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Every Machine guaranteed to give satisfaction is an easy seller.

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are amongst the very best. TRY A COCKEREL.
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Will sell my breeding stock which includes my imported birds of Golden and Silver Wyandottes. Winners at the Canadian and U.S.A. shows. Golden and Silver Wyandottes eggs, \$1 per 13. Headed by Cock from Sharp Butterfield.

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Caustic Balsam

A Safe Speedy and Positive Cure for all kinds of Ulcers, Heat, Blister, and other eruptions. Takes out all humors from the blood and cures all kinds of skin diseases. **SUPERSEDES ALL CAUSTIC PREPARATIONS.** Impassible to produce scar or blisters. The bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or direct from the manufacturer, with full directions. Send for descriptive circulars. **LAWRENCE-VILLIAMS CO., TORONTO**



A. F. MacLAREN, M.P., STRATFORD

...LEADING TOPICS FOR THE WEEK...

Requisites of Success in our Co-operative Dairying. The Short Selling of Cheese. Arbitrations Between Buyers and Sellers of Cheese. Looking Backward. Instructions in Winter Creameries. Salt for Stock. Meat Scarcity in Australia. Agriculture in Public Schools. Canada's Dairymen. Advantages and Disadvantages of Modern Methods of Poultry Culture. Feeding Dairy Cows in Winter. Report of the Convention of the Butter and Cheese Association of Eastern Ontario. Market Review and Forecast. Docking Horses.

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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 111, imp. 6955; dam, Nellie Osborne, imp. 5358.



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Our Special Offering consists of six choice Ayrshire bulls and a few heifers; two Guernsey bull calves, and a choice lot of Shropshire and pigs. All at very low figures for immediate sale.

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DRYDEN, QUE.

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PRICE, \$2.00 A BOTTLE.

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TESTIMONIAL

BUFFALO, Mass., Nov. 30th, 1897.
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Address **FLEMING BROS., Chemists**
ST. GEORGE, ONTARIO.

English Advertisements.

Henry Dudding

Riby Grove, Great Grimsby,
Lincolnshire, England

Has always for inspection, and sale, the largest flock of pure Lincoln Longwool Sheep in the county, including many prize-winners, having taken prizes for many years at the Royal and other shows for both Rams and Ewes, including champion medals at both the Paris Exhibitions, Vienna, Amsterdam, Canada, Australia, New Zealand, and all the leading prizes at the Chicago Exposition; also the first for the best collection of Lincoln fleeces of wool at the Royal Windsor Show and the Lincolnshire Show, which proves the character of this flock. The sheep are famous for their great size and one hundred and twenty-five years' good breeding. At Lincoln Ram Sale, 1896, this flock's consignment not only made the highest individual average of any consignor, but also made an average price exceeding that made by any other breed in England, i.e., \$511 per head, the first six making an average of \$840. The sheep for sale this year are all sired by noted rams, and are fully equal to their predecessors in every way.

Station: Stallingborough, 3 miles distant, and Great Grimsby 7 miles.
Telegrams: "Dudding, Keelby, England."

S. E. Dean & Sons

Dowsby Hall, Folkingham,
Lincolnshire, England

Have always for inspection and sale fine specimens from their FLOCK of PURE LINCOLN SHEEP (No. 47 in Lincoln Flock Book), including SHEARLING EWES and RAMS, also RAM and EWE LAMBS. Sheep from this flock have been exported to nearly all parts of the world, where their great substance and large fleeces of beautiful quality wool give the greatest satisfaction to purchasers. Early in 1865, about twenty Rams from this flock were sold by public auction in Buenos Ayres, and realized the highest average ever obtained for Ram Hogs exported from England. The flock is most carefully bred, and none but the very best sires used. Messrs. Dean also send out selections from their flock to purchasers who are unable to come to England to inspect them, and they have given great satisfaction. Messrs. Dean have also for sale purebred Bates SHORTHORNS and pure LINCOLN RED SHORTHORNS.

Dowsby Hall is one mile from Rippingale Station, on the Great Northern Railway, Bourne and Sleaford Branch.

TELEGRAMS: DEAN, RIPPINGALE.

D. J. Millington

Sempringham House,
Folkingham, Lincolnshire, England

Has for sale pure bred registered Lincoln Rams, Ewes and Ram Lambs and She Lamba. Flock established over 100 years. The Rams this year are principally sired by the 200 guinea ram Sempringham, 3145, Ashly Rover, 1291. This sheep gained first prize at the Yorkshire Show in 1895, and last year clipped 11 lbs. of wool. Sempringham Pointon A, 2241, Loughton Chief, 1427 (sired for a high figure), and Sempringham Dudding, 2740, half brother to the Royal Prize Shearing at Darlington.

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J. E. Casswell

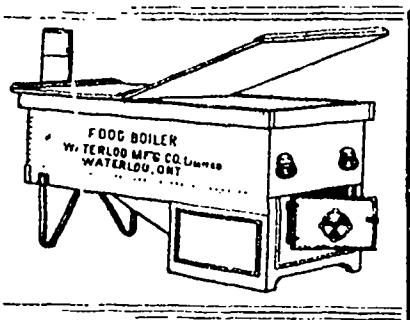
Stock Book No. 46
Laughton, Folkingham, Lincolnshire, Eng.
This well-known flock has been established more than 70 years, and the pedigreed Lincoln long-wooled rams and ewes have been noted throughout the Colonies and South America for their "size, symmetry, and lustrous wool." Ewes from this flock have always passed from father to son, and have never been offered for sale. Mr. J. E. Casswell's grandfather, Mr. G. Casswell, of Laughton, was the first breeder in the county to let his rams by public auction. At Lincoln Ram Fair, 1865 and 1867, Mr. J. E. Casswell made the highest average for 20 rams. The rams of 1866 were all sold privately for export. During the last two years the following amongst other noted sires have been used: Bakewell Councillor and Baron Rigby, for each of which very high prices have been refused; Laughton Major, Laughton Style, Laughton Choice, No. 5; Ashby George, 60 guineas; Judge, 95 guineas; his son, Laughton Justice Lincoln, 200 guineas; Lincoln, 152 guineas; Welcott, 70 guineas; Lincoln, 72 guineas; and his sire, Laughton Riby. Shire horses, Short-horn bulls, and Dorking fowls are also bred. Inspection and correspondence invited. N.B.—Laughton Choice was 2nd at the Royal and a pen of 5 thereof by him won 1st at Royal Darlington. Visitors met by appointment. **TELEGRAMS:** Casswell, Folkingham, England.

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Have always for inspection and sale pedigreed registered Lincoln Longwool Rams and Ewes from their registered flock (Flock Book No. 32), which has been most carefully bred for upwards of one hundred years, each Ram and Ewe having full pedigree. Royal, 130 guineas, used in the flock this season.

The Waterloo Food Boiler



Used chiefly by Farmers, Stock Feeders, and Butchers for Cooking Feed for Stock and Poultry, for Boiling Sap, Scalding Hogs, etc., etc.

You save fifty per cent. of the feed, and produce double the growth and fat, when feeding boiled feed than when fed dry and raw.

The Waterloo Food Boiler is the simplest, cheapest, most convenient, and most economical Boiler in the market. Every farmer should have one.

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All kinds of Registered Stock, Horses, Cattle, Sheep, and Pigs supplied on Commission.

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North American Chemical Co., Limited,
GODERICH, ONTARIO.

Dispersion Sale of Live Stock

The property of John Miller,
Markham, Ont.

Wednesday, Jan. 26, 1898.

Twenty-three head of Shorthorns, 16 cows and heifers and 7 young bulls; 15 Southdown sheep, 8 horses and a large number of farm implements. Everything will be sold without reserve, as the proprietor is giving up farming. The sale will take place at Mr. Miller's farm, situated 4 miles from Markham Station, Midland Div. G.T.R. and 3 miles from Locust Hill, C.P.R. Catalogues will be ready January 10th, and may be had by applying to

JOHN MILLER,
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One of the best and cheapest mills in the market, possessing qualities which no other mill of its kind has. We also make mills to grind corn and cob in the ear, and windmills geared to wood or steel. Also pumping. Send for circulars and prices.

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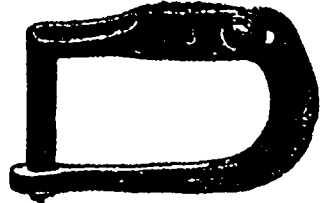
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The Apollo Harp

A Musical Wonder.

We will give the Apollo Harp, No. 4, which renders four chords, and valued at \$4.00, for 5 New Yearly Subscribers at \$1 each.

Apollo Harp, No. 27, rendering twenty-seven chords, valued at \$8.50, given for 10 New Yearly Subscribers at \$1 each.

If you cannot secure the required number we will take part cash and balance in new subscriptions.

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A work of the highest character. Every Farmer should have one.

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FARMING

44-46 Richmond Street West,
Toronto, Can.

FARMING

Vol. XV.

JANUARY 18TH, 1898.

No. 20.

FARMING

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

Published every Tuesday by

THE BRVANT PRESS,

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Representative for Great Britain and Ireland, W. W. CHAPMAN, Fitzalan House, Arundel St., Strand, LONDON, ENG.

TOPICS FOR THE WEEK.

They all Speak Well of It.

It was with considerable trepidation and concern that in September last we changed FARMING from a monthly to a weekly publication. But now after several months' experience with the weekly, we do not at all regret that we made the change. In fact, we are delighted with the result, and the increased popularity of the weekly over the monthly even during the few months since the change was made, amply justifies our action. One of the special features of FARMING that is commended more highly, perhaps, than others is the weekly market review and forecast. We give below extracts from a few of the many letters received, expressing the highest appreciation of FARMING in its present form:

Thompson R. James, Lindsay, Ont., writes:

"FARMING is a profitable paper to any farmer. For myself I feel the short time I have taken it that I could not do without it, particularly for the correctness of the markets."

CASTLETON, ONT., Jan. 11th, 1898.

SIR,—Please find enclosed \$1 for renewal of your valuable paper, FARMING. There is such a lot of very valuable information in it that I like to save all the copies. The market report is a good addition to it, and also the Agricultural Gazette.

JOHN MCCURBIN.

ERIN, ONT., Jan. 6th, 1898.

SIR,—Enclosed please find P.O. order for \$1.50 for subscription for FARMING renewal and *Toronto Weekly Globe* renewal. I am much pleased with the weekly reports of the markets in FARMING.

JAMES BINNIE.

FULLARTON, ONT., Jan. 11th, 1898.

SIR,—Enclosed please find \$1 for FARMING. I am very well pleased with the change you have made with the paper in publishing weekly. It is certainly an up-to-date paper.

JNO. G. BAIN.

Our Clubbing List.

We are pleased indeed to be able to offer the following low clubbing rates for FARMING with other publications:

	Regular price.	With FARMING.
Canadian Magazine.....	\$2.50	\$2.50
Toronto Weekly Globe.....	1.00	1.50
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Montreal Daily Witness.....	3.00	3.00
Toronto Morning World.....	3.00	3.00
Montreal Weekly Witness.....	1.00	1.60
Family Herald and Weekly Star.....	1.00	1.75
London Weekly Free Press.....	1.00	1.75
London Weekly Advertiser.....	1.00	1.40
Ottawa Semi-Weekly Free Press.....	1.00	1.60
Hoard's Dairyman.....	1.00	1.75
Rural New Yorker.....	1.00	1.85

Agriculture in Public Schools.

Agricultural education has been a frequent topic for discussion at farmers' institute meetings, dairy conventions, etc., for some years back, but it is only within the last year or two that the question has taken a really practical turn. We have it on the best authority that agriculture has been placed on the curriculum in the rural and high schools of the province, and that before the end of the present year a new and practical text book on agriculture will be ready for use in these schools.

The Minister of Education is to be commended for his action in this regard. Everyone who takes any interest in the development of our agricultural resources will approve of the scheme. Fully 70 per cent. of the boys and girls of Ontario are living in the country, and to go on educating them away from the farm is a very serious mistake indeed. If agriculture in Canada is to progress, an effort must be made to retain the very best young blood on the farm. This cannot be done better than by reaching the boys and girls in their school days, and directing their minds and their inclinations towards the farm. It is not necessary to teach practical agriculture in the schools in order to accomplish this. By prescribing a course of study that will tend to interest the youthful mind in the importance of the farmer's calling, and that will create a love for the farm and a liking for agricultural pursuits, boys in the rural districts will have a greater inclination to remain on the farm and to make agriculture their life work. This cannot be done at once, and it may take several years before there may be any noticeable change in the present tendency for young men to look to the cities for opportunities for advancement. The teachers of the rural schools must acquire a knowledge of agricultural subjects before they will be able to enthuse their pupils in the subject. This will take time. But there will be no doubt about the eventual result.

In countries such as France, where more attention has been paid to educating the young in the principles of agriculture, the results have been very satisfactory. In France, for instance, there has been rapid advancement during the past few years in the study of agriculture in the public schools, and the result has been that the peasant farmers of that country have no less than \$600,000,000 on deposit in the post office savings bank. So in Ontario with the study of agriculture placed on the curriculum in our rural and high schools and collegiate institutes, we may expect still greater advancement in the development of our agricultural resources. With their minds judiciously directed towards agricultural pursuits when in attendance at the rural schools, with a wider agricultural course in the high schools and collegiate institutes, and with the opportunities which the Ontario Agricultural College affords for acquiring and perfecting an education in the more advanced and scientific side of agriculture, young men will not be so tempted to leave the farm and seek opportunities for advancement in the towns and cities. If our young men would only think so, there is really more room for advancement on the farm than in the professions and in mercantile pursuits. In the latter men only reap success after years of hard toil and anxiety. How many professional men to-day are much more than making a living? The percentage is very small indeed. In fact, the great majority of men in professional life to-day in the towns and cities are barely making a living, and to do this they have had to spend nearly the price of a good farm in fitting themselves for their particular vocation. The man in mercantile life is in a somewhat simi-

lar position. It is stated that only about 5 per cent. of those who go into business succeed. This is a very small proportion in comparison with those who succeed on the farm even in these hard times.

It is undoubtedly true that in Canada at the present time no other calling presents as many opportunities for advancement as agriculture. For a very small proportion of the amount required to enter professional or mercantile life a young man can start farming in some of the newer sections of Ontario or in the Northwest, and if he applies himself, in a few years will be practically independent as far as the outside world is concerned. Besides, if a young man is ambitious the farm is the place for his greatest aspirations. He can become a leader among his fellows there quicker than in any other calling. To do this, however, he must make a study of agriculture and put into practice more modern methods than are now followed by the average farmer. So with the knowledge of the first principles of agriculture acquired at the public school, and with a love for the farm instilled into him in his early youth, the young man on the farm or elsewhere will not be so much inclined to leave the farm, and will find in Canadian agriculture opportunities for advancement and preferment which no other calling affords to-day.

Requisites of Success in our Co-operative Dairy System.

One of the essential features of our system of making cheese is co operation. There are three factors concerned in this co-operation: The patron, or the man who supplies the milk, the maker, or the man who makes the cheese, and the manufacturer, or the man or company that owns the buildings or plant. The success of the whole concern will depend upon how these three factors perform their respective duties. If they are negligent as regards the performance of their respective parts in the co operation, failure will be the result, and a fine quality of cheese or butter cannot be made.

The duties of the manufacturer and maker are pretty well defined and the responsibilities attached to each fully recognized. Not so with the patron, who supplies the milk. We are of the opinion that many patrons of cheese factories either do not fully understand the duties dependent upon them or are negligent in performing them. Negligence, or ignorance at the very source of the milk supply makes difficulties all the way through the cheese making process. If the maker can be assured that the milk supplied is perfect in regard to flavor and keeping qualities, and if he understands his business, there should be no doubt about a first-class quality of cheese being made. A maker who cannot make good cheese from a good quality of milk has no right to be in the business and should be dismissed on the spot.

The primary cause of the greater portion of the "cull" cheese made in many of our cheese factories to-day is the neglect on the part of some patron to give his share of the co-operative scheme the proper attention. If the cow is not provided with proper food and a sufficient quantity of it she will not be able to give a good quality of milk nor a large quantity of it. Then the patron should give particular attention to the little details connected with the care and handling of the milk after it is taken from the cow. In this particular the duties of the patron may seem trivial, but they are nevertheless important, and if neglected will prevent the finest quality of cheese from being made. Did it ever occur to you that success in almost every calling depends upon how much attention is

paid to the little details of the business? In the dairy and in cheese making is this true, more perhaps than in any other line of work.

If the patron who supplies milk to a cheese factory or creamery fully realized the importance of giving special attention to the little things connected with the care of the milk they would not seem so trivial. It is because many patrons do not fully realize the importance of the duties they have to perform in carrying out their share in the cooperative system that these little things are so often neglected. The maker is held as the responsible party in the concern, and if the cheese made are inferior in quality and do not command the top price he is compelled, in many cases, to make good any loss. This is perfectly right if he is to blame and if the loss has been due to his negligence or inability to perform his work satisfactorily. But when losses occur where the maker is not to blame he should not be held responsible. The maker in the large majority of cases should not be held responsible for losses from bad-flavored cheese or butter. In the first place, it is very difficult always to detect bad flavors in milk when it arrives at the factory, and flavors may afterwards develop through germs from some cess-pool coming in contact with the milk before it leaves the farm. In such cases where bad flavors which injure the sale of the cheese develop the maker should not be held responsible. Such cases of responsibility should rest upon the man who supplies the milk, and if this were done there would not be so much difficulty as there is at present in getting patrons to take the proper care of the milk which they supply to the cheese factory or creamery. We include creamery because what applies to cheese making in this regard applies to butter making also. In dairying, as well as everything else, there is always a tendency when loss occurs to shift the blame on to some one else. If the blame in each case of loss could be saddled upon the parties responsible therefor an improvement in the quality of the cheese and butter made in many factories would quickly result.

Instruction in the Winter Creameries.

The efforts of the dairy associations of the province in providing for instruction in the cheese factories and creameries are confined to the summer months and the late fall only, and no provision seems to be made for giving instruction in the winter creameries. A great many cheese factories are now making butter during the winter months and instruction in butter-making is needed as much during these months as during the summer season. In fact, more so, as many of the cheese makers who are making butter during the winter have not had the experience of the summer butter-maker nor as wide an experience in butter-making as they have had in cheese-making. The associations to whom is committed the matter of imparting instruction in the best methods of cheese and butter making should not lose sight of this fact and feel that their work is finished when the cheese-making season is over or when the summer creamery has ceased operations in the fall. The work of instruction should be continued during the whole year and an effort made to reach every winter creamery and especially the cheese factories which are making butter.

Winter butter-making is now of sufficient importance to receive greater attention than it is now getting in regard to instruction and inspection. It would be a suicidal policy to be any way lax in our methods at this juncture when so much depends upon the quality of the butter we are sending to Great Britain. To properly develop our export trade we must give particular attention to having every pound of butter sent forward of the very best quality, and not only that, but every butter-maker should thoroughly understand the needs of the trade in regard to the size and style of package to be used. True, the maker may be able to get valuable information in regard to these matters at the dairy schools and dairy conventions, but it has been demonstrated that no instruction is so valuable as that imparted by a competent instructor at the factory when the butter is being made. It is

hoped that the associations will take this matter up and make arrangements for some competent instructor to make at least one visit to each winter creamery before many weeks advance.

In the developing of our dairy interests it should not be lost sight of that the butter interests are just as important as the cheese interests. In fact, we believe that in many ways the butter interests need more attention than the cheese interests of the country. Our cheese trade has assumed large proportions, and with the exception of keeping up the quality of the product there is not much more to be done. With our butter trade it is quite different. We have to give attention to keeping up the quality as well as developing the export trade in butter.

Looking Backward.

The London, England, *Cable*, in its issue of January 1st, gives an interesting retrospect of the past year in regard to the British agriculturist. The British farmer, in looking over the past year, has every reason to be a little more cheerful. There has been, it is true, no extraordinary intervention, either of nature or of the Legislature, in his behalf. The harvest last year was considerably under the average, and there have been no acts of the Legislature but have been characterized by weakness rather than by strength. It is pointed out that the one solitary exception was in the reduction made in the rates of the Inland Parcel Post. This benefit is shown to be of special advantage to the home producer.

With regard to the wheat crop the yield was below the average, but this was compensated for by the fact that the price was higher than it has been for years. The average price of wheat for the past year was a little over 30 shillings a quarter, a higher average than has been obtained since 1892. The price of meat in England has undergone very little change, though the recent tendency has been in the direction of lower values. Considering all these things, however, there is really a better tone prevailing amongst British farmers than has been the case for some time past. This is pointed out as being due to some extent to the excellent weather which prevailed last autumn. There has not been a better seeding time for many years, and the land generally has been got in splendid condition for the winter.

While this is all very satisfactory, the *Cable* points out that the public must not be allowed to run away with the idea that agriculture is restored to something like its old-time prosperity. This is not the case. The increase in the price of wheat is almost nullified by the reduced yield. Dairy farming, however, has been conducted under very favorable conditions, and homemade dairy produce is beginning to command some attention in the market. The past year may, therefore, be said to have witnessed to a certain extent the revival of British produce. Taken as a whole the year has been productive of many small mercies, for which the farmers ought to feel thankful.

The British farmer according to this retrospect does not seem to have fared as well as his brother farmer in Canada. Here we have had an increase in the price of wheat without any decrease in the average yield. The stock interests have revived and the bacon trade has been more profitable than for years. For a large portion of the season the price of cheese was higher than for two or three years, and the yield larger. 1897 has, therefore, dealt more kindly with the Canadian farmer than with the British farmer.

Arbitration Between Buyers and Sellers of Cheese.

A bill has been introduced into the Legislature to facilitate the settlement of disputes between the sellers and buyers of cheese and butter. In this bill power is given to the Eastern and Western Butter and Cheese Associations to appoint arbitrators to whom cases of dispute may be submitted for settlement. In some ways this will be beneficial. An arbitrator appointed by either of the dairy associations would be a competent person and sufficiently disinterested to be able to give an unbiased

decision. Considerable difficulty has been experienced sometimes in adjusting disputes between the cheese buyers and the factorymen, where cheese have been rejected when bought, but most of such disputes have been satisfactorily adjusted by arbitrators appointed by the buyer and the seller under the direction of the local cheese board where the cheese were sold. However, referring such matters to a higher tribunal may be more satisfactory still, and the bill will likely meet with the approval of dairymen.

Arbitration in connection with cheese sales is attracting some attention in Montreal just now. This is in reference to the C.I.F. sales of cheese in England, or cheese sold subject to arbitration on the other side. Many in the trade on this side consider it unfair that in cases of dispute as to the quality of the goods sent forward they have to submit to an arbitration in which they have no voice. There is no desire on the part of those desiring the reform to impute any unfairness to the people who arbitrate on the other side, but they believe that in the event of lengthened arbitration proceedings in England, with perishable goods such as cheese and butter, the exporter is placed at a disadvantage in the event of the goods being thrown on his hands.

There does not appear to be any feasible way out of the difficulty. The English buyer will not definitely accept goods until he sees them, and the only way of settling cases of dispute is to submit the matter to some arbitrator on the other side. The past summer furnishes a case in point. A large cheese sale was made by a Montreal firm to a buyer in England. When the cheese landed they were reported not up to the standard of quality as stated when the sale was made, and consequently were not accepted by the English buyer. A lengthened arbitration case was the result, and if it is taken as a sample there is a great danger of goods becoming injured before disputes are finally settled.

The Short Selling of Cheese.

Mr. A. J. Brice, President of the Montreal Butter and Cheese Association, is strongly opposed to the practice of short selling of cheese. In his annual address delivered last week he pointed out that fully fifty per cent. of the past season's business was done on the basis of selling cheese ahead, or in other words, selling cheese that was not in possession of the seller at the time when the sale was made or perhaps was not manufactured. In the discussion which followed on this point in the address it was conceded to be more honorable to do business more openly and not according to this plan.

We are decidedly of the opinion not only that it would be more honorable, but that it would be of immense value to the trade all through if such practices of short selling were put a stop to. It is not at all necessary for the successful carrying on of our export trade in cheese that such methods should be practised. The question is assuming a very grave crisis indeed when fully fifty per cent. of last season's business in exporting cheese was transacted by "dealing in futures," and it is time that some definite action were taken by those in authority to prevent such practices.

Meat Scarcity in Australia.

The colony of Victoria, Australia, is now experiencing a meat scarcity. In the large towns and cities, in fact all over the country it is almost impossible to obtain a prime roast of beef. So much so is this the case that all kinds of poor meat are put upon the market, and it is expected that high prices will prevail for some time.

There are several reasons given for this scarcity; one of the chief ones being that the farmers in the colony have turned their attention chiefly to dairying, and have neglected the stock-raising interests. There has been a kind of a craze there to get cows for the dairy, and the consequence is that "deaconing" calves has been largely practised, with the result that very few steers are to be found in the country, and those there are

so poor and ill-bred as to be unfit for making really fine beef. Another cause of the scarcity is the stock tax imposed on all stock coming into the colony.

In Canada there is also a scarcity of good young stock for producing prime beef. The scarcity here, however, is not so much due to the fact that dairying has progressed, but that the stockmen have been hampered the past few years by extreme quarantine regulations and have not been able to bring new blood into the country. This difficulty is now past and we may look for large importations of stock in the near future. However, as in Australia, there has not been the attention paid to using the best stock for breeding purposes on the part of many of our farmers. Good stock cannot be produced but by good ancestors.

Fancy Cheese.

Comparatively speaking, there is not much fancy cheese made in Canada. With the exception of a couple of brands of fancy "potted" cheese, no attention has been paid to the development of this trade. Our efforts have been directed to promoting the manufacture of the regular factory cheddar cheese, and it is hardly necessary to state that these efforts have been eminently successful. Canadian cheese has a high reputation, and it might be possible with this established reputation for our dairymen to develop a large trade in fancy brands of cheese. A great many fancy cheeses are sold in our towns and cities, which are imported from other countries. Why is it not possible to make this cheese in Canada for the home market, and, if need be, for the foreign trade as well? We believe that experiments have been conducted at the Guelph Dairy School, and several of these fancy cheeses made. Excepting where the value of a certain brand of cheese is due to some form of bacteria peculiar to a certain district, there is nothing to prevent many of these fancy cheeses from being made in Canada.

Salt for Stock.

Many farmers do not fully recognize the importance and necessity of supplying their stock with a good supply of salt. Salt is just as necessary for the good health of stock, especially for horses, cattle and sheep as it is for the health of man. In a great many cases, however, the idea of salting stock on the farm regularly is never once thought of. It is often given at long intervals, and the stock are ravenous for it. Salt is particularly valuable for milking cows. If a cow does not get salt regularly she will not be in robust health and consequently will not produce as much milk. Some time ago experiments were made in England to ascertain whether the giving of salt to dairy cows had any direct bearing upon the supply. For one month three cows were kept without salt, and the milk from each weighed twice daily during the last fortnight of the period, when it was found that the three cows gave 454 lbs. During the succeeding fortnight the same cows received four ounces of salt each daily, and while under this treatment the milk showed an increase of 101 lbs., or amounted to 564 lbs. in all. This increase would be sufficient to enable the dairyman to realize a nice profit out of his business.

If the use or non-use of salt has such an effect upon dairy cows in England where there is supposed to be enough salt in the atmosphere to supply the needs of stock, what must the effect be in Canada, where there is hardly a trace of salt in the atmosphere, when milch cows are deprived of salt. The neglect to supply cows with the necessary salt may mean losing all the profit there is in the dairy business.

The Government Branding of Butter.

There seems to be considerable opposition to the Australian method of putting the Government brand upon butter. In the colony of Victoria it has been the practice for some time for the Government to put a brand upon all butter exported, indicating its quality. This is causing considerable difficulty in the trade. For instance, if a shipment of butter is branded choice when it

leaves the colony there is no guarantee that it will be choice when it reaches England. So the brand is practically of no use, as the English dealer does not place any reliance on it, and buys the butter according to its quality when it reaches him.

There is an agitation in the colony to do away with Government branding and allow the factories to use their own brands. This is the system in vogue in Canada. Every factory or dealer, after inspecting the goods, puts what brand on he may think best. Government branding and grading of butter for export might work satisfactorily in Canada where the distance between the producer and the consumer is not so great as it is in Australia, but it does not seem to be necessary, and would entail a lot of extra expense and difficulty in having it inspected. Government inspection might be beneficial in preventing poor quality from being sent forward, but it then is no guarantee that the English dealer will buy according to the brand. Brand or no brand, it is the actual quality of the goods when they reach him that determines the price which he will pay.

Electricity in Agriculture.

One of the latest applications of electricity is in plowing. The experiment has been successfully tried in France and Germany. The general principle is practically the same as other power-propelling plows. A gang plow is drawn back and forth across a field. The electric motor is carried on the plow itself and drives a pocketed chain sheave, which is attached to a chain stretched across the field and anchored at each end. The current is conveyed to the motor through a pair of trolley wires supported on carriers, which may be moved laterally across the field as the work progresses.

The general advantages of power plowing will apply to plowing by electricity. On large farms power plowing can be used to advantage, and in this particular consequently, the application of electricity will come into practical use. But on the ordinary farm it will be some years at least before plowing by electricity will be a practical thing. The great difficulty will be to get the power to generate electricity. When some of the electric railways that are projected for agricultural sections are an actual fact, and electricity can be supplied pretty cheaply to the farms along the route, we may see plowing by electricity become an actual fact.

NOTES AND IDEAS.

The development of the beet sugar industry in the United States is likely to receive a severe check if the Sandwich Islands are annexed to the United States. It is claimed that free sugar from Hawaii can undersell sugar produced in the United States by from 1 to 1½ cents per pound. With this competition to contend with, the beet sugar industry, which has been making such rapid progress in some of the states, will likely die a natural death in the United States if the islands are annexed.

The hog killings in the Western States continue to show a large increase. For the week ending January 1st the total killings were 580,000 as compared with 360,000 for the corresponding week last year, showing a gain of 220,000. For the two months beginning November 1st, 1897, there was an increase of 950,000 over the same time a year ago. However, notwithstanding this large increase, the price keeps up well and shows a little tendency to advance.

Cattlemen in the Western States are complaining of the scarcity of cattle for stocking the ranges. One cattleman from Wyoming states that he has had his men all over, endeavoring to get stockers, but they are so scarce and prices are so high, that it is really discouraging getting supplied. This scarcity, though it will not have any immediate effect upon the market, will probably tend to increase prices later on unless something unforeseen occurs to counteract it.

Secretary Wilson is making active efforts to increase the exportation of American horses for sale in the English markets. The agents of the department in London and elsewhere have been instructed to make reports on this subject covering the general question and the style of horse, the demand, price, etc. A special agent will leave for Europe to investigate the horse markets with special regard to cavalry horses. All the data secured from these sources will be compiled into a bulletin and sent to horse breeders.

CANADA'S DAIRYMEN.

A. F. MacLaren, M.P., Stratford, Ont.

Associated with Canadian dairying are the names of some of Canada's ablest citizens, but none are deserving of greater mention than Mr. A. F. MacLaren, M.P. Mr. MacLaren has been closely identified with our dairy interests from his early boyhood days. It has been said of many people that "They were born with a silver spoon in their mouths." In the same way it might be said of Mr. MacLaren that he was born with a piece of good Canadian cheese in his mouth, so closely has he been associated with every progressive movement for the advancement of our cheese industry.

Though he has lived in Western Ontario for many years, Mr. MacLaren was born in the town of Perth, in Eastern Ontario, and came with his father to Perth county when only two years of age. His education was obtained at the common school, and it is in no way discreditable to Mr. MacLaren to state that his early education was very limited indeed, and that his present wide knowledge of dairy matters and the important positions which he now occupies, both in connection with the dairy associations and in the field of politics, have been due to his own ability, perseverance and push. He worked on a farm till he was sixteen, when he began cheese-making at the Fullarton cheese factory, in the county of Perth. He spent four years as a maker, during which time he had charge of the Bryanson factory in London township, at the same time that Prof. Robertson, now Agricultural and Dairy Commissioner for the Dominion, had charge of his first factory at North Branch, in the same township. It is worthy of note that these two men, so prominently identified with everything that has been progressive in Canadian dairying, began their early training in practical cheese-making about the same time and in the same locality.

In 1878 Mr. MacLaren entered the wider field of cheese buying, in which he has continued with marked success till the present time. Unlike some of the buyers, who go through the country inspecting cheese, Mr. MacLaren always had a word of advice for the makers, and many of those who are to-day making fancy cheese owe much of their success to his counsel and instruction. In 1892 Mr. MacLaren began the manufacture of "MacLaren's Imperial Cheese." In this venture he has been particularly successful, and "MacLaren's Imperial" is known in every city in America, where a really delicious fancy cheese is fully appreciated.

Mr. MacLaren is considered to be one of the best judges of cheese in Canada, and is in demand at the leading exhibitions to judge dairy products. His ability and experience in this regard were fully recognized during 1893, when he was appointed judge of cheese at the World's Fair. Every dairyman fully appreciates the splendid service rendered to Canada by Mr. MacLaren in this capacity.

For many years he has been closely identified with the Western Dairymen's Association, and has been one of the prime movers in the many advanced movements which have characterized the work of that organization in recent years. He has filled every position in the gift of its members, and for two years has been the Association's able and esteemed president. Mr. MacLaren has been specially honored outside of the dairy, and is the representative of North Perth in the Dominion Parliament, to which position he was elected in 1896.

Mr. MacLaren's genial manner, natural ability and splendid generosity have won him many friends, who hope that he may long enjoy the popularity and esteem which he has deservedly won. FARMING has nothing but good to say of a man of Mr. MacLaren's ability and standing, and trusts that his services may long be available in promoting the dairy interests of Canada.

Look Up Your Address Label.

Will subscribers kindly examine the address label on this issue? We are open to receive renewals at any time, and there is no time like the present for attending to such matters. Remember that our special offer to extend subscriptions one year for two new yearly subscribers, and six months for one new yearly subscriber still holds good. A great many old subscribers have taken advantage of this offer. It, however, will be found on second page of cover in this week's issue. Are not those offered worth trying for? Kindly look over the list and see if you cannot secure some of these valuable premiums by sending in new subscribers.

ADVANTAGES AND DISADVANTAGES OF MODERN METHODS OF POULTRY CULTURE.

(Continued from last week.)

The best breed is the fowl best suited to your place, and whose products sell the best in your market. There are many different breeds, each having qualities suited to a special purpose. In some breeds, the various extreme qualities have been combined, and they, although not as good for any of these special purposes, are fairly good for all purposes, and are therefore popular with the majority who do not follow special branches.

Each breed differs under different management, and in different sections of the country. Each has undesirable qualities as well as good qualities. Some markets call for white eggs and others for brown eggs; some require yellow poultry while others will take anything that is plump and soft, regardless of the color of the skin or legs. If you want to produce winter eggs you want one thing, while for eggs in summer you want another breed. Certain breeds are very hardy and can stand exposure and hardship, while others more prolific are very tender. Some are very quiet and fatten readily, and others so active it is impossible to get them fat. There are those that excel in flesh production, but in little else.

Brahmas and Cochins are of great value to the industry on account of their hardiness, and always will be. They are not hustlers like active breeds, but stand cold and confinement well. The non-sitters, the Minorcas, Leghorns, Hamburgs, etc., are the greatest layers; unless protected from cold and damp and given considerable liberty, they will contract disease. The old English Games, the Cornish Indian, the Malaya, Black Javas and Ascels, are great flesh producers, but are less hardy than Chinese breeds, and much less prolific than the non-sitters. We have these classes combined in Wvandottes and Plymouth Rocks. They are rather too beefy to make the best layers, and not as hardy as the Cochins and Langshans, but as they are fairly hardy, fairly good layers, and good flesh producers, they meet the needs of the majority. They have enough of the beet and hardy blood to be quiet and withstand cold, and they produce brown tinted eggs and lay well in winter. Their worst "out" is a tendency to get so fat by the second year that they are no longer profitable egg producers, and, therefore, must be marketed. The non-sitters, if given liberty are profitable the second and third years.

If your market prefers white eggs, and you do not care to market table poultry, I believe the Black Minorca is the best breed for you. If you wish a white egg producer that has yellow skin and legs, the largest strains of White and Buff Leghorns would be my next choice. For a hardy winter layer of brown eggs the Langshan stands at the head, but the dressed poultry cannot be sold to advantage, or at all in some markets; it is, however, excellent for your own table. Black legs and black pin feathers are usually objectionable.

*Abstract of lecture delivered by Samuel Cushman, of Pawtucket, R.I. at the annual winter meeting of the Massachusetts State Board of Agriculture.

I cannot honestly advise every farmer to keep nothing but purebred poultry. I would like, however, to see everyone use purebred males of the breed best adapted to their purpose. If the poultrymen of this country could be induced to do this the sale of purebred poultry by breeders and fanciers would be ten times what it is to-day, and not only that, but many would succeed where they now fail. Let those who want to follow the business of raising purebred fowl do so. Let them do the improving, and where they succeed buy your stock of them.

There is a legitimate field for fanciers who sell exhibition and breeding birds, but those who succeed are a small number compared with the great number who can make money, producing eggs and poultry for market. Skillful breeders that raise but few, like the artist on canvas, do best to produce a few choice artistic productions that bring fancy prices; but the breeder who engages extensively, if he breeds the stock demanded by the practical producers, and is sufficiently well known, can sell all he can raise at a good price and make the most money.

The male is the most important part of the flock. I am out of all patience with this idea of buying the meanest, cheapest specimen from a purebred flock. Get the best, having in the greatest excellence the qualities which you desire, and pay what you must to get this. A bird at from two to five dollars is a wise investment, even to grade up common stock. If you reckon the difference it makes in the increase in egg production alone, you will be convinced. The size and marketable qualities of the whole flock depend greatly upon the male used.

Producers of cattle, sheep and hogs for market, have found they usually get stronger animals and better market stock by producing first crosses and high grades. By using a male of the same breed year after year we secure grades that are hardy and have the qualities of the pure breed. If males of different breeds are used each season the stock soon becomes very inferior. The more they are mixed in this way the worse they become. By crossing two pure breeds that are very dissimilar, we secure an increase in hardiness in the first cross, as well as the special qualities in each breed in a high degree. The feeding power is also greater, and more of the chicks will live. These first crosses, the males especially, should not be bred from, but marketed.

Choice fowls that have been weakened by over-feeding, confinement, and over-showing, that would not give satisfaction if bred pure, may sometimes be used with safety for crossing. Hardy stock that has been on the farm for five or six years is too good stuff to throw away. I would advise no one to discard it entirely and commence with purebred stock that they know nothing about. I am a fancier as well as a student of the commercial end of the industry. I admire, and have for many years bred for beauty, but having seen the disadvantages as well as the advantages of fancy stock, I give you this advice.

A great deal of butter in the private dairy is worked too much.

DOCKING HORSES.

W. A. SHOUTS, V. S., Gladstone, Man.

The Canadian Society for the Prevention of Cruelty to Animals seems to be devoting considerable attention to the question of "operating on horses' tails for the purpose of improving their appearance," with a view to its suppression and ultimate prohibition. While we entertain a feeling of profound respect for the said society, and note with gratification its noble efforts to alleviate the sufferings of dumb brutes, let us hope that its zeal may not outrun its discretion in the pursuit of such a laudable object.

While the enactment of a law, making the wholesale chopping off of horses' tails, by unskilled persons, a punishable offence, deserves the heartfelt approval of every lover of the noble animal, the total prohibition of such operations is quite another matter, and would, under existing circumstances, undoubtedly prove detrimental to the horse industry of Canada.

As long as the fashion prevails to have "coachers" or any other class of horses with short tails, so long will the operation of docking be necessary to enable the seller to procure the best prices for such animals. The value of a good carriage team may be depreciated fifty or a hundred dollars by one horse carrying its tail to one side. Nicking speedily remedies this defect, and whatever may become the fashion in regard to length of tails, it is highly improbable that a crooked one will ever be considered a mark of beauty.

Some people who would willingly submit to a painful, and in many cases serious, operation for the removal of some slight blemish, and the consequent improvement of their personal appearance, hold up their hands in holy horror at the thought that horses should be subjected to what they deem unnecessary operations for fashion's sake. The operation of nicking is not a serious one, nor is it considered by many eminent veterinary authorities to be attended with much pain.

Horses known as "switchers" have a disagreeable habit of keeping their caudal appendages in constant motion while in harness, and succeed in getting them over the lines in spite of the driver's best efforts to the contrary. Having accomplished this the animal generally kicks "till all is blue," and the driver, if he escapes with his life, leaves the wreck of his once handsome carriage on the roadside, and leads the brute home, "a sadder and a wiser man."

Many appliances have been devised for the cure of this vice but all prove unsatisfactory, and amputation of the unruly member is, in many cases, the only means of rendering an otherwise dangerous animal tractable and useful.

An argument often urged against docking is, that animals are thus deprived of their natural weapon of defence against the attacks of flies and other insects, and while this is true, horses which are valuable enough to require the operation are generally much better taken care of than their less fortunate fellows, and provided with artificial protection when the occasion demands it.

Although we do not wish to be understood as advocating the indiscriminate docking of horses, we believe there are many cases in which

the operation may be justly considered a necessary one.

FEEDING DAIRY COWS IN WINTER.

Now is the time to feed dairy cows well, and force them to the highest point possible in profitable milk production. At no time in the year has a farmer so much time to give to his cows as during the winter months, and at perhaps no other time do they require such careful attention. The margin between profit and loss is sometimes not very wide, and a little careful attention on the part of the farmer may turn the scale in favor of a profit.

In the first place dairy cows require better shelter than beef cattle. The beef animal uses the food for strengthening the body and laying on fat which acts as a covering and protection, while the dairy cow does not use the food given her to build up and strengthen her body; on the contrary she is thin, has no protection of fat, and uses her food for the production of milk. She feels the cold, and unless given very comfortable stables, will not yield the largest profit she may be possible of producing.

In the successful winter production of milk a plentiful supply of good water plays a most important part. Eighty-seven per cent. of milk is water, and the cow must have a liberal supply of it if she is to make large quantities of milk. Numerous trials show that a cow will give the greatest milk yield where she has fresh water before her all the time in the stable. She will drink a little at a time, ten or twenty times a day, and thus take more water than if she had access to it only once or twice a day.

A cow in full milk will drink from fifty to one hundred and fifty pounds of water a day. Now, if she be compelled to take this ice cold it will take some of the heat of the food, that should go for other purposes, to warm this water to the temperature of the body. This means a waste of feed value, and a consequent loss of milk production.

In forcing a cow to her highest point of production it must not be forgotten that every exposure, no matter how slight, will also cause a loss in milk yield. Therefore the cows should not be turned out to drink ice cold water. It means a double loss. The exposure to winds and storms going twice a day to water will cause a serious shrinkage in the milk yield, which, if continued for several days in succession, will be very apt to make a permanent reduction in the milk yield. During storms it may often pay to haul water for the cows rather than expose them. The best plan is to have the water in the stable before each cow; if that cannot be done, have the water trough in a covered shed.

It is only by watching for and stopping all these little losses that the best success is obtained. There is another loss a great many farmers are cheerfully sustaining, and which they could stop if they would but put on their thinking caps, and, perhaps, drop some of their prejudice. We all know that the cow gives the best returns under June conditions, when the great peculiarity of her food is the succulence of the grass. The nearer, therefore, that we can approach to these

conditions in the winter the greater will be our returns. The majority of our winter feeds lack this succulence, consequently the cows become constipated and cannot do as well as they otherwise might. This one thing causes a serious loss. It can be overcome by providing more succulent feeds, as ensilage, roots, linseed meal, and clover hay. Where dry cut corn stalks are being fed, a great improvement will follow, if after feeding the next feed is put in a box, a pailful or so of water put on it, and all closed up until next feeding time. Keep the cows from becoming constipated, and you will add materially to your profits.

BUTTER AND CHEESE CONVENTION OF EASTERN ONTARIO.

The first convention of the amalgamated association was held in Lindsay on January 11th, 12th, and 13th, 1898. In point of attendance, helpful addresses, and enthusiastic meetings it was one of the best, if not the very best, conventions ever held by the dairymen of Eastern Ontario. Mr. D. Derbyshire makes an ideal chairman and kept everyone in good humor. Mr. John Gould, Aurora, Ohio, was a whole host in himself, and his talks on Corn and the Silo, and on the Selection and Care of a Dairy Cow, told in his own peculiar way, were most helpful and very highly appreciated.

Professor Robertson's addresses on Cold Storage and Food Values were also helpful and interesting as usual. The address given by Dr. Connell on Bacteria in Relation to Dairying was one of the best on the subject we have ever heard. Professor Dean gave good addresses on the way science has helped both the butter and cheese maker, and on the Ideal Creamery. Mr. J. A. Ruddick, Superintendent of the Kingston Dairy School, gave an interesting paper to the cheese-makers on Curing Cheese. Mr. Mark Sprague's paper on Butter-Making was thoroughly enjoyed by all the butter-makers.

Dr. Saunders, Director of the Experimental Farms, gave an address on the values of different varieties of grains, on cover crops, and on catch crops, that was most thoroughly enjoyed by the large number of farmers present. Mr. Jos. E. Gould, of Uxbridge, showed a miniature stave silo and explained how it was built and hooped. Mr. W. T. Crandall, of Picton, one of the government agents in England during the past season, gave a few facts about the Canadian trade in England. The reports of the instructors and inspectors, of which there were seven the past season, were very suggestive of the need of more thorough work being done and of the great good the work of inspection was doing.

The following are the officers for the ensuing year: President, D. Derbyshire, Brockville; first vice-president, E. J. Madden, Newburgh; second vice-president, John McFavish, Van-camp; third vice-president, A. Campbell, Ormond. Directors: Division 1, W. Eager, Morrisburg; Division 2, E. Kidd, North Gower; Division 3, J. R. Dargavel, Elgin; Division 4, Jas. Whitton, Wellman's Corners; Division 5, T. B. Carlow, Warkworth; Division 6, Henry Wade, Toronto. Auditors:

Morden Bird, Stirling, and H. Brenton, Bellville. Treasurer, P. R. Daley, Foxboro. Secretary, R. G. Murphy, Elgin.

GLEANINGS FROM THE CONVENTION.

In reporting the convention this year we have departed somewhat from the usual custom and have gathered under suitable headings the leading points brought out by the various speakers.

Exports of Butter and Cheese.

The exports of cheese from the port of Montreal this year show an increase of 370,000 boxes over 1896, or a gain in money value of \$2,570,000. The increase in butter was 63,000 packages over 1896, having a money value of about \$800,000. Prof. Robertson called attention to the fact that in 1894 the export of Canadian butter was only 32,000 packages, and that in 1897 the number exported was 220,000, an increase of sevenfold in three years.

Prof. Saunders called attention to the significant change in the character of our exports. In 1886 we exported \$16,000,000 worth of coarse grains. In 1896 we exported only \$4,000,000 worth, only one-quarter as much; but our total agricultural exports were in 1896 over \$12,000,000 more than they were in 1886. They showed less crude material sent away and more finished products, the result of skilled labor, as good beef, butter, and cheese, etc.

Tampering with Milk.

Many instructors reported a great improvement in the factories, in their surroundings, and in the quality of the cheese as the direct result of their visits. The sad feature about these reports is the fact that some patrons will persist in tampering with the milk. In a district covering 250 factories, the inspector tested 9,000 samples of milk, and found forty-five had been tampered with. Of these, forty were fined, in all, a sum of \$950. This inspector believes in making the fines as high as the law will allow. The association received the sum of \$1,734.35 from prosecutions. As half the fine goes to the factory to which the tampered milk was sent and the other half to the association, this would mean that in Eastern Ontario a sum of \$3,500 had been paid as fines for tampering with milk sent to factories. The complaint was made that too much of the time of the instructors was taken up with prosecutions.

Paying for Milk.

If milk were paid for according to its actual value for either butter or cheese-making the temptation to tamper with it would be done away with. One speaker said it was not right that the patrons should be so tempted. Milk should be paid for according to its value. John Gould said it was a funny thing farmers would not pool their grain, their cattle or pigs or any other farm product, but they are willing to pool their milk. Would two farmers think of pooling the proceeds of their fat cattle? Say one had a 1,000 lb. steer and another a 1,500 lb. steer, both sold at five cents a pound. The one would bring \$50, the other \$75. Do you think these two farmers would be content to take \$62.50 each, just for the sake of good neighborhood? Then

why pay for milk the same way? He maintained that nothing would so increase the quality of the milk and put a premium on honest effort as paying for milk according to its value.

Pasteurizing Milk and Cream.

Prof. Dean advocated pasteurizing the cream wherever there was any trouble from tainted milk. There were always complaints coming in from the men who bought their butter before they began pasteurizing the cream. Since then there have been no complaints. He does not think it profitable to pasteurize the whole milk. He found that pasteurized cream gave a somewhat milder flavored butter which he believed to be in demand. It took away some of the fine aroma of the butter, but made a much better keeping article. Prof. Dean and others insisted on the thorough cooling of the cream after it had been pasteurized.

Prof. Dean found in an experiment that pasteurizing the whole milk seemed to change its character somewhat for cheese-making. When the rennet was added he did not get as firm a curd, it was softer. The cheese cured slowly and was somewhat like a Stilton cheese.

Bacteria in the Dairy.

This is a big subject, but one which both the farmer and the dairyman will have to study and try and learn all about it they can. Just as they have learned to understand and use such words as the telephone, phonograph, etc., so will they have to learn what bacteria are, how they live and work, and how different forms affect dairy products and the soil for good or ill. Dr. Connell's paper on this subject made things so plain that any farmer or dairyman could understand it. We hope to give his paper in full at an early date.

While there are good or helpful forms of bacteria there are bad or harmful forms as well, which the dairyman must not cultivate. Each year new harmful forms are found. This year Prof. Dean had a sample of cheese sent to him from Eastern Ontario with peculiar wavy red discolorations, which he believed to be caused by a different bacterium to the one that Dr. Connell discovered as causing the red discolorations last year. This one develops a peculiar sour, whey-like odor in the cheese. At the factory where the sample came from the whey is sent home in the milk cans. Prof. Dean believed the bacterium first developed in the whey. He also found that it showed itself only in colored cheese, which would look as though it worked on the coloring matter, and therefore advised makers to use none but the best of supplies.

Prof. Robertson said the dairymen were making progress along the line of their knowledge of bacteria, and that they would require to, because he believed that the longer a cheese factory was in a neighborhood, and the more thoroughly the ground became saturated with the washings of the factory, with milk and whey, etc., the more difficult it would be to make good cheese. These conditions would develop suitable breeding ground for new forms of bacteria. The same thing will take place on the farm, requiring greater care in handling the milk than ever before.

Bacteria in the Soil.

Dr. Connell said that a billion bacteria could be spread on a five-cent piece. John Gould wants to get millions of these little fellows working for him in the soil. He thinks it a cheap way to hire help; so he puts out his manure in the green state, and gets them to work at it in the soil and liberate plant food. He also turns down a good clover sod for his corn crop and sets a lot more of these microscopic laborers at work for him. He sows clover with his various crops and sets millions more of them at work gathering nitrogen from the atmosphere and storing it in the soil while he looks after other things.

Curing Rooms.

Prof. Robertson said that it was important that cheese-makers should remember that when cheese left the press it was only half made, and that its quality and flavor can be greatly controlled in the curing. While it is important to look at the patron's side of the business it is equally important to study the maker's end also. The curing room must have more attention in the future. Certain conditions are necessary for successful cheese making. For instance, a maker would not think of trying to secure an even make of cheese by cooking one day at a temperature of 90°, the next day at 100°, or 98°, or 96°; he wants a regular temperature every day. So, too, in the curing room, the best results are not attained where the temperature varies with that of the outside air.

The way most curing rooms are kept cool in summer is by opening the windows at night and closing them, and the shutters too, during the day time. The majority of the rooms are not close enough to prevent some circulation of air during the day; but where the building is close, it means that the cheese are curing in an unventilated atmosphere and in the dark. These are undesirable conditions.

All curing rooms should be thoroughly insulated so that the outside will not affect the inside temperature. In the majority of cases this could be accomplished by lining the existing rooms with two ply of building paper, put over this two-inch strips, and on them two ply of lumber with two thicknesses of paper between. The cost of lining the ordinary room will be about \$150. An air drain is then necessary to furnish a free supply of air. A drain one foot square, three feet deep in the ground, and about 100 feet long with two openings into the curing room through the floor will meet all requirements. This drain will cause the air in the curing room to contain more moisture, which is very desirable, as generally the air is too dry. Sprinkling the floor with water twice in the forenoon will cool the room more than most people believe it will. An ice-house was as necessary for the cheese-maker as his wood and other supplies. Use it in the curing room, but there is not much use using it there if the building is not properly insulated. Now that we have cold storage to England we must make a better cheese. In England they have our June conditions of pasture during the whole cheese season, and at the same time, for the whole season our

September conditions in the curing room. So if we are to make a cheese that will sell for as much money as the old country cheese we will have to be stir ourselves.

Mr. Ruddick also strongly recommended having the curing rooms so built that the cheese-maker could control the temperature of the room with ice at all times.

Curing and Ripening Cheese

Mr. Ruddick said that all along we have thought that the rennet has played the most important part in the ripening of cheese, because the more rennet that is added the faster the cheese will ripen. This is not necessarily so because there is no doubt that moisture and temperature also count in the ripening process and possibly much more than we give it credit for.

Dr. Babcock, of Wisconsin, has, however, advanced a new theory that may upset all of our ideas about the ripening of cheese. It is no less a theory than that certain enzymes inherent in the milk itself are the agents that ripen the cheese and not the rennet. If this be so we will have to change our ideas; time only will tell.

Mr. Ruddick called attention to the results of an important experiment. He had placed green cheese from the same vat in a room the temperature of which varied with that of the outside air, the average temperature during the experiment was seventy-five degrees, and in a room where the temperature was kept between sixty and seventy degrees, with an average temperature of sixty-four degrees. The cheese were weighed when they were put in, and at the end of three weeks they were weighed again. The cheese that were kept at the lower temperature showed about one pound less shrinkage in a seventy-five pound cheese. Samples of the cheese were sent to Brockville and Kingston to be tested, with the result that a commercial value of one half cent a pound in favor of the cheese cured at the lower temperature. Mr. Ruddick estimated that these gains would amount to about \$480 on the season's make at the average factory. This saving can be effected by using ice and having the rooms properly insulated. The gain the first year would much more than pay the cost of fitting up the curing room. Directors of factories should take notice of this, and provide their makers with an up-to-date curing room.

New Butter Package.

Mr. Ruddick showed a new package for pound prints, which will make a great improvement in handling print butter. The print is wrapped in parchment paper, then slipped into a tight fitting case of cardboard. It makes a neat package, and twenty or thirty of them can be shipped in a small case of light board in the winter time much cheaper than in any other way. The total cost of parchment paper, paper case and shipping package is less than one cent a pound.

Butter Making

Mr. Ruddick called attention to the fact that milk, while warm, will absorb certain odors. Salt, he said, will also absorb odors, and should therefore be kept in a clean place.

Mr. Mark Sprague said that when a butter-maker accepted milk he became responsible for the product. He

should, therefore, be able to detect tainted milk and return it, or gracefully accept the criticisms of the buyers.

Professor Dean says that when silage is fed the butter churns much easier than when the cows are fed dry feed. He had repeated the experiment tried some time ago with milk from fresh cows, cows under six months, and cows over six months. The first experiment showed that there was not much difference in the flavor of the butter made from the different milks.

This season's experiments showed that the fresh cows' milk made the best flavored butter. This shows that too much reliance cannot be placed upon a single experiment. The patrons of a cream-gathering creamery near Barrie were in the habit of straining their milk through pounded ice into the creamery cans, claiming a more complete separation as the result. They had tried it at Guelph and found no difference.

Aeration of Milk.

Professor Dean gave a good instance of the value of aerating milk. On the 26th of July they had an especially bad lot of milk at the dairy school. One half of it was aerated; the other half was not. The milk that was aerated made the best cheese, and there was less loss of fat in the drippings. They also found gassy curds were much more easily handled if the milk was aerated.

Care of the Cow.

Mr. John Gould thought we should take a great deal better care of the cow. We keep her to increase our herd, to give us a necessary and wholesome food, to enrich the soil by returning to it 85 per cent. of the manurial value of her feed, and finally, to make jerked beef for the family.

Every farmer should study the science of "Ovology" or the science of bovine motherhood. He thought that many a dairyman was most brutal in his treatment of the cow mother. Why tie up a calf where the mother can see it but cannot reach it? Why crucify her feelings in this way? Why let the calf suckle the cow for a day or two until the mother becomes fond of her offspring, then tear it away?

Never let a heifer's calf suckle her and she will never know that there is any other way of removing her milk than by the human hand. Ingratiate yourself into her favor and get her to adopt you as her calf and you will get the most milk. Bestow real affection on the cows and they will love you in return. Treat them as you would members of the human family and they will pay you well for it.

Cows that calve in the fall will give 2000 lbs. more milk in the course of the year. Try it. Why should they not give the most milk in the winter? They cost the most to feed during this time. We want our cows to have great vitality, and be hardy. We never think of this when they are out in hot summer sun; but just as soon as the cold weather comes we expect the cows to freeze and thaw out twice a day, drink 100 lbs. of ice water, and give a lot of milk. Yea, verily, they will. It takes four good pounds of Indian corn meal to keep a cow warm if she is out doors, but if she is kept in a good stable she won't take the half of that.

The General Purpose Cow

Mr. John Gould says that a good many farmers want a cow that will give a big flow of milk, that will give rich milk, that will be a real good cheese factory cow, that will give milk suitable for the city milk trade, that will drop a heifer calf one year which will develop into an ideal dairy cow, and the next year give a bull calf that will make an ideal broad-backed, deep-fleshed beef steer. You might just as well want a general purpose farm machine, one that will plow the ground, harrow and sow it, then reap the harvest and thrash it, cut the hay and haul it to the barn, plant and dig the potatoes, then during the winter pull stumps and cut wood. Just as much sense in one as the other. Get a special purpose cow, and feed her for a special purpose.

Cover Crops.

Professor Saunders urged the farmers to grow more cover crops, i.e., clover, or peas and oats, to keep the ground covered. These plants gather food from the soil and air and prevent the loss of nitrates, which always occurs when the land is bare. On being plowed down they leave all the plant food they have collected in the soil, quickly available for other plants. Clover sown with grain in the spring grows up quickly after the grain is cut, and if plowed down in October will add manurial value equal to a dressing of ten tons of ordinary farm-yard manure per acre. If left until spring it prevents the loss of nitrates during the winter, and unless too badly winter killed will, when plowed down in the spring, add manurial value equal to an application of about fifteen tons of farm-yard manure per acre.

Corn for the Silo.

Professor Saunders exhibited a chart which showed the value of growing the right kind of corn for the silo in a way farmers can understand it. Corn that only reaches the tasselling stage by the time it is necessary to fill the silo only contains 186 lbs. of digestible nutrients per ton, if it reaches the silking stage it will contain 211 lbs., when in the early milk it will contain 257 lbs., in the late milk 286 lbs., and at the glazing stage 339 lbs. So that it will pay farmers to grow a corn for ensilage purposes that will reach the glazing stage by the time it is necessary to fill the silo.

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for

1898

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MARKET REVIEW AND FORECAST.

Office of FARMING,

44 and 46 Richmond Street W., Toronto, January 17th, 1898.

The wet weather interfered a little with trade this week, but on the whole general business has been good.

Wheat.

The wheat market is considerably easier than it was last week. The cables from Europe show lower prices, and unless there is considerable buying for export, prices are bound to decline this week.

At Toronto wheat is now about two cents lower than it was last week. It fell away early in the week, and will likely go lower still.

Barley and Oats.

There is no change in the barley market: it remains dull and unchanged at 32c. to 33c. for No. 2, and 25c. to 27c. for feed.

For the first time the oat crop of Ontario has exceeded the hay crop. This year there were several thousand more acres of oats than of hay.

Peas and Corn.

The market for peas is a little excited in the west in sympathy with better cables from Europe, and there has been some advance since last report.

Rye and Buckwheat.

Rye is steady at 45c. east and 44c. at points west of Toronto. At Montreal the market is firm at 53c. in car lots.

Milfeed.

The demand is only fair, shorts according to quality bring \$10 to \$12, and bran \$7.50 to \$8 for cars west.

Potatoes.

There is no change in the market. They are dull at 60c. on the track here, and at Montreal 55c. seems to be the best price for car lots.

Cheese.

There has been a fair demand for export during the week and sales are reported from 8,000 to 10,000 boxes at prices ranging from 8 1/2c. to 8 3/4c.

Butter.

The market at Montreal for fresh creamery is not quite so firm as it was last week. It is about 4c. lower.

The large amount of poultry sent to the English market from Canada, along with that sent from the continent, made the supply more than enough to meet demands.

Poultry.

There is room there for all the dressed poultry we can send, but send it judiciously. The market continues good for poultry during February, March, April, May, and even into June.

At Montreal the market for dressed poultry is quiet, and prices are fairly steady. Fresh killed turkeys bring from 9c. to 9 1/2c., while frozen birds bring from 8c. to 8 1/2c.

Eggs.

The market continues steady though the offerings are large. New laid eggs are firm at 18c. to 20c., late gathered sell at 15c. to 16c.

Cattle.

On account of good markets in Montreal prices have been a little better at the Western Cattle Yards at Toronto. Good export steers are scarce, but a few are picked up at from 3 1/2c. to 4 1/4c. a pound.

Sheep.

Export sheep continue quiet at 2c. to 3 1/4c. per lb. Lambs are firm and sell for \$4.50 to \$4.80 per cwt.

Hogs.

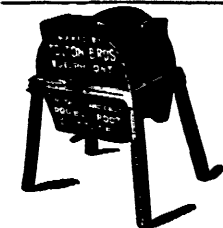
Tuesday's receipts of hogs at the Western Cattle Market was 4843, and the demand for them very sharp; they were all taken up quickly at an advance of 4c. per pound.

hogs brought \$4.50 to \$4.60 per cwt., stores \$4.40 to \$4.50. At Friday's market about 1,000 hogs were offered and sold readily at Tuesday's prices.

Dressed Hogs.

The market is a little easier owing to heavy shipments from the west. Choice weights, 90 to 150 lbs., bring \$6.10 to \$6.25 at Toronto; heavy weights, 150 to 250 lbs., bring \$5.85 to \$6.

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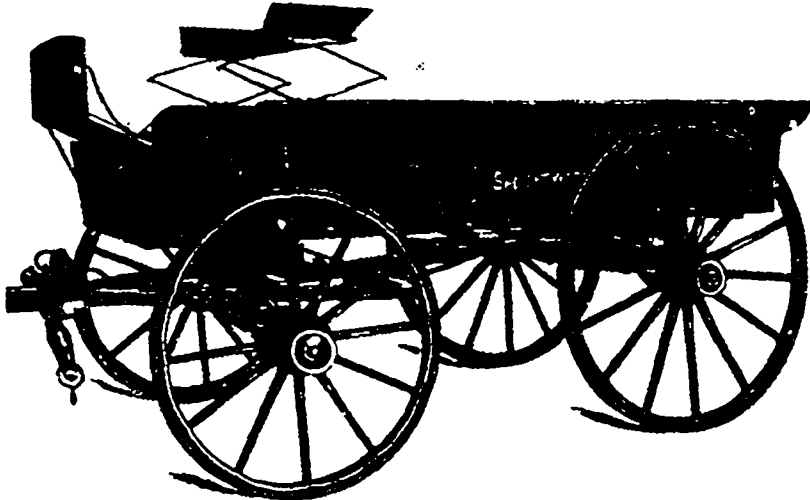
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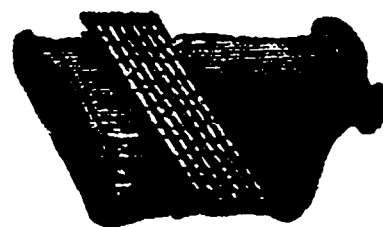
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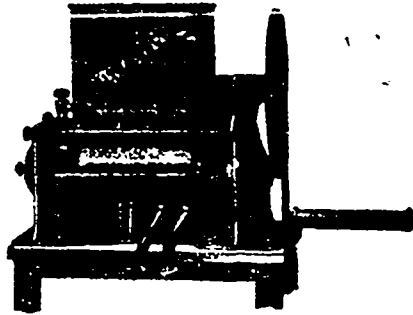


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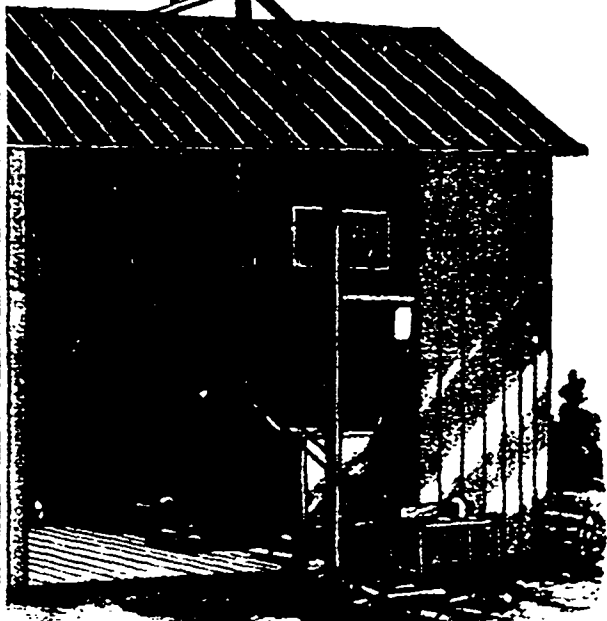
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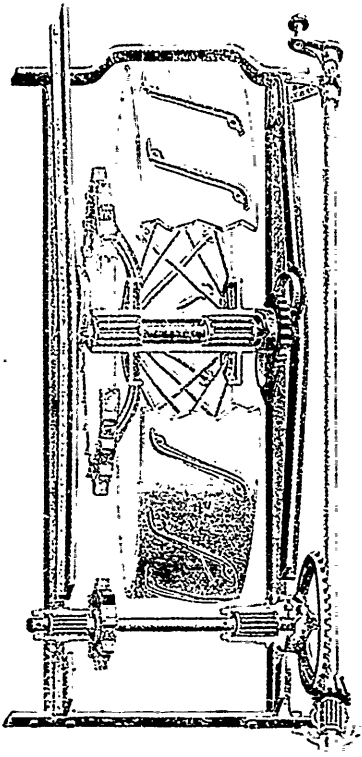
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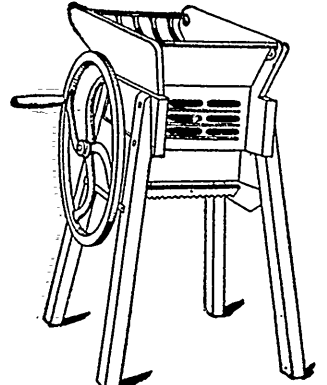
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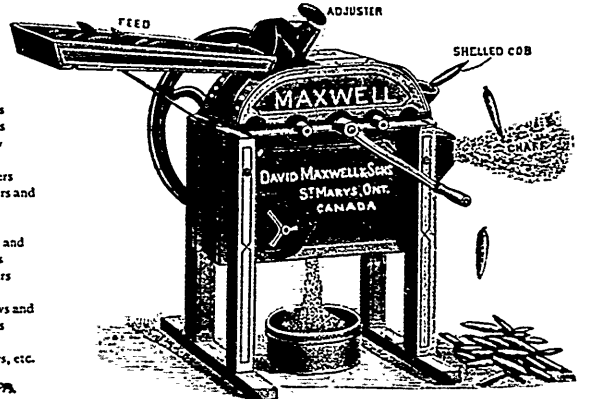
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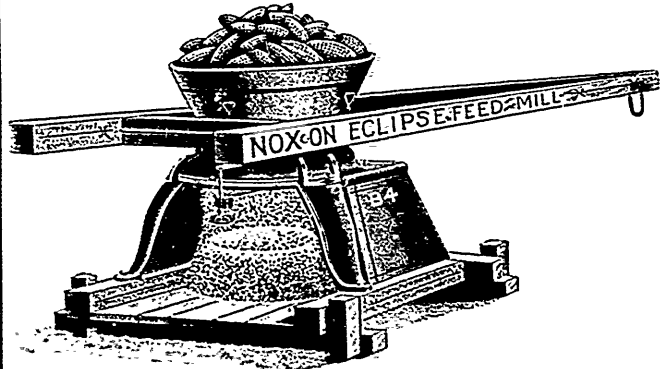
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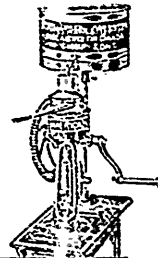
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