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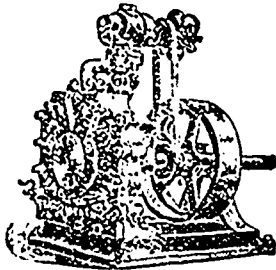
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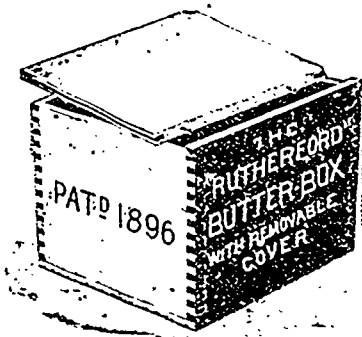
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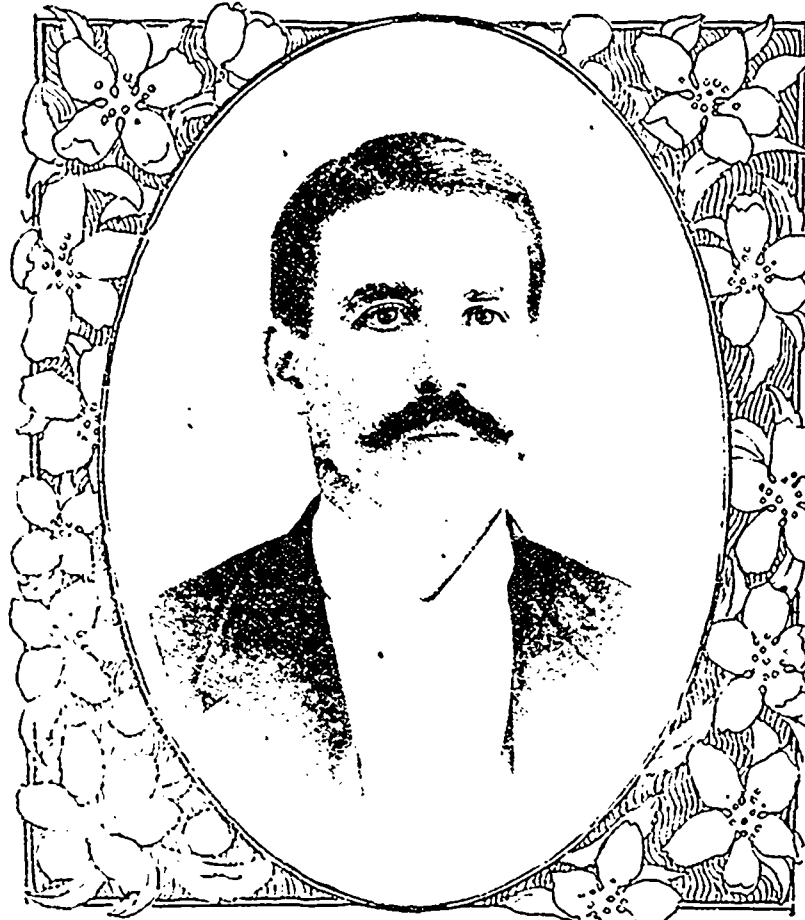
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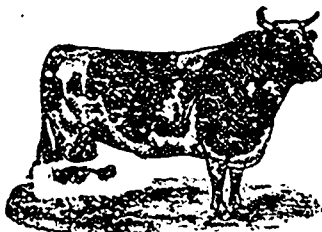
PROF. LOCHHEAD.

LEADING TOPICS FOR THE WEEK.

Co-operative Pork Packing. Great Britain's Cattle Importations. Canada's Dairy Products Pure and Unadulterated. The Stockbreeding Outlook in Great Britain. Pure Air in Country Homes. The Threshing Problem. Growing Demand for Young Lambs. Our Dairy Schools. Crop Estimates for Ontario, etc.

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Ayrshire and Guernsey Cattle.
Improved Yorkshire Swine.



Shropshire Sheep. Our Ayrshire herd is headed by the noted bull, Matchless 7560, sire, Glencairn III., imp. 6955; dam, Nellie Osborne, imp. 5358.

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CARGILL STATION AND P.O., ONT

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Is sold under a positive guarantee to cure, or money is refunded



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70c. per 100 lbs.; 500 lbs. for \$3.00 here. CASH WITH THE ORDER.

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Good Shearling Ram and some fine Rams and Ewe Lambs; also some good young Yorkshire Sows and Boars. Some good young Heifers in Calf for sale.
John Cousins & Sons,
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LAMBS—Canadian bred yearling and ram lambs. Yearling ewes and ewe lambs for sale, reasonable.
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For Sale.—A fine lot of ram and ewe lambs, bred from imported sire and dams. Prices to suit times.
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One mile north of Claremont, on C.P.R.

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Berkshire Sows ready to breed. Boars fit for service. Twenty Plymouth Rock Cockerels, choice.
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OXFORD SHEEP
BRONZE TURKEYS
Have an aged imported ram, and first-class ram and ewe lambs for sale.
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SOUTHDOWN SHEEP

Champion flock at World's Fair. Awarded 20 prizes—10 firsts.
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Shorthorn Heifers by Statesman, and Berkshires by Baron Lee. Eight weeks old. Also one Baron Lee boar, ten months old.
Bolton Station, C.P.R. and Palgrave, G.T.R.
A. J. Watson, Castlederg, Ont.

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SWINE.

Large English Berkshires.

Stock and show boars, 6 months and over. Sows in farrow. Young stock, 2 months up, good length. Write for prices. Mention FARMING.
O. R. DECKER, Chesterfield P.O., Ont.



LARGE

ENGLISH BERKSHIRES

My herd won 306 prizes, 11 diplomas, and 5 medals since 1882. Choice stock of all ages for sale.
GEORGE GREEN, FAIRVIEW, ONT.
Stratford Station and Telegraph Office.

AGENTS WANTED.

We want reliable agents in all unrepresented districts. Liberal terms will be given to men of integrity and ability who will devote their whole time to the work. Address
FARMING, Toronto, Ont.

CHESTER WHITES.

I have on hand forty head of pigs from two weeks to four months, both sexes, pairs not akin, from imported and home-bred stock.
H. CHALK, Calton, Ont.

FAIRVIEW SHROPSHIRE.

Imported and Canadian RAMS and EWES

Choice lots to select from for breeding purposes, also first-class fitted sheep of both sexes for showing.

JOHN CAMPBELL,
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Large English Berkshires

I have a share of some of the best. I keep them for breeding more than for show.
Prices according to quality.
Also S. L. Wyandotte, S. G. Dorkings, P. Cochins, B. Minorcas, S. Hamburgs. Eggs in season, \$1 per setting.
Geo. Thomson, Bright, Ont.
Sunnyside Farm, 3 miles from Bright Station, G.T.R.

Parkhill Berkshire Herd and Poultry Yards.—I have on hand a very choice lot of Young Boars ready for service; also a nice bunch of Young Sows 5 months old and up; the stock is A1, and the prices are right. Poultry—Cockerels and Pullets, of the following breeds, ready to ship: B.P.N.W. Rocks, S.L. & W. Wyandotte, Black, Brown, and W. Leghorns, L. Brahmas B.B. F. d Games, Pekin Ducks, Toulouse Geese, and M.B. Turkeys. Write for prices. D. A. GRAHAM, Parkhill.

Chester Whites and Berkshires

For a boar or sow of any age, that is right in quality, right in breeding, right in price, and guaranteed to be all right. Address,
JAMES H. SHAW,
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Yorkshire Hogs.

ONLY ONE BREED KEPT
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WRITE FOR PRICES.
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JOS. CAIRNS, Camlachie, Ont.

IMPORTER AND BREEDER OF

Chester White Hogs

Stock on hand for sale at all times, of all ages, and at right prices.

R. H. Harding,

Breeders and Importers of Dorset Horn Sheep and Chester White Swine
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Anyone in want of a young boar fit for service, or a young sow for mating, should write to me before ordering elsewhere, as I have quite a few left at right prices.

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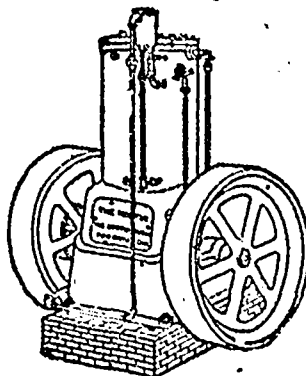
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SPECIAL EXHIBITION NUMBER

Northey Gasoline Engine



The far-seeing farmer will readily recognize its practical labor-saving qualities for all work requiring power on the farm. The running expenses are light only 1 cts. per h. p. per day. Needs no experience to run, no one to watch it while it is running. It will do more hard, constant work—according to our customers—than either the windmill or steam-engine.

Our booklet tells all about it. Write for it.

Northey Manfg. Co., Limited, Toronto
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TAMWORTH SWINE. For Sale Boars fit for service. Sows in pig; also bred to order. Large quantity of young pigs. Address, JOHN BELL, Clydesdale Farm, Amber P.O. Agincourt Station, G.T.R. and C.P.R.

GOLDSRING HERD TAMWORTHS.



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Stock for Sale of all ages and both sexes
EGGS FOR HATCHING from L. Brahmas, Buff Cochins, Partridge Cochins, P. Rocks, S. G. Dorkings, Black Minorcas, S. White and Brown Leghorns, Rose Comb White Leghorns, B. B. Game, and Cornish Indian Games at \$1 for 13. Mixed eggs if desired; also Aylesbury, Rouen, and Pekin Ducks' eggs at \$1 for 9. A few grand cocks for sale of White and Brown Leghorns, Cornish Indian Game, Pyle Game and B. B. Game stock.
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A. ELLIOTT, Pond Mills, Ont.

Poland Chins, Duroc Jersey and Tamworth Swine, Oxford Sheep, Collie Dogs, Pekin Ducks, W. ite Holland and Bronze Turkeys. Eggs for sale.

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Largest herd of choice-bred Herefords in Canada. Winners of both the first and second herd prizes at Toronto, Montreal, and Ottawa, 1895, 1896, and 1897; also silver medals same years for best bull and best female. This herd is of the "up-to-date-beef kind," combining early maturity and quality.

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Farm 2 1/2 miles from G.T.R. station.

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The Up-to-Date Carriage Horse...

Is the product of the HACKNEY-TROTTER CROSS.

Most profitable for the farmer to raise. Lowest percentage of misfits; earliest maturity and least expensive to fit for market.
Four fashionably-bred Stallions, rising 3 and 4 years, 1,100 to 1,250 lbs., solid colors, high and levelactors. Must be sold to make room for young stock and harness horses. Prices reasonable. For pedigrees and particulars, address
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Affiliated with the University of Toronto.
Patrons: Governor General of Canada and Lieutenant-Governor of Ontario. The most successful Veterinary Institution in America. Experienced Teachers. Classes begin on Wednesday, Oct. 23rd 1897. Fees, \$65 per session.
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Fashionable Hackneys and Prize-Winning Clydesdales

OF THE... BEST KNOWN STRAINS For Sale

A number of superior Hackney stallions and mares, sired by such well-known prize-winners as Onawa, Banquo, Seagull, and the world-renowned JUBILEE CHIEF, winner of the Hackney championship at the World's Fair. Also a number of Clydesdale stallions and mares sired by such famous stock-getters as Sir Walter and Eastfield Laddie.

MATCHED HIGH-STEPPING CARRIAGE HORSES, FASHIONABLE-COBS, SUPERIOR SADDLE HORSES, HANDSOME PONIES.

R. BEITH & CO., - Bowmanville, Ont.

Thorncliffe Stock Farm.

I have on hand the best young Clydesdale Horses and Mares on this continent. Bred from the well-known sires, Prince of Wales, Dartney, Macgregor, Energy, Lord Montrose, The Ruler, Carruban Stamp, Knight Errant, and other celebrities.



SHROPSHIRE. Orders can now be booked for Shearling Rams, Ram Lambs and Ewes, sired by the celebrated prize-winning English ram, Bar None. Also rams and ewes of this year's importation.

SHORTHORNS. Choice young Heifers and Bulls by the celebrated Crackback bulls, Northern Light and Vice-Consul.

My stock in the above lines were very successful at all the large shows last year. Call and inspect stock before purchasing elsewhere. Terms reasonable.



ROBT. DAVIES, PROP., TORONTO, CANADA

FARMING

VOL. XV.

AUGUST 23RD, 1898.

No. 51.

FARMING

AN ILLUSTRATED WEEKLY JOURNAL DEVOTED TO FARMING AND THE FARMER'S INTERESTS.

Published every Tuesday by

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TOPICS FOR THE WEEK.

Important Announcements.

The end of this month closes the first year's publication of our weekly edition. It is needless to say that the year about to close has been a very satisfactory one to us, and, we have good reason for believing, to our numerous readers as well. We will begin another year by issuing a special Fair number. This special number will be something unique in the line of agricultural journalism. It will contain, at least, forty-eight pages of good, solid reading matter, profusely illustrated, and will be distributed in large numbers at the leading Canadian exhibitions. All our advertisers should have a special advertisement in this number, and we would call their attention to the special announcement on page (441) of this issue.

FARMING will again have a tent at the Industrial Fair this year, which opens on August 29th. This tent will have the same location as last year, that is, opposite the Farmers' Institute tent, and in close proximity to the cattle rings and horse stables in the north-eastern portion of the grounds. If you visit the Fair be sure to give us a call. We shall be glad to see you, and to give you any information at our disposal in the way of helping you to enjoy the Exhibition. Pens, ink, and paper will be at the disposal of stockmen and others who may care to use them, and we shall take it as a favor if all our friends will avail themselves of the privileges of the tent at any time during the Exhibition.

Agricultural News and Comments.

Germany offers a remarkable object-lesson to the world in the way she manages her forests. In that country about 11,000,000 acres of forest lands are owned by the State, and the yearly revenue is not less than \$20,000,000. About 20,000,000 acres of forest lands are owned by private individuals, and their profits are almost as large. During the last fifty years these revenues have been constantly on the increase.

The number of co-operative associations in existence in Germany at the end of May, 1897, was 14,842, as compared with 13,005 on May 31st, 1896. Of these 3,315 were agricultural societies. The advance of co-operation in that country during recent years has been striking. The membership of these co-operative associations runs up in the millions.

An exchange says that hens can be produced that will lay two hundred eggs per annum, and out-

lines the plan to follow thus: Take a hen that lays one hundred and twenty eggs per annum. Some of her chicks will lay, say, one hundred and fifty eggs in a year. From these pick out layers and so on till two hundred eggs per year or better is the result. It is pointed out that the males should be bred from as prolific layers as the females.

There is found to be an unpleasantly large deficit in connection with holding the Royal Agricultural Society's show at Birmingham last June. The deficit amounts to about £5,000 and the society has had to sell that much Consols in order to pay off the debt, which will leave England's great National Agricultural Society in a somewhat hampered condition.

The prosecution of parties in Great Britain for adding "preservatives" to dairy products still continues. Recently a shop-keeper of Chester, England, was charged with selling pure, fresh cream from a certain creamery, which, on analysis, was found to contain twenty-three grains of boracic acid to every pint of cream. The case was dismissed on the ground that it was not proven to the court's satisfaction that the cream contained anything injurious to the health. It is probable that an investigation will follow to ascertain definitely if boracic acid is injurious to the health.

A writer in *The Country Gentleman* gives the following formula for feeding ducklings: The first meal after being placed in the brooder is corn-meal and bran equal parts, with a handful of coarse sand introduced; all thoroughly mixed with cold water and fed in a moist condition. After they are two days old a small quantity of soaked beef scraps is added. This mixture should be fed five times daily, but only just as much as they will eat up clean. They should always come up to the feed board lively and hungry.

According to returns compiled by Mr. Geo. Johnson, Dominion statistician, there are 559 creameries, 2,556 cheese factories, and 203 combined cheese and butter factories in Canada. In 1871 there were only 353 cheese factories; in 1881, 709; and in 1891, 1,565. The average output of each factory in 1871 was \$4,570; in 1891, \$6,250, and in 1897-98 it is estimated to be \$5,570. The value of the total output in 1871 was \$1,602,000; in 1881, \$5,460,000; in 1891, \$9,780,000; and in 1897, about \$15,800,000. In 1871 there were no creameries in Canada; in 1881 there were 46; in 1891, 170; and in 1898, 559. In 1891 the output per creamery was \$5,400, and at this rate the total output for 1897-98 would be valued at \$3,018,600, an increase of over \$2,000,000 since 1891.

Sharp grit is a necessity when fowls are fed on grain and solid food. Gravel is the best grit if the gravels are sharp and not too round. The hen needs grit to grind grain in her gizzard. If she is fed on soft food too long or too much she is not liable to require grit. A great deal of the so-called cholera is nothing more than indigestion, occasioned by too little grit of the right sort. If the right kind is available the hens will find it and take just what they want.

It is estimated that the total exports of agricultural products from the United States for the year ending June 30th last will reach upwards of \$825,000,000. In 1892 the total exports of these products amounted to \$799,323,212. The ex-

ports of breadstuffs take the most prominent place, as they reach the large sum of nearly \$1,000,000 for each business day, and the total this year will be \$100,000,000 in excess of last year.

Correct management is everything. Two men living next to each other may have the same breed of cows and the same conditions for conducting the dairy business, but one may make a success of it and the other a failure. Why? Because one puts more skill and intelligence into the management of his herd than the other. He sees that they are properly fed, have the best of care, and that every little detail in connection with the care of the milk, etc., is looked after.

Canada's Dairy Products Pure and Unadulterated.

The following extract from an address, delivered by ex-Governor Hoard at the last session of the Wisconsin Cheese-makers Association, is a good recommendation for Canada and Canadian dairy products:

"Canada has been a very sharp competitor with us. Do you know why? Because Canada is smart enough to make a pure article; not to make one pound of skim cheese; not to make anything like a filled cheese. And they put into force and operation through the whole of the Dominion a condition of education, and the public tone and sentiment which prevail are as strong as law against the production of any inferior goods."

There can be no doubt that a large share of the success which has attended the sale of Canadian dairy products in Great Britain has been due to the fact that our butter and cheese are pure and unadulterated. The Americans fully recognize this fact, and are now making strenuous efforts to regain the place which they lost some years ago, when skim-milk cheese, and "bogus" butter became factors in their export trade in dairy products. So far a fair measure of success has been met with, and several of the states have now on their statute books laws for controlling and regulating the manufacture and sale of spurious dairy goods, which, if properly enforced, will do much to curtail the make of oleomargarine and "filled" cheese. But there is a lot of ground to cover yet before the dairy products of the United States have obtained the reputation for purity which Canadian dairy products now have.

Canadian dairymen, however, have no cause to tear the efforts now being put forth by the Americans to regain their lost reputation. It would be better for dairymen the world over if no "filled" cheese or "bogus" butter were allowed to be made in any country. It cannot be denied that there is quite a large market for these spurious products in Great Britain, and especially for "bogus" butter. Wherever there is a pound of oleomargarine sold it displaces a pound of good butter, and to that extent curtails the market for the pure article. If there were no oleomargarine made in the United States or anywhere else, there could be none sold, and consequently, in every land, there would be a greater demand for the real article. Consequently, it will be to the interest of the Canadian dairyman if the American dairyman succeeds in prohibiting the make and sale of all spurious dairy products in the United States, and for this reason, if for no other, the former should give the latter all the assistance he possibly can.

Ex-Gov. Hoard touches the real keynote of the situation here when he points out that public tone

and sentiment in Canada are as strong as law against the production of any inferior goods. In many ways public opinion counts for as much as law in the suppression of any evil, and it would be a sorry day for Canadian dairy products if public sentiment should wane in regard to keeping them up to the highest possible state of perfection. Legislation on the subject is a necessity, but if it is not backed up by a strong public sentiment it will not be very effective in preventing the making of spurious dairy products. We are pleased to note, however, that there is not the slightest indication of a waning of public sentiment in Canada against the making of "filled" cheese or "bogus" butter. In fact, there are signs that public sentiment is growing stronger on this point, and that Canadian dairymen everywhere are more determined than ever to maintain the high reputation of Canadian dairy products, and not to allow it to be sullied in the least jot whatever by the making of "bogus" dairy goods.

The American dairymen have a big task before them in educating public opinion on their side of the line up to the same high plane which now prevails in Canada. But that is the line along which their main efforts should be directed, if they wish to be ultimately successful in suppressing the manufacture and sale of "bogus" dairy products within their borders. There may be State laws and National laws galore, but if they are not backed up by a strong public opinion they will not be effective in obtaining the object for which they were enacted.

Great Britain's Cattle Importations.

In a recent issue of *The Farmer and Stock-breeder*, of London, England, a very interesting table is given showing the number and value of the imports of cattle from the United States, Argentina, and Canada for the first six months of 1896-'97-'98. The following summary of this table will be of value as showing the average prices obtained for cattle from these countries:

IMPORTS FROM THE UNITED STATES.

First 6 months of	Number imported	Gross value.	Average value per head.
1896.	215,575	£3,666,991	£17 0s. 2d.
1897.	217,791	£3,778,944	£17 7s. 0d.
1898.	209,785	£3,556,737	£16 19s. 6d.

IMPORTS FROM ARGENTINA.

1896.	44,491	£598,569	£13 9s. 0d.
1897.	43,090	£687,558	£15 19s. 1d.
1898.	54,538	£519,812	£15 0s. 7d.

IMPORTS FROM CANADA.

1896.	26,007	£426,790	£16 8s. 2d.
1897.	34,824	£570,373	£16 7s. 6d.
1898.	30,048	£492,827	£16 8s. 0d.

The valuable part of this table for the Canadian farmer and cattle breeder is the greater value of United States cattle as compared with those from Canada. Why this should be so it is hard to say. We have just as good conditions here for producing beef cattle as the cattle raiser of the United States has, and, if our feeders have the right kind of cattle to begin with, there appears to be no adequate reason why as good beef cannot be produced in Canada as in the United States. There is one gratifying fact, however, and that is, that, while the average value of the United States cattle for the first six months of 1898 decreased 7s. 6d. as compared with the same period of 1897, the average value of Canadian cattle has increased somewhat. But there is still an increase of 11s. 6d. in the value of the United States cattle per head for the first six months of 1898 over that for Canadian cattle for the same period.

Another important point to notice in this table is the increase in the value of the cattle imported from Argentina since 1896, showing a gain averaging £2 per head in two years. There is also a large increase in the gross value of the cattle imported from that country during the past two years. While the Canadian imports show a large increase for 1897 as compared with 1896, there is a decrease for the six months of 1898 as compared with the six months of 1897. Argentina shows a

gradual increase since 1896, being £221,243, or over \$1,000,000. This is something for our cattle feeders and breeders to think about. Our export cattle trade is too important to let slip out of our hands. But Argentina seems to be making such rapid strides of late years that we will have to look to our laurels or our export trade in beef cattle will become a very secondary affair.

Co-operative Pork Packing.

Another co-operative pork packing concern was organized at Palmerston, Ont., a few weeks ago. Mr. Joseph Stratford, General Manager of the Farmers' Binder Twine Co., of Brantford, conducted the opening ceremonies. This is the third co-operative pork-packing factory to be established in Ontario. Early in the spring factories were started at Stouffville and Bowmanville in Eastern Ontario. These we presume have been in operation during the summer. By the time the season is over the farmers patronizing them will have gained sufficient experience to be able to judge whether the scheme is to bring the splendid results its promoters claimed for it.

The movement has spread outside of Ontario into the other provinces. There are one or two co-operative pork-packing factories in Prince Edward Island, and if we mistake not one in Nova Scotia. An effort was recently made to establish one at St. John, N.B., though the promoters were not all farmers. This one has fallen through for the present for the simple reason that it is thought by the promoters that the farmers of N.B. would not be able to supply enough hogs to keep the establishment running. This might be the case for a time, but we are convinced that if the factory were once established it would not be long till an ample supply of hogs could be procured.

The movement, then, for co-operative pork-packing establishments is becoming very wide spread indeed. Without any desire whatever to throw cold water on the movement, or in any way to disparage those contemplating engaging in the business, we would like to point out that farmers should not be too hasty in establishing concerns of this kind. If a sufficient amount of ready capital can be secured and every facility provided for in the way of curing the meat in the proper way and in selling it to the best advantage, all well and good. But, if the business cannot be put on a proper basis on the start, it will only prove a failure in the long run. We have heard the question reasoned out in this way: The co-operative cheese factory and creamery have proven a complete success, and why should not the co-operative pork packing establishment? We do not think the two admit of comparison very well. While very little risk is involved, and comparatively little capital is required, to operate a co-operative cheese factory or creamery, a very large capital is required to start a co-operative pork-packing establishment on a proper basis, and a very great risk is run if the right kind of hogs are not secured, and if the quality of the bacon manufactured does not suit the export trade. Besides, the co-operative pork packing establishment cannot dispose of its product as easily as can the cheese factory or creamery. While the latter have a market at their very door, the former will have to arrange for the disposal of its products in Great Britain and elsewhere, and it may be difficult to find a ready market when wanted.

We merely draw attention to these points in order that farmers may know somewhat of the risks incurred in the establishment of these co-operative pork-packing concerns. As we have previously stated we have no desire whatever to put a damper on the scheme, as we believe that where such an establishment can be successfully operated the farmers in the locality will be benefited.

Growing Demand for Young Lambs.

Lambs for mutton seem to be growing in favor in the great markets of the world. There seems to be a demand for all kinds of lambs. Some

markets prefer very young lambs, others the light lambs, and still others like the very heavy lambs. In catering for this trade the producers should endeavor to supply the trade with the kind of lambs the market demands. In the United States some buyers will not take heavy lambs for the reason that when dressed they have too much the appearance of old sheep. Young lambs and light lambs are always in demand, and there seems to be a good opportunity to develop a market of this kind. There is good money in raising lambs for the Easter or early market. This can be done without any great difficulty if preparations are made for it.

To produce early lambs early-maturing breeds of sheep should be kept, such as the Dorsets, Suffolks, or Hampshires. The lambs from these should not be kept till they are eight or ten months old if a heavy lamb is not required. The great advantage of early-maturing lambs is that they can be sold for the early market, or can be kept later and sold as heavy lambs. The consensus of opinion among many American breeders is that it pays better to sell lambs young than to raise them and sell them as fat sheep.

The Stockbreeding Outlook in Great Britain.

The Mark Lane Express, in discussing this subject in a recent issue, points out that, owing to excessive importations of meat, graziers can no longer buy store stock at rates low enough to pay for fattening them. This is a rather serious state of affairs, so far as the British stockfeeder is concerned. If present conditions do not change very soon he will have to turn his energies in some other direction. The same journal goes on to say that though there is likely to be an abundant crop of hay, roots, etc., yet the markets will not warrant the buying of stockers and feeding them by the British farmers. This has been the situation in regard to the feeding of cattle for several years past, and now there is an indication that sheep-feeding is going to be crowded out in the same way.

The same journal goes on to suggest remedies for this state of affairs, and points out that the graziers might remedy their position by supplying the butchers and consumers with carcasses which will cut into small joints with a considerable proportion of lean meat. These sell well, and will command two cents per lb. more than the larger joints. The way to do this is to adopt the early maturity system, or to produce what in this country is known as "baby" beef. This requires good stock to begin with. It is also recommended that graziers should buy in lamb ewes in the fall, and feed them well till lambing, when both ewes and lambs should be fed highly, so that the latter would put on flesh rapidly, and be ready for market when nine and ten months old.

Shire-horse breeding is also recommended as a substitute for grazing cattle and sheep, as this is likely to pay better than the latter. But the line of policy advised as being more likely to give the best results is for the British farmer to go in for pedigree herds and flocks, so as to have a revenue in bulls and rams instead of fattened heaves and wethers. It is pointed out that the only bright spot in the darkened horizon is the foreign demand for British pedigree stock, the outcome of skilfully bred herds and flocks. There does not seem to be any likelihood of this enterprise being overdone, so long as the ranch men and farmers of Argentina and other new countries require to improve their flocks and herds by importing better blood. Besides, Canadian and American breeders will need to import more or less of new blood in order to maintain the standard of their herds. There, therefore, seems to be a brighter outlook for the British stock breeder along this line than along any other, and if the report of the sale of Lincoln sheep published in last week's issue be taken as a criterion, high prices are likely to continue for pure bred stock for some time to come.

The point for the Canadian feeder and breeder in this discussion is the possibility of the British feeder and breeder dropping out of the race altogether in supplying the consumers' trade, and devoting his attention to the breeding of pure bred stock. As he gradually drops out of the arena there will be a wider field open for the producer on this side of the water.

The Threshing Problem.

Some weeks ago we discussed this question and pointed out some of the failures of the system adopted by most farmers in getting the threshing done. In that discussion we took the ground that the present system of the farmer of depending upon his neighbors for help in threshing was a most expensive one, and that the farmer would make more money by hiring the help necessary when threshing. We also drew attention to the method in vogue in some districts of Quebec where the farmer has his own thresher, which he operates by means of a tread power or small steam power.

Though many farmers may not agree with all that we have said in this regard, we think that if they go into the question thoroughly they will find very much in favor of our contention that the present plan of changing works in order to get the threshing done is a very expensive one. Aside from the extra expense and loss of time incurred in paying back "threshing" work in the early autumn, when the corn and the fall plowing has to be done, there is the further danger of the threshing machine bringing dirty seed to the farm. Of course, this may be avoided by the persons in charge of the machine taking every precaution in cleaning out thoroughly every crevice and nook in the thresher before leaving one farm to go to another. But every one who knows anything at all about the work of threshing is well aware that this is seldom done, and that it is always the aim of the person controlling the machine to get to the next place and get started to work as soon as possible. There are many farmers in nearly every locality who would otherwise have had clean farms and pure seed had it not been for the fact that bad seed was brought on to the place by the threshing-machine coming from a dirty farm. The travelling threshing-machine is a very effective means of distributing wild oat seed through the country. These grains, because of their peculiar nature, adhere to the machine more than any other kind of seed, and therefore are easily carried from one farm to another.

A good way to avoid all these difficulties is for the farmer to have his own threshing machine, and to do his own threshing whenever he wishes. There will be no danger then of carrying bad seed from one farm to another, and the farmer will save money and precious time by not having to send help to assist his neighbor in threshing when that help is needed at home. This threshing question is well worth considering, and we would like to hear from some of our readers on the subject.

Pure Air in Country Homes.

Pure air is an essential to good health. Yet how often we find people completely ignoring this law. Farmers and people living in the country are frequently greater transgressors in this particular than the people living in the city. The latter, owing to their surroundings, often have not a plentiful supply of it, and consequently know how to appreciate the value of pure air more than the former. In the country where pure air is abundant, or should be abundant at all times, the farmer does not appear to put the value on it that he should.

The country home, perhaps, has less of pure air than one would expect from its surroundings. Very often the house is built in a way that prevents the air from being absolutely pure throughout. For instance, if a house is built without a

cellar under every portion of it, it will be difficult to maintain the air pure all through the house. The portion of the house under which there is no cellar will be permeated by the close, stagnant air which gathers there. Where there is a cellar there can be a current of pure air all around the house, both in the living rooms and underneath them. The value of this cannot be overestimated when the health of the family is considered.

Very often the air about a country home is saturated by some cess pool near the house, caused by depositing the washings, etc., from the kitchen. Again, the hog pen or hog-yard may be in such proximity to the house as to prevent the air from being absolutely pure. When such is the case, it is largely because the hog-pen has been utterly neglected, and is nothing else than an abomination of filth and dirt. If the pen is kept clean and is a respectable distance from the house there should be no bad flavors from it. In many other ways the pure air necessary to the country home may be contaminated and made injurious to the health; and farmers should see that everything in and around the house is conducive to maintaining pure air in the home.

There is also a disposition in many country homes to exclude the sunlight. Nothing is so necessary in maintaining pure air in the home as the renovating, purifying rays of the sun. For this reason there should be no trees so close to the house that they will altogether exclude the sunlight. A great many disease-producing germs cannot thrive in the presence of direct sunlight, and consequently there should be as much of it as possible in every home.

Kansas Hard Winter Wheat.

Considerable interest is now being taken in the West in a new hard winter wheat grown in the State of Kansas. This variety is known as the Turkey wheat, and is said to have been introduced by the Mennonites who settled in Central Kansas in 1873 and 1874 from the southern or Black Sea district of Russia. For a long time this wheat was disparaged by millers and grain buyers, but its hardiness and almost unfailing yield caused it to be grown in ever-increasing areas in spite of the lower prices it commanded. About ten years after its introduction some of the progressive millers of the state discovered the superior flouring qualities of this wheat, and adapted their machinery so as to mill it properly. From that time they have carried on the manufacture of what is known as Kansas hard wheat flours, which are now recognized as superior to any other in the United States, and equal to the famous Hungarian flours.

The wheat is of a hard, flinty character, and millers were not able to do anything with it until they constructed apparatus for steaming, and thereby softening the grain before grinding. The price paid at first was from five to ten cents below that for the softer wheats of like grades. The farmers, however, because they were always sure of a big yield, and sometimes twice as much per acre as other varieties, persisted in sowing this wheat. They reasoned that, if they had to take ten cents a bushel less than for other varieties, it would pay them better to grow this Turkey wheat because of the much greater yield.

Of late years millers in the Northern States have been buying this wheat extensively to mix with the hard spring wheats from the Dakotas, in order to keep up the standard of the Minnesota spring wheat flours. The demand for it seems to be increasing. One large firm of grain merchants, operating in several of the large American cities, speaks of this wheat as follows: "We find the Turkey hard wheat, grown in Kansas, to be in excellent demand for export as well as domestic use, and think if more acres were devoted to its cultivation farmers would be better off, but they should get fresh seed occasionally from its native land." The best variety of this hard wheat is that known as the Crimean.

We give this somewhat detailed description of this hard wheat, as it may be interesting to wheat growers here. We are not aware that this variety is grown in any part of Canada. If it has been grown we would be pleased to hear from those who have had experience with it. It may be that our winters are too rigorous for its growth, and that it would not thrive under our climatic conditions. If no experiments have been made with it, it might be well if some of our experimental stations would take the matter up. There is a variety of spring wheat grown in some sections of Ontario known as the wild goose wheat, which seems to have some of the characteristics of this Kansas wheat.

Professor Lochhead.

We have pleasure this week in presenting our readers with a very good likeness of Wm. Lochhead, M.A., M.Sc., the newly appointed Professor of Biology and Geology at the Ontario Agricultural College, Guelph. He is the fourth son of Mr. Wm. Lochhead, a prominent farmer and dairyman of the Listowel district, and was born in the township of Elma, county of Perth, in 1864.

Professor Lochhead received his early educational training in S.S. No. 2, Elma, from which he passed into the Listowel High School at the early age of eleven years. For six years he attended the High School, and in 1881 matriculated into McGill University, winning a general proficiency Exhibition scholarship. At McGill he won scholarship after scholarship, proving himself proficient in mathematics as well as in science. In 1885 he graduated with the degree of B.A., securing first rank honors in the Natural Sciences. Sir Wm. Dawson took a very great interest in the young graduate, and much of Professor Lochhead's success as a teacher of science can be attributed to the careful training he received from the veteran Professor and Principal of McGill University.

Mr. Lochhead, like many young men with limited means and a strong desire to further the cause of science, decided to follow the teaching profession. After a course of training at the Kingsto. Training Institute he secured his first position in the Perth Collegiate Institute; but resigned it six months later to accept a Fellowship in Geology at Cornell University. He returned from Cornell to Perth and taught two years, after which he went to Galt, where he remained five years in charge of the Science Department of the Collegiate Institute.

The years 1894 and 1895 saw him again at Cornell, devoting himself to biology and geology, working under the guidance of such inspiring teachers as Professors Comstock, Terr, Atkinson and Gage. He learned their methods of work, and the secrets of their great success as investigators and instructors. In 1895 Prof. Lochhead secured the degree of Master of Science (M.Sc.) from Cornell University. He taught in Napanee during the following year, but resigned in 1896 to accept the science mastership of the London Collegiate Institute.

Though eminently successful as a teacher, Prof. Lochhead has been interested in other matters outside of the profession. During the present year the Educational Department honored him with the appointment of examiner in Methods in Science for the Normal College at Hamilton. He has always taken the deepest interest in the pursuit of scientific knowledge whenever the opportunity occurred, and the Ontario Entomological Society has found in him a good worker and an enthusiastic collector of scientific specimens.

From the foregoing it will be seen that Professor Lochhead enters upon the responsible duties connected with the Department of Entomology and Biology with a practical and comprehensive training in the natural sciences which eminently fits him for discharging those duties in a way that must result in great benefit to the college and to agriculture generally.

THE REGULATIONS GOVERNING THE MILK TEST AT THE OMAHA EXPOSITION.

As we have had considerable discussion in these columns of late as to the best method of conducting a milk test at a fair, it may be interesting to our readers to know the scale of points to be used in the milk competition at the Omaha exhibition. The following is the scale of points to be used and the rules and regulations governing the test:

Rule 1. The test shall be for ten days, and shall be open to all cows. Heifers with first calf shall be in a class by themselves.

Rule 2. All cows entered for competition shall be under control of the committee in charge during the test and for two days prior thereto. They shall be fed and milked under the direction of the committee, the owner of the cow being allowed to name the person who cares for and milks the cow. They may receive at the direction of the owner any amount or proportion of the following foods, viz.: corn and oats ground, wheat, bran, lin seed meal, cottonseed meal, corn silage, clover hay, timothy hay, and prairie hay.

All feed used shall be weighed and samples analyzed, and each cow shall be charged with the dry matter therein. But the same feeds and the same proportion of each shall be continued throughout the test in each case. When the ration is adopted only the amount of feed can be varied. Each cow shall be charged with the total amount of food given, no allowance being made for food not consumed.

Rule 3. As a basis for comparison one point shall be allowed for each pound of solids not fat, and ten points for each pound of fat contained in the milk. The points obtained in this way shall be increased by one per cent. for each week of lactation after the first month. In no case, however, shall more than twenty-five per cent. increase be allowed for advancing lactation. The number of points obtained in this way divided by the number of pounds of dry matter in the food consumed during the test will give a factor which represents the relative food economy of the cows being tested.

This factor multiplied by an arbitrary number (five is recommended) shall be added for each day of the test, and the sum shall constitute the score. The cow having the largest score obtained in this way shall be considered the best.

Premiums of equal merit are offered for cows and for heifers; in case of tie between cows and heifers each shall be entitled to the same premium.

The chief feature of this scale, as compared with the tests conducted at the fairs here, is the fact that the food is taken into account. It is hardly possible to do this satisfactorily with less than a ten days' test. Would it not be possible to conduct such a test during the Toronto Exhibition? Of course it is now too late to do anything this year. But the plan is worth considering for another year; and if all the varied interests concerned would co-operate we could have at the Industrial Fair for 1899 a ten-day milk test in which the food consumed could be taken into account.

CROP ESTIMATES FOR ONTARIO.

The Ontario Department of Agriculture has issued its annual estimate of the crops for the present year. The acreage given is final, but the yield of grain will be revised in November from actual threshing results. The following is a summary of the report:

Fall Wheat.—1,048,182 acres, yield 25,305,890 bushels, an average of 24.1 bushels per acre. In 1897 the estimated yield was 23,988,051 bushels, averaging 25.2 bushels per acre. The average for the sixteen years, 1882-97, was 20.2 bushels per acre. The acreage this year is the largest since 1883,

when 1,097,210 acres yielded only 10.6 bushels per acre. On the basis of acreage, yield, and quality the Ontario fall wheat crop for 1898 may be set down as the best since 1883 at 1st. There were only 25,159 acres plowed up this spring, as against 55,477 in 1897, which may partly account for the big increase this year.

Spring Wheat.—389,205 acres, yielding 6,714,516 bushels, an average of 17.3 bushels per acre. In 1897, 323,305 acres gave 4,868,101 bushels, or 15.1 bushels per acre. The crop this year is the largest since 1891, in which year 510,634 acres gave 10,711,538 bushels or 21 bushels per acre.

Barley.—438,734 acres give 12,048,245 bushels, or 27.5 bushels per acre. In 1897, 451,515 acres gave 12,021,779 bushels, or 26.6 bushels per acre. The acreage has fallen steadily since 1890, though the yield of late years has been about stationary.

Oats.—2,376,360 acres yielding 82,132,026 bushels, or 34.5 bushels per acre. In 1897, 2,432,491 acres gave 86,318,128 bushels, or 35.5 bushels per acre. The great increase of recent years may be seen from the fact that the average for the past sixteen years was 1,875,240 acres, giving 64,476,051 bushels, or 34.4 bushels per acre.

Peas.—865,961 acres gave 15,681,782 bushels, or 18.1 bushels per acre. In 1897, 896,735 acres gave 13,867,093 bushels, or 15.5 bushels per acre. The average for the past sixteen years was 19.9 bushels per acre.

Hay and Clover.—2,453,503 acres yield 4,399,063 tons, or 1.79 tons per acre. This is an increase of 587,545 tons over 1897, and over 1,000,000 tons above the average of 1882-97. The largest previous yield was 4,963,557 tons in 1893. The yield per acre has been equalled only once since 1887—in 1893.

Other Crops.—Acreage alone is given. Corn for husking has fallen from 335,030 acres in 1897 to 330,748 in 1898, and for the silo from 209,005 in 1897 to 189,948 acres in 1898. The acreage of potatoes is practically the same as last year, or 169,946. The acreage of tobacco has increased from 705 acres in 1897 to 7,871 acres in 1898.

Live Stock on hand.—The numbers of live stock are for the 1st of July of each year. Horses were as follows: 611,241 in 1898, 613,670 in 1897, and 624,749 in 1896. Cattle: 2,216,943 in 1898, 2,102,326 in 1897, and 2,181,958 in 1896. Milch cows show an increase of 26,000 in the past year, and store cattle a decrease of 20,000. Sheep: 1,677,014 in 1898, 1,670,350 in 1897, and 1,849,348 in 1896. Swine made a large increase from 1,269,631 in 1896 and 1,284,963 in 1897 to 1,642,787 in 1898. There is an increase of 3,500 in young swine over last year. Poultry are 9,084,473 in 1898, 8,435,341 in 1897, and 7,734,167 in 1896.

Live Stock sold.—The figures are for the twelve months preceding July 1st in each year. Horses are about the same as the previous two years—44,404. Cattle are 552,485 in 1898, 503,007 in 1897, and 436,451 in 1896. Sheep show a decrease—766,876 in 1896 to 732,872 in 1897, and to 664,239 in 1898. Swine sold increased from 1,304,359 in 1896, and 1,399,

967 in 1897 to 1,592,697 in 1898. Poultry show a slight increase over the previous year.

The wool clip was 5,104,686 pounds, as compared with 5,139,894 in 1897. There are 190,080 colonies of bees in Ontario.

OUR DAIRY SCHOOLS.

According to its population Canada is as well equipped with dairy schools as any other country in the world. Not only are they as numerous in proportion to the number of inhabitants as elsewhere, but the equipment of the schools, and the staffs of instructors and teachers are equal to, if not superior, to those in any other country. This is as it should be, for Canada is the leading dairy country in the world to-day and should have an efficient teaching staff on practical dairy subjects. As yet we have received the annual announcements of only two schools.

GUELPH DAIRY SCHOOL.

This school is an important branch of the Dairy Department of the Ontario Agricultural College of Guelph, and is under the immediate charge of H. H. Dean, B.S.A., Professor of Dairy Husbandry. The next session opens on January 4th and will close on March 24th, 1899. The course is a comprehensive one and includes a practical training in cheese-making, cream separators, butter-making, milk testing and home dairying, besides a number of lectures on kindred subjects, such as dairy farming, dairy bacteriology, etc. The staff of instructors for the coming term will be the same as last year, which is a guarantee that good, effective work will be done and that the students who will attend will receive a good drilling in practical dairying.

KINGSTON DAIRY SCHOOL.

The Kingston school is a branch of the School of Mining and Agriculture located at Kingston, Ontario. It is under the supervision of the Ontario Department of Agriculture, with Mr. J. A. Ruddick resident superintendent in charge. The next session of this school opens on November 25, 1898. In addition to a long course of six weeks, there are six short courses of two weeks each arranged for. The long course opens on January 26, and is intended to afford those who have the time and the inclination an opportunity for more thorough training than it is possible to get in the other courses. The same staff of instructors will be on duty as last year, with the exception of Mr. J. A. Kerr, who will act as instructor in butter-making. Mr. Kerr is one of the regular instructors employed by the Eastern Butter and Cheese Association, and will no doubt give a good account of himself.

Cheese and butter-makers should bear these announcements in mind and arrange to spend some time at either one of these schools. In many ways it will be advantageous for a maker to spend a week or two at these institutions every winter. The brushing up that he will get will make him a better workman and better fitted to discharge the important duties he is called upon to perform as a manager of a cheese or butter factory.

TO PREVENT CONTAGION OF TUBERCULOSIS.

Issued by Ohio Experimental Station.

Recent developments, together with the historical data concerning tuberculosis among the bovine kind, has excited some curiosity among thinking people as to the possibility of rendering animals exposed less liable to the disease than would seem possible under average or normal conditions. Physicians and veterinarians generally have arrived at the conclusion that the greatest danger comes from the germs floating in the dry air or dust. To this end they argue that persons with consumption should not be allowed to spit upon sidewalks, on floors in the house, about the streets, in street cars or any other places frequented by others; not that there is danger from the spittle as such, but from the dried residue, which is regarded as the most potent factor in spreading the disease from one person to another. The reasoning seems plausible, and, if it is true of the human subject, it should apply equally forcibly to the animal kind.

The Ohio Experiment Station assumes this theory as correct, and, since the disease has developed among their dairy herd, the plan has been adopted of keeping the stable atmosphere constantly moist. The floors are of cement, and are swept clean twice a day. Before each sweeping the entire inside is lightly sprinkled, just sufficiently to allay all dust. After sweeping, and while the floors are yet moist, salt of an inferior grade is thinly scattered over them, aiding materially in keeping the atmosphere of the entire stable in a moist condition, and thus reducing the chances of germs being transmitted in the dust. Animals in the same stables not affected are less liable to receive germs, and the attendants enjoy greater safety, if, as it has been alleged, man can contract the disease by working among animals affected with tuberculosis.

This treatment is a comparatively inexpensive one. The water can be secured from the well or cistern connected with every well-regulated barn, and the salt can be purchased at from \$3 to \$5 per ton. In addition to the moist treatment, the barn is opened and thoroughly aired every day, even in the coldest weather, and every precaution is taken to prevent the atmosphere from becoming close or stuffy. This practical work seems to demonstrate that the cattle are in no way uncomfortable under the treatment, the attendants enjoy as good health as ever, and the spread of the disease has been reduced to a minimum.

FEEDING HORSES CLOVER.

Very few farmers ever think of feeding clover hay to their horses, says *The Michigan Farmer*. They have always regarded it as dangerous, and preferred feeding timothy or mixed timothy, because no danger resulted from its use. The first objection to clover hay is its dustiness, the result of its leaves breaking into very fine pieces because they had become so dry as to be very brittle. Timothy has no leaves to break up in this way. The other objection to clover is that horses will eat so much of it, if allowed, as to injure themselves. The first ob-

jection can be done away with by cutting the clover a little earlier, before all the moisture has left the leaves and gone to perfect the head.

The best time to cut the crop is just as soon as it is well headed out. The leaves will not be so dry or the stocks so woody and coarse as they will be if left until the seed is nearly ripened. Early-cut clover hay will be largely free from dust, and as a nutritive ration for horses, or any other kind of farm stock, it is worth double what timothy is. It is true clover contains so much nutriment that a horse, with its small stomach, will certainly overeat himself if allowed to do so. But we can't see what objection there can be urged to the use of clover for this reason that would not also imply to oats or corn. The horse's rations of clover should be measured out to him, just as are corn and oats, and then all trouble from this cause would be obviated.

From its high nutritive value, and the fact that it never sells well in the city markets, it is good policy to sell timothy, which is worth much less as feed and brings much more in market, and feed out all clover on the farm. The grain ration should be reduced when clover is fed from the amount given with timothy. The latter is very little better, if cut late, than good oat straw.

DRIED FODDER VERSUS SILAGE.

The cost and feeding value of the dry matter of dried corn fodder and of silage is the subject of Bulletin No. 122, issued by the experiment station of New Jersey.

The question of dried fodder *versus* silage has been given a thorough test by the station, and the results of the experiments are summed up as follows:

First, that the cost of harvesting, storing and preparing the dry matter contained in corn was greater in the form of silage than in the form of dried fodder.

Second, that the changes that occur in the composition of silage were not such as to decrease its feeding value in a greater degree than those which occur in the process of curing corn fodder.

Third, that for milk and butter production the feeding value of the dry matter of the silage was greater than that of dried fodder corn. The yield of milk was 12.8 per cent. greater, and the yield of fat 10.4 per cent. greater.

Fourth, at one per cent. per pound for the milk produced the value of the corn crop was nearly \$10 per acre greater when fed in the form of silage, rather than in the form of dried fodder.

PERMANENT STAIRS IN BARNS.

It is very strange how some farmers, year in and year out, will climb up in the barn or hay mow to put in and take out hay, straw and other fodder without the aid of a ladder or stairs, but climb from a manger, box or barrel, grasp a brace, stringer, or other projecting portion of structure, and by an extra effort swing or throw the body upward, and perform similar gymnastic feats to again reach the floor. This is most often done in midwinter when the hands are encumbered with heavy mittens. These operators can thank

their stars that they do not fall, endangering life and limb.

By the expenditure of a few dollars and a day's time an easy and safe way of access could be made to any of these lofts, and one could actually save enough time between the sensible and the careless way in a year's time to cover all the expense of construction. It may possibly make a man more muscular to twist about and hang by one hand to reach the hay mow, but the more considerate prefer the easier plan. In wagon houses in which horses are stabled, stairs should, by all means, be used to reach the loft, as then women and children can often feed the horses with perfect safety. Skeleton stairs can be erected with simply the steps and sides, but they should be made strong and firm.

CORRESPONDENCE.

RESTORING LOST FERTILITY.

MR. WALLACE EXPLAINS MORE FULLY THE CLOVER AND PHOSPHATE THEORY.

To the Editor of FARMING:

We must all hail with pleasure the entrance of Mr. John I. Hobson, of Guelph, into this most interesting discussion, and I hope, with you, Mr. Editor, to see other thoughtful farmers take part in it. My statement, which is tantamount to an assertion, that meadows and pastures which we usually describe as poor and worn out, whether clays or light sandy soils, can be brought into rich, nutritious clovers, both red and white, simply and solely by the application of Alberts' Thomas-Phosphate Powder (Registered), and without the sowing of clover seed, is pronounced by Mr. Hobson as astounding. I can assure you that there was a time when I, too, was astounded by this phenomenon, but the practice of thousands of farmers in Europe and England, and very many in Canada under my own eyes, convinced me of the correctness and feasibility of this plan of improving herbage and obtaining rich stores of the nitrogen of the atmospheric air free.

To account for this remarkable phenomena in theory is not just the most important point, perhaps, and, while I have reasoned out a theory founded upon my observation, I am reluctant to go to it unless accorded more space than this letter should cover. I will explain, however, that on a field already rich in nitrogen, either from manuring with barn-yard manure, clover ploughed under, or nitrogenous chemicals, it is not generally the rule to immediately obtain clovers spontaneously. (This expression you will kindly permit in lieu of a better or more correct one scientifically.) This is ascribed to the habits of other kinds of plants, the graminaceæ, we will say, finding plenty of available nitrogen in the soil and flourishing, filling the surface. But when the store of nitrogen in the soil is low, and if there is a sufficiency of potash, and there nearly always is; if there is also a plentiful supply of available phosphoric acid, clovers spring forth to gather from nature's great storehouse for nitrogen (the atmospheric air) a supply for the graminaceæ, for as these clovers perform their function in the soil they seem to die out again.

When this peculiarity of clovers springing up from seemingly barren pastures and meadows as the result of manuring was first noticed, it was ascribed by most authorities to Thomas-Phosphate Powder and Kainit manuring, they being generally used together, as phosphoric acid and potash were the known principal alimentary substances clovers required for their perfect development. Even Henri Albert, the renowned head of the chemical manufacturers, H. & E. Albert, who first brought Thomas-Phosphate forward for manurial purposes, held that Kainit was necessary. The experiments of Wagner, followed by the practical use of the Thomas-Phosphate by thousands of farmers, gradually showed that only in soil deficient in potash (and these are few) was the Kainit necessary to the getting of clover, and it further developed by Wagner's experiments that clovers not properly supplied with phosphate and potash failed in storing any great quantity of atmospheric nitrogen. However, soils may have a lavish

supply of potash, which may be in such an insoluble form that few plants (and those only wildlings) could attack and assimilate it, but in such cases the rich supply of a fine form of very soluble lime in powdered state in the Alberts' Thomas-Phosphate Powder acted upon the soil-potash and rendered it readily available to the clovers. Thus it was found that without the assistance of Kainit, most soils in a poor state responded readily to the Thomas-Phosphate and produced rich clovers. A very important point to which I will now draw attention is the after-effect of such manuring. Occasionally we find soils so denuded of their phosphate that repeated dressings are necessary before the highest production is reached. This Prof. Wagner explains as being due to the fact that the first dressing is needed to do away with the state of starvation existing. These cases are, however, rare, and as a rule the action of Alberts' Thomas-Phosphate Powder is very prompt. In the second year after dressing the clovers develop much more richly, and even to an amazing extent, and also there is a noted improvement in the graminaceæ. The third year is liable to show a slight falling off of the clover, but a decided and almost wonderful improvement in the timothy and other grasses, only those of the highest class developing. This is due to the store of nitrogen brought into the soil by the clover, providing a nitrogenous food for the nitrogen-consuming plants. (If clover is then still desired a further dressing of the phosphate is required.) Thus the after-effect of this manure for about four years very much lessens the yearly cost, and I think it is a fair way of looking at it.

The cost per acre of doing this thoroughly on a few acres is, of course, greater than in a large way, owing to freights, etc., but it costs from \$2.50 to \$5 an acre, according to the necessities of the soil; and in some very bad cases, such, for instance, as I found in Carleton county, N.B., it was from \$5 to \$7 per acre. This expense, as I observed, may fairly be divided as over about four years, and even much longer from the nitrogenous effect mentioned. The advantage gained is the doubling and trebling of the feeding value of the land, either in pasturage or mowing meadow. This has been proven beyond any doubt, and the figures for it are as follows:

Part of a meadow not manured with Thomas-Phosphate Powder produced about 6,000 pounds of hay, containing 450 lbs. flesh-forming constituent and 150 lbs. fatty matter. The other part of the same meadow, being equal in size, in the same season, manured with Alberts' Thomas-Phosphate Powder, produced about 12,000 pounds of hay, containing 1,610 lbs. flesh-forming constituent, 300 lbs. fatty matter, and twice as much phosphoric acid as the other part.

This, then, means that from an expenditure of from, say, at the utmost, \$2 to \$3 per acre per year, the produce of the acre is doubled in quantity, and more than trebled, in fact, almost quadrupled, in value. This same calculation extends to grain and roots in the same land, and it has been most positively proved that turnips grown with Alberts' Thomas-Phosphate Powder have a much higher value in making a finer quality of beef and mutton. But, on the clover question, I am prepared to pledge the guarantee of my firm that Alberts' Thomas-Phosphate Powder, at the rate of one ton to four or five acres, broadcasted this summer or fall on wornout meadow or permanent pasture, on such soils as are usually found in Ontario or the Eastern Provinces, will cause a rich growth of clovers next summer and fall, which will be further improved the following year, and an improved herbage for about four years. A second application will greatly enhance the value of the field.

As regards Mr. Hobson's question as to the practicability of expecting to have from poor, wornout land a crop sufficiently good to be worth plowing under for next fall's crop, I answer that the growth of clover on soils dressed with Alberts' Thomas-Phosphate Powder is so great that such is fully within the range of probabilities, if the party advised made an August sowing of clover, for which he had plenty of time when I advised him. I advise the use of a rather larger amount of the phosphate in such cases, say 600 lbs. to 700 lbs. per acre, as it should be well mixed through the soil and not so thoroughly concentrated about the roots as in broadcasted the meadow. As this letter has already "run away with space," I have transmitted to Mr. Hobson by mail my further proofs of my assertion. I know whereof I speak, and the practical application of the method I advise is well within my knowledge.

T. C. WALLACE.

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The Ontario Agricultural Gazette

The Official Bulletin of the Dominion Cattle, Sheep, and Swine Breeders' Associations, and of the Farmers' Institute System of the Province of Ontario.

THE DOMINION CATTLE, SHEEP, AND SWINE BREEDERS' ASSOCIATIONS.

Annual Membership Fees:—Cattle Breeders' \$1; Sheep Breeders' \$1; Swine Breeders' \$2.
BENEFITS OF MEMBERSHIP.

Each member receives a free copy of each publication issued by the Association to which he belongs, during the year in which he is a member. In the case of the Swine Breeders' Association this includes a copy of the Swine Record.

A member of the Swine Breeders' Association is allowed to register pigs at 50c. per head; non-members are charged \$1.00 per head.

A member of the Sheep Breeders' Association is allowed to register sheep at 50c. per head, while non-members are charged \$1.00.

The name and address of each member, and the stock he has for sale, are published once a month. Over 20,000 copies of this directory are mailed monthly. Copies are sent to each Agricultural College and each Experiment Station in Canada and the United States, also to prominent breeders and probable buyers resident in Canada, the United States and elsewhere.

A member of an Association will only be allowed to advertise stock corresponding to the Association to which he belongs; that is, to advertise cattle he must be a member of the Dominion Cattle Breeders' Association, to advertise sheep he must be a member of the Dominion Sheep Breeders' Association, and to advertise swine he must be a member of the Dominion Swine Breeders' Association.

The list of cattle, sheep, and swine for sale will be published in the third issue of each month. Members having stock for sale, in order that they may be included in the Gazette, are required to notify the undersigned by letter on or before the 9th of each month, of the number, breed, age, and sex of the animals. Should a member fail to do this his name will not appear in that issue. The data will be published in the most condensed form.

F. W. HODSON, Secretary,
Parliament Buildings Toronto, Ont.

TO STOCKMEN.

A car of thoroughbred live stock will be shipped to Manitoba and the West the last week in September. For full particulars apply to F. W. Hodson, secretary Live Stock Association, Parliament Buildings, Toronto.

PROVINCIAL WINTER SHOW

The Premium List of the Provincial Fat Stock and Dairy Show is now issued, and copies may be obtained upon application to the secretary, F. W. Hodson, Parliament Buildings, Toronto.

Special attention is drawn to a clause entitling exhibitors coming to the show a distance of over one hundred miles to a rebate on freight charges on their exhibit equal to the distance it is carried over one hundred miles. By this clause no exhibitor will be required to pay freight charges for more than one hundred miles. This should be the means of inducing a number of dairy-men and others from the eastern part of Ontario to exhibit.

Between \$500 and \$600 is this year offered as prizes for Export Bacon Hogs. The Prince of Wales' prize is this year offered in this class, and special prizes have been donated by the Wm. Davies Co., Toronto; F. W. Fearman, Hamilton; and the Ingersoll Packing Co., Ingersoll. The following special rules are appended to this class:

(1) No animal deemed unsuitable for export bacon purposes by the judges shall be awarded a premium, but no premium shall be withheld merely because there is no competition.

(2) Hogs shown in any other class are eligible to compete in this class.

(3) Other rules governing the swine department will apply to the bacon class.

N.B.—Hogs which meet the pork packers' requirements weigh between 160 and 200 pounds. They are long in the body, deep in the side, narrow in the shoulder, with small heads and hams in proportion to the body, and not too fat; the ideal weight is between 170 and 180 pounds.

A number of public meetings will be held in Brantford during the time

of the Show. A joint public meeting will be held in the Opera House on the first evening. During the afternoon of the first day the annual meeting of the American Oxford-Down Record Association will be held. On the second evening of the show the American Leicester Breeders' Association will hold their annual meeting, and on December 2nd the annual meeting of the Dominion Swine Breeders' Association will be held. The three latter meetings will be held in the Grand Trunk reading room, the building in which the annual meetings were held last year. The show will be held on Wednesday, Thursday and Friday, November 30th, and December 1st and 2nd.

Farmers' Institute Department.

Reports concerning the work of the Farmers' Institutes in Ontario will be published weekly under this head, also papers prepared for this department by Institute workers. Secretaries and officers having announcements to make are invited to send full particulars to the Superintendent.

FARMERS' INSTITUTE AND LIVE STOCK ASSOCIATIONS' TENT AT THE INDUSTRIAL EXHIBITION.

Arrangements have been made by F. W. Hodson, superintendent of Farmers' Institutes, to occupy a tent, as an office, on the grounds of the Toronto Industrial Exhibition from August 30th to September 9th. It will be located east of the cattle ring, and just in front of the horse and cattle shed, on the site occupied last year.

Officers and members of farmers' institutes, of live stock, dairy, poultry, fruit growers', and kindred associations, exhibitors of live stock, poultry, agricultural products, etc., are cordially invited to make this tent their headquarters during the time of the exhibition. Associations connected with agriculture are at liberty to use the tent, free of charge, for holding public meetings, for which ample accommodation will be provided. The superintendent of farmers' institutes will be pleased to meet there institute officers and members, also members of other kindred associations, to discuss the best means to advance the work of the farmers' institutes in their respective

districts. A table and writing material will be available at any time.

The superintendent will be in attendance at the Western Fair at London, and the Central Fair at Ottawa, two days at each place. Particulars will be given later.

THE INSPECTION OF FEEDING STUFFS.

CHAS. D. WOODS, Director Maine Agricultural Experiment Station, Orono, Me.

With the increased use of concentrated feeding stuffs it has been found by chemical analysis and feeding tests, as well as by common experience, that there are great differences in the feeding values of goods which outwardly closely resemble each other. The following instance illustrates this:

Some time ago the Station purchased a quantity of cotton-seed meal from a dealer. A few weeks later the firm offered, at a somewhat reduced rate, a brand which, to outward appearance, was apparently equal to the first. Yet chemical analysis showed that the first contained 52.2 per cent. protein, and the latter only 31.9 per cent. In other words, one, which was an unusually good article, contained over 60 per cent. more protein than the other, which proved much below the average. As regards the feeding value, the actual difference was much greater, since the amount of ash found in the lower grade indicated that the adulterant used was of inferior quality, and the digestibility of the protein present must have been affected thereby.

There was a general dissatisfaction with the existing state of things among the farmers of the state as evidenced at the farmers' meetings, such as that of the State dairy meeting, State Board of Agriculture and State Grange, and, as a result, the legislature of 1897 passed a law entitled, "An Act to regulate the sale and analysis of Concentrated Commercial Feeding Stuffs." In essence the law is identical with the law regulating the sale of commercial fertilizers, and is the first attempt to establish an adequate control over the sale of offals and other by-products used as food for cattle and other live stock.

The chief requirements concisely stated are as follows:

Kinds of feed coming within the law. The law applies to all feeding stuffs except hays and straws; whole seeds and meals of wheat, rye, barley, oats, Indian corn, buckwheat, and broom corn; brans and middlings. The principal feeds coming under the provisions of the law are linseed meals, cotton-seed meals, pea meals, cocoanut meals, gluten meals, gluten feeds, maize feeds, starch feeds, sugar feeds, dried brewers' grains, malt sprouts, hominy feeds, cerealine feeds, rice meals, oat feeds, corn and oat chops, ground beef or fish scraps, mixed feeds, and all other materials of similar nature.

Inspection tax and tag. To meet the expenses of inspection, a tax of

ten cents per ton must be paid to the Director of the Maine Agricultural Experiment Station. On receipt of the inspection tax, the Director of the Station is required to furnish a tag stating that all charges have been paid. This tag must be affixed to the package before it is offered for sale.

The Brand. Each package of feeding stuff included within the law shall have affixed the inspection tax tag and shall also bear, conspicuously printed, the following statements:

The number of net pounds contained in the package.

The name or trade mark under which it is sold.

The name of the manufacturer or shipper.

The place of manufacture.

The place of business of manufacturer or shipper.

The percentage of crude protein.

The percentage of crude fat.

These statements may be printed directly on the bag, on a tag attached to the package, or on the back of the inspection tax tag furnished by the Director of the Station.

A copy of the statement of brand must be filed with the Director of the Station. The goods must carry the inspection tax tag and the brand before they can be legally offered for sale in the state. It will not answer to affix tags at the time the goods are sold.

Analysis. The Director of the Station is required to collect and analyze each year, at least, one sample of each of the brands of feeding stuffs coming within the provisions of the act; and publish the results, together with related matter, from time to time.

The law has been in operation nine months, and, even in this time, has proven of advantage to the manufacturer and dealer in honest goods, as well as a protection to the consumer. The most conspicuous case of adulteration by concentrated feeding stuffs is in cotton-seed meal. Pure cotton-seed meal is made by grinding the seed after the white down, which remains upon the seed as it comes from the cotton gin, and the hard hulls have been removed. Thus prepared, cotton-seed meal carries from 40 to 53 per cent. of protein. At first, cotton-seed meal was all high grade goods. The temptation to adulterate was too strong for unscrupulous manufacturers to withstand, and the market was overrun with cotton-seed meal adulterated with finely-ground hulls. This made a dark-colored meal, the color of which was sometimes "improved" by grinding and mixing a bright yellow clay with the meal. Some of these meals were known in the trade as "Sea Island" cotton-seed meal, and others were sold without any brand. These adulterated cotton-seed meals, instead of carrying 43 to 53 per cent. protein, had only from 20 to 30 per cent. protein. Goods of this type were very abundant in Maine in 1897, but there is almost none of them to be found at present. The inspection law has driven them to other states. The chief chemist of the Rhode

GAZETTE.—Continued.

Island Station, in a letter to the writer last summer, said, "I regret to say that Rhode Island has become the dumping ground of adulterated cotton-seed meals, etc." At about the same time the chemist of the Massachusetts Experiment Station found large quantities of adulterated cotton-seed meal being offered in that state.

It is the belief of the writer that all the principal manufacturers and dealers are reliable men, of strict integrity. The enforcement of the law was made on this assumption, and we have enjoyed the co-operation of dealers and manufacturers, as well as that of consumers. No case of wilful violation has come to our notice. On the contrary, there has been an evident desire on the part of most dealers to live up to all the requirements of the law. The law has come into effect without friction, and by another season it bids fair to be running as smoothly and as satisfactorily as the fertilizer law. It protects both the dealer and consumer. It tends toward a more rational use of feeding stuffs, which will be alike beneficial to the feeder and the dealer.

THE LATE MR. J. G. SNELL.

We regret exceedingly to be compelled to announce the death of one of the most enterprising and popular stock breeders in Ontario, Mr. Joseph G. Snell, of Snelgrove, Ont., which resulted from a fall from a ladder in his barn on August 10th. Mr. Snell was a breeder of purebred Berkshire swine and Cotswold sheep, and at the time of his death an importation of the latter was in quarantine at Quebec. He was a genial, kind-hearted man, and well deserved the esteem in which he was held by all who had the pleasure of his acquaintance. Stock breeders will miss his counsel and practical knowledge at their annual gatherings, and all who knew him will join with us in sincere sorrow for his untimely decease.

PROFITABLE MANAGEMENT OF SHEEP.

By H. P. MILLER, Ohio.

Let the ewes drop their first lambs after warm weather and grass have come in the spring. Grass is the best milk producer and young ewes need it to enable them to nourish their lambs satisfactorily. From the late weaned lambs I would renew the breeding flock, for I believe it will be much more satisfactory, for many reasons, to grow one's own ewes. These lambs, of course, should be of the breed desired in the permanent flock, and for them I should use a mature ram. The male lambs of this crop may be sent to the mutton market at ten or twelve months of age. If merinos they will sell better when shorn than in full fleece.

Whether to breed the ewes for a second crop of ewe lambs or not should be determined by the need of more ewes. Under a well-established flock on this plan, two crops of lambs of this class would be required to keep up the number of the entire flock. The second or third crop of lambs from any class of ewes I should have weaned in March.

The age at which a ewe should drop her first lamb depends somewhat upon the breed but more upon the care she has been given. When they have been pushed to rapid maturity ewes may raise a lamb at two years of age. But they should be fed so as to continue to grow during their third and fourth years, which they will do after this temporary check. If the wool will approximately pay for their keeping I prefer they should not raise a lamb until three years old. Raising a lamb will reduce the fleece twenty per cent. in weight and the possible carcass weight about ten per cent. Hence a lamb raised before the ewe is mature is not entire gain. With her first lamb at three years of age, a ewe may raise four lambs and be put upon the market herself fat at six years of age.

On the average one-hundred-acre farm 250 to 265 sheep ought to be kept besides a team and two cows. Under a conservative calculation the sales should amount to \$750 or above for each year. This should be a practically net income, as one energetic able-bodied man can easily provide the necessary feed and care for that number. This I think will compare not unfavorably with the incomes from average one-hundred-acre farms managed along other lines.

Not much is to be said in regard to feed. We have more to learn in methods of feeding than in the growing of our food products, but we shall probably do well to imitate our Canadian neighbors in the growing of more root and forage crops.

QUESTIONS AND ANSWERS.

DESCRIPTION AND PEDIGREE SUPPLIED.

Editor of FARMING:

Please give pedigree and description of Claude Marius (2073) in the next issue of FARMING. When a mistake is made in registering a stallion, can it be corrected after six years? It has been neglected by former owners up to that age.

SAMUEL GREEN,
Theodore P. O.,
Yorkton, Assa., N.W.T.

The stallion, Claude Marius (the name is Marius, not Marions), 2073, was bred by Prouse & Williamson, Ingersoll, Ont. The second owner was John Prouse, Ingersoll, and the third owner Thos. Prouse, of Virden, Man. Claude Marius' sire was Clan McPherson, imp., 2071 (Eng. No. 8529). His dam was Jean of Green Hill, imp., 2052 (Eng. No. 9936). He is bay in color, has a star on the forehead, and the nigh hind-foot is white. Was foaled on August 2nd, 1892.

Any reasonable mistake in regard to registering an animal can always be rectified. Application should be made to Mr. Henry Wade, Parliament Buildings, Toronto, Ont., who will be pleased to rectify any reasonable mistake.

A FARMERS' FAIR.

As a strictly farmers' fair Canada's Great Eastern Exhibition has, during the last few years, taken up a prominent position in the front rank of the annual fall fairs of the Dominion. The object of the management since the organization of the association seems to have been "A Fair for the Farmers," and in pursuance of the policy thus marked out we must to-day, in all justice to the directors, say that they have fully attained their end.

They have always made it an aim to advertise honestly, fulfil their engagements faithfully and treat their patrons, both exhibitor and visitor, with that same fairness which still continues to be a characteristic of their efforts to please, and, so long as they continue to extend their substantial encouragement to the farming public and persevere in their untiring efforts to make every provision for the comfort and accommodation of exhibitors, their

Exhibition shall continue to be a popular word upon the tongues of the farmers of this district, and such dealing will ensure a continuance and even increase of that hearty patronage which has marked their Fair ever since its initiation.

The prize list this year has been added to in almost every department, both by the opening up of new classes and the increasing of the money prizes. We are looking forward to this fall's fair, September 5th to 10th, as a record-breaker and can bespeak a good contingent of exhibitors from this province. Prize list, programme and particulars can be obtained from Mr. H. R. Fraser, manager and secretary, Sherbrooke, Que.

BOOKS AND BULLETINS RECEIVED.

Herd Register of the American Guernsey Cattle Club, vol. 8, part 35. Published quarterly from the Secretary's office, Peterboro', N.H.

Premium List. Provincial Fat Stock and Dairy Show, to be held at Brantford on November 30th and December 1st and 2nd, 1898. Copies may be obtained by applying to F. W. Hodson, Parliament Buildings, Toronto.

Report of the Chemist. Central Experimental Farm, Ottawa. This report gives a complete account of the work of the chemist, Mr. F. T. Shutt, M.A., F.I.C., F.C.S., for 1897, and should be in the hands of

Report on Forestry. Central Experimental Farm, Ottawa. This gives an account of the work of the Foreman of Forestry (Mr. W. T. Macoun) for 1897.

Thirteenth Annual Report. Maine Agricultural Experimental Station, Orono, Maine, being a complete resume of the work conducted at that station for 1897.

Part Second of the Tenth Annual Report of the Storrs Agricultural Experimental Station, Storrs, Conn., and containing a partial account of the work for 1897.

Publishers' Desk.

The Happiest Man in Canada.—Mr. Joseph Stratford, the General Manager of the Farmers' Binder Twine Co., of Brantford, should be one of the happiest men in this Dominion. He has accomplished a magnificent work for the farmers of this country and at the same time placed the Farmers' Binder Twine Co. in a position which may well be envied by any business concern in America. Those who have carefully followed the various phases through which the binder twine question has passed will appreciate the situation thoroughly.

Does Its Work Every Time.—Wilmington, Del., April 5, 1896.—The Lawrence-Williams Co., Cleveland, Ohio: I found out the virtue of the Balsam and have used two bottles. I think it is one of the finest remedies one can keep around a stable. It is always ready for use, and I believe if properly applied and rubbed in will do its work every time. I have used different kinds of liniments, but this does its work quicker than anything I have ever used, and after all leaves no scar, and the hair grows in same as ever. You can use my name whenever you see fit.—H. C. PARRISH.

Stock Notes.

J. CAMPBELL, Fairview Farm, Woodville, Ont., writes: I have entered twenty-six of my flock at Toronto, and will be pleased to have customers and intending purchasers look them over. In aged rams "The Comet," second at English shows, and first at Madison Square Garden and Canadian fairs, and "Fair Star Dreamer," with an English record of seconds at the Royal and Shropshire Shows, will show Mr. A. E. Mansell's skill as a breeder of rams. In shearing rams two Canadian-breds, "The Champion" and "The Gentleman," will be an exhibit of Canadian breeding. One is sired by "Newton Lord," out of a "Montford Dreamer" ewe, and the other by a home-bred ram named "Sterling."

Ram lambs by "Newton Lord" and out of choice imported Williams and Mansell ewes will bring up the rear of section for males.

In aged ewes, same breed, "Newton Lord" ewes, imported Mills and Bryce ewes, all past first-premium winners will be forward. In shearing ewes three pairs of somewhat similar breeding, and winners of many honors last season, will enter the ring.

Ewe lambs by "Fenn's Counsellor," whose half-brother won second at the English Royal in 1897, and out of ewes which won firsts at New York City Show and at many Canadian fairs, will complete the exhibit. The demand for good rams to head purebred flocks is extraordinary. Wish I had ten times my number to sell.

The Century's Period

THE WESTMINSTER, the great Canadian home paper, makes an extraordinary "End of the Century" offer. Illustrated announcement number just issued. Sample copy free. It's worth having. Send name on post-card. Address,

THE WESTMINSTER,
TORONTO.

THE CENTRAL FAIR.

The Central Fair directors are up to date in every respect. Their latest move—and it is a most excellent one—is to issue a '98 fair souvenir. The book is a creditable specimen of the printer's art, and contains pretty nearly everything one wants to know about the exhibition, including the daily programme. The places of interest in the city, hotel rates and a fund of other information are also to be found in the book. Get one and read it.

GENERAL GREELY'S 278 DAYS OF DEATH.

The true story of those 278 days of suffering by Greely's heroic little band of explorers in the Arctic region has been told by General Greely himself, for the first time, for the October Ladies' Home Journal. For years General Greely has kept an unbroken silence about his fearful experience and that of his companions, as they dropped dead one by one at his side, and it was only after the greatest persuasion that the famous explorer was induced to write the story.

Good blood will not enable a hog to live on air and water. Dish water may add to the probability, however.

ALL PEDIGREE STOCK-BREEDERS

Should keep in touch with Herd, Flock and Stud movements by reading the

FARMER AND STOCK-BREEDER

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THE BEST

For Dairy or Table Use

IT IS UNEQUALLED.

Salt on the Farm

for wire worm, joint worm, army worm and all insects that destroy crops. Salt is the best insecticide. It is also a fertilizer.

TRY IT.

R. & J. Ransford,
CLINTON ONT

MARKET REVIEW AND FORECAST.

Office of FARMING,

44 and 46 Richmond street W., Toronto.
Aug. 22nd, 1898.

It is now considered in commercial circles that the trade of the country is safe for another year. Good crops are now assured, and not only will the yield be large, but the quality will be good. A better demand has set in for butter and cheese, and a brisk demand is looked for from European points for wheat as soon as this year's crop begins to move, so that the prospects for a big fall's trade are very promising indeed.

Wheat.

The visible supply of wheat in the United States and Canada is now down to the lowest point it has been for years, being 6,897,000 bushels, but it is likely that this will be enough to meet all requirements till the new crop begins to move. The world's wheat supply in sight is now 26,817,000 bushels, as compared with 20,100,000 bushels for the corresponding period last year. It is estimated that this year's wheat crop for Canada and the United States combined will be 800,000,000 bushels. Stocks are low in many places, and unless farmers rush their wheat on to the market much earlier than is expected we may see better values before long. Should a war between Great Britain and Russia take place wheat would soon run up to the dollar mark.

The London market has ruled steady during the week, with values about the same as last week. The speculative element seems to be having things a little its own way in the Western States, and every advantage is being taken on account of the big crop to "bear" the market. The receipts at the primary markets, however, have been comparatively small so far, and this, together with the extra demand by local millers, is tending to maintain values. Receipts at Montreal do not seem to be increasing. Manitoba No. 1 is quoted there at 91c. to 93c., and at Fort William 84c. to 86c. Farmers in Western Ontario seem to be holding their wheat for 70c.

The market here has been steady, with not much business doing in the export line. Quotations are from 68c. to 70c. for red and white west.

Oats and Barley.

The London market for oats is steady, and, owing to light stocks, holders are not pushing sales. The Montreal market is easier, and large sales have been made at 32c. for old oats. Several sales of new oats have been made at 30 1/2c. to 31c. afloat. The Toronto market is steady at 26 1/2c. to 27c. for old and 24 1/2c. to 25c. for new white west. Feed barley is quoted at Montreal at 38c. to 39c. and malt at 45c. to 50c. The market here is quoted at 38c. for No. 1.

Peas and Corn.

The London market for peas is quiet, no business being done owing to values being too high. The Montreal market is quiet, and there is an easier tendency at 62c. to 62 1/2c. afloat. The market here is fairly steady at from 50c. to 51c. north and west.

Corn has taken a drop in the west owing to recent rains and the prospect of a big crop. Chicago No. 2 is quoted at Montreal at 37c. to 37 1/2c. afloat, or 42c. to 43c. in cars on track. American is quoted here at 40c., Toronto.

Bran and Shorts.

Ontario bran is quoted at Montreal at \$12 to \$12.25, Manitoba bran at \$11 and shorts at \$14 to \$15. The market here is steady at \$12.50 to \$14.50 for shorts, and \$8.50 to \$9 for bran west.

Eggs and Poultry.

Canadian fresh eggs are now in good demand at Liverpool at an advance of 3d. to 6d. per 120, with sales at 6c. 6d. London quotations are about the same. The Montreal market continues firm under a good local demand with sales of fresh candled at 10 1/2c. to 11c. in large lots and 11 1/2c. to 12c. in small lots. New-laid are quoted at 14c. to 16c. for fancy selected, but the new August stock is complained of as not being up to the standard. The receipts here are fair though the quality is complained of, and the prices are unchanged at 11c. to 12c. for fancy.

The receipts of poultry are getting larger, and the market is a little easier at 45c. to 55c. for chickens, 40c. to 55c. for ducks, and 10c. to 10 1/2c. per lb. for turkeys.

Potatoes.

The Montreal market is steady, and prices are 45 to 50c. in large lots, and 55 to 60c. in small jobbing lots. The market here is quiet at about 85c. per bag out of the stores.

Hay and Straw.

The hay market at Montreal is somewhat dilapidated, specially for old stuff. Some old stuff is being exported, but it has to be bought at very low prices, as sales of Canadian hay in Liverpool have been made recently at 55c. c. f. Choice No. 1 baled hay is quoted at Montreal at \$8 to \$9, and No. 2 at \$6 to \$7.50. The market here is quiet. Cuts of new on the track are nominal at \$7. There is no change in the straw market.

Fruit.

The general opinion now is that Canada will have a fair average crop of apples. It was expected that the winter fruit would be small in size, but the recent rains in the fruit districts may improve the quality in this respect. Good sound apples are selling at Montreal at from \$1.25 to \$1.60 per barrel. Quite a number of barrels are arriving in bad shape. Apples in baskets are being sold at 20c. to 25c. Apples bring from 5c. to 25c. per basket in Toronto.

Cheese.

The cheese situation seems to be a little more clear, and the outlook is very much brighter. The market has a very much healthier tone, and if we mistake not a good fall's trade will be done from this out. It is now evident that the total make will be considerably less than last year. The total shipments from Montreal up to August 15th show a falling off of 157,287 boxes as compared with the same time last year. The shipments from New York for the same time show a falling off of 156,251 boxes as compared with last year. We are now near the last of August, and cheese should be good value at present prices. Under an increased consumptive demand the London market is much firmer, and prices have advanced 1s. per cwt. More attention is now being paid to Canadian, and some large sales have transpired lately. Finest Canadian is quoted at 40c. to 41s., and good to fine at 37s. to 39s. Liverpool is also firmer at 39s. 6d. to 40s. 6d. for finest and 37s. to 39s. for good to fine. The public cable is 37s. 6d. for white, and 38s. 6d. for colored. The local cheese markets have ruled at from 7 1/2c. to 8c. during the week. A very much better export demand is reported at Montreal and prices there are 8 1/2c. to 8 3/4c. for finest western colored, 8c. to 8 1/2c. for finest western white.

Butter.

The London market is firmer and higher, and under a good demand prices have advanced another shilling. Canadian creamery seems to be doing well on that market, and in some instances has been given the preference over Danish. Sales of choice to fancy Canadian creamery have been made during the week at 90s. to 92s., one lot bringing 94s. 6d. Good to fine, 84s. to 88s. Large sales have been made at Montreal at 17 1/2c. to 18c. for choice fresh creamery in boxes, and 17 1/2c. to 17 3/4c. in tubs. It is estimated that there are from 50,000 to 55,000 tubs stored in Montreal, but it is thought that double this quantity will be wanted. The shipments up to Aug. 15th were 71,552 packages, as compared with 57,449 packages for the same time last year, an increase of 14,003 packages. The shipments from New York for the same time show a decrease of 73,241 packages, thus making the combined shipments from these two places 50,138 packages less than last year. There is now quite a healthy export demand, and the outlook for creamery butter is very encouraging. Quite a lot of well-kept June creamery has changed hands recently at 16 1/2c. to 17c. Western dairy brings from 13 1/2c. to 13 3/4c. at Montreal. Creamery continues in good demand here at 19 1/2c. to 20c. for prints, and 17 1/2c. to 18 1/2c. for tubs. Dairy is in good demand at 13c. to 15c. for the best tubs, and 11c. to 12c. for other quality.

Wool.

There is reported to be a fair amount of business doing in wool at Montreal. Stocks in dealers' hands are reported light, which is having a tendency to keep up prices. The market here does not show much change over last week.

Cattle.

The cattle situation does not show much change. The leading Western American markets continue active, with a seemingly growing demand for stockers and feeders.

The receipts on this market have been fairly heavy during the week.

Export Cattle.—Cable reports from Britain show a demoralized market, owing to the heat. It is stated here that some drovers have paid more for their cattle in the country than they can sell for here. The ruling figures here are from 4c. to 4 1/2c. per lb., some fancy cattle reaching 4 1/2c.

Butcher's Cattle.—There was a better enquiry on Friday's market, but prices have not advanced any. The quality of many of the cattle is complained of. Prices rule from \$4 to \$4.25 per cwt. for the best. Several lots were sold at \$4. Medium cattle sell slowly at 3 1/2c. to 3 3/4c., and common stuffs hard to sell at any price.

Bulls.—There has been some demand for these for export, and heavy bulls sell for from \$3.40 to \$4.10 per cwt. and light ones for from \$3.35 to \$3.75 per cwt.

Stocks and Feeders.—The Buffalo market is a little easier for these, and the market here is dull but steady at from 3c. to 3 1/2c. Feeders bring from \$3.60 to \$4.80.

Cattle.—Are firm and unchanged at from \$2.50 to \$8 each. Good veals are in demand.

Milk Cows and Springers.—Extra fancy milk cows bring about \$50, but the general run are quoted at from \$25 to \$45. Good milkers are in demand.

Sheep and Lambs.

Receipts have been more liberal at Buffalo recently, and the market is lower for lambs. Sheep remain steady, but yearlings are 10 to 15c. lower. Spring lambs bring from \$6 to \$6.35, and native clipped sheep \$4.75 to \$4.90. There was a heavy run on Friday's market here, especially of lambs, and the market was easier. Lambs bring from \$4.50 to \$4.75 per cwt., and export sheep from 3 to 3 1/2c. per lb., and hucks 2 1/2c.

Hogs.

Stocks of Canadian bacon in Great Britain are reported light, and holders are not anxious sellers. Fancy selections bring from 57s. to 59s. in London. There was an easier feeling on Friday's market here, and choice bacon hogs brought only from \$5.75 to \$6 per cwt. Light hogs bring from \$5.60 to \$5.65, and thick, fat hogs, from \$5 to \$5.60. Much of the stuff coming forward is of poor quality.

TORONTO'S GREAT EXHIBITION.

Admittedly the Most Varied, Attractive and Comprehensive Annual Fair in the World.

On Tuesday next, the 29th instant, Canada's Great Exposition and Industrial Fair opens at Toronto. It is no idle boast to say that the arrangements made for this year guarantee that the Exhibition will be easily the best ever held. Owing to the war, amusement matters have been very quiet in the United States. As a consequence the management have been able to secure special features that otherwise could not have been obtained. Not is that all, for the exhibits are of a great deal better quality and more varied than usual. For the first time manufacturing establishments of both France and Great Britain are sending over collections of goods especially made for this purpose, included in them being several recent scientific inventions of a revolutionary nature. It would be impossible here to enumerate the wonderful attractions that will be offered, but they will include the famous diving elks, that have created a tremendous furore throughout America, as samples of the greatest state of perfection to which animal training has been brought; Mlle. Gertrude and her four magnificent lions; Mons. Achille Pailion, spiral tower and revolving globe artist; and a whole army of other performers, who are at the top of their profession. And these are only minor features, for two great spectacles are to be given, one, which will be free, by day, and the other by night. The first will be an illustration of real warfare, and will be conducted by the Royal Engineers, of Halifax, and the Dominion Artillery, of Kingston, and will comprise the exploding of submarine mines, the blowing up of ships, the storming of forts with shot and shell from quick-firing and Maxim machine guns, Red Cross hospital work, and so on. At night the great spectacle presented will include the blockade, bombardment, and surrender of Santiago, the sinking of the Merrimac, the captive balloon, and the destruction of Cervera's fleet, concluding with a joyful celebration of victory. There will also be horse races and horse jumping contests every day, and one day of bicycle races. An exhibit of horseless car-

EXPERT BUTTER MAKERS

Endorse the "Maple Leaf Churn." Works easiest and best. Ask your dealer to show it. Circulars sent free by the manufacturers,

WILSON BROS., Collingwood, Ont.

Engagements will be another feature of interest, while the bands of music will number a score, including three or four from the United States. The usual dog show will be held, but the value and number of prizes exceed previous years by several hundred dollars, the amount involved being \$2,500. On the whole there is more to be seen at Toronto for less money than at any other fair in America, and such an opportunity as the present, when rates prevail on the railways that may never be so low in another year, should not be missed.

A NEW SCHOOL-BOOK.

The new school-book on agriculture by the Deputy Minister of Agriculture of Ontario, Mr. James, will be useful beyond the bounds of the school-room. It may be predicted that it will have a considerable sale among those who are actually engaged in the tilling of the ground. And this for three reasons, viz.: It contains what the farmers want to know; it is written in the simplest and most intelligible language; and it is capably illustrated. As a compendium of agricultural knowledge it should certainly meet the views of those who are beginning to wake up to the fact that brains are as much required in farming as in any other business, and that in the long run it is the intelligent agriculturist that wins. In the production of this book Mr. James has performed a national service. The work, which is in the press, will be published by Mr. Morang, and be sold at the very moderate price of 25 cents.

Large English Berkshires and **Barrad Plymouth Rocks**
Foundation Stock of Berkshires selected from herds of Arthur Johnson and Scott's Gold Medal Herd.

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Young cows bred to a Snell Sire.
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ENTRIES CLOSE TUESDAY, SEPT. 13th.

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Sherbrooke, Que., SEPT. 5th to 10th, 1898.

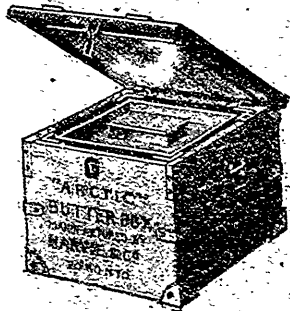
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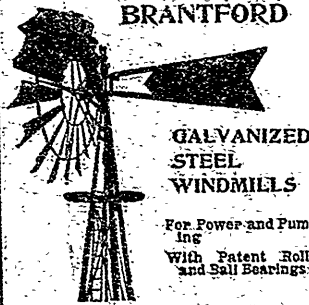
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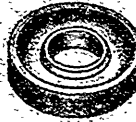
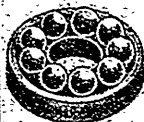
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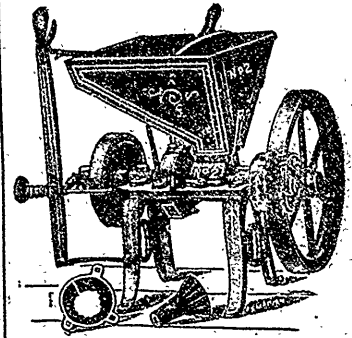
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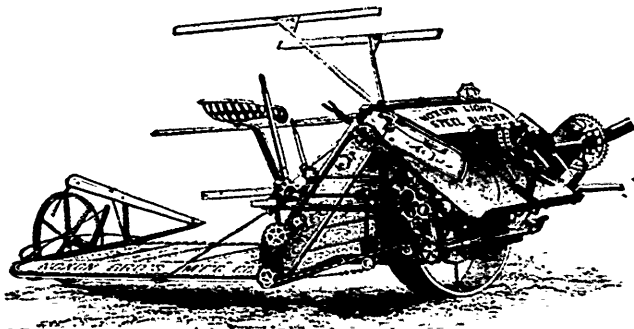
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