for either lambs or calves. Quite a quantity can be grown if the season be at all favorable.

I am well aware that outside the rape-growing sections many hold it dangerous to put cattle on rape. With nine years' experience we never had a sick or bloated animal in that time, and with a crop of from eight to twelve acres every year. We turn the stock in for the first time when the rape is perfectly dry, allowing them to come and go at will, they having the run of other fields at the same time; we find them do exceedingly well at a time when they would otherwise be going back.

IMPORTATION OF CANADIAN CATTLE.

The President of the Board of Agriculture on Thursday received a deputa-

(1) This is, as Hannibal Chollop would say, "dreadful true."—Ed.

(2) Not unless it is decayed. Fresh rape will convey no bad flavour.—Ed.

(3) Thanks to—ahem!—Ed.

ation at St. James' Square from Scotland and the North of England, who asked that the recent order of the Board prohibiting the landing of Canadian cattle alive at any port of the United Kingdom should be withdrawn. The President was accompanied by Mr. T. H. Elliot, Mr. Anstruther, and Professor Brown. The deputation was introduced by the Earl of Aberdeen, and the following members of Parliament were present:—Sir Charles Cameron, Sir John Long, Sir James Carmichael, and Messrs. Wason, Harry Smith, J. C. Stevenson, Farquharson, Parker Smith, Beith, Jacks, John Wilson (Govan), Paulton, Thomas Shaw, Field, Edmund Robertson, Williamson, and Macgregor.

At a preliminary meeting held at Westminster Palace Hotel, Sir Charles Tupper told the deputation that there was no contagious pleuro-pneumonia in Canada, and he had offered to pay the expenses of experts of the Board of Agriculture if they could find the disease in the country.

The Earl of ABERDEEN, in introducing the deputation, said that a totally new issue had been raised since the deputation saw the President in February last. Besides the strong feeling against these restrictions on the importation of Canadian live cattle in this country, there was a unanimous feeling among the Canadian farmers that their interests were being injuriously affected.

Mr. ANDREW HUTCHISON (Dundee), Mr. JOHN S. SMITH (Aberdeen), Bailie BRECHIN (Glasgow), and Mr. FIELD, M. P., having spoken, the latter advising that outside experts should be called in to assist the Board.

The PRESIDENT replied. He regretted most deeply the decision at which he had been obliged to arrive after the most anxious and careful consideration of the facts of the case. He recognised that the free entry of the Canadian cattle into this country was advantageous not only to the Dominion of Canada, but to many importers and feeders at home. At the present moment, however, he was not satisfied that reasonable security existed against the admission of disease from Canada. They were aware of the estimable benefits conferred on agriculturists by the Contagious (Animals) Diseases Act, and he warned them against the danger they were running of having the Act repealed altogether by reflections upon the central authority, the Board of Agriculture. With reference to the evidence on which he had acted, he begged them to defer their judgment until the reports were published. As to the suggestion that the evidence should be referred to some scientific expert outside the Board, he could not concur. His professional advisers formed an impartial, independent, and disinterested tribunal; and they possessed an extended and accumulated experience of the symptoms and appearance of pleuro-pneumonia which he believed to be unique and positively unrivalled. He certainly should not undertake to supersede them in favour of any outside or foreign savant, however distinguished or learned upon the subject. He had been obliged to give the order for the slaughter of the animals at the ports, but he should be glad to withdraw the order when the circumstances warranted it. He was bound to say that at present there was no immediate prospect of the restrictions being removed.

The deputation then withdrew.

General Matter.

ISALEIGH GRANGE.

This farm, which is the property of Mr. G. N. Greenshields, Montreal, is now the seat of one of the largest fine stock breeding establishments in the province of Quebec. It is conveniently situated for railway accommodation, being within two and a half miles of Danville, P. Q., which is on the main line of the G. T. R. between Quebec and Montreal, and near Richmond, the junction between the above line and the Portland branch of G. T. R. The farm contains eight hundred acres of easily worked land, which is very suitable for pasture and growing the crops required in stock feeding, while water in abundance is supplied by the living springs abounding throughout the property, and two never-failing streams conveniently situated for furnishing this essential on a stock farm. Many improvements have already been added since the farm came into the present proprietor's hands, among which are extensive stock and grain barns, sheep, horses, and piggery, all of which are equipped with modern appliances of the most modern character.

Stabling for 100 cattle is provided, and 300 sheep have roomy and convenient quarters, while the piggery is the most perfect of its kind. This building is 100 feet long and 30 feet wide, is built in the most substantial manner, and is heated with steam, so that cold has no effect upon the occupants, let the weather be ever so severe outside. The main barn is 165 feet long by 40 feet wide, contains four threshing floors, with shafting conveniently placed for running the necessary machinery operated in threshing and cleaning the grain, as well as preparing the feed for the stock. A 25-horse engine supplies the power which drives the whole of this machinery, and is also further connected with the milk separator, the circular saw for cutting wood, etc. The engine-house, grain-grinding room, ice-house and dairy, together with a large store room, are situated close to the barn.

Guernseys are the cattle bred at Isaleigh Grange. At the head of this herd is the bull Ontario's Pride 1029, A. G. C. C., which is undoubtedly one of the best bulls of the breed on the continent and pronounced by that astute judge, M. Wm. Crozier, of Long Island to be one of the best dairy bulls of any breed in America.

The cows are also a remarkably fine lot, and, taken as a whole, display capital dairy points. They have large frames, are smoothly finished, and are among the most handsome of the dairy breeds. The cow Eliza C. 2nd, a lemon-colored fawn, with white markings, comes nearly to the perfection in type of what we consider a dairy cow should be; her grandly developed milk vessels, elastic touch, and handsomely turned horns all bespeak high breeding.

The four-year-old cow May Queen 7th is another grand, large cow that claimed our attention, although there were many others equally good here.

The calves were a remarkably good lot, the gem of the whole collection perhaps being a four-month-old bull calf, Isaleigh Choice, by Ontario's Pride, out of Eliza C. 2nd. This is really a marvellous youngster, showing wonderful size for his age, smooth and level all over, a beautiful handler, in fact, to our mind, about the perfection of what a dairy bull should be.

We cannot leave the cattle without paying a tribute to the herdsman, Mr. M. Mansell, a son of the well-known Shropshire breeder, Mr. T. J. Mansell, of Dudmaston, England. Mr. Mansell, who, we might say, has barely reached his twentieth year, deserves the greatest credit for the beautiful form in which he has brought the herd, numbering over eighty head, through the winter.

The Yorkshire herd, founded on stock from the herd lately owned by the manager, Mr. J. Y. Ormsby, has been increased last year by a large importation from the best herds in England, including two grand stock boars from the well-known herd of Mr. Sanders Spencer. One of these, Holywell Manor, winner of first last year at the Royal Show at Warwick, has been pronounced by good judges, both in England and Canada, a faultless type of a bacon pig. His magnificent hams and well sprung ribs, combined with his tremendous length and depth, cannot but please the most critical eye, while his clean, flat bone and excellent coat of hair indicate a grand constitution.

Among the sows, besides a few choice specimens from Holywell, we noticed a capital sow of Lord Ellesmere's breeding, the dam, we were told, of a prize-winning pen of boars at the Royal; and last, but not least, a beautiful yelt (1) from the Metchley herd of Mr. D. Gibson, Edgbaston, Birmingham, England. This sow has never been beaten in England, having won at the Royal and numerous other large shows. She is now carrying a litter of pigs to Holywell Prince, also a winner in the best company in England.

After leaving the main building, a few minutes drive with the manager brought us to the sheep barns, where we found, perhaps, as choice a collection of Shropshires as can be found in the Dominion. It is not necessary, perhaps, to say much about the sheep, as a short description with illustrations appeared in our December (1892) No. We cannot however, pass them over without mentioning a magnificent shearing ram, "The Other One." This sheep, bred by Mr. George Thompson, of Wroxall, Warwickshire, England, was commended at the Royal, and received the reserved number at the Shropshire and West Midland Show at Welshpool, England, being considered one of the best yearlings of the year. While not overly large to the eye, he is a sheep of tremendous scale, showing a grand back and loin, short couplings, good brisket, and a magnificent fleeco. The flock, which numbers over 100 head exclusive of this year's lambs, of which there were at the time of our visit nearly 50, gives every evidence of careful and judicious handling without the slightest pampering, all the stock sheep being in strictly breeding condition. Besides the pure-bred Shropshires, a flock of about 120 grade ewes are being lambed down this spring, thus making the total number of sheep wintered at Isaleigh Grange 235, all in charge of an experienced English shepherd, the manifest signs of whose careful management it does not take an experienced eye to detect.

Before closing we might mention that what especially struck us at Isaleigh Grange was the systematic manner in which everything is carried out, the manager Mr. J. Y. Ormsby, whose reputation as a stockman is already known, being seconded in a most efficient manner in their respective departments by the farm foreman, Mr.

(1) i. e. young sow.

M. Lockwood, and the shepherd, Mr. O. Lloyd, as by well as Mr. M. Mansell, to whom we have already referred.

(From the Farmer's Advocate.)

ENGLISH AND AMERICAN FARMING.

THE STOCKMAN AND FARMER says that an American journal has lately been comparing English and American farmers, sometimes making points which are just and fair, and sometimes exaggerating the differences, of course making an exhibit in the main strongly favorable to our own farmer. In replying to this the *English Agricultural Gazette*, as would naturally be expected, shows an opposite bias, and says some pretty curt things. The American journal says, among other things, that when the English farmer learns to take off his coat and get down to solid work he may begin to find that his receipts every year do not fall so far short of his expenditure. To which the *Gazette* comes back in this vigorous fashion: "When the American farmer learns how to farm, when his average yield of wheat becomes half as much as that of England, instead of only a little over one-third, and when elementary agricultural principles, settled here half a century or a century ago, have begun to dawn upon his mind, the American farmer may earn enough from the business to enable him to live as comfortably as an English farm laborer at the present time." There may be something worth thinking about in the Englishman's salty words—oh?

DR. HOSKINS.

Swine.

WHEAT AND RYE FOR HOGS.

Prof. Henry gives the following suggestions, in the *Breeder's Gazette*, in regard to the comparative feeding value of wheat and rye for hogs.

"In all my writings where comparisons are used I wish to be understood as referring to the grains by their actual weight not by bushel measure. The comparison is therefore pound for pound.

"If we are asked to state which was the best food for man—meat, bread, or potatoes—it would be impossible to name any one of the three definitely and without qualification. It is reasonable to suppose that though a man might live upon meat only for some time, yet after a while he would have an intense craving for other food—kinds which probably did not contain so much nourishment and yet for which he had an intense longing. The chemist may find in the meat all the elements for nourishing the human body, yet the demands of the stomach would not be satisfied with what the chemist announced. It is much the same with our farm stock, and experience shows that our animals do far better upon two or more kinds of feed than upon a single variety. Here at the west, corn is so cheap that we have gradually come to feel that there is little need of feeding anything else. The evil effect of exclusive corn feeding is soon apparent, however, and feeders are forced to drift away from it and furnish variety, or suffer serious loss from disease, small litters of pigs, those with little vitality, etc.

I have no fault to find with corn. It is our best single feed and we must

always use it for the main part of the ration with hogs; indeed, we cannot make cheap pork without it, but it must be supplemented with other kinds of feed for pigs and hogs up to the time of fattening, when if necessary it can be used nearly or quite alone, though even then I believe a little other feed for variety will prove highly profitable. Shorts is one of the best feeds to mix with corn for swine, because it contains much of the protein portion of the wheat grain. When wheat is cheap, as has been the case for some time past, then feed the wheat for variety.

Rye differs little from wheat in its chemical composition, being a little poorer in protein. It may be regarded, however, as having about the same value for the feeding of swine as wheat, and should be used in the same way. There have been complaints in the *Gazette* that rye poisoned hogs, but I cannot see where there is any reason for such a conclusion. Others reported excellent results. Rye is used by millions of people for human food and has been extensively fed to stock, both in this country and abroad. Rye-meal is generally fed in the form of slop. In this case see that the slop barrel does not get offensively sour, as possibly dangerous fermentations may occur. For young pigs feed half ground rye and half corn-meal, or, if shorts can be obtained at a reasonable price, substitute part shorts, giving one third say of each, which would form a very rich ration. After weaning feed half rye and half corn, with or without a little shorts. As the fattening period comes on, the amount of rye can be reduced to one third, and even less, the amount being regulated by the relative cost of this grain and corn. I think the feeder who tries feeding a mixture of rye and corn or wheat and corn against corn alone, will soon see the great advantage in mixture in both the rate of growth and the better animal frame (1).

PIGS AND POTATOES.

Which do you consider the most profitable food for pigs now six months old—potatoes at 40c. per bushel (not extra quality), pea meal at \$1.25 per 100 lb., ground wheat (frozen) at \$1.25 middlings at \$1.10, barley meal at \$1.10? The potatoes will be boiled and could be mixed with the middlings. E. W. Brockville, Ont. [E. W. presents the question which often occurs, of overestimating the feeding value of potatoes. The potato is 75 per cent. water; consequently a bushel of potatoes at 60 lb. would have 15 lbs. dry matter. Now this would be the highest feeding value of the potato for swine. Pea meal in the milk ration would have an extra value for its albuminoids. (2) Ground wheat would have no greater value for fattening purposes than barley meal. Barley meal is therefore the cheapest food for W. to fatten his pigs on. If convenient, the barley meal would be improved by cooking. E. W. S.]

The Household.

WHAT OPEN EYES SEE.

SPICED HAM STEAK.—Cut as thick as a fresh steak and broil. Have butter

(1) And if pease can be had, at a reasonable price, 1/3 of them would be an advisable substitution for 1/3 of the meals.—Ed.

(2) Good.—Ed.

and pepper in your platter, place the steak on it and turn, then serve. This is good.

BISCUIT (1) AND CREAM.—Some cold evening, make a big pan of hot biscuits by any preferred recipe, and pass with them a bowl of well-salted cream. No dish is more warmly welcomed at our table, but I have never eaten it or heard of it elsewhere. G. M. K.

SOME USES FOR SOAP.—In hand sewing, if the work is stiff and hard, rubbing soap on one's needle and fingers will be found very helpful. A thin-edged piece of white soap is much better than chalk for marking fine lines on cloth to cut by. Some one recently suggested soda for scouring the tea stains from cups, but if they are washed carefully with soap, there will never be any stains. J. H. O.

CELERY IN SOUP.—You can use a little celery and it is good; much, and it is better, if the white of the celery is available. The green leaves and trimmings are good to use in soups, but one must use only a little—perhaps one large leaf to a soup. You can also use a teaspoonful of celery seed, if the fresh stalks are not to be obtained. Two or three celery plants are a fine addition to the herbbed as a source for soup flavoring. So thinks Mis Parlor.

CELERY CRUEL.—This may be prepared in different ways, says the Medical Record. As a cure for rheumatic twinges, it may be steeped in water, and the water seasoned with salt and pepper and drunk either warm or cold. It is usually relished in the form of a stew. Cut the celery in inch bits. Place in a small quantity of boiling salted water. After half an hour's boiling add rich, sweet milk to make it quite juicy. Let this scald, and add seasoning to taste.

BREAD AND BUTTER.

Having called at a neighbor's not long since, in the middle of the afternoon of a very hot day, I found her baking bread, and the house like an oven. I asked her if she never baked in the morning.

"I never heard of such a thing; how could you do it?" she replied, greatly to my astonishment.

I set the yeast or emptyings (I use yeast foam, the compressed cakes) about one o'clock the day before I wish to bake; by nine that evening it is light. Three sifterfuls (Hunter's) of flour will make five loaves of bread. I mix with cool water in hot weather, and if it is patent flour I mix it very stiff and knead but little. It takes more flour of spring wheat to make the same amount of bread and more kneading. I have found that out by experience. I spread a light cloth over the pan, and by five o'clock the next morning the bread is light, the pan rounded full. I make into loaves, disturbing or kneading as little as possible and by the time the oven is hot, the bread is ready to bake, and is all out of the oven before eight o'clock. Rolls and biscuits I often make with the bread and they are ready for the seven o'clock breakfast.

When one has not and cannot have the conveniences of a dairy house or good cellar, many ways may be devised to supply deficiencies or take their places. We make about 40 pounds of butter a week, and deliver it to private customers' in town each Saturday. We have a cabinet cream-

ory: the water from the windmill all passes through it, and thence in pipes to the stockyard cistern. The milk is skimmed while sweet into tin pails holding 12 quarts each, fitted with tight covers. Every time fresh cream is added it is well stirred, so that all will ripen evenly. Those pails are hung in a deep, dry cistern having a tight door over the top. We churn Mondays, Wednesdays and Fridays—using a barrel churn—at a temperature of 60 degrees in summer and 62 to 64 degrees in winter. Our dairy thermometer is indispensable. The cream is churned until butter comes the size of wheat kernels; the buttermilk is then drawn off and a pail of brine strained in. The churn revolves a few times very fast, the brine is drawn off and two pailsful of clear water are used; or water is added until it runs free from color. Thus the butter-milk is all out of the butter before the latter leaves the churn, and it requires no working to get it out—working which would spoil the grain of the butter and give it a salvy appearance. It is worked in the butter bowl and salted—one-half ounce to a pound—worked just enough to mix in the salt, then packed in a covered tin pail and hung in the cistern. At night cold water is put in to the butter bowl, and the next morning before a fire is built the butter is made into rolls, hard, solid and waxy; each is wrapped in white muslin and all are placed in a galvanised iron butter box hung again in the cistern. When we deliver it, each roll is wrapped in a newspaper and so handed to the customer hard and firm. This is when the thermometer is 90 degrees in the shade or more, while others pack their butter in jars and bowls to prevent its running away and get much less per pound even if the butter is as good otherwise. "Necessity is the mother of invention" and in knowing how, and planning out our work, life can be made much easier; time may also be found for reading and cultivating the mind, and getting glimpses into the outside world. Thus we need not endure the same monotonous round, with no change.

MRS. FRED. C. JOHNSON.

R. N. Y.

BOTTLED MILK.

Probably most of those who retail milk in cities and specially seek the best class of customers, do not deliver in bottles. This method is so vastly preferable to the use of tin cans that there is no comparison between them. It is more expensive, on account of the handling and washing of the bottles, as well as the additional weight to carry and the occasional accidental breakage. We have had no serious trouble in several years' experience with loss from breakage by customers, nor with their allowing bottles to become foul past redemption. These are objections usually urged against bottle delivery. A tolerably efficient remedy against loss by either of these causes is found in attaching the customer's name permanently to his own bottles. After a good many experiments in marking bottles we have found nothing so satisfactory as a small brass plate, with name encircled on, soldered on top of the metal cover of the bottle. This never comes off, is not in the way, and if it becomes necessary to substitute one name for another it is but a moment's work with a soldering-iron to do it.

When customers know that they got the same bottles all the time, they

will take some pride in returning them clean. If they are broken, the responsibility is fixed and payment is insisted on. We wash all that come in, however, without reference to their condition. As the bottles are filled they are put in to wooden boxes holding a dozen. The bottoms of those boxes are not solid, but made of slats, so when they are set in the trough of running water as fast as filled, to await transfer to the waggon, the water comes up to the top of the bottles, and further, chills the milk. Observation teaches me that in our own neighboring city, as well as in other places, public opinion is slowly compelling the use of glass for milk delivery. Here there is seldom a waggon to be seen on the street without a few bottles in it, intended, no doubt, for particular customers, while only two or three of perhaps fifty dairies use bottles exclusively.

It would be well if this common sense reform was universally imposed, if upon no other consideration, that the dust of the street might not have access to the milk in a can uncovered every few minutes—Jaques in "Country Gentleman."

SCALLOPED OYSTERS.

Drain a quart of oysters and plump them by heating a tablespoonful of butter in a frying-pan until hot, and then spreading the oysters on the bottom and turning carefully to plump both sides. Take out the oysters with a skimmer and add a heaping tablespoonful of butter, a saltspoonful of salt, half a one of pepper, the same of ground mace, and a sprinkle of nutmeg. When the mixture boils, thicken it with a tablespoonful of flour wet in cold water; stir until smooth and add the oysters. Butter a pudding dish and, when the oysters have boiled, pour them in to it, and cover the top with fine bread crumbs that have been well seasoned with butter, pepper and salt. Bake in a hot oven until nicely browned. Some prefer celery salt to mace and nutmeg for seasoning, or both can be omitted if preferred.

KATHERINE B. JOHNSON.

FRICASSEED OYSTERS.

Fill a spider half full of new milk, made thicker than for soup, and seasoned in the same way. Have a pint of oysters rinsed in cold water and drained, as for soup, and when the thickening has come to a boil, drop in the oysters and cook only till they begin to show their frills. A little chopped parsley stirred in at the last is an improvement, and a good lump of butter must be added just as you are putting in the oysters. When ready, pour into a deep dish, in which you have laid some nice hot buttered toast, with the crust cut off.

The Farm.

ABOUT BARN.

FILLING TO THE PEAK—LARGE BARN.

EDS. COUNTRY GENTLEMAN—What Mr. L. B. Pierce writes is always interesting whether about horticulture, barn-building, or mowing away a large quantity of corn fodder under his barn

roof. He says (p. 961): "I must confess that I am, at loss to see how I have got so much up there." This is particularly interesting to me, because I worked and sweated at that kind of business myself for a good many years, but did not love it. I had to do the mowing around the purlin plates myself in order to get it well done. It was a dusty, dark, sweltering place to work in, and no hired man I ever had was anxious to take the same pains to crowd the bundles under the peak and fill every vacant space, that I was willing to take. Mr. Pierce's and Mr. Chamberlain's experience seems to be the same as mine—that when they want the peaks of their barns well filled, they do the mowing themselves.

Mr. Pierce knows of "two moderate sized barns that are made to do the work of much larger barns" by first filling the bays, and then the barn floor "by driving along in front of the door and pitching on to it." Of course the barn floor had to be filled with grain, and not fodder, or fodder would be in the way of threshing. I do not think any parent could be obtained for that method of filling barns, for my father practised it 40 years ago, and I followed his practice till he built a larger barn. The barn floor should be kept free if possible.

Mr. Pierce is convinced "that many of the barns built are needlessly large and expensive." Nobody needs a barn that will cover as much ground as one of Barnum's tents. That would be a waste of good ground as well as of valuable lumber and nails; but a barn a little too large for the crops is much better than one a little too small. Largeness, if a fault, is a good one. Every person before building a new barn should consult his pocket book, and if he finds he is able to do so should build a little larger than his present needs require, and then he has a strong inducement to raise bigger crops in order to fill it. What powerful motive can a man have to increase the yield of hay or grain on his farm if he is obliged to make a slave of himself every year to pack the sheaves under the rafters and bump his head against the swallow's nests?

Mr. Pierce talks about 18-foot barn posts, My barn has 20-foot posts, and if I were to build another, it would have them 22 feet long. It requires no more roofing to cover a barn with 22 feet posts than one with 18 feet, and the difference in their capacity is more than their difference in height, because the settling of the hay and grain is so much greater in the higher barn.

My grandfather built his first barn 30 by 40 feet, his second 20 by 30 feet, and my father built another 30 by 40 feet. All three of them would not hold all of our hay, grain and stalks. The stalks had to be stacked, and most of the straw had to be pitched out of doors and stacked in the yard. I tore down two of the old barns and built a new one 50 by 70 feet with 20 foot posts, which holds more than all three of the others combined. We have plenty of room for everything raised, and can keep all the straw in the barn, when we thresh, without having to pitch it out and then pitch it back again in order to have any bright dry straw for bedding or to feed. The barns which Mr. Pierce mentions as being not more than one-third full now, will be fuller when the threshing is done if the straw is kept in the barn. Straw does not pack like grain.

A part of one of the bays in my barn, 20 by 25 feet, is partitioned off, and a tight floor laid overhead for a tool room, but it is not more than half large enough to hold all my tools. It

(1) In England, these biscuits are called rolls. Ed.

would be considerably cheaper to build a barn large enough to hold all the farm tools in addition to the cattle and the crops, than to be at the expense of building a separate tool-house.

Mr. Pioreo figures out that "seventwelfths, or more than half the space in large and costly barns, is unused, and a simple extravagance which might be avoided." No doubt he also knows of churches in which the seats are not more than half filled on ordinary occasions. Does he think the builders were guilty of "extravagance" in providing extra room for an increasing congregation? When building a new barn, is a farmer chargeable with extravagance in providing an abundance of room for the larger crops which he expects to raise by reason of a tinago, better tillage and the use of more manures?

Another thing. A large barn affords abundant room in the basement for all the farmer's stock which is a great convenience, and it saves time in doing chores to have the work all under one roof and not travelling from one building to another. We have our horses, cows, young cattle, calves and pigs all in the basement of our barn. Besides this, there is room behind the horses for driving in with a buggy and cutter, and in the feed room for pumpkins and roots. There can be but one just criticism for a large barn, and that is where a man builds larger than he can afford.

Sugar Run, Pa.

J. W. I.

CULTIVATION OF THE SOIL.

Perhaps no branch of farm work is less perfectly understood than the cultivation of the soil. Every one knows that corn, potatoes and all other vegetables grow better when well cultivated; why the soil should be cultivated, when it should be cultivated, how deep and how often it should be worked to give the best results, are of the greatest importance. To answer these questions we must first consider what we cultivate for. Analysis shows that about eighty per cent at least of the composition of vegetables is water. We must, therefore, try to supply the required amount of moisture during the dry, hot weather, otherwise our crops will not succeed. This may be done best by frequent cultivation, the soil may also be dried out by cultivation. It is, therefore, necessary to know just how to proceed to gain the end in view. Cultivation causes moisture to be retained in the soil. - First, when the soil becomes firm with the spring rains or from any other cause, the moisture is brought up to the surface by small capillary tubes which are formed in the soil, and evaporates it very rapidly. By stirring the soil these little capillary tubes are broken off that have been continually pumping up the water to the surface for evaporation, and prevents the moisture from rising farther than to the point where the cultivator has stirred the soil and made it so porous that the little particles of water cannot follow to the surface, hence are retained in the soil just at the point where they can do most good to the growing plants.

Another and very important reason why cultivation produces moisture is that by stirring the soil it is cooled off considerably, and thus causes the dew which falls at night to be deposited down in the earth, while soil that has not been stirred is not much if any cooler than the surrounding atmosphere, and hence does not attract the dew.

It is quite a common belief that cultivation is only to kill weeds. That may be so during a wet season. But cultivation to retain and produce moisture is the first consideration, as most every season when vegetables and small fruits should be making their most vigorous growth we are apt to have dry, hot weather. At this time the cultivator should be kept going over the plantation twice a week, and three times would be better. If this is done, sufficient moisture will be secured during the driest weather to keep plants growing vigorously.

If, however, cultivation has been deferred during dry, hot weather until the soil is dry down to the depth of several inches, then cultivate quite deep, wait a week and cultivate a little deeper, and you can dry the soil out as dry as an ash heap. On the other hand, you may cultivate two inches or less in depth, and do so often, and you can keep the soil moist to within one or two inches of the surface during the driest seasons we ever have, and there will be little difficulty with weeds.

After every rain it is very important to cultivate as soon as the soil is dry enough to work. If left a day or two too long evaporation is very rapid, as capillary tubes have again been formed to the surface of the soil by the rain compacting it or forming a crust; this should be broken as soon as it can be done without causing the soil to bake or become hard by stirring.

Cultivation should always be done to about the same depth to avoid disturbing the little rootlets that are continually forming in the soil, and these will come as near the surface as they are allowed, for it is there they can get the best supply of food suited to their requirements, hence, the necessity of shallow cultivation to obtain the best results. There may be some exceptions to this method of shallow cultivation, but they are few in this province of Ontario.

(Farmer's Advocate.)

IMPORTANCE OF THOROUGH CULTIVATION.

Mr. W. Somerby draws attention in the *Rural World* to the important results obtained by a system of thorough cultivation which has been carried on by General Sir Arthur Cotton for several years. These results (he says) are not only highly satisfactory, but also most profitable. "This year, which has been one of the most trying ever experienced in this country for several generations, has brought down agriculture to the very lowest ebb, bad enough as it was before. Yet, notwithstanding the unfavourableness of the season, General Cotton's crops, though not equal to his highest average, are most conspicuously and exceptionally good, when compared with the results obtained by the average of ordinary farming. On the first of June he cut his first crop of grass, which yielded at the rate of four and a half tons to the acre as compared with half a ton on neighbouring land, and he expects two more cuttings of two or three tons each. His crop of wheat will, he expects, yield one hundred bushels to the acre - he has had as high as one hundred and forty bushels - and his straw is six feet high, as against six feet nine inches, the usual height in former years, both wheat and straw being of the very best quality, and his other crops are nearly as prolific. All this is obtained by thorough cultivation, a thing hardly understood by the ordi-

nary farmer. The General is no more theorist or visionary, as his vast works in India, where he brought into profitable cultivation many thousands of acres of waste land, which now yield millions of revenue annually; and his coadjutor, Scott Moncreiff, has completely redeemed the revenues of Egypt by his great works, which even the French admit have been pre-eminently successful. General Cotton a short time ago published a full account of his experiments giving a complete statement of the results he has obtained, which are seven times the usual average of the ordinary English farming, and every one interested in agriculture should obtain a copy of it. Landed proprietors, who once boasted about their broad acres, and farmers who rejoiced in their big farms, are awaking to the delusion, and they will find that it is better and more profitable to cultivate fifty acres thoroughly than five hundred acres badly, starving their farms, and starving and ruining themselves. It is preposterous to think that Englishmen cannot compete with foreign nations, who are thousands of miles away, and it is shameful to think that the finest lands in this country should go out of cultivation from a want of a knowledge how to do it thoroughly.

(Gloster Chronicle.)

GUELPH COLLEGE.

The appointment of Wm. Rennie to the position of farm superintendent has assured the success of the farm department. Mr. Rennie was born and brought up on a good farm in Scarborough, east of Toronto. For a number of years he was known as one of the tidest and most successful farmers in Ontario. After a time, he opened a seed store in Toronto, and finally became a somewhat extensive dealer in Clydesdale horses. He carried on the farm, the seed store and the horse business all together, and with marked success. Mr. Rennie is a genial, modest gentleman. He has been very successful in everything he has yet undertaken, and if he fails at Guelph it will be the first time in his life. He says the College farm is in a very different condition from what has recently been proclaimed with such a flourish of trumpets in some of the daily papers. On arriving at Guelph he found the farm so far from being anything like clean, and things generally on the farm in such a shape, that he insisted on the executive committee of the board making a thorough inspection before he entered on his duties, and he has since asked several farmers, who have been misled by the statements in the papers, to go to the farm and see for themselves. Already the students are beginning to express their appreciation of the new order of things under Mr. Rennie. They begin to see the difference between office management and the close, personal supervision of a sharp, competent man, who is always moving about amongst both men and students at work.

(Farmer's Advocate.)

WHEAT-CROP IN THE STATES.

The October Report of the American Department of Agriculture indicates an average yield of wheat of only about 11.3 bushels an acre, on an acreage much smaller than that of last year. It is stated that the average yield would have been much

smaller if a good deal of the inferior portion of the crop had not been ploughed up. The area of the crop has not been yet distinctly announced by the Department, but, from the supposed percentage of reduction, it has been estimated at about 34,595,000 acres or about 3,950,000 acres less than that of last year. On the supposed acreage, at 11.3 bushels an acre, the total crop would amount to 390,923,500 bushels, or over 125,000,000 bushels less than the quantity officially given for 1892, which is now known to have been greatly underestimated. A year's consumption in the United States is about 370,000,000 bushels; therefore, according to the latest estimate, there will be very little of the new crop to spare, and exports will be mainly derived from the surplus hold over from the last cereal year.

(Agricultural Gazette)

SAVES HALF THE NUMBER OF MEN.

The best machine for harvesting beans of which I know is manufactured by Miller & Co., Caledonia, N. Y. It cuts two rows, 28 inches apart, at a time, horses straddling the rows by means of a long neckyoke and long whiffletrees, which come with the machine. A span of horses and one man can cut about 8 or 10 acres a day, with five or six men to follow to pick up and pile the beans. The number of men depends upon how clean the beans are; that is, free from grass and weeds. If the beans in pods are hard, dry and solid when drawn in, they can be thrashed at once; but usually we leave them for four weeks that they may sweat, or season. We have regular bean thrashers, good for no other thrashing, which will thrash from 500 to 600 bushels a day. We grow on an average 125 acres, and the average yield is from 15 to 25 bushels per acre. The cull beans are fed to sheep raw; and boiled and fed to hogs and cattle. The vines are worth about as much as clover hay for feeding sheep or young cattle. (1) The bean harvester saves about half the number of men and a great deal of back-ache. The average yield per acre depends on the kind of soil and the condition. The greatest comes from old sod, meadow or pasture land, plowed in the fall or early in the spring, well cultivated, and planted from June 1 to June 10, with an 11-toothed drill, using three teeth, planting three pecks of beans to the acre. (2) We also have a regular bean planter, which is manufactured at Brockport, N. Y.

V. P. BROWN.

(R. N. Y.)

FEEDING MANGELS IN GERMANY.

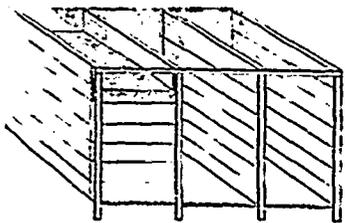
All kinds of cattle are fed extensively on mangels in middle and south Germany as well as in France and England, and they are one of the most important and safest crops we grow. We aim to make turnips last from November 1 until Christmas, by which time they begin to get bitter, and then we start on the mangels, arranging the daily ration so as to make them hold out until May 15.

(1) Ob! Ed

(2) Neither pease nor beans are sown thick enough here. The best crop of beans we ever grew had nearly 3 bushels to the acre of seed; 24 inches rows: yield, 54 bushels an acre. Ed.

When the supply is plentiful, I feed 40 pounds per day to each cow in milk and 50 pounds to a steer. They are cut into fine strips. I have fed them for the last 30 years and never known any damage to arise therefrom. They are fed with advantage to young stock, sheep and horses. Mangolds do best the year after the land has been manured. I haul my barnyard manure on clover stubble and seed down the middle of September to rye and winter vetches which give me a heavy crop of green fodder the coming spring, before anything else is in sight. Whatever is left of this on May 15 is cured to hay, the land is broadcasted with 300 pounds of basic slag and 200 of kainit and turned under to be ready on June 1 for the planting of the mangolds. The Eckindorfer is to-day by far the most profitable kind to grow, perfectly cylindrical, smooth and flat at the top, with scant foliage and but one root. Then it is easily harvested and no woody part about it; even specimens 20 pounds in weight are to-day—May 8—fresh and soft all through. We consider 20 tons per acre a good crop. We plant at 24 inches between the rows and keep the ground well stirred and free from weeds.

Mangels are never given alone, but always in combination with hay and straw cut into 1½ inch lengths. As we cannot have the silo, we contrive to get a palatable food in the following manner: A box, shown at Fig. 146, is built out of pine scantling and 1½-in. boards, with the top and front open, the whole divided into three equal compartments, each to hold an entire day's feed for all animals, space being calculated on the basis of two cubic feet for each cow. A three-inch layer of chopped hay and straw is now spread evenly on the floor of the first compartment; then follows a thin layer of sliced mangels, which have previously been mixed with the daily allowance of oil-meal and bran; then another layer of chopped hay and straw, treading down firm as it grows up and setting in the front boards as needed. When full, a board covering



SUBSTITUTE FOR A SILO.

is put on. On the second day the next compartment is similarly filled and on the third day the last one. On the third day we commence to feed from the first compartment; this has now become thoroughly heated and has entered into a sweet fermentation giving an agreeable odor to the whole mixture and the avidity with which it is consumed proves that it is relished. The increased flow of milk shows that the cows are grateful for our having "roots on the brain."

J. F. SARG.

(R. N.-Yorker.)

CULTURE OF BEETS.

What is the cost per acre of raising beets for live-stock? Cost per acre of ensilage corn? Relative value of these two feeds for cows kept for milk? What variety of beet is best? How many tons per acre would be a good crop on good clay loam? In addition

to the manure made on the farm, I can buy stable manure a mile away at a dollar per load. It is said that beets exhaust the soil much faster than corn, but what of that, so long as they are fed on the farm and the manure returned to the land? B. B. Elk County, Pa. [The cost of raising an acre of beets will vary greatly with several conditions. If the soil is already in perfect order, deep, rich, free from weeds, the cost will be about the same or rather more than for an acre of turnips or carrots, or an acre of potatoes. The cost of an acre of ensilage requiring reduced hand labor will be less, and not more than raising an ordinary corn crop. Taking its cost into consideration the ensilage will be commonly preferred, as it may be raised on almost any soil, and will not require the labor necessary for beets, but both have their special advantages. There are many varieties of beets, some of them especially adapted to different localities and modes of treatment, and therefore no one can be pointed out. Varieties of the sugar beet and of the mangel wurzel are commonly preferred, the sugar beet being richest and the mangels most productive. Twenty tons and often much more of mangels are raised on an acre. If you have a good strong soil it will probably pay well to purchase a fair quantity of the manure mentioned, the land being improved for future crops, but much will depend on the mode of application. If applied the previous autumn, so as to become thoroughly incorporated with the soil, it will be worth much more than if spread in the spring and simply plowed under. Fresh manure answers well if thoroughly incorporated. It is important that the land be not only free from the seeds of weeds but clear of all fibrous rubbish, which would clog the seed drill. The drills may be 25 (1) or 35 inches apart, and the plants finally thinned to eight inches for sugar beets or a foot for mangolds. A rapid mode for thinning is sometimes employed in large field culture, by means of a tool cutting eight inches wide and running across the rows at right angles, leaving cross rows four inches wide, which are finished by hand at greatly reduced labor. This mode requires very thick seeding. If the seed is quite fresh when sown, it will germinate freely, but old seed should be scalded and allowed to remain a day or two before planting. With a fine rich soil one inch in depth is sufficient. It is important to keep the crop of beets perfectly clean through the season—an essential not always observed by cultivators.]

(Country Gentleman.)

Poultry-Yard.

POULTRY ON THE FARM. (2)

BY MRS. IDA E. TILSON, WEST SALEM, WIS.

The fall, when yards are full of young stock, is a good time to buy fowls; if a beginner, choose a standard but not fancy breed, and buy as near home as possible, until time and experience determine whether you can

(1) The best English growers make the row 20 inches apart, and thin out to 10 inches, for mangels: sugar-beets are quite a different thing. Eo.

(2) We regret to say that our friend, Mr. Gilbert, of the Ottawa Experiment Farm, is too unwell to send us his usual monthly article.

fly higher and farther. Last fall, I paid \$1.75 expressage on two chickens from the southern part of my state, coming in an admirable "A" shaped cage which was composed of canvas, aside from its light, bottom and frame. If you send my distance for fowls, and would avoid all surprise and disappointment at transportation rates, it may be well that you should inquire the expense in advance, and also charge your shipper not to use unnecessary weight about his cage. For the sake of those who wish to improve their stock, it is hoped the present agitation will cause a helpful reduction in express charges. If there arises any disappointment at appearance of fowls when they arrive, remember fright and confinement may have put them a little "off condition," and suspend your judgment till they recuperate, unless you see a gross fraud has been committed, which I believe seldom occurs. I remember once buying some Wyandotte eggs that hatched chickens with almost every shade of leg color and style of plumage. I named the seven, "Ringed," "Streaked," "Speckled," "Shaded," "Barred," "None-such," and "Seek-no-further," but when they grew up, dark legs turned lighter, orderly plumage came out of chaos, beauty reigned and I learned that all composite breeds like the Wyandottes, till thoroughly established, vary somewhat, and any one bird at his different ages may show the successive stages in the formation of that breed. I was glad I had not given a piece of my mind to the one of whom I purchased, when that piece would have been so small. Last year, without enough inquiring into their habits, I bought some pullets which proved to be fond of roosting in trees, something my own hens had not done for years. Several nights witnessed up there and on sheds a roal feathered picnic, which I proceeded to pick. A bamboo fish-pole was found to fill a long felt want as a weapon of dislodgment, and after weeks of measuring my will-power against their won't power, my pullets were properly housed. Roosting and laying outside the hen-house are the bane of many farm poultry yards. I allow neither habit, there is so much danger of loss from strays, midnight marauders and storms. I recollect reading an article, wherein a writer recommended coaxing hens out into apple trees during summer, for the benefit of both trees and fowls, the latter being cool and the former rid of some insect pests. I wish I knew the end of that story. I often think about the man of our nursery jingle, who, when he saw a brambie had scratched his eyes out, jumped into the same bush and scratched them in again. How did that writer coax her hens out of the trees and "scratch them in" their house again? It is true, chickens like to roost in those low, bushy trees, like fruit and nut trees, but it seems to me clean fruit and a hen roost can hardly go in partnership. I also read about a man who put his hens in his hay-mow over winter, and let them bed and lay there, so cozy and warm, I wish I knew the rest of that story, too, and whether other larger stock would eat hay so well. Fowls are such creatures of habit, I wonder how he got them back to their house when summer came and he put in new hay.

Upwards of a hundred years ago, Mother Goose wrote about her black hen which laid eggs higgledy-piggledy for gentlemen. Surely there ought to have been improvement in that time especially now that women too are interested in poultry, and

bidly lays eggs for ladies as well. I for one, see a great saving of time when I know where to find things, and therefore prefer my hens in their house and their eggs in their nests. When I kept those breeds having strong tendencies to roam, I once found under a currant bush a nest of about thirty Hamburg eggs, and father discovered in a fence corner another containing over twenty Polish eggs. Hardly any could be used, they had been so soaked with rain and scalded by hot weather, hence I sell no eggs except those gathered daily in the hen-house. When my hens and I are parted, we have varied experiences. While I was lately away at Lake Monona, my fowls received in the main good care, but egg production fell off greatly, and two eggs had been broken in the nests, which probably occurred because broody hens were not broken up, but, instead, left to fight layers. On the first night of my return I saw, alas, one little, two little, yes, three little pullets, in their nest tailor-like suits of full plumage, sitting on a tree, and was informed the ringleader had done so throughout my absence. I could not exactly have been knocked down with a feather, as the old saying is, because I am too robust, but my heart sank at sight of their collective feathers and bodies far above my head. These particular pullets were hatched from eggs laid by those which troubled me similarly last year. It seems a clear case of heredity, for these chickens never saw old fowls roosting outdoors—even their own mothers continue entirely reformed. "Blood will tell"; family resemblances and peculiarities are plain in people, and a long, choice pedigree is sought for horses and cattle. We have a cow the cream from which churns very quickly into butter. For at least two generations before her the same was true, nor is she the only one of her race inclined to kick. Fanciers believe in heredity in fowls, and have taken advantage of it to impress beauty and symmetry on their product. If they will be sure to add all good qualities of disposition, they can finish Keats' line, and prove it once more true that—

"A thing of beauty is a joy forever."
(Farmer's Advocates.)

CAPONS AS BROODERS.

EDS. COUNTRY GENTLEMAN.—These days of applied science make one utilize every method and means for a productive and useful end. The unsatisfactory and often disappointing use of various artificial incubators and brooders that go to make up chicken life led me to adopt a more natural and simpler scheme. I find so few raisers of poultry know of this adaptation of nature that your valuable columns are sought to expose something which has proved successful, economical and valuable to me, as I trust it may to others, and a vexed question solved.

Years ago, in Louisiana, the Creoles were accustomed to use their capons as brooders when the mink or some other destroying element compassed the death of the sitting hen. In the Middle States it has been a well known fact that a turkey hen can be made to sit at any time of the year; being a larger bird she covers a larger number of eggs. Putting these two bits of knowledge together, we accomplished very good results. At first we hypnotized these birds very scientifically, but as every farmer is not provided with mirrors and crystals, and the birds

object to being brought under the influence, we adopted simple means. Select a turkey hen in her second year; arrange a nest, in which put a number of eggs, either china or ordinary eggs filled with plaster of Paris. Place the turkey upon the nest, and cover her with a barrel, preferably one made for sugar, as it is lined with blue paper. This excludes the light; darkness is necessary. Leave the hen to her meditations for 24 or 30 hours, or longer, after which time she will sit contentedly for two months, leaving the nest only for food and drink. Take away the artificial eggs, and put those under you wish for chickens. When these are hatched, remove the young birds and replace with fresh eggs. For your brooder choose a large fine—not too young—capon. Envelop his head in your hand, and pull into his mouth and gills smoke from a tobacco pipe, the stronger the pipe the better. Shake the cock's head after each blowing, repeating for five or six times until the bird seems unconscious; then place him on the young chickens, and set the box in a dark corner for some six or eight hours, or until the next morning, when this hypnotized capon will carry and care for those young birds like a hen. In my hands this has proved eminently successful, and I commend the process to all.

FRANCIS A. SCRATCHLEY, M. D.

New-York.

BREEDING HABITS OF TURKEYS.—A reporter of the New Westminister, (B. C.) Columbian recently visited the turkey ranch of A. Ferguson at Liverpool. The first object that appeared strange was an old turkey gobbler strutting about alone. There were no hen turkeys in sight, and the visitor inquired about them. Mr. Ferguson replied that he had lots of females, but they were away setting. "Let us go and see them," suggested the reporter. "By all means," replied Mr. Ferguson, "if you will show me where they are." "Do you mean to say you don't know where the turkeys are sitting?" asked the visitor in astonishment. "I know they are somewhere in the back part of the swamp," replied Mr. Ferguson, "but I wouldn't be able to raise a bird if I visited their breeding grounds." He went on to explain that the idea that young turkeys should never get wet was all "bum-kum," an ancient fable, about as correct as the life and adventures of Baron Munchausen. "Turkeys," continued Mr. Ferguson, "prefer to breed in the same localities as sandhill cranes. I have reared young turkeys that had to swim from the place they were hatched in. The old hen never moves after the chicks are hatched for four days, and there is not a particle of egg shell left when the old one starts off. I have made a study of turkeys and their habits, and what I say is correct. North-America is the natural home of the turkey. If left to themselves, the males and females separate during the summer months. It is a peculiar fact that after the beginning of July the gobbler can't gobble any more until he has moulted and got a brand new suit of clothes. The hens have deserted the gobbler already, but will return to him in the autumn, bring back their offspring. Then I will know how many turkeys I shall have."

The Horse.

THE FAMILY HORSE

AN ANIMAL THAT IT PAYS TO BREED IF THE RIGHT KIND.

What is a family horse? We see on street and road a thousand animals dignified by that name, yet differing widely in conformation, speed and gait. Here, we meet a handsome, strong, big, willing horse drawing a neat Surrey, the whole turnout showing that expense is no object; there, we meet a plain honest, plodding slave pulling an over loaded phaeton, and anon a poor old brute suffering from almost all the un-oundness horseflesh is heir to. And yet they are all family horses, within the meaning of the term, and it is a question whether the handsome arched necked aristocrat drawing the Brewster Surrey gives more pleasure to, or gains more health or strength for his master's wife and children, than the poor old "rickle of bones" gives to or gains for his master's wife and bairns, whose only mode of conveyance is the dilapidated remain of a \$50 Cincinnati end-spring buggy.

What then constitutes a family horse? The answer to this question can be found in a thousand different shapes in the brains of a thousand men. Here is one man's idea. Not so long ago a friend of mine came to me and informed me that he had decided to purchase a horse—a family horse, he explained, one that his wife could drive and that her little brother could take care of during the summer season. I then asked the gentleman just about what sort of a beast he wanted. He replied that he thought he wanted a mare, for then he could raise a colt from her each year, and so, after a while, have a horse or two to sell or use; she must be big enough to pull a moderately large phaeton, must not be afraid of electric cars or locomotives, must be warranted not to run away if a breeching strap were to break going down a steep hill, must stand perfectly quiet when tied in the street, and in short must be a perfect angel of a beast, with all good qualities and not a single bad one. In addition to these essentials in deportment the mare must be quite willing to go very slowly when the gentleman's wife was at the other end of the ribbons; but must strike a lively clip when it suited her owner's-pleasure to have a "brush with the boys." Such was this man's idea of what a family horse should be, and impossible of performance though the task may seem, to the great honor and glory of America an horse he it said than in ten days I succeeded in finding the gentleman just such a beast and for a comparatively small sum—less than \$150. The mare was well bred and is, under the able tuition of the lady who drives her, becoming so lazy that in a few months she will be quite as useless in the shafts as the lady is in the driver's seat.

There is probably no more unfortunate animal in the whole wide world than the average family horse, certainly none of which more is expected, and none which gets less in return for what he does. His duties are as multifarious as those of an executive commissioner of a state world's fair board, which are said to be even as the sands of the sea in number, and which are without hard to perform to every one's satisfaction. Let us canvass the duties of this average family horse. He must quite frequently content himself with

a scanty breakfast thrown to him by some irresponsible gossoon, who has a fixed idea that the horse is his natural enemy and treats him accordingly. He—the horse—is shown the curry-comb and brush and, in effect, told to consider himself groomed. The gossoon aforesaid then hastens to his breakfast or his amusements, having disposed of his "chores" to what seems to him the very best advantage. In a short time the same gossoon or some equally irresponsible and incapable person throws an ill fitting and unearned for harness upon the family horse's frame, buckles it up "anyhow," hooks the animal into some heavy vehicle, attaching the traces most likely a couple of holes too long and taking up the breeching straps a couple of holes too short. The bit is rusty, the cheeks of the bridle too long or too short, and the cheek is adjusted to suit some fantastic idea on the part of the person doing the "hitching up." (1)

And in return for this treatment what is the patient animal expected to do? He is expected to proceed leisurely along the street or boulevard or road, as the case may be, to meet with perfectly even balance of mind, anything from a sheet of paper, blown straight into his face by a gust of wind, to snorting locomotives or whizzing electric street cars; in fact, like the tall quadruped made historic by the equestrian efforts of Mr. Winkle, he must be proof against the terrors of "a vaggin load of monkeys with their tails burnt off;" he must stand, for hours may be, with his fore feet in a hole eighteen inches lower than his hind feet; and while driver and her hostess settle the affairs of the neighborhood in particular and of the nation in general, he must chew the cud of bitter reflection upon the nasty rusty bit in his mouth, the fantastically adjusted cheek preventing him from doing anything else, even from removing from his shoulder an obnoxious hard biting fly. At length released from this bondage, he is driven rapidly down town, tied up again in front of some store, and toward dinner time is brought home to be thrust unceremoniously into the stable and then treated by the same gossoon to a repetition of his morning's mockery of a meal.

Being only a horse, of course, he can stand for hours with his harness on, the good, church-going, devout people in the house, with their wraps, hats and coats off, sitting at the festive board and never thinking that perhaps, their faithful servitor in the stable might, perhaps, relish his scanty meal much more without a tight leather band around him and his tail securely strapped there on by the crupper. Dinner over, and the work consequent thereon completed, the family must be taken for a drive. Again, the horse is attached by the ill-fitting harness to the heavy vehicle, and this time he is expected to perform the work of a road horse. His head is turned toward the open country, the whip—the most terrible of weapons in the hands of a woman—is lifted from the socket, and for six, eight or ten miles the poor brute is reminded by the constant flick-flicking of the bow-bedecked silken lash, that he is only a family horse and not possessed of the speed of the roadsters, which now and again pass or meet him. The perpetual chuck-chucking of the bit in his mouth, and the chirruping noise which emanates from the mouth of his driver add to the poor horse's misery, until at length, urged almost to his utmost trotting speed the whole of

his long journey he brings his freight home safe and sound, but himself, fatter by far for the immediate care of a veterinary surgeon than for the tender mercies of the irresponsible gossoon, who jams him into his stall, gives him a couple of bucketsful of water, cold from the well, throws him a measure of oats and a handful of hay, and leaves him for the night to cool out and get rested and rid of his soreness as best he may. (1)

This is no overdrawn picture; though of course, there are many horses who fare better. It would be a hard world if there were not. Age tames the ambition of most animals; but we see many carriage horses well along in years going down the road or boulevard well and strong, driven by men who understand their business, and who see that their horses are properly cared for. But take the average family horse, and we find him slowly drifting along, as though tired of his life and its surroundings. The difference must be attributed directly to the mode of treatment, for every horse is sprightly in its youth.

The Dairy.

SUMMER OR WINTER BUTTER?

You ask for a discussion on the relative cost of butter made in winter or in summer, and the respective profit there is in it. The question is not so simple as your remarks would indicate. It is easy enough to find out what the food of a cow costs and the care of attendance, say, in the months of June and July, and to compare that sum with the corresponding cost of maintaining the same animal in, say, January and February. You can also find her yield of milk or butter in the same months and the prices at which you can sell the produce and so figure out in which period you can reap the greater profit. I venture to say that, in nine cases out of ten, provided other things are fairly equal, the summer months will give you the best results. I say other things being equal, and I mean by this that in both cases the cow has had all the good, nutritious, properly balanced food she can make use of, and that she is in each case in about the same period of her lactation. There is, however, another very important item to be considered, which I think in many cases will reverse the result as to profits. That is, the cost of the keeping of the cow during her dry period and the cost at any rate during the winter, whether she is milking or not. We hear of cows which can hardly be dried off and so give a paying return the year round, but I venture to say that in most dairies, even the very good ones, there is an average period of two months in which the cows are dry, and their keep and care during that period have to be reckoned when we discuss the cost of their product. If they are dry in summer, it has to be charged at summer pasture with hardly any attendance at all. If in winter they have to be fed well on food which had to be gathered, handled and housed, and they themselves, except for milk, require just the same attendance as though in profit. The expense of winter dairying is not the full cost of the food and attendance on the cows' milking in winter, but the difference between the food and attendance on cows milking and cows dry. Another item has to be considered, which is,

(1) Very good indeed. En.

(1) Capital. En.

under which system will the cow give the greater yield and profit in the whole year?

My own experience is emphatically that a cow calving in October will give more milk in the year than if she calves in the spring. When a cow has given milk for six months and is pregnant, there is the natural tendency to dry which is accelerated and aided by the cool weather and drier pasture in the fall of the year in the case of the spring-calved cow. On the contrary, the one that has milked during six months of winter comes out of the barn on to the succulent grass of the spring, which is the most milk-producing food possible to be found, and with the warm weather she is maintained in her flow for some time longer, only drying up in the hot, dry days of midsummer, when she can take her yearly rest from milk to the best advantage.

These considerations put a different complexion on the question of summer and winter dairying than would appear from the bold statement made by Mr. Chapman as to the relative cost of butter in summer and winter. The prices obtained for the butter are a further consideration which varies much according to the circumstances of situation and market, and into which I will not now enter.

SIDNEY FISHER.

Alva Farm, Knowlton, P. Q.

(R. N. Yorker.)

BUTTER-MAKING.

I have seen scores of churnings at dairy schools and conferences in nearly every county in this State, of cream of all dairy breeds, raised in all the deep setting creamers, shallow pans and from the separators; churned and worked by experts, amateurs and hired girls; the cows being in all stages of lactation, and fed on all varieties of rations, or nearly starved to death. Ninety-nine of every one hundred pounds of milk drawn from healthy, properly fed and cared for cows, will make butter that will "stand up and possess good body, flavor and texture," if the conductor of the train is an artist. If he is a "daub," as many of them are, he'll spoil it. That's about all there is of it and the attempt to make the dairymen of this country, or the world, believe that all this depends on the cow and that no other cow than the Jersey can do it, will fail.

There are a great many men in this big country of ours, who own cows but have not gone to Chicago, and not a few of them have sat in their shirt sleeves in the shade, while their cows were chewing their cuds, and read the newspapers, and done some thinking for themselves. Some of them own Jerseys, some own cows of three or four breeds, while some seem contented while milking and feeding scrubs, and some of these men can tell what each and every one of their herd has and can do; therefore, neither the partisan cackle of the organ, the clamor of the breeders, nor the big head lines of their "spread eagle" ads, are going to turn them from "the tenor of their way." One thing the World's Fair contest has proved beyond cavil, and that is, that even the Jersey cannot put sufficient color into the butter, when fed on winter rations, to suit the market standard. I am glad of this for it spikes the little pop gun of the Jersey Bulletin in its senseless howl about "painted butter." There will be no wiping that record out.

DEVONSHIRE CREAM.

Persons on their return from their travels abroad, express surprise that they can never get at home, such delicious cream as they have in England and Scotland. It is known as Devonshire cream, and not many people, in this country especially, know what it is, but suppose it to be the particular rich cream of the country in question, whereas, every American housekeeper may have Devonshire cream on her own table, if she will take the trouble to prepare it. Rich, new milk is put in a very shallow (1) vessel, with an extended surface, and is then set on the range, where the milk will be warmed, but on no account must it boil, or even scald. The heat will cause all the cream to rise to the surface in a very short time, and the pan is then taken off and placed in the ice box, or in a cool place. When thoroughly chilled, the cream may be taken off, and will be nearly of the consistency of newly made butter. This is put in to jars, and at breakfast is helped with a spoon and is delicious with oatmeal, jams, berries—everything, in fact, that ordinary cream is used for, its merits being, that not only does one obtain the richest cream, but it will keep two or three days without becoming sour. Why this English dainty is not used in this country to the same extent as in England, is to be wondered at, but our dairy folk seem to know nothing about it.

(Scientific American.)

THE NEW NAME FOR JERSEYS.

CONDENSED MILK FACTORIES.

The breed fight of dairy cows at Chicago has shown that the Jersey can be bred to produce a wonderfully large quantity of milk. Contrary to my expectations, and contrary to what I wished might have been the results, the Jersey cow not only outmilked the Guernsey but the Short-horn also. Some Jersey men are much pleased at this result. I am not; I would have been much better pleased if the Jersey had come out third in quantity and still have remained first in pounds of butter, as she might have done, and as I believe she could be bred to do. I know I shall be met with the objection that the only way to increase the amount of butter is to increase the amount of milk. "You can't feed fat into the milk, you know." But, I don't know; I only know that that is a claim whose only foundation is that the contrary has not yet been scientifically proven. Not to say any more on that point, there is another that, I think, no one will dispute, and that is if fat can't be fed into the milk it can be bred into it. The Jersey came to us a condensed milk factory; we are breeding her into a skim milk factory. We used to say, when twitted with the small amount of milk the Jersey gave, "Yes, that's so, but see how rich it is!" Now, we (some of us) can say, "Huh! We can beat you Short-horn fellows now, and we are going for the Holsteins." Wouldn't it be better to go in for a little condensation, both in the size of the Jersey and the quantity of milk she gives? A. L. CUOSBY, in *National Stockman*.

THE COW'S VACATION.

The remarks of Mr. Newton on page 695 in regard to the prolongation of

(1) On the contrary, the Devon people use pans 9 inches deep, and the milk stands from 16 to 30 hours before heating. Ed.

the milking period of cows that drop their calves in October, is, in most essentials, an experience that I have had with my own winter dairy. I am now fully satisfied that a winter-milker will give at least one-fourth more milk than the same cow would if she freshened in the spring months. When I began winter dairying, the cows were practically dry from July 4, until they commenced dropping their calves in the fall, but now the cows—substantially the same ones—give us no let up in milking, and we go to the creamery every day in the year. This season, dry as it has been, when the first cows became fresh in early September, the daily yield of milk was over one third that of the best day's yield of last winter. Only a few of the cows now but will milk up to within four to six weeks of calving. There is no guess work about the thing with me, for I find there is no vacation in milking the cows, and the scales that weigh the milk twice a day, tell the increase.

Ohio.

J. G.

(R. N. Y.)

BUTTER FAT IN CHEESE.

At the recent gathering of the New-York Dairymen's Association, Dairy Commissioner Robertson was called on to answer a question about butter fat in milk and its relation to making dividends in the manufacture of cheese and responded as follows: I had about 250 boxes of cheese made for the express purpose of finding out the comparative value of milk with different percentages of butter fat, in the manufacture of cheese. In three factories I had a vat constructed with three compartments. Then I had the milk from the several patrons classified, and I had a given quantity of milk put into compartment No 1. In it was put milk as near as possible averaging 3 per cent of butter fat; in the middle compartment, milk averaging 3½ per cent; and in the other, milk averaging 4 per cent. The cheese were made in the same manner, and weighed to discover the yield of cheese from the milk of different qualities. I had the cheese examined to compare their market value, and I came to the following conclusions: From a general average of the milk in one compartment, which contained 3.86 lbs. butter fat per 100 lbs. of milk, I obtained 9.22 lbs. of cheese; from milk containing 3.45 lbs. of butter fat I obtained only 8.92 lbs. of cheese. In every case there was a gradual reduction in the quantity of cheese when there was a less quantity of butter fat in the milk. But the increased yield of cheese was not in direct proportion to the increased percentage of butter fat, that is, milk containing 3 per cent. of butter fat will yield a certain quantity of cheese, but if you take milk having one-third more butter fat, or 4 per cent., it will not yield one-third more cheese. At the same time, such milk is worth one-third more for cheesemaking, and thereby hangs a tale. You see, if it does not yield so much more cheese it makes a quality of cheese so much better that the market value of cheese from 100 lbs. of milk is a third greater than that of cheese in the other case.

Questioned for an explanation of this point Mr. Robertson said; It will hold more water with success. My experiments show that difference.

Milk containing 3 per cent. of butter fat will make a given amount of cheese, Milk containing 4 per cent. will not make one-third more cheese. But you should gain nearly 150 lbs. of cheese for 100 lbs. of butter fat, or a pound and a-half to one pound. By the same method of manufacture, 10½ lbs. of cheese would be obtained from 100 lbs. of 4 per cent milk, if 9 lbs. of cheese be obtained from 100 lbs. of 3 per cent. milk. From 0.2 of 1 per cent. butter fat in the milk we obtain 0.3 of 1 per cent. of additional weight in the cheese. If you take this same calculation, you will get from 10,000 lbs. of milk, say, 400 lbs. of cheese. Then if you get that from 3 per cent. milk, you will get from 4 per cent. milk 1,050 lbs. of cheese. Now 900 lbs. of cheese at 10c. would bring \$90, and 1,050 lbs. at 10½c. would bring you \$108.93. It will often pay a man better to make his milk into butter than into cheese. But when he takes milk to a cheese factory that is richer than 3½ per cent. of butter fat, he is entitled to more per 100 lbs. than the man who takes poorer milk. His milk will increase the quantity of cheese by 3 lbs. for every additional 2 lbs. of butter fat which he sends; and it will improve the quality. The calculations based on the number of tests I have mentioned, lead me to this conclusion: That every man who furnishes milk to a cheese factory, containing between 3 per cent. and 4 per cent. fat, should be paid for that milk according to the quantity of butter fat.

(Country Gentleman.)

A GOOD SHORT-HORN DAIRY IN NEW-HAMPSHIRE.

ED. HOARD'S DAIRYMAN.—I have been taking your very valuable paper for only a few months, but I like it very much. I notice that the writers in the DAIRYMAN quite generally prefer the Jersey as a dairy cow, and that there is no breed like it. I will say a word for a class of Short-horns we have her in New-Hampshire and what they have done for me.

I commenced to keep a record in 1889 from ten cows that I have raised from calves. In 1889 the average per cow was 306 pounds of butter. In 1890 it was 307 pounds; in 1891, 320 pounds, besides the butter, milk, and cream used in our family of from six to ten. The cows are from 8 to 10 years old. I am getting 30 cents a pound for my butter the year round. I have now a Babcock tester and I think it will prove a great help to me. One of my cows has tested the past year by the Babcock about 475 pounds of butter, and one other nearly as much. That is what the Short-horns are doing for us in N. H. Yours truly,

GEN. W. STANLEY.

Cheshire Co., N. H.

It is a pity Mr. Stanley did not send some of his herd to the Dairy-test at the Fair.

CANADIAN CHEESE AT CHICAGO.

Cheese at the World's Fair October competition; two United States and one Canadian Judges:—Canada won 109 awards, in Cheddar cheese made previous to 1893, United States won none. Canada took 369 awards against 45 to the United States in Cheddar of this year's make (factory class); also, Canada had 130 exhibits of cheese scoring higher than the highest United States cheese.

Quebec had one hundred and thirteen exhibits of cheese of 1893, and took one hundred and five awards; four lots scored ninety-nine and a half points out of a possible hundred points for perfection. No cheese scored higher than these.

Quebec had forty-five exhibits of cheese of 1892, and won forty-two awards. This demonstrates both excellence and keeping qualities.

The Mammoth Cheese, weighing 22,000 pounds was tested by the judges and pronounced perfectly sound, of clean sweet flavour, and solid body. It was scored at 95 points out of a possible 100 for perfection, after being exposed to the heat of summer in a glass-roofed building. They recommend a medal for the big cheese to be awarded to the Dominion Dairy Commissioner.

Chicago, 19th Oct. 1893.

have been born and bred. Aphides upon roses in gardens near the nesting-places of many sparrows are never touched by these birds.

Miss Ormrod also "for the prosecution" says:—

Speaking now just of my own observations (a few among many), I have seen a field of corn left unreaped solely on account of the damage from sparrows, which I saw rising in thick clouds from the ruined crop; and I can speak also from personal knowledge of the martins (truly insectivorous birds, being driven away by the sparrows where I had no power to protect them.

And again:—

I have also in my care, as a most excellent collection for reference, a large number of bottles containing the contents of many of the sparrows shot by the late Colonel Russell, of Stubbers,

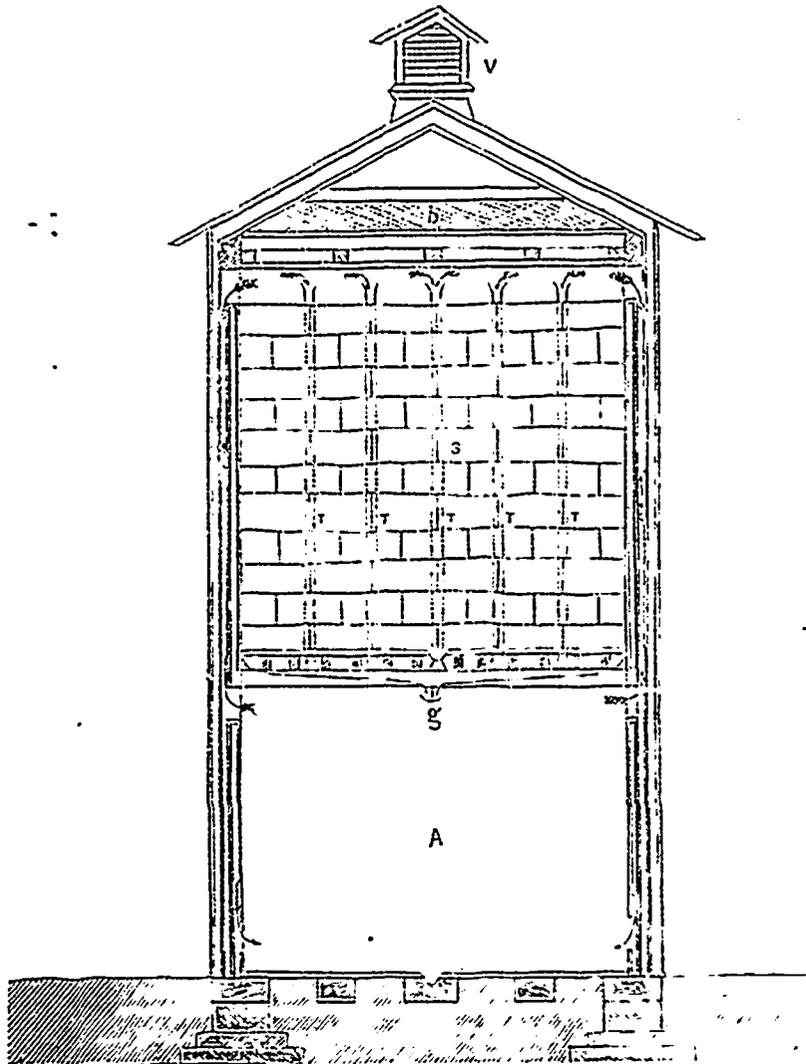
much. Mr. J. H. Gurney sums up with ability, adducing a "table of diet," compiled from 755 dissections, which proves beyond doubt that the sparrow's customary food from January to December is corn. Nevertheless, he concludes:—

All that can be said is that the matter is not settled yet. That the sparrow does more harm than good under ordinary circumstances is proved; but it is not clear that in the case of the exceptional abundance of some noxious insect, or some noxious weed, it might not be of great service. Upset the balance of Nature by exterminating sparrows, and you may pay an unknown penalty. With this in view, it may be wise indeed for the Norwick Chamber of Agriculture to recommend their being kept within bounds, but never that they should be entirely exterminated. (*Eng. Ag. Gaz.*)

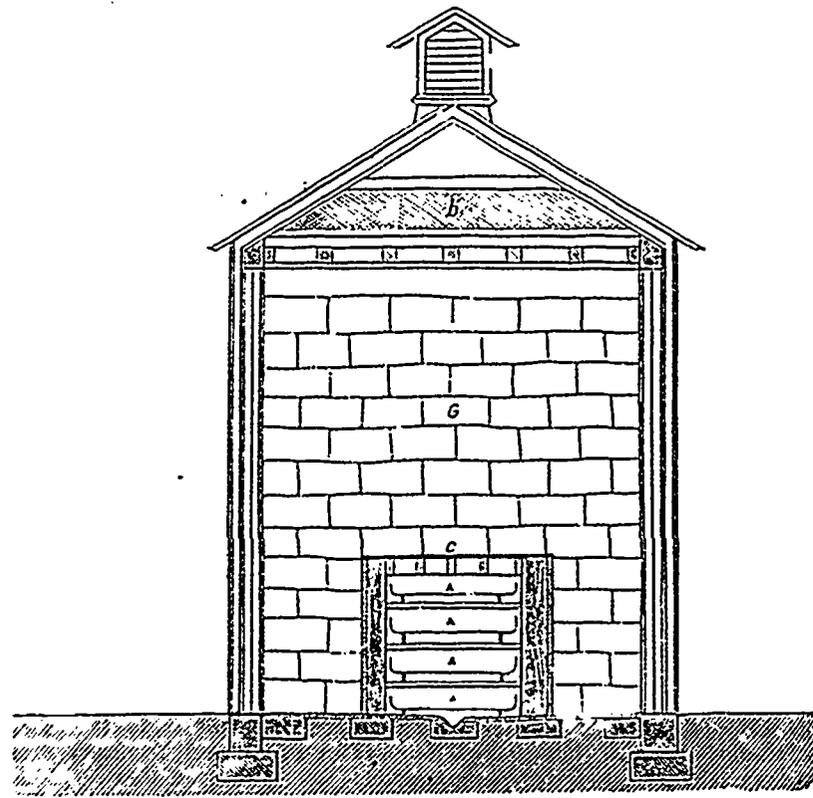
shall gladly hail the removal of horns by breeding them off, and we believe dehorning will greatly hasten that result.

(*Vt. Watchman.*)

GYPSUM IN STABLES.—Müntz, one of the great agricultural authorities in Germany, does not find satisfactory results from the use of gypsum (plaster) as a means of fixing ammonia in stables. We have before this expressed our own opinion to the same effect, in which we are supported by the authority of the well known Phillip Pusey, President of the English Royal Agricultural Society, one of the most distinguished *agronomes* of his day (1850) and of Girdwood, a more modern practical man as well as an able chemist. Our position is that two substances in prac-



A. Cold chamber.—G. Corded ice.—t. Refrigerating pipes.
C. Condenser.—g. Gutter.—V. Ventilator.—b. Sawdust.



G. Ice-house.—b. Sawdust.—a. Drawers on rollers for cooling butter.

Ornithology.

THE SPARROW.

The house sparrow, as we anticipated, is condemned as a hopeless rogue and vagabond. Mr. Charles Whitehead testifies against him as a thief of corn, a destroyer of fruit, of peas, young lettuces, cabbages, and other tender green vegetables.

Colonel Russell relates that he once examined, in Essex, the stomachs of forty-seven nestling sparrows, and only found the remains of six small insects in the entire lot, their crops in most cases, being filled with green peas and greens. That sparrows have no appreciable effect upon aphides is proved over and over again by the fact that these insects have swarmed upon plum, damson, and other trees close to where hundreds of sparrows

Essex, to whom we are indebted for careful watch and record of observations of sparrow life for fifteen years or more. The large proportion of wheat grains in these bottles is to be seen at a glance.

The late Rev. F. O. Morris and the Rev. Theodore Wood take up the cudgels on behalf of the sparrow, but cannot make out a good case for him, though they make the most of the exaggerated charges brought by the prosecuting counsel. The best point they make is that the defendant is essentially a home lover, never travelling far from his nest in search of food, and therefore commits depredations only on those portions of the wheat and barley field close to human habitations. Mr. Wood, with ingenuity that does credit to his legal acumen, also suggests that the corn in the sparrow's crop may have been honestly obtained by patient investigation of horse droppings, etc., but in doing this he asks us to believe too

much. We have known some emotional people who would almost go off in a fit of hysterics at the idea of dehorning a cow, and yet would let the same cow shiver all winter in a cold stable, rather than put themselves to the trouble of boarding up the cracks. And the very same class of people will cry out with violent emotion at the idea of keeping a sheep killing dog tied up, "when the poor thing wants to run out, and it is entitled to his liberty as much as anybody." And you can't get them to look any farther, or to take in the idea that this dog will surely use his "liberty" to harass and slay their neighbor's sheep. They will pat him, and pet him, even when he slinks home with his teeth full of wool. We have never got one of this class to say a word, or hear a word, about the very much more severe surgical operations than dehorning, constantly practiced on other domestic animals, with no better reason than exists for that operation. At the same time we

tically a dry state can exert hardly any effect upon each other. Mr. Warrington, one of the leading agricultural chemists of England, says that he "has found gypsum very effective in the laboratory for preventing the loss of ammonia from urine." Just so: *urine is a liquid.*

AN ICEHOUSE.

(*Illustrated.*)

The accompanying sketches are taken from a book on dairying by Mr. F. MacCarthy. In describing them, he says: "In these icehouses, I advise the owner to make a small open space in the middle of the ice, to be fitted up with drawers of zinc or tin, to hold the butter." This refers to the smaller figure.

The Flock.

SALE OF THE LITTLECOTT HAMPSHIRE DOWNS.

The dispersal of Mr. F. R. Moore's famous Hampshire Down flock took place at Littlecott on Saturday week. The numerous arrivals from all parts of the country testified to the keen interest that was taken in the sale. Mr. Moore's success as a breeder was the subject of general remark, both at the luncheon, over which Mr. Joseph Carpenter presided, and at the sale-ring, where Mr. Lawrence conducted the auction. The sheep were brought to the hammer in working condition, but their excellence was unquestionable. They came into the ring full of all those perfect qualities of the Hampshire Down type which have made them famous, and the result was a spirited competition, which, considering the present prices and the late period of the year must be considered satisfactory from a business point of view, though in no way representing the high values which Mr. Moore's sheep deserved to attain. There were instances in which the biddings seemed to partake of something of the encouragement which the breeder of so fine a lot of sheep should receive and possibly those who became the possessors of some of the best specimens will always be gratified at having had this opportunity of introducing the Littlecott blood into their flocks. The sale commenced with fourteen ram lambs and rams, which had either been in service in the home flock this season or let at the annual hiring, Mr. W. Newton securing lot 4 at 23 gs. (this being the lamb which let at Britford for 51 gs.); Mr. J. K. Read, lot 8 at 20 gs., and the noted old sheep Sainfoin at 10 gs., the remainder making from 5 gs. to 9½ gs. Of 193 two-tooth ewes which followed, Mr. Dibben bought No. 7 pen at 170s. per head; Mr. Hole, for Lord Rothschild, at 80s., 74s., and 70s.; Mr. Postmouth at 84s; Mr. Fitcher at 62s; Mr. W. E. Pain at 61s and 53s.; other pens selling at 51s., 50s., 47s., 46s., 45s., &c., the average being 55s. 6d. 170 fourtooth ewes averaged 63s., Mesrs. C. and T. Coles buying at 180s.; Mr. C. Waters at 130s.; Mr. Hole at 120s.; Mr. J. K. Read at 86s., 78s., 55s., 52s., and 51s., Mr. W. C. Young at 76s.; Professor Wrightson at 68s.; Mr. Cox, for Mr. Dalgey, at 61s., others making 55s., 54s., 52s., 50s., &c. 179 six-teeth ewes averaged 53s., Mr. H. Lambert buying at 200s.; Mr. Hole at 120s.; Mr. Wrightson at 110s.; Mr. J. Flower at 70s.; Mr. Jones at 78s.; Mr. W. C. Young at 68s.; others making 55s., 53s., 52s., &c. Forty full-mouthed ewes averaged 67s. 3d., Mr. Lambert buying at 100s., Mr. W. C. Young at 88s., and Mr. J. K. Read at 72s. and 62s. 230 ewo lambs averaged 40s.

INDIGESTION IN LAMBS.

HENRY STEWART.

One of the most frequent disorders of the domestic animals, and it may be truthfully add of their owners as well, is indigestion. But while this disease is a typical one as regards its peculiar symptoms and development, yet it is due to so many causes as often to mislead the observer, and even the expert, by reason of its reflex action on the nervous system. Thus the symptoms differ so much,

and commonly appear to be due to other and unsuspected causes. Indigestion leads to malnutrition, as well as to special disorders of the stomach and bowels, and the immediate result of malnutrition is disturbance of the nervous functions. Thus we have cases of paralysis, partial or general, as in the paraplegia of pigs, lambs and sheep, in which the hind limbs are suddenly paralyzed and the animal crawls on its side or belly by means of its forelegs only, or the fore part of the body may be affected and the animal go about on their knees, or stagger and fall, unable to rise for some time, when they stand a few minutes and go down again. Necessarily, this disease is fatal, as motion is prevented, and the food being undigested, it is only a question of time when the patient dies of starvation, and yet the real cause is not suspected. Young lambs, when become suddenly weak, go off their food, pine away, are affected by obstinate diarrhoea, or prolonged costiveness, cough and breathe with evident distress (the result of the disorder on the pneumo-gastric nerve) and become emaciated. It is true that sometimes these same symptoms are caused by the presence of knots of thread worms in the lungs, and the obstacle to perfect respiration having a similar result on the system as defective nutrition, the same condition of the animals, will prevail, or the worms may gather in the stomach and have precisely the same effect as the indigestion produced otherwise. And these worms may even cause such a depraved appetite as to induce animals to swallow earth, chew wood, or to cause lambs and sheep to swallow wool, all or any one of these gathering as balls or wads in the stomach or intestines, and giving rise to the most acute symptoms of indigestion, with its nervous reactions. Thus lambs at this season may be troubled by worms, the common filaria especially, which is supposed to be the cause of anaemia or paper skin, and is very often so, but at times is apt to be only a proximate cause of this condition, as leading the lambs, or even old sheep, to pull and swallow wool. This forms what are known as wool balls in sheep, or hair balls in calves, or sanding in horses, males and cattle.

The only remedy is prevention. Sometimes the lambs or calves may gather wool or hair from the udders of their dams, and at the season of the shedding of the hair this often happens. The effect of this accidental disturbing agent in the stomach is to produce an unnatural desire for more

of this foreign matter, and then the lambs or sheep begin to pull wool and swallow it, and when this collects in the stomach or large intestines the troubles described supervene. When there is this danger, and there always is, the udders should be closely clipped; vermin, as lice or lice or fleas or or ticks should be got rid of, so that the animals will not collect wool or hair by licking or biting themselves; and on the first appearance of this the best substance to remove the foreign irritative matter is oil raw linseed, or olive, or castor, in doses of half an ounce for a young lamb, given in milk and shaken into an emulsion.

Am. Ag.

AMERICAN BROOM CORN.

F. G. HAWKINSON, KANSAS.

RAPE FOR SHEEP.—I grow rape after rye and barley, harrowing the ground well so as to retain moisture. Sow any time in July or August. I can advise sheepmen to grow rape whenever they need something to tide over from the first frosts to snow and they have moisture enough to grow turnips. It will be found invaluable, I think.

W. W. KELLY.

Minnesota.—R. N. Y.

Implants and Fodder Cutter, Carriers, Straw Cutters, Root Pulpers and Slicers for horse and hand power, Earth Scrapers, Wheelbarrows and other Farm and Garden Implements. Wm. Evans, Seedsmen, corn, McGill and Foundling Sts.

Ask for our Catalogue.

EASTERN TOWNSHIPS HOME OF THE AYRSHIRES.

A. McCALLUM & SON

IMPORTERS AND BREEDERS OF **Ayrshire and Berkshire Swine**

DANVILLE, P.Q.

Have always on hand and for Sale.

Young Stock of the Most Approved Breeding for deep milking properties.

PRICES REASONABLE.

YOUNG PIGS FOR SALE.

FOR OVER FIFTY YEARS

AN OLD AND WELL-TRIED REMEDY.—Mrs. Winslow's Soothing Syrup has been used for over fifty years by millions of mothers for their children while teething, with perfect success. It soothes the child, softens the gums, allays all pain, cures wind colic, and is the best remedy for Diarrhoea. Is pleasant to taste. Sold by Druggists in every part of the World. Twenty-five cents a bottle. Its value is incalculable. Be sure and ask for Mrs. Winslow's Soothing Syrup, and take no other kind.

A HAZELTON PIANO FOR LONDON

A very fine "Hazelton Bros." parlor grand piano, purchased by an English gentleman at L. E. N. Pratto's piano rooms, Notre-Dame street, has been shipped to London, Eng., last week per SS. Montovidean.

—A Persian walnut upright piano may be seen in the windows of L. E. N. Pratto's piano ware rooms, No. 1676, Notre Dame street. With regard to its musical qualities, it is only necessary to mention that it is a duplicate of the instrument bought a few weeks ago, by Prof. D. Ducharme, organist of the Gesu, for his own use as well as that of his advanced pupils. It has been manufactured at Mr. L. E. N. Pratto's establishment and it is a beautiful piece of art work. The case might be mistaken for marble although it is perfectly natural wood without the least stain or graining.

IMPORTANT NOTICE To Farmers

We are offering for sale at very reasonable prices

FOUR PURE BRED GUERNSEY BULLS

ALL PRIZE WINNERS

AT THE LARGEST SHOWS IN CANADA

—ALSO—

A beautiful lot of PURE BRED SHROPSHIRE LAMBS

AND

A few choice one and two

Shear Imported Rams

Write quick and get our prices.

IN YORKSHIRES

We lead as usual, and we have sold every spring pig we can spare, but have twenty grand sows to farrow this fall.

Send in your orders for young: gs at twenty dollars a pair not related. We give a registered pedigree with every animal sold.

Address:

J. Y. ORMSBY, V.S.,
MANAGER.

ISALEIGH GRANGE FARM
DANVILLE, P.Q.

CANADIAN PACIFIC RAILWAY

MANITOBA and the CANADIAN NORTHWEST

LANDS AT REDUCED RATES

The Canadian Pacific Railway Company are making a general reduction in the price of all lands listed at \$4.00 per acre and upwards, amounting in most cases to from 25 to 33½ per cent.

NOW IS THE TIME to secure lands in well settled districts at low figures.

Only one tenth of purchase money required down, balance, nine annual instalments, interest six per cent. Deferred payments made to fall due after harvest to meet convenience of farmers.

Full information contained in the Canadian Pacific Ry. Company's publications which are sent on application.

Each volume contains numerous illustrations of farming operations, &c., upon the prairies. The readers shall find also a great number of letters from settlers in the country telling of progress, and a good map of the country. Copies will be mailed free to any address upon application to any Agent of the Canadian Pacific Railway, or to

W. F. EGG,
District Passenger Agent,
MONTREAL.

L. O. ARMSTRONG,
Colonization Agent,
MONTREAL.

N. B.—The Manitoba corn has just been awarded the first premium at the Millers' International Exhibition, at London, in England.

Do not miss the excursions during harvest time and apply for circulars about particulars.

**TO DAIRYMEN
BABCOCK TESTERS**

Whey Gates Centrifugal Separators
DANISH AND ALEXANDRA STYLES
POWER AND HAND
WRITE FOR CATALOGUE

J. DE L. TACHE
MOUNTAIN HILL, QUEBEC.

NOTICE

To Secretary-Treasurers of Municipalities

Secretary-Treasurers, District Magistrates, Lawyers, Notaries and Bailiffs will always find at our establishment all the blank forms they may require.

ALSO:

VALUATION ROLL BLANKS,
PERCEPTION ROLL BLANKS,
PARLIAMENTARY VOTERS' LISTS, &c

To Registrars.

Registrars may be sure to find just what they want in the shape of

REGISTERS,
INDEX TO IMMOVEABLES,
BOOKS OF ADDRESSES,
RECEIPT BLANKS.

And all forms requisite for registry and law offices, at

Eusèbe Senécal & Fils,
No. 20, Saint-Vincent Street, Montreal.

THE MUNICIPAL CODE

— OF THE —

PROVINCE OF QUEBEC

(NEWLY AMENDED)

WITH

The Quebec Licenses Act, with Amendments; the First Part of the Quebec Election Act, with Amendments; together with Reported Decisions relating thereto, the Law on Masters and Servants, the Law concerning Furors and Furries, a Rural Calendar and an Analytical Index, Etc., Etc.

Price, by mail, . . . \$1.50

PRINTED and PUBLISHED BY

Eusèbe Senécal & Fils

No. 20 ST. VINCENT STREET
MONTREAL.

JUST BEING PRINTED.

SPEECHES

—OF—

SIR GEORGE ETIENNE CARTIER

Published in French

Under the direct control of the

HONOURABLE JOSEPH TASSÉ

LARGE in-8°. 800 PAGES

ORNEMENTED WITH A STEEL PLATE PORTRAIT OF

Sir George Etienne Cartier

Full cloth binding with a gold plated Coat of Arms and Motto on the Cover.

For the Volume - \$4.00

APPLY TO

EUSEBE SENEAL & FILS

20 St. Vincent Street, MONTREAL.

EUSÈBE SENÉCAL & FILS,

Printers, Publishers and Bookbinders

No. 20 ST. VINCENT ST., MONTREAL.

o | BOOK, JOB | AND | RAILWAY | PRINTING | o

Book work. Legal forms. Way bills, Pamphlets, Blank forms. Insurance forms. Periodicals, Catalogues, Railway forms, Prospectuses, Receipts, Business cards, Hand-bills, Circulars, Visiting cards, Posters, Bills of lading. Funeral letters.

LEDGERS, **BLANK**
JOURNALS, **ACCOUNT**
CASH **BOOKS.**
AND
DAY BOOKS.

OF ALL SIZES, MADE TO ORDER. BOUND IN CALF (WITH OR WITHOUT RUSSIA BANDS), VELLUM OR BASIL.

Ruling to any Patern required.

Bill Books, Merchant's Memo. Books, Invoice Books, Letter Books, Account Current Books, Banker's Pass Books Policy Books, Contract Books.

FACTUMS EXECUTED AT SHORT NOTICE