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DAIRY NUMBER.

Toronto, April 8, 1902.

# THE Farming World

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A PAPER FOR FARMERS AND STOCKMEN

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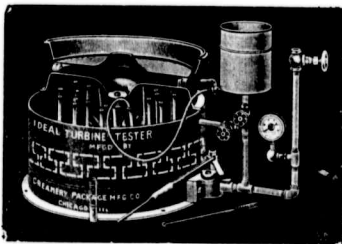
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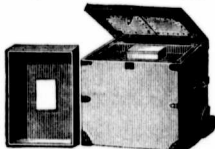
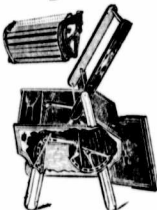


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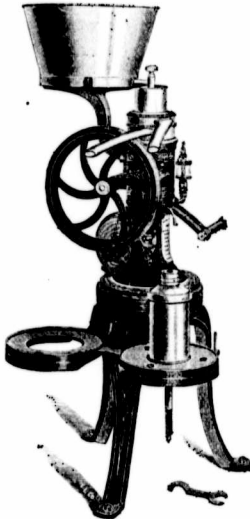


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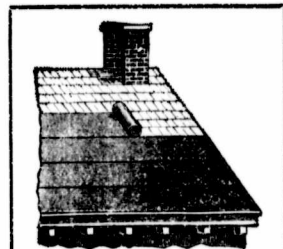
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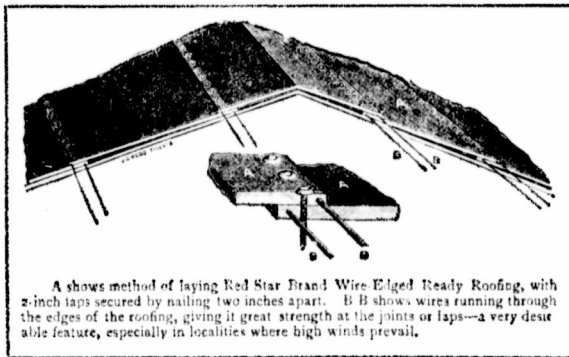
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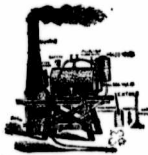
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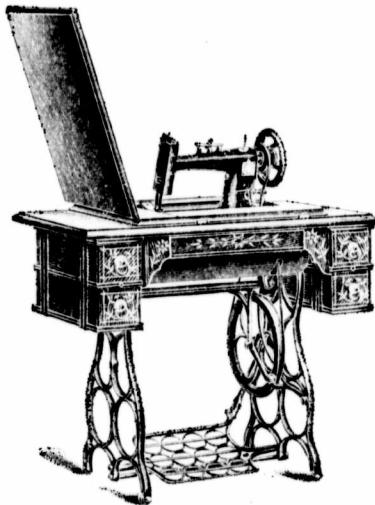
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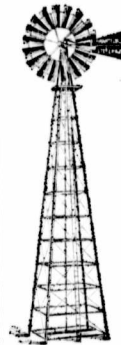
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either one or all of them must always feel miser-  
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friends and family. There is one sure, safe and  
absolute cure which you can test without any ex-  
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we send you the trial package, and lead you to per-  
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THE EGYPTIAN DRUG CO., New York.

# The Farming World

For Farmers and Stockmen

Vol. XX.

APRIL 8th, 1902.

No 14

## The Dairy Industry.

**T**HIS number of The Farming World is devoted to Canada's most important industry, the dairy. The achievements of Canadian dairying in the past have been many and of great import to the Dominion at large. At Philadelphia, in 1876, at Chicago in 1893, and at Buffalo in 1901, Canadian dairymen won distinguished honors and well maintained the prestige of Canada as one of the greatest cheese producing countries in the world. Likewise, Canadian butter, as was shown at the Pan-American last summer, is fast coming to the front and securing an enviable reputation as a first-class article. All this is very gratifying and should stir our dairymen up to greater, and still greater successes.

The development of Canadian dairying has been rapid. It is only thirty-five years since the first cheese factory was built in Canada, and to-day there are over 3,000 factories in the Dominion, turning out annually upwards of 200,000,000 lbs. of cheese. The butter industry had not such an early beginning, and we refer here, of course, to the creamery system. In 1871 there were no co-operative creameries in Canada. In 1881 there were 46, in 1891 170, and in 1901 fully 1,000 creameries in the Dominion, which made approximately 50,000,000 lbs. of butter. And the end is not yet. By improved methods it should be possible to greatly enlarge the market for Canadian cheese, while the butter industry is only at the beginning, as it were, of its career.

But while it may be pleasant to revel in these optimisms regarding Canadian dairying, it may neither be advisable nor profitable to confine our deliberations to this more satisfying side of it. During 1901 the Canadian cheese trade had perhaps the most trying year in its history. If we take the spot value at Montreal of the cheese exported from that port during the season of navigation, we find that the value of the exports for 1901 fell off nearly \$4,000,000 as compared with the year previous, the figures being \$17,077,500 in 1900 and \$13,168,355 in 1901. If this loss were confined altogether to the falling off in the Canadian output, the situation would not be so serious. But when we are compelled to ascribe a large share of this shrinkage in returns to a falling off in the British demand for Canadian cheese, a much more serious condition of affairs is presented.

The experience of the past year or two has shown that a radical change is taking place in the United Kingdom with regard to the consumers' taste for cheese. The strong-flavored, hard-bodied cheese of a few years back, is not wanted. The demand now is for a cheese of mild flavor and soft body, and Canadian factories will have to change their methods and adjust their conditions so as to supply this quality, or there is likely to be a still greater falling off in the demand for Canadian cheese. One of the chief complaints in regard to our cheese last year was its "heated" flavor. This flavor is, no doubt, due to the poor curing facilities at many factories, and to some extent to the cheese being over heated while in transit on the railway or steamship. With better curing facilities and better facilities in the way of ventilated and cool chambers on board steamships, such as the Dominion Department of Agriculture are endeavoring to have provided on twenty-five vessels this season, it should not be a difficult problem to get rid of this objectionable flavor. Besides proper curing facilities will admit of a softer-bodied cheese being made without having it go off flavor, as it undoubtedly would in some of the "hot-house" curing-rooms of the present day. The curing and transportation end of the business is, therefore, of prime importance and it is to be hoped the efforts that are now being made for improvement along this line will bear fruit.

But the curing end is not the only side of the cheese business that needs attention. There is great need for improvement in the milk supply at the average Canadian cheese factory. The bulk of the dairy teaching and instruction of the past decade has been directed toward the maker, while the patron, to a considerable extent, has been neglected. All efforts along the line of improved curing facilities and a better training of the maker will be largely without avail unless a good raw material from which to make cheese can be provided. It is gratifying, however, to know, as noted elsewhere, that more direct efforts will be made this season to reach the patron. He is the most difficult factor in the business to get at, but none the less important on that account.

Concerning the future, little need be said. In view of the efforts that are being made to improve the weaknesses in the system, the outlook is most hopeful, not only for cheese, but also for butter. As

the articles published elsewhere in this issue show, dairying in the Western and Eastern provinces is making gratifying progress. In Manitoba and the West the main effort is along the line of butter making. This is wise. With the Kootenay and the Klondike to supply with butter it would be foolish for the Western dairyman to attempt to compete with the cheese producing centres of the East. In Nova Scotia there is also a good local market, and dairy development there will be along butter lines. In the other provinces cheese making is receiving greater attention, though butter making is by no means side-tracked. In fact, throughout the Dominion there has been more advancement in developing butter than cheese, and this is likely to be the condition of affairs for some years to come. The butter industry is bound to grow. It affords greater room for expansion and can be carried on by the farmer in conjunction with other industries, such as rearing the bacon hog, to better advantage than that of cheese making. However, there is no need of any rivalry between the two, as both can be developed to the fullest extent possible without interfering one with the other. In the future development of the cheese trade the dairyman must not lose sight of the fact that other countries are improving their methods and becoming stronger competitors of his in the British markets. Likewise, there has been a great improvement in the quality of the home-made cheese of England and Scotland, due largely to the introduction of Canadian methods. There is, therefore, improvement all along the line, and to maintain his present position, let alone improve on it, advancement must be the watchword of the Canadian dairyman. We have every confidence in his ability to hold his own in competition with any other country, and now that the weaknesses of his present methods have been pointed out we look for marked improvement in the quality of Canadian dairy products from this day onward.

## Our Illustrations.

In the illustrations in this number we have endeavored to present as many views of up-to-date cheese and butter factories as possible. For a number of these illustrations and especially for the New Zealand, English and American views, we are indebted to Mr. J. A. Ruddick, Chief of the Dairy Division, Ottawa, who kindly loaned the photographs from which the plates were

made. Many of these illustrations will be found of interest as representing the progress of modern dairying in the several countries represented.

### Report on Railway Rate Grievances.

The report of Prof. S. J. McLean on railway commissions and railway rate grievances has been issued. It seems to cover the ground pretty fully. The findings of the investigation are placed under the following headings:—1, classification; 2, distributive points; 3, carlot and less than carlot rates; 4, excessive rates and discriminations; 5, competitive versus non-competitive traffic; 6, American rates and Canadian rates; 7, minimum weights; 8, rebates; 9, settlement of claims; 10, changes in rates; 11, through rates; 12, rates to the Northwest; 13, complaints in connection with transcontinental traffic; 14, regulation of rates; 15, the Railway Committee; 16, Railway Commission in Canada.

It is not possible to more than give a brief note or two here. The report will be dealt with more fully later. Over one-fourth of the report is given up to investigation into excessive rates and discrimination. Numerous instances are quoted of discrimination in rates. Dealing with this question Prof. McLean says: "Local rates in Ontario are in some instances so excessive as to lead to the movement of commodities by team. There also exist discriminations between localities. In the Northwest there is a high basis of local rates. The ease of movement in the transportation across the prairie, coupled with the fact that this section is rapidly filling up, would, in my opinion, justify some readjustment of local rates. The existing grain rates from branch lines in the Northwest are on an anomalous footing."

Referring to the discrepancy in rates for long and short hauls, he says:—"It is true that shorter distance traffic cannot justifiably expect the same rate per ton per mile as longer distance traffic. It has to be recognized that the terminal charges are constant in both classes of traffic, while the cost of movement tends to vary inversely as the distance. At the same time, in a number of instances the discrepancy between the rates on the two classes of traffic is too great. There is not sufficient correspondence between the distance travelled and the rate, and regulative supervision is necessary."

Prof. McLean favors a railway commission. On this point he says:—"In my opinion the only way to put the matter of railway regulation on a more satisfactory footing in Canada is by entrusting it to a railway commission composed of men of technical training, who shall receive salaries adequate to attract the most efficient, and who shall have a long tenure of office."

### Dominion Agriculture.

The annual report of the Minister of Agriculture for the year ending Oct. 31st, 1901, is a very comprehensive one. Mention is made of the splendid stand taken by Canada at the Pan-American Exposition, especially in the live stock competitions. It contains an instructive review of Canada's agricultural requirements, and a short description of how they are met. Cold storage and its developments receive special attention.

The reader is not wearied with superfluous statistics, but enough are given to show that the position of the farmer has advanced very materially during the year. Comparisons are made with the year 1896, when Mr. Fisher took office. In that year Canada's butter exports were valued at \$1,052,089, and in 1901 at \$3,295,663. The bacon trade in the same period shows an advance of from \$4,446,884 in 1896, to \$11,829,820 last year; cheese from \$13,956,572 in 1896, to \$20,690,951 in 1901.

Mention is made of the favor with which Canadian eggs are received in Great Britain, and practical information is given poultry raisers how to prepare, pack and despatch. The special fattening of chickens for the British markets is fully dealt with, and a comprehensive review of the work of the Dominion Experimental Farms makes this report of more than ordinary merit to the farmer.

ter-State fairs, the judging to be done only by members of the National Commission.

It also provides that the United States shall have the right to call upon the breeders who shall have taken advantage of the provisions of this act to furnish, for the use of the country, in case of emergency, registered horses, excepting those in use for actual breeding purposes, it being provided that only animals from four to eight years of age shall be taken, and that the owner shall be paid the value of the horses as inventoried by the commission. The only contingency in which the government could specifically profit by the passage of the measure would be in case of war. This, however, is not the chief reason why it is receiving enthusiastic backing.

Aside from the purpose of supplying suitable horses for army purposes official inspection of this kind should encourage more careful breeding and increase the number of good horses available for other purposes than war. Strong objections have been raised in this country to any kind of inspection of stallions or government supervision of breeding stock, though some such plan has strong advocates among many prominent horse breeders in Canada. The effect of this new bill in the United States, should it become law will be watched by horse breeders on this side with some interest.

### Pneumonia in Cattle.

Some alarm has been caused among cattle men in some of the Western States owing to a number of cattle having been sick with symptoms, somewhat similar to those of cattle suffering from an acute form of bovine tuberculosis. Investigation has shown this to be a broncho-pneumonia, or inflammation of the bronchial tubes which carry the air into the lungs. The disease is of a comparatively mild form and so far has been observed only in cows and heifers.

The disease is said to be caused by a poor quality of coarse feed, especially corn fodder. It is not contagious. The animal coughs at first dry but later coughing up considerable mucus, the breathing is rapid and labored and the bowels are usually constipated. A majority of affected animals will recover with good care. Medicinal treatment is of little value. The animal should receive the best of care; protection from the weather; laxative, nutritious but not bulky food, and pure water. Salting the animal with a mixture of 1 lb. of sulphur, 1 lb. air-slaked lime, 1 lb. of hyposulphate of soda with 10 lbs. of salt will do good.

**Our third annual horse number will be issued on April 22nd. It will contain a full report of the horse show besides a number of special articles of value to horse breeders. The number will be handsomely illustrated.**

### Government Supervision of Horse Breeding.

A BILL TO THAT EFFECT BEFORE THE U.S. SENATE.

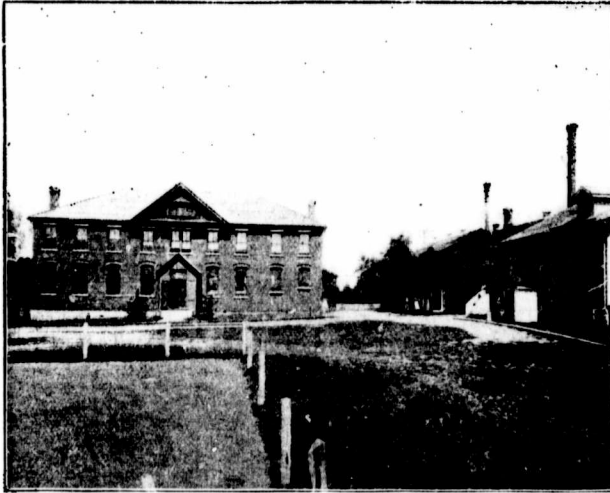
A bill is under discussion by the Agricultural Committee of the United States Senate, which if it becomes law will have considerable effect upon some features of the horse breeding industry in America. The measure provides for the improvement in breeding of horses for general purposes and to enable the United States to procure better remounts for the cavalry and artillery service.

The first section of the bill provides that the Secretary of Agriculture, in connection with three retired army officers appointed by the Secretary of War, shall appoint 12 practical horse breeders to inspect stallions and mares offered for government registration, so that the selection of the most promising stock for breeding purposes may be made.

The second and third sections provide for the organization of the commission and the appointment by it of sub-committees, who shall have power to act in any part of the country.

The bill provides for the registration of the approved animals, and another section provides that the various States are empowered to provide premiums, to be awarded to registered stallions and mares and their progeny, at State or in-





Dairy School Buildings, Ontario Agricultural College.

## A Progressive Scheme for the Improvement of Dairy Products

At the annual meeting of the Western Dairymen's Association, held in the city of Woodstock, the Hon. Mr. Dryden, speaking of the future of dairying in Canada, said that he thought it would be possible to "forge a chain" strong enough to hold our trade in cheese in Great Britain against all comers. This "chain," which he described at length, had seven links and covered the entire ground, commencing with the owner of the cow and ending with the dealer in Great Britain.

In describing the position of the various parties interested in making a pound of cheese and transporting it to market, the speaker expressed his conviction that the weakest link in the chain was the one first mentioned, namely, the owner of the cow who furnishes the raw material from which the product has to be manufactured. If this was of poor quality, or improperly cared for so as to absorb foul odors or infectious bacteria, the results, though every effort be made to counteract it, must be disappointing. Mr. Dryden's plea at that meeting was that these people must be reached, and

strongly impressed with the necessity of proper care and approved methods in the production of milk.

The plan followed in the past by the Dairymen's Association, was to give instruction and inspection only to those who requested it, and who expressed a willingness to pay a given sum towards the expenses of the Association. Under this plan it is easily seen that those who most need instruction are frequently left out altogether, because of their own indifference. The Minister insisted that a remedy must be found, and further, made the statement that if the Association could not accomplish it, he was prepared to recommend to his colleagues that this work should be undertaken directly by the Government. If the latter course were taken, he pledged himself that every inspector would be compelled to do his duty promptly and thoroughly, and that in the doing of it, he would not be required to wait for an invitation from any of the parties interested.

Shortly after the meeting above referred to, a deputation from the Association waited upon the Minister and urged him to increase the

grant for the purpose of carrying out the suggestion he had made. This he refused to do, but offered to take charge of two definite districts, one within the territory of the Eastern Association and one in that of the Western, which in each case should be considered as a model.

Accordingly, an appropriation was made for this purpose and the Minister, with others, is now engaged in laying out the districts and in arranging plans so as to thoroughly overlook every branch of the work. The most competent men that can be found will be employed for the purposes of inspection and instruction, and every patron and every maker will be touched in this effort.

We learn that it is the intention to follow the educative methods so strongly advocated by the Minister of Agriculture in other directions. "To help rather than coerce," will be the motto of the Department. It is believed that when the farmer is shown that better care and better methods always mean better returns, he will not need to be driven in the right way, but he rather will choose it by preference.

Should this experiment prove successful, as no doubt it will, the work another year will be extended until in time the whole province is covered. We shall watch this



Western Dairy School, Stratroy, Ont.

new departure with some interest, and believe that it is a long step in the direction of perfecting our cheese product so that it will be placed on the foreign market bearing a uniformly excellent quality. This means increased work in the Department of Agriculture, but the head of that Department is not inclined to shrink from any duty for that reason.

If by this means the cheese and butter product of the Province can be brought to a higher standard, so as to add even one cent per pound to its value in the markets of Great Britain, two things will have been accomplished: first, the farmer will receive the additional sum of about \$1,250,000 for cheese, and about \$100,000 for butter; and second, the hold of our products on the market will have been so strengthened as to render it impossible to replace them by goods from any other country.



Eastern Dairy School, Kingston, Ont.

### Dairy School Work in Ontario.

Never, perhaps, since they were started have the dairy schools of this Province had such successful sessions as during the present winter. The superintendent of the Western Dairy School at Strathroy, in writing to this office a few days ago, stated that 81 students had registered there this last term, besides 225 ladies in the two-weeks' course in Domestic Science. At the Kingston School the attendance has also been good. But at the Central Dairy School at Guelph, operated in connection with the Ontario Agricultural College, the attendance and interest is perhaps more noteworthy. The session of 1902, which closed last month, has been one of the most successful in the history of the school. Prof. Dean writes us, in regard to the work of the school, as follows:

"Our Dairy School closed on the 27th instant. The term has been most successful. Over 100 students were in attendance at the Dairy School classes, besides over 100 ladies attended the domestic science lectures on Thursday afternoon of each week. These lectures close on March 13th, but we arranged for a special lecture and demonstration for farmers' wives and daughters on the 20th March, by Mrs. Joy. This was for farmers' wives only—daughters, of course, included.

"Our annual meeting of patrons was held on Feb. 25. We adopted the plan of inviting our patrons and their wives and daughters to come to the dairy school in the forenoon and see the boys and girls at work. We also asked them to bring their lunch-baskets and have lunch with the instructors in the class-room of the school. Tea was provided by us. We had a very pleasant time with about 50 men and ladies to take lunch. The business meeting was in the afternoon, and was most cordial.

"Our milk supply has been ample for all practical instruction to students, and the term has been one of the brightest for many sessions. We have had at least two applications for the services of every available student in the class this year. I have never seen so great a demand for men. Two of the class go to Vancouver, B.C., to work in the City Dairy Co. there."

### The Use of Butter Wrappers.

The preparation of produce for the market is a subject which has received far too little attention at the hands of Canadian farmers. It is undeniable that thousands of dollars have gone in other directions which might easily have been turned our way had due care been exercised in preparing and packing goods. There are, however, signs of improvement. In the matter of butter this is particularly true. A dozen years ago it was a rare thing to find on the markets of any Ontario town or city print butter with any wrapper on, save perhaps an old cotton cloth. The

butter thus exposed gathered on its surface what dust and germs chanced to float through the market place.

All up-to-date butter makers now use vegetable parchment with which to wrap their product. The advantages of this are obvious, not the least of which is that a dairyman can select a name for his brand and by having this printed on the wrapper the buyer, if pleased with the butter, can ask his dealer to supply him with this brand regularly, the maker, thereby, developing a steady trade, possibly at an enhanced price. The

extra cost of the wrapper is but a trifle—perhaps not more than a tenth of a cent per lb.

Care should be exercised, however, in the selection of this vegetable parchment. There is on the market an imitation parchment, the correct name for which is "parchmentine." Instances are numerous where the use of this imitation has imparted a bad flavor, as well as a bad odor to the butter. Genuine vegetable parchment will never injure the butter, but on the contrary, its use is calculated, by insuring cleanliness, to improve the quality.

## Consolidated Curing Stations

The decision of the Dominion Department of Agriculture to establish four consolidated curing rooms for the curing of cheese in cooled air, is arousing much interest in the districts selected for testing this experimental work. As previously announced in these columns, these central curing stations will be located at Woodstock and Brockville in Ontario and St. Hyacinthe and Cowansville in Quebec.

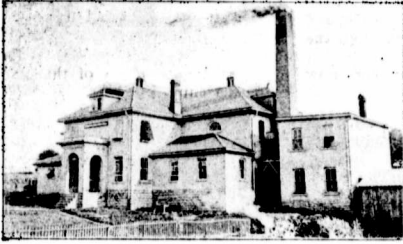
The Department will collect the cheese from each factory daily and will cure it in the most approved manner. The charge made for the collection of the cheese will only be a sum equal to the value of the saving in shrinking in weight. The cheese manufacturer will be expected to pay the Department the price of first-class cheese boxes, and for that the Department will provide boxes and box the cheese. The cheese will continue the property of the patrons of the cheese factories, and be at the disposal of the same salesman as would be appointed by them under ordinary circumstances. All four curing rooms will be fitted up with plants for mechanical refrigeration. In at least two of them there will be small experimental curing rooms for the carrying on of investigations.

Experimental work of this nature cannot but prove of immense value to the dairymen of the country. Prof. Robertson estimates that the cheese cured at these curing stations will sell in the same market for at least half a cent a pound higher than cheese from similar factories cured in ordinary curing rooms. This increased value and the saving from less shrinkage, if saved to the average cheese factory in Canada would mean largely increased revenue for the producer. The average cheese output per factory in the Dominion is about 60,000 lbs., and even at one-half a cent per pound increase, there would be a snug little sum saved that would go a long way towards paying for proper curing facilities. But this one-half cent should not be the only advantage to be derived from better curing methods. The better and more uniform nature of the product throughout the season

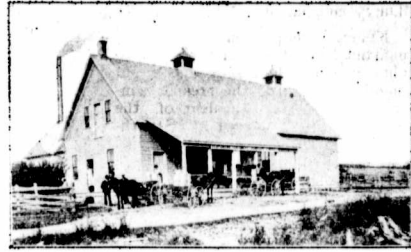
should tend to increase consumption and also the value of the season's output.

There are also more or less indirect advantages that should result from these consolidated curing stations. It is claimed that the foundation principle in cheese making in Canada is co-operation. But this principle does not extend beyond the factories. There is little co-operation between factories, excepting in so far as they may be under one management. In fact, the very opposite is the case and we more frequently find bitter and foolish rivalry rather than co-operation in methods that would make for better milk, better cheese and a better management of the business all round. If say ten factories can be induced to join together in the matter of erecting a central curing station it would help to extend the co-operative spirit and do away with a lot of the petty and senseless jealousy that is the ruin of the business in many localities.

Elsewhere, attention is called to a new movement inaugurated by the Minister of Agriculture for Ontario with a view to providing a better system of instruction during the making season. This new movement will likely develop along the lines of factory syndicates similar to those in use in Quebec. Central curing stations would go a long way to complete the syndicate system of instruction. If a number of factories can be grouped into a syndicate with a competent instructor over them and the cheese made after a uniform method the central station would enable this uniformity to be preserved in the curing. In fact, any instruction along the line of procuring a better quality of milk and a better and more uniform quality of cheese for a district would be largely useless unless proper curing facilities are provided. So it seems to us instruction in the factories and proper curing facilities are largely the complement one of the other. This being the case, the Dominion and Provincial Departments of Agriculture have a splendid opportunity in the new lines of work they are planning for co-operating for the best interests of the industry as a whole.



St. Marys Creamery Co., St. Marys, Ont.



Scotsburn Creamery, Scotsburn, N.S.

## The Weak Ends of Canadian Cheese Making

By H. H. Dean, Professor of Dairying, O. A. C., Guelph

Nearly all men conversant with the condition of Canadian cheese-making are agreed that the weak parts of the industry are to be found at the two ends—the milk producing end, and the ripening or curing end. If we shall be able to get a better quality of milk supplied to our cheeseries, and have more skill and common sense applied to the ripening of the finished product, our cheese trade will materially improve. The actual making of the cheese, or the middle of the business, has received attention

or "Star" is best where the dairyman has a supply of cold water in an elevated tank. Where such a tank of water is not available, then a trough or tank into which water may be pumped and ice added is most convenient. For stirring the milk while it is in the tank in order to cool it rapidly, we have found "Kippen's Agitator" simple, effective and easy to clean. It saves hand-stirring of the milk. This agitator is not sufficient to cool milk in hot weather without the use of ice or cold water.

sour or over-ripe milk is not suitable for cheesemaking.

2. Germs, which cause bad flavors in milk, curd, and cheese, multiply very rapidly at a temperature of 70 deg. or above; hence, cooling of the milk is necessary to prevent their growth which will enable us to obtain better flavored cheese.

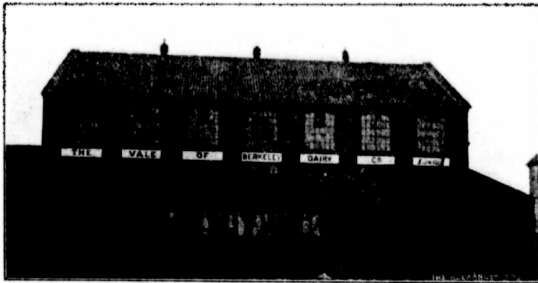
### THE RIPENING OF CHEESE.

Many theories have been propounded to explain the ripening, commonly called "curing", of cheese. When the mystery is finally unravelled, it will probably be found that the active agent in ripening is rennet, and that bacteria are concerned only indirectly in cheese-making. The governors of the ripening process are salt, heat, and moisture.

The general law of cheese ripening may be stated as follows: The more rennet used in coagulating the milk, the less the salt added to the curd, and the higher the temperature at which ripening takes place, the more rapidly will the cheese ripen and the tendency is for a poorer quality of cheese. The more slowly the ripening takes place, the better will be the quality. If we wish to turn the milk rapidly into money regardless of the consequences, we may follow the first plan. If we wish to establish and maintain a reputation for manufacturing an excellent quality of cheese, we must make haste slowly, and be content to wait some time for the profits.

### SOLUTION OF RIPENING PROBLEM.

The solution of the ripening end of the cheese industry appears to lie in the establishment of cold-



The Vale of Berkeley Dairy Co., Limited, England

to a much greater extent than the fully as important ends. This resembles somewhat a man who is nearly all body with very little head and small feet—a monstrosity. Can you imagine more folly than the taking in of bad milk, hiring a first-class cheese-maker to manufacture the goods, then placing the cheese in a room where they spoil as rapidly as possible?

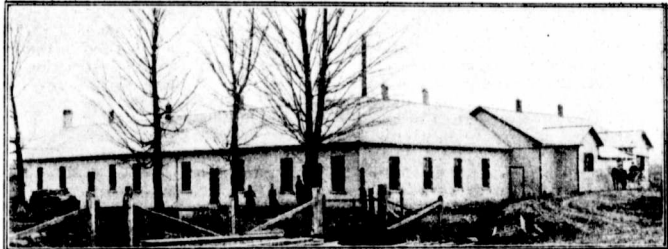
### COOLING THE MILK.

The points which require most attention in the production and care of milk are: clean, milk-producing food and cows milked in a cleanly manner. The milk should be strained at once after milking and be cooled immediately to a temperature of 60 degrees if possible, and certainly below 70 degrees. For this every dairymen should provide either a water-cooler or a tank which may be filled with ice and water, or cold water into which the cans of milk may be placed. A water-cooler, such as the "Lister"

Every patron of a cheese factory should provide means of cooling milk to a temperature of 60 deg. to 70 deg. as soon as it comes from the cow.

The reasons for cooling milk rapidly after milking, especially in hot weather, are:

1. Milk allowed to stand for any length of time at a temperature above 70 deg. sours quickly, and



Cheese and Butter Factory at Bright, Ont.

storages at central points, where the cheese may be sent at least once a week. If the make is large enough to pay the cost of hauling and shipping, then it would be better to send the green cheese to the cold-storage every day. In small factories, this is not practicable; and, in the case of large factories, it may pay to have a cold-storage at the factory. Small cold-storage plants are now available at reasonable cost. The individual cold-storage plan has this advantage, that the cheese is under the eye and control of the owners, and has the disadvantage of being more costly to operate, and more expensive for inspection of the cheese by the buyers. Some salesmen are very nervous about allowing the cheese to get very far from the factory before they have the money in hand for the goods. To such, the individual cold-storage plant will appeal.

#### NOTES OF WARNING.

Cold-storage cannot make inferior products into superior ones. If the cheese have a bad flavor when they go into cold-storage, they will have this flavor when they come out, although bad flavors do not develop so rapidly at a low temperature as when kept in a somewhat warm room. Our cheese-makers should bear this in mind, that cold-storage will be no excuse for receiving badly flavored milk or for careless making. This carelessness will appear in the cheese whether ripened in cold-storage or not, though it will be more marked if cured in a room at a temperature above 60 deg. to 65 deg.

Moisture in the air to the extent of 70 deg. to 80 deg. is another requisite for curing cheese in cold-storage. Where the cheese have been placed in mechanical cold-storage in a very dry air, the tendency is for the cheese to become too dry and crumbly, and they are also likely to crack. On the other hand if the air be too moist the cheese

will mould considerably. No practical remedy for mould on cheese has yet been discovered, except spraying them with Formalin, which is a somewhat tedious and expensive operation where a great many cheese are kept in one room, such as we should have in central cold-storage depots. Formalin is to be recommended for the individual factoryman to prevent mould.

#### THE BEST TEMPERATURE FOR RIPENING CHEESE.

Up to the present time, no one can say what is the best temperature for ripening cheese. Experiments made at the Ontario Agricultural College during the season of 1901 demonstrated:

1. That a temperature of 40 deg. was better than a temperature of 65 deg.

2. The chief improvement in quality was in the flavor and texture of the cheese. Uniformity in the quality is one of the main advantages of ripening at the lower temperature. Its chief disadvantages are expense of operating, and length of time required for ripening.

3. That the loss in shrinkage was about 2 per cent. less in one month by ripening at 40 deg. as compared with 65 deg.

4. Cheese put directly from the hoops on a shelf in the refrigerator at 40 deg. cured in three to four months to about the same degree of ripeness as did cheese cured in three to four weeks at 65 deg.

5. Cheese were put directly from the hoops into a dry cheese box, and were placed on the floor of the refrigerator, with good results, except that the cheese were badly covered with mould.

6. The experiments need to be carried further with varying temperatures in order to find the best one, if there is such, and for this, a first-class mechanical or ice refrigerator having several compartments is necessary.

visions, and one or more syndicates can be organized in each. Each syndicate comprises from 15 to 30 factories. Each syndicate inspector makes on an average seven visits to each factory each season. The inspectors receive salaries averaging \$550 each, \$300 of which is paid by the Department of Agriculture and \$250 by the factories joining the syndicate. Over these inspectors there are two chief inspectors, one for cheese and one for butter syndicates. The head of the cheese inspectors has an assistant.

Considerable attention is paid to fitting these instructors for their work. Each candidate for the position of inspector is compelled to take the inspector's course at the Dairy School and pass a rigid examination before a board of examiners appointed by the association. The factory in which he is making is also visited by one of the chief inspectors, where his ability to manage a factory is looked into. He must also have been the head maker in a factory for at least three years, and must furnish a certificate from the buyers of his cheese as to their quality. And thus the work is systematized and only capable men selected.

The Quebec dairymen have also been pioneers in dairy school work. In 1881 Messrs. Barnard & Chapais opened at St. Denis Comte, Kamouraska, the first cheese and butter factory in the eastern part of Quebec, and received a bonus from the local Government of \$200, making it the first dairy school in America. In 1882 the Dairymen's Association was organized. It immediately opened a summer dairy school at St. Hyacinthe, which was operated till 1891. In the same year a similar school was opened at St. Hughes, and the next year a travelling dairy school was organized. In 1892 the present dairy school was opened at St. Hyacinthe. It gives special courses to apprentices and makers during the winter. In nine years 950 butter-makers and 1,319 cheese-makers, making a total of 2,269 students, have attended this school, an average of 252 each year.

#### The Maker.

It will be noted that in this issue there are only one or two articles dealing with the practical work of butter and cheese-making. To the maker, however, has been directed the bulk of the educational effort of several years back and he is to-day not in so much need of instruction as the other factors in the concern.

Canadian makers are none too well paid for their work. Considering the work they do and the responsibilities they assume they are more poorly paid than any other class of our citizens. The ordinary farm laborer, will we think, under the present scarcity of farm help, have more money saved at the end of the year than the average cheese-maker. This is rather a sad reflection on Canada's most important industry.

## Dairy Instruction in Quebec

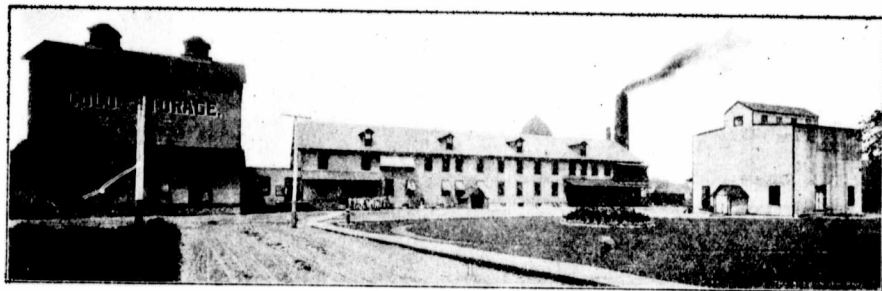
It has remained for the Province of Quebec to set an example for the other Provinces in the matter of dairy instruction. In that Province has been developed what is known as the syndicate system, which, if properly followed up, cannot but produce a more uniform and better quality of cheese and butter. A very good description of the work was given by Mr. E. Bourbeau, chief inspector for the Quebec Dairymen's Association, at the Western Dairymen's meeting at Woodstock last January.

The first syndicate of factories was organized in 1889. In 1890 three syndicates were in operation, and the necessary funds provided by the local Government with the understanding that the Dairymen's Association would have control.

In 1891 the syndicates were officially organized under regulations made by the Dairymen's Association and approved of by the Government. Then syndicates were or-

ganized that year, and the inspectors visited 242 factories and made 1,992 visits. In 1901, just ten years later, there were 42 syndicates, employing 42 inspectors who visited 840 factories. In addition, there were five qualified inspectors employed by the Quebec Department of Agriculture to visit the factories not able to join the syndicates. These visited 742 factories, which in addition to the regular syndicate factories, made a total of 1,582 out of the 2,000 in the Province that received instruction in 1901.

These syndicates were organized for the purpose of: (1) securing a better quality of milk at the factories; (2) securing better kept factories in regard to cleanliness, etc.; (3) securing a better and more uniform quality of product; (4) keeping a record of the reports which the factories are obliged to make to the association. The Province is divided into twenty di-



St. Alban's Creamery, St. Albans, Vt. Largest in America.

## The Hand Separator in Creamery Work

By J. A. Ruddick, Chief of the Dairy Division, Ottawa

There are large districts in Canada where the present conditions of settlement are such that the cream gathering system is the only practical way of carrying on the co-operative creamery. If the whole milk is to be delivered at the creamery, the area from which it can be collected without incurring too great an expense is necessarily somewhat restricted. The cream gathering system has proved a great boon in many localities where there is not a sufficient supply of milk convenient to any given centre.

The hand power separator is of great value to patrons of creameries operated on this plan, and its advantages are too well understood to need any comment at this time.

The signs of the times point, however, to a considerable extension of the use of hand separators, even in connection with creameries, which have been more or less successfully operated on the plan of having the whole milk delivered and new creameries are being organized on the gathered cream or hand separator plan, where the whole milk might easily be delivered at one central point.

The arguments in favor of the hand separator system are in effect as follows:

1. The skim-milk from the freshly-drawn milk is in the best possible condition for feeding calves,

and very superior to that which is delivered back to the patron at the separator creamery.

2. Where the hand separator plan is followed the difficulty and expenses of hauling is very much reduced.

3. Cream can be carried a much greater distance than it is possible to carry the whole milk.

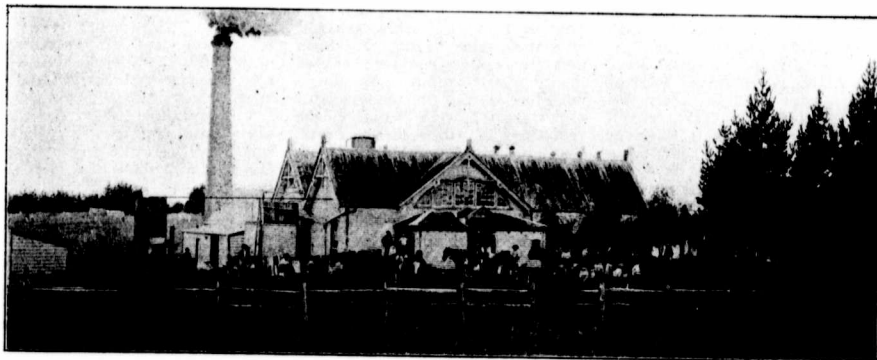
That these are substantial advantages no one can deny. Nevertheless, great danger to the Canadian butter industry lies in some of these very advantages. Those who are organizing creameries on this system are apt to push these advantages too far by permitting patrons to keep the cream too long between deliveries, so that it becomes stale and over-ripe before it reaches the creamery. The competition to secure patronage encourages that sort of thing, just as it encourages patrons of cheese factories to deliver milk which is not in good condition.

When the cream from hand separators is brought to the creamery in an advanced stage of fermentation, it is no better, and possibly not as good as the cream collected from shallow pans or deep setting cans. Now it has always been admitted that butter made in ordinary cream-gathering creameries cannot be expected to compete in quality with butter made in separator creameries. At the World's Fair in Chicago, the Committee

on Awards recognized this by establishing a lower standard for the gathered cream article. That is to say, separator butter had to score 95 points to secure an award, while gathered cream butter scoring 94 and over was allowed the same distinction. The view was held that a buttermaker who could make an article from gathered cream that would score 94 points, showed as much skill as one whose butter scored 95 points if made at a separator creamery. There is no doubt that this assumption is correct, as far as it goes, but the handicap might very well be made greater.

It is a well recognized principle in butter making that the proper ripening of the cream has a most important bearing on the quality of the butter, especially in regard to its flavor, but if the cream arrives at the creamery in an advanced stage of fermentation, the buttermaker is not so able to control the ripening process when he has sweet cream to begin with.

The extension of the use of the hand power cream separator will have a most disastrous effect on the Canadian butter industry unless such regulations are adopted as will insure the cream being delivered to the creamery in a pure, sweet condition. With the increasing supply of second grade butter from various sources on the British market we will find the competi-



Pukekohe Creamery, New Zealand. Annual Output, 600 tons.

tion too keen for us unless we manufacture a superior article, an article superior to what can be made from cream delivered to the creamery in a sour, tainted condition.

Just as good butter can be made on the hand separator plan as on any other if the patrons are obliged to keep the cream in good condition and deliver to the creamery sweet.

I think it is quite possible to do this by delivering every second day, providing each patron puts up a supply of ice to be used during the hottest weather. The cream should be aerated and cooled as soon as separated, and then placed in cold water, with the addition of ice when necessary to keep the cream sweet until it reaches the creamery.

Too much stress cannot be laid on this point, and the managers of hand separator creameries must give it their careful attention and not permit the desire on their part to increase the patronage to warp their judgment in framing rules for the reception of cream, and the general conduct of the business. The situation of the buttermaking industry will not permit of any methods being followed which will result in producing anything but the very finest article. We have been making fair progress during the past few years, but we must not forget that much of the credit for this is due to improved transportation facilities and improved refrigeration at the creameries. In the matter of equipment and gen-

eral management, progress has not been so marked. The art of buttermaking is better understood, and it is worth noting that a great deal of the education of the buttermaker has been along the line of ripening the cream. It would be the height of folly to nullify this work by compelling the buttermaker to accept cream so far advanced in fermentation as to prevent him from employing his most effective means of ensuring a uniformly good article.

This is a question in which the patrons have a direct pecuniary interest, and every one of them should make it his business to see that no cream is delivered in such a condition as to lower the grade of the butter. The patron who delivers over-ripe or tainted cream causes a much more serious loss than one who sends skimmed or watered milk to a cheese factory, or a creamery where the milk is not paid for according to test.

The managers of the separator creameries are a good deal to blame for the growth of the desire to have the fresh separated milk at the farm for stock feeding purposes. If the skimmilk was better handled at the creamery, and every precaution taken to return it in the best possible condition, the advantages of the hand separator would not be so apparent or real. The skimmilk should never be put into any receptacle which is not thoroughly cleaned and scalded every day. It goes without saying, that no skimmilk tank can be kept clean unless it is tin lined.

etc., it will vary from three to ten minutes.

A new machine should run an hour or so and be tested with water before running any milk through it. By filling the bowl with water before starting, we find that as soon as the bowl begins to revolve the centrifugal force throws a portion of the water out and over the bearings, where it washes out the oil. I prefer to commence filling the bowl as soon as the power is turned on, so that by the time the bowl is filled sufficient centrifugal force has been generated to throw the excess water into the covers. In one popular line of separators the bowl is not filled until the machine is at full speed. The speed of the bowl should be maintained at the point directed by the manufacturer.

On the farm the milk should be separated as soon as possible after it is milked; a good plan is to start the separator as soon as a continuous supply of milk is assured, so that the separation of milk is finished very shortly after the last cow is milked. In the creamery, the best temperature at which to separate is the highest temperature obtainable up to 170 degrees; that is if the object is to recover the largest percentage of fat in the cream. A point that should be carefully attended to is the rate of feeding. I find that many operators run the separator at the same capacity all the time; this is a mistake, as the same influences which make milk difficult to cream by the simple gravity process act when milk is separated by centrifugal force. The double-necked skimmilk bottle should be used for testing the skimmilk after every run. The operator will find it necessary to decrease the capacity of the separator 10 or even 20 per cent. with fall and winter milk. In making a comparative test of the skimmilk qualities of Jersey and Holstein milk at the Virginia Experimental Station, it was found that the loss of fat in skimming Jersey milk was 1.39 per cent., while the loss in the case of Holstein milk was 4.57 per cent., or about three times as much; the cows being about the same length of time in milk. Under conditions like this the feed and temperature should be regulated so as to skim clean, whatever the character of the milk. It is highly important to take a test of the skimmilk from every day's work, to find out how much or little fat is being left in it.

A convenient way to get a sample for testing is to punch a small hole near the delivery end of the skimmilk spout and snap two rubber bands around the spout, then take a 2-pound tomato can, shear the top so as to leave two projecting ears which can be slipped under the rubber bands; in this way a representative sample of the whole run can be taken. Take thick cream unless some one is paying you a good price for the other kind.

In separator creameries complaints of the milk foaming or

## Care of Cream Separators

By J. W. Hart, Supt. of Dairy School, Kingston

The excellent instruction books sent out by the different manufacturers of cream separators leave little new to be said on this subject, but a few suggestions in regard to some of the more important points to be observed in separating milk may be of some service to some of the readers of *The Farming World*.

In the first place, the separator should be set on a solid foundation. A good wooden floor may answer for a hand separator, but the power machine should be set on a stone or brick foundation laid with Portland cement. The top surface should be perfectly level and a little over than the base of the separator. Make a templet from the bottom of the frame, then bed four bolts in the foundation, turning the heads of the bolts down. These bolts should be a little smaller than the holes in the separator frame. Have the bolts 10 or 12 inches long, and 2 inches from the head, bend them almost to a right angle, this will prevent them drawing or turning; bed them deep enough so that you can bolt the machine down firmly. By using two or three thicknesses of sheet rubber packing under the corners, the machine will run steadier. It should not be bolted down

too tightly, as in this way the rubber will not lessen the jar. The frame should be adjusted so that it will be perfectly level on top. If the masonry base projects through the wooden floor, protect with tin flashing as round a chimney.

In setting up a belt separator follow the detailed instructions carefully, being particular to see that the countershaft is in direct line with the shaft that drives it, and that all shafting, belts and pulleys are in perfect running order. In using the turbine separator insist upon having a steam pressure regulating valve between the globe valve and pressure gauge; with this one can run the separator at the desired speed, whatever the variations in the boiler pressure. Use good oil, preferably that supplied by the manufacturer of the separator you are using; then, if a bearing heats, he will not be likely to claim that it was on account of inferior oil. Oil should be supplied by sight feed lubricators. The waste oil from the separator may be used for lubricating other machinery. Before starting see that the bearings are properly oiled; the time taken to get up speed will depend upon the weight of the bowl, the size of the belts,



Provincial Dairy School, Sussex, New Brunswick.

frothing are common. Whenever the conditions favor the production of lactic acid in the milk, and the acid rises above .16 or .18 per cent., the foam is apt to be troublesome. When I have reason to suspect that the milk will foam, I test the acidity, and if I find it is up to or above the percentage indicated, I neutralize it, making use of a solution of Gillett's lye. The acid should not be completely neutralized. My practice is to use enough alkali so that the resulting

milk will test about 15 per cent. acid; this will require usually, about as much as will lie on a 50 cent piece for 1,000 lbs. of milk. It should be dissolved in a pail of warm water and vigorously stirred into the milk. The separator should not be allowed to run without an adequate supply of milk, or the thick cream then separated will stick to the cream cover and be wasted. For flushing out the bowl warm water is better than skimmilk because being lighter than

the skimmilk it goes directly to the centre and drives the cream out. A pail of water poured through the bowl as fast as the inlet tube will carry it down, will flush the bowl better than a dozen pails of skimmilk. If the separator cannot be cleaned as soon as the bowl stops revolving, put it in a sink or tub of water.

With regard to such irregularities as failing to skim thoroughly, the bowl not running true, etc., the directions sent out with the separa-



Petitcodiac Cheese Factory, N. B. Output for 1901 2,600 lbs. butter ; 84,000 lbs. cheese.

tors are so plain that it will not be necessary to give detailed instructions here, besides which the advice might not suit the particular style of separator. Before attempting to run a separator the book of instructions should be carefully studied. If the separator cannot be made to skim clean, a loan bowl should be sent for and the bowl sent away to the shop to be re-balanced. If the separator is not to be used for some time, it should be carefully cleaned before being put away. The bottom bearing should be taken out, dried and replaced; all bright parts should be coated with vaseline and the machine should be set in a

place where it will be protected from dampness and dust.

The size of the separator is an important consideration. In a creamery or skimming station separator the capacity should be sufficient to separate the milk within three hours. In the private dairy no one wants to turn a hand separator for over an hour at a stretch, and the wear and tear is greater in the small separator, as it has to be run a long time to do the work.

The purchaser of a separator should be protected by an ample guarantee similar to that given with a piano or watch or a similar fine piece of mechanism.

## The Factory Milk Supply

By H. Weston Parry, O.A.C., Dairy School, Guelph

This is a subject which the most eminent dairy authorities of the day, are wont to dwell upon more particularly at the present time, than in the past; and their sentiments are a rebuke to the farmers of Canada, although but rarely expressed in the nature of a rebuke. I have read the public utterances of prominent dairymen by the dozen, and I notice that in talking about the cheese and butter industries, they all record the fact that the improvement in quality of our dairy products at the present time, is held in check, to a very large extent, by the supply of a far too large proportion of badly cared for milk. In other words, they might state, that the farmers are not holding up their end.

### FARMERS DO NOTHING

In return for government supervision of the cold-storage problem, for the training of butter and cheese makers, and for the establishment of our produce in the only available market, what have the farmers done?

To my mind they have done nothing, they seem incompetent to help themselves, helpless to do their little to assist in placing our dairy industry on a great and permanent footing. I hold that the fact that dairy authorities have recognized this to be the case, is a rebuke to the farmers of Canada.

I would not infer, however, that all our farmers have failed to realize their responsibilities, without exception, for such is by no means the case, and we have many examples of the adoption of thorough, up-to-date and business-like methods. The enlightened ones, have certainly nothing to be ashamed of, and stand head and shoulders above their fellows in the dairy business. They have different ideas, different sympathies, different ambitions, different ways of doing things, and consequently different results, better results. They realize the honor and nobility of their calling, and recognize its importance as one of the best of the country's permanent assets.

### POSSIBILITIES UNLIMITED

A patron who can furnish it.

milk at the factory every day he goes with his milk to it, is a man in my estimation whose possibilities are unlimited. He, who is able to so master all the minute details which alone are responsible for the supply of perfect milk, uniformly and regularly, throughout the year, must be a man of forceful character who fully realizes the value of attending promptly to the little details of his whole business. It is just these little details which ensure success or failure, according to the amount of attention given them.

### DID NOT BEGIN RIGHT.

It is unfortunate, but none the less a fact that those at the head of dairy development in this country, did not give that prominence to the question of taking care of milk for the factory which its great importance called for, when the dairy industry was in its infancy.

It was very evidently taken more or less for granted that the milk producers would naturally take proper and intelligent care of their milk, and the fact that they needed very persistent education to get them to do this, was quite lost sight of in the anxiety to induce the farmers to start in the dairy business by means of special dairy commissions, training of makers, and hints of cold storage facilities. Thus, does the cart happen to be before the horse, and we are struggling along at the present time, trying to make the best of things as we find them. The tendency today is to introduce new machinery and manipulations to offset inferiority in the quality of our raw material instead of going to the root of the matter and improving the raw material itself.

Older countries, which have gained eminence in dairy pursuits, have worked up to their present state of perfection by degrees, assisted in some cases by legislation, until intelligent dairy habits may now be said to be born and bred in the bone.

### MAKERS TO THE RESCUE

The majority of our dairy leaders agree in recommending one specific

remedy for the existing state of affairs. Salvation rests with the makers, is their cry. Let the makers educate the farmers up to a recognition of their responsibilities and duties in connection with the proper care of their milk for the factory. At present this advice certainly sounds and reads better than it works. In time, when the average maker is better educated than the average maker of to-day, when positions become more permanent, and farmers therefore more confiding, this idea may work better. Undoubtedly the makers have some influence with their patrons, but it is merely passive, it meets with no opposition as long as the patrons meet with no coercion.

Some patrons will take advice and profit by it but such a large majority are entirely beyond being advised in any capacity whatever, that it is not reasonable to expect that the busy makers can succeed where the specialist fails, for in spite of the lectures at Dairy Institute meetings, official bulletins and press comments on the proper care of milk, there remains still an immense field for dairy missionary work, which is now recommended to the attention of our already fully occupied cheese and butter-makers.

### CO-OPERATION THE KEY.

I claim that the key to the situation is co-operation.

Of all the interests in this commercially competitive world, those of the farming community alone remain disunited. With but one or two solitary exceptions, the farming communities of every country under the sun, fail to recognize the urgent necessity of co-operation. I will not dilate upon the entire meaning which this word, co-operation, conveys, when used in connection with the organization of farming interests into one harmonious whole. But taken in connection with the dairy industry, it would be a means to the farmers of working out their own salvation in the matter of producing a perfect and uniform milk supply.

### FARMERS MUST PULL TOGETHER

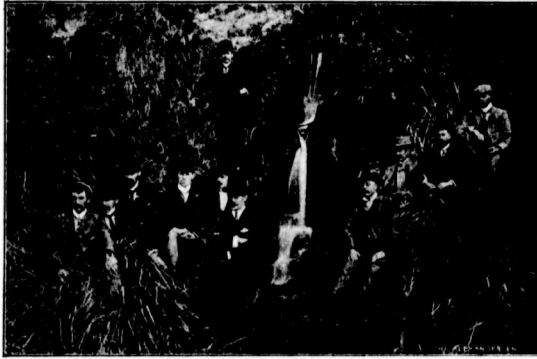
What is necessary, is to represent things to the farmers in the right light, to get them to work together and feel that they are all in the same boat, pulling the same way, and not in opposite directions.

The farmers themselves have the greatest interest in the quality of the milk delivered at the factory, and should bind themselves to proper regulations governing the care and delivery of their milk or cream, and they should themselves be on the look out that the rules are not broken.

We have a co-operation of a sort now, but it is unfortunately the wrong sort, it is co-operation to avoid trouble and thoroughness, to shirk responsibilities, and to thwart the well meant efforts of the makers.

The agricultural propaganda of the next decade, should be "Co-operation."





Staff of Instructors and Graders, New Zealand. J. A. Kinsella, Dairy Commissioner, is first to left of Falls. W. M. Singleton is the next in front (hard hat). Both are Canadians.

## Dairying in the Maritime Provinces

By J. W. Mitchell, Dominion Supt. of Dairying for the Maritime Provinces

In endeavoring to arrive at the beginning of co-operative dairying in the Maritime Provinces one is carried back quite a considerable number of years—the Williamston cheese factory, in the Annapolis Valley, for instance, which has been operated every year since its inception, was established some thirty years ago—and yet if we omit isolated instances the dairy industry remained comparatively undeveloped, and co-operative dairying was known in little more than an experimental way, until within quite recent years. Even ten to twelve years ago factory or co-operative dairying was scarcely out of its swaddling clothes.

In 1891 there was only one small cheese factory in operation in Prince Edward Island. In 1892 a cheese factory was run in the province as an experimental and illustration station under the direction of Prof. J. W. Robertson, Dominion Dairy Commissioner, while the following year saw eleven cheese factories in operation throughout the island under the direction of the Dairy Commissioner, with Mr. T. J. Dillon as superintendent of the work; and since its inception the growth of co-operative dairying in Prince Edward Island has been quite phenomenal, as a table given later on will show.

In his report to the Dairy Commissioner upon his work in New Brunswick for the year 1891, the late John Robertson reported only twelve small cheese factories and two creameries in operation in that province, and tersely summed up the situation as follows, "It seems exceedingly strange that the province should pay out thousands of dollars every year for dairy produce which could be produced as cheaply and of as good quality as in the Province of Quebec from

which this province imports a very considerable quantity."

Again, for the same year (1891), Mr. J. W. Wheaton, in reporting upon his work in Nova Scotia, reported twenty cheese factories and no creameries in operation in the province for that year, quite a fair showing in so far as numbers go; but we gather from the general tenor of his remarks that dairying was in anything but a healthy condition in the province, the factories being very indifferently supported and patronized. The milk supply was small and the average length of the factory season only about four months.

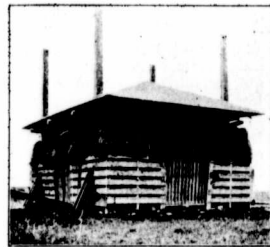
We have briefly outlined the condition of dairying in the Maritime Provinces in the early nineties. In comparison with this, and as illustrative of the material growth that has taken place during the past decade, we present the following table giving the number of factories in operation in each province, together with their combined output, for the year 1901:

Province.	Number of Cheese Factories and Creameries.	Pounds of Milk.	Pounds of Cheeses.	Pounds of Butter.
Prince E. I. ....	51	50,093,530	3,554,779	571,761
New Brunswick. . . .	83	30,969,818	1,887,370	542,626
Nova Scotia. ....	25	9,916,884	3,787	292,071
Total . . . . .	159	91,010,232	5,770,006	1,406,658

The foregoing table does not fully represent the development that has taken place, inasmuch as we suffered last season from the greatest drouth that has been experienced in this portion of Canada for many years. From this cause there was a shortage in Prince Edward Island alone, of nearly one million pounds of cheese. However, the

drouth will not prove an unmixed evil—in fact it may prove a blessing in disguise—if we only learn from it the lesson that so many of our dairymen need to learn, viz., the necessity for growing, soiling crops to supplement the pastures. There is never a summer season during some portion of which there is not a shortage of pasture, and a soiling crop is necessary to keep up the milk flow—an all important matter. A mixture of peas and oats, sown at the rate of one and a half bushels of each to the acre, will produce an excellent soiling crop. Make about three sowings at intervals of a fortnight, sowing the first plot when beginning seeding in the spring. For the partial soiling of a herd of ten cows sow from a third to half an acre at each sowing. We believe that the time is not far distant when a large percentage of our dairy farmers will realize the truth of the fact, that soiling crops are just as essential to success in dairying as is a good dairy cow. But I have digressed from my subject a little.

The Maritime Provinces are naturally well adapted for dairying, and we look for a continued development in the industry. The climate is fairly moist and favorable to pastures and soiling crops can be successfully grown to supplement these, while suitable winter foods such as corn, clover hay, roots and the coarser grains can all be produced very successfully; and as for pure water I was going to say



An Ensilage Stack, New Zealand.

that almost a superabundance of it is to be found in most localities, in the form of springs, brooks, etc. In short our natural conditions for dairying are not markedly dissimilar to these in Ontario and Quebec. As regards markets for our dairy products we have a large home market, especially in Nova Scotia, and one that will grow as the mining and manufacturing industries develop, and in addition we have ready access to both the West Indian and the British markets. Hence from both a productive and a market standpoint we are offered strong incentives to develop the dairy industry.

New Brunswick and Prince Edward Island engage largely in the production of cheese during the summer season, while the tendency in Nova Scotia is more in the direction of creamery development. This is probably much as it should be. The large home market for

butter is, and will likely continue to be, in Nova Scotia—Halifax, the Sydneys and other rising towns—where there is a large, and growing mining, manufacturing and shipping population. Were all three provinces to engage in the production of butter during the summer they would readily glut the home market and largely spoil its value to each and all, and it is but natural that Nova Scotia should look to supply this market largely.

Prince Edward Island and New Brunswick have already won a good reputation in the British markets for their cheese. Their climate—especially that of Prince Edward Island—is almost an ideal one for the curing of cheese, both as regards degree and constancy of summer temperature and as regards humidity, and the present shipping facilities for exporting cheese are altogether superior to those for butter. Hence, generally speaking, it would seem best that New Brunswick and Prince Edward Island,

engage largely in cheese production during the summer season and the making of butter during the winter, leaving Nova Scotia to engage more largely in the production of butter throughout the year.

There is a growing feeling in favor of education along dairy lines. There are five dairy instructors in the Maritime Provinces, and in addition the Nova Scotia Department of Agriculture started a travelling dairy last summer under the management of Miss Laura Rose, of Guelph, which did much good. Furthermore, during the past winter three dairy schools were conducted in the Maritime Provinces. Factory courses were given at Sussex, N.B., and Charlottetown, P. E. I., while a home-dairy course was given at the school at Truro, N. S. With such forces at work, coupled with our natural advantages, the development of dairying should continue to forge ahead at a fairly rapid rate.

quality of the product. We firmly believe that factory patrons should compel owners to reconstruct the curing-rooms so that proper curing temperatures can be maintained. Until this change is brought about we will have to be content with a lower price per pound than we will get when the change occurs.

In my opinion the butter-making industry is only in its infancy in the Province, and in future years New Brunswick will be recognized as one of the leading butter-producing Provinces of the Dominion. We have the natural advantages required for dairy development which many countries do not possess that are at the present time far in advance of us, due to the fact that they have been engaged in the work much longer than we have, and have perhaps not had the market for other farm produce that the New Brunswick farmers have had and consequently have followed the line of work which gave the greatest return. We realize the fact that education is necessary in the development of any business in order to put it on a paying basis, and as far as that education extends, just so far will the work extend profitably. To assist along this line the Government of the Province have established a system of farmers' institutes which cannot be excelled, and in consequence are doing a grand work.

A provincial dairy school is held each year at Sussex, where a practical course is given in the theory and art of cheese-making, milk-testing, separating, butter-making, and animal husbandry. The school is well equipped with up-to-date machinery, and at time of writing has about forty students in attendance, a few coming from the neighboring Provinces of Nova Scotia and Prince Edward Island.

This school is supported entirely by the New Brunswick Government, and no charge is made for tuition for any student. The instructors are: Harvy Mitchell, milk-testing; J. F. Tilley, cheese-making; L. C. Daigle, butter-making; and Geo. Rawson, separators. This school is situated in a fine dairy district, and about 8,000 pounds of milk are taken at the factory daily.

### Dairying in Prince Edward Island.

By Robt. Jenkins, Secy., P. E. I. Dairy Association.

There are now in Prince Edward Island 48 factories and skimming stations (only two of the latter) which were all in operation last year except one new cheese factory built at Summerside during the summer. Two new ones are now being constructed which will make 40 in all. It is expected that all these will be working this summer. These factories are all in good order and well equipped with the best machinery, the majority of them able to be used for cheese and butter manufacture. They are

## Dairying in New Brunswick

By J. F. Tilley, Dairy Superintendent

The dairying industry in the Province of New Brunswick is one of its leading occupations and is fast coming to the front.

In 1891 only a few cheese factories or creameries were in existence, each manufacturing a very small quantity of cheese and butter, with very little interest shown by those who were at that time patrons, they thinking that dairying was not a paying business, and more money could be made from the farm by following some other line of work. In this they were not far astray, as will be seen if we look at the census returns of 1891. We find then that the dairy cows of the Province only made an average of 71 pounds of butter, which, if figured at 18 cents per pound, gives the farmers the sum of \$12.78. To this would be added \$2 for skim milk, which would bring the net return of \$14.78 per cow per year. There is not much wonder that those who were engaged in dairying at that time entered into the work in a half-hearted manner, for no one could expect to feed a cow for a year on the amount they were then realizing from them. Dairy knowledge was very meagre, and as few cows were kept the farms soon began to show signs of exhaustion, as crops were beginning to get less each year.

The Provincial Government, however, came to the farmers' assistance, and offered bonuses of \$150 and \$250, respectively, for the erection and equipment of cheese factories and creameries, with the result that the first year quite a number were erected. Travelling instructors were put on the road, holding meetings and giving practical instruction in butter-making, and it was not very long before new life was put into the work, and more attention was paid to the breeding, selection, feeding and care of stock, which soon began to

show its good effects. The number of factories steadily increased, and to-day we have 56 manufacturing cheese and patronized by over two thousand farmers, whose output amounts to about two million pounds.

Thirty-five creameries and skimming stations are in active operation, manufacturing over half-a-million pounds of butter. The net return from both industries last season brought to the dairymen the snug sum of about \$287,000. A large quantity of both our cheese and butter is exported to the Old Country each year, and the reputation earned has been a very satisfactory one.

The exports of cheese have increased from about \$38,000 worth in 1897 to \$111,000 in 1901; while in butter we find that more was exported previous to 1898, and last year shipments to the value of about \$66,000 were sent forward.

The prospects for the coming season were never brighter than now, and we can safely predict a large increase in both the output of cheese and butter, as New Brunswick farmers are showing by the interest taken that they are making money from their dairy work. Better cows, better stables, better food and care of stock than in former years goes to prove this, and coupled with the fact that as their education along dairy lines improves the quality of the milk improves, which places the factorymen in a position to manufacture a finer article, we can safely look for more lucrative business.

The cheese and butter factories in the Provinces, with the exception of the cheese-curing rooms, are well built and equipped, but we fear that unless a change is made in the rooms now in use for curing cheese, there will not be very much improvement in the

run on the co-operative system, (2 by private enterprise) each company holds an annual meeting which elects a board of directors from 5 to 7, who conduct the business through a secretary treasurer and salesmen, who of course are advised by the board of directors. The business has run along very smoothly and very little friction is to be observed. The directors charge a rate on manufacture generally about 1½¢ per lb. on cheese besides expenses in drawing and about 3½¢ per lb. on butter. The patrons in winter mostly deliver their own supply of milk, if this is not done the company charge an additional amount for drawing besides the 3½¢ per lb.

These factories are visited in turn by an inspector during 8 months of the year who is appointed and controlled by the Dairy Association or its board of directors, they also pay his salary which is about \$1,000 for the 8 months. The funds for paying this amount and other sums accruing to the Dairy Association are made up by a levy of 1½¢ per 1,000 lbs. of milk received at the factories during the previous year and by provincial and local government grants. The inspector has been found of great advantage to the Dairy Industry, his oversight conducing to a uniform make of cheese and to a better care of the milk and factory surroundings.

The make of cheese last year fell short about one million lbs. below that of 1900; caused by the great drouth which came early in the summer and factorymen were not prepared to meet the exigencies of the case as they should have been with a supply of green feed but the severe lesson will probably be of benefit in another like case as the planting of green feed will be more generally attended to in future.

The make of butter was about the same as last year, I am bound to say however, that winter dairying has not been as successful as was at first anticipated. The conditions this year were certainly unfavorable, raw feed was high, and farmers preferred selling their grain and hay to feeding to supply or produce a good flow of milk; and the delivery of milk at the factories during the winter months is considered a burden by the farmer who has only a small supply. A few factories engage the drawing for the full year and this I consider the best solution of the difficulty, as when this is done the factories continue in operation much longer than they otherwise would.

The Dairy Association conducted a cheese making class here this winter for a short term which was considered of great benefit to our cheese makers generally. Mr. J. A. Mitchell, Superintendent of Dairying for the Maritime Provinces and J. A. Ruddeck, Chief of Dairy Division attended the school and gave lectures, instruction in milk testing, etc. They were assisted by our own inspector, F. S. Morrow. It is intended to continue the class next year when instruc-

tions in butter-making will also be given.

The following is the output of the factories in cheese and butter during the year 1901:

Total lbs. of milk made into cheese, 37,230,755.  
Total lbs. of cheese, 3,554,719.

Total gross value, \$320,521.75.

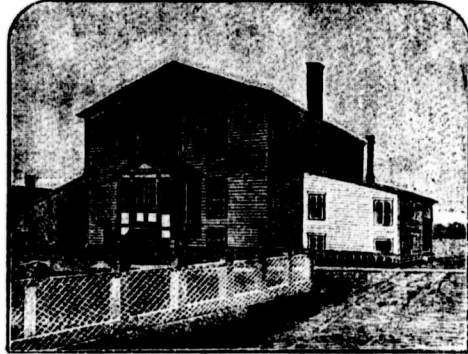
Net value to patrons, \$245,297.30

Total lbs. of milk made into butter 11,000,000.

Total lbs. of butter, 572,726.

Gross value, \$123,052.32.

Net value, \$97,191.13.



Provincial Dairy School, St. Hyacinthe, Que.

## Dairying in Manitoba

By C. A. Murray, Dairy Superintendent

Our present system of dairying in this province may be said to have started in 1895 as it was in that year that the Government first commenced to lend assistance and appointed a permanent superintendent to look after the dairy work.

The growth of the dairy industry in Manitoba has been most phenomenal as has also been the improvement in the quality of the goods manufactured. A number of the first factories built in this province were poorly constructed and had not the best equipment. In many cases some old buildings were remodelled for creamery and cheese factories, which plan as a rule, is seldom, if ever, satisfactory. The factories being built at the present time are of more modern design, are better equipped and with good cold storages—in fact about all that could be desired for creameries handling the same amount of butter during the season. In order to give the best idea of the growth of the industry in this province, we here give a table showing the number of pounds made and the value from 1895 until the close of 1901.

Year.	BUTTER.		CHEESE.		
	Pounds.	Value.	Pounds.	Value.	Total Value.
1895.....	1,763,252	\$217,066.74	553,192	\$107,170.24	\$324,176.98
1896.....	2,245,025	.....	886,000	.....	.....
1897.....	2,397,494	366,317.84	987,007	83,895.59	450,213.43
1898.....	2,116,644	340,687.98	800,084	69,367.28	409,455.26
1899.....	2,357,049	383,578.93	848,587	89,980.16	470,559.09
1900.....	3,338,431	541,661.04	1,021,258	102,330.05	643,991.09
1901.....	5,208,740	837,964.60	1,039,392	88,348.32	926,314.01

The large increase made last year was one of the most phenomenal jumps in the dairy industry that could be accomplished in most any province except Manitoba. The conditions throughout the season in that part of the province lying

west of the Red River were most favorable for the production of butter. The pasture came early in the season and was abundant and good, the plentiful rains kept it in splendid condition until the creamery closed the latter part of October or early in November.

The increase of dairy butter was 31 per cent. over the preceding year and the average price remained about the same, showing a correspondingly large increase in the net value. The output of creamery butter made the most phenomenal stride, showing an increase of 96 per cent. over the preceding year. The average price was about 1-5 cent per lb. lower than the year before.

The prospect for dairy work in Manitoba is very good indeed as there are several new factories building preparatory for the coming season's work, and the indications are that we may again double our output next season. The system of gathered cream which is in vogue in this province helps us to cover large districts, and through the efforts being made to instruct the patrons with reference to car-

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ing for the cream, will in the future enable us to make the highest quality of butter at the least possible cost to the patron.

The advance to be looked for in this province is in the development of the creamery work.

### Dairy Association Work in Ontario.

For years the practical instruction work at cheese factories and creameries has been carried on under the auspices of the Dairymen's Associations. These organizations have therefore rendered valuable aid to the dairy industry. This year the associations are more aggressive than ever in their endeavors to reach the patron and the maker, and improve the quality of Canadian cheese and butter.

During March a number of special meetings were held at different points in Eastern and Western Ontario. A detailed list of these meetings and the names of the speakers who addressed them were given in these columns a few weeks ago. These meetings were largely attended, and it is to be hoped they will bear good fruit in inducing a better quality of milk to be delivered at the factories.

The work to be carried on during the summer will be somewhat along similar lines to that of previous years, excepting perhaps, that the instructors will give more of their attention to aiding the maker and the patron and less to inspecting milk. Three instructors will be employed by the Western Association to cover the district west of Toronto, Messrs. James Morrison, Brantford; James Bristow, Strathroy, and J. F. Millar, London. Mr. Morrison will take the south-eastern district; Mr. Bristow the south-western; and Mr. Millar all north of the main line of the Grand Trunk Railway running from Toronto via Guelph and Stratford westward. The fees to be charged to factories have been reduced to two dollars per visit, and it is expected that the majority of the factories will take advantage of the opportunity provided for them.

The Eastern Association in addition to the employment of a number of instructors during the summer will endeavor by publishing a series of practical articles written by their instructors and others in the press to educate both patrons and makers on lines that will lead to a better raw material being delivered at the factory and a better quality of cheese being made from it.

The cheese instructors engaged are: L. A. Zuleit, Kingston; A. P. Purvis, Maxville; R. W. Ward, Foxboro; G. H. Bensley, Warkworth; H. H. Howey, Newburg, and J. B. Lowery, Frankford, who will cover the district east of Toronto. Mr. A. B. Rabb, Brockville, will look after the creamery work of Eastern Ontario.

### British Columbia Dairying

Dairying seems to be progressing slowly but surely in the Pacific Province. There is a splendid market there for fine butter and with the high prices, the surprise is that there are not more creameries. But there seems to be a difficulty in securing a sufficient

number of cows in a district to operate a creamery. However, there are several very fine creameries in operation and others are talked of.

Mr. C. H. Hadwin, until March last secretary of the British Columbia Live Stock and Dairymen's Association, in writing this office a few days ago, gives some details regarding the creameries of British Columbia that may be of interest. The creameries already in operation are near the coast and on Vancouver Island. There is a movement to build one in the Okanagan country, which will be the first one in the interior in the irrigated district. The largest creamery is located at Chilliwack, which made last year 140,000 lbs. of butter. A movement is now on foot to get another creamery established there. The Ladner creamery last year made 85,000 lbs. of butter, the Cowichan 81,000, and the New Westminster 100,000 lbs. A creamery established at Victoria last year is also doing well and the outlook for the dairy business is bright.

In addition, we might add that no cheese making is attempted, all efforts being confined to butter-making. This seems wise in view of the excellent demand for butter. The average price for the season would run about 40c. per lb., and at that figure who would not make butter. At the meeting of the Association, held on March 4th last, some discussion took place in regard to the cutting of prices to the consumer. When prices are too high, however, consumption decreases so the creameries have nothing to gain by keeping prices up too high. If there should be a surplus of butter in the flush of the season the British Columbia dairymen have a good outlet for it in the Klondike.

### Keep Up the Milk Flow.

Many dairymen fail to reap the full profit from their cows through not having a supply of succulent feed for them during the summer. There is always a period during July and August when the pastures

become parched and dry and before the fall rains begin, when, if cows have not a plentiful supply of succulent feed, they will shrink very much in the quantity of milk they give, and what is more, it will be very hard to bring them back to a full flow when the pastures are green later on.

It, therefore, becomes a necessity to supply this supplementary feed in the business is to be made a success. The simplest, and perhaps the most effective, way to supply this is to sow peas and oats as recommended by Mr. Mitchell in another column, and afterwards utilize the corn crop. If the peas and oats are sown at different periods, they can be made to supply a lot of good supplementary feed until the corn is sufficiently matured for use in August.

The summer silo is becoming very popular as a means of supplying this summer feed. Where a dairymen has a silo, and no dairymen who desires to reap the greatest profits from the business should be without one, he should arrange to hold over a small quantity of silage for summer feeding. The best way to do this, perhaps, is to build a small silo for this purpose. The silage will keep better and there will be less waste than where a part of the silage in a large silo is held over for the summer. Those who have tried the summer silo speak very highly of it and we can strongly recommend it to our dairymen.

A great many dairymen who grow supplementary feed make the mistake of not beginning to feed it soon enough. They wait till the pastures become dry and the cows begin to fail a little in their milk flow before they begin to feed. The successful dairymen will anticipate matters a little and have his cows supplied with supplementary feed before they begin to fail in their milk flow. By beginning thus early and feeding liberally the regular milk flow can be kept up during the summer and the cows will be in a condition to go on milking until late in the fall. Unless something of this kind is done cow keeping in Canada cannot be carried on at a profit.

## Our Western Letter

Organized Effort — Flour Milling Business — Horticultural Exhibition — Western Remounts.

Winnipeg, April 1st, 1902.

The farmers of the North West Territories have already proven the value of organized effort. Reference has several times been made in this column to the Grain Growers' Associations which are being organized in the Territories and more especially in Eastern Assiniboia. At the meeting of the delegates from the local associations, held at Regina on the 12th February for the purpose of organizing a Central Association, resolutions were passed, among others, calling upon the C. P. R. to make

an equitable rate on wheat to Duluth over the "Soo" line and thus enable the farmers to make use of the storage at that point. Hon. Mr. Bulyea and Mr. Snow of Wolseley were delegated to place this and other matters before the railway authorities. In a recent letter your correspondent noted the successful outcome of the efforts of this delegation, and it is a satisfaction to know that the movement began with the Grain Growers' Association, or in other words, with the farmers' organization. Other resolutions were adopted at the an-

annual meeting, which let us hope, will be as speedily productive of results as the above mentioned. Among the more important were those asking for amendments to the Grain Act, permitting loading from waggons at points where elevators, warehouses or platforms are in existence; requiring loading platforms to be constructed within thirty days of order of the warehouse commissioner under penalty for delay or neglect to do so; favoring the erection of farmers' elevators; favoring adoption of measures to secure our wheat from admixture with other wheats in transit to the European markets. All these very desirable objects may we hope, be furthered by the resolutions adopted by the Grain Growers' Association.

Apropos of the above movement we feel it a duty to speak a word of praise for the hearty and unequivocal manner in which the Territorial Government, and especially the Hon. Commissioner of Agriculture has espoused the cause of the farmer in the present crisis. Hon. Mr. Bulyea's attitude has been of the kind to win the respect and support of the farmer, whatever his political stripe.

Mr. F. W. Thompson has for so long been the actual head of the Ogilvie Milling Company that the transfer of that company's business to a new company organized and managed by Mr. Thompson is not likely to result in any radical change in the operations of the business. The president of the new company is Mr. Chas. R. Hosmer, of Montreal, the head officer of the C.P.R. telegraphs, which fact we hope will guarantee that the new business will suffer from no unjust discrimination in railway rates, etc. We ardently hope for a large development of milling in Manitoba during the next few years and Mr. Thompson's reported statement that his company intend to take the first position among the millers of the British Empire leads us to expect such development. There is and will be plenty of room for this and several other companies and with the amount of water power available in Manitoba and western Ontario this industry has undoubtedly a great future in store for it.

The Ogilvie Milling Company was the first exporter of Canadian flour in any considerable quantities. Their first mill was located at Jacques Cartier near Quebec, in 1801 by the father of Hon. A. W. and the late W. W. Ogilvie, who came to this country from Scotland in 1800. The business grew rapidly and was taken over in 1852 by the three sons who erected the Glenora mills at Lachine in that year. The roller system was introduced into Canada by this company as a result of Mr. W. W. Ogilvie's investigations in Hungary in 1868. From that date Canadian flour has assumed a premier position in the British market. The Ogilvies were also the first exporters of Manitoba wheat. In 1876 the firm shipped 500 bushels, a

small figure compared with the millions they now handle each year.

The first Provincial Horticultural Exhibition will be held by the Western Horticultural Society at Winnipeg on the 28th, 29th and 30th of August next. The prize list amounting to nearly \$1,000 has been issued and if liberal premiums are effective there should be an excellent showing of fruits, vegetables and flowers from Manitoba and the North West Territories. The fruit growers of British Columbia have announced their intention of making a commercial exhibit of their products and Ontario fruit growers might profitably follow the lead.

Col. H. F. Dent wrote Major Sanders, of the Mounted Police,

Calgary, as follows from the Queen's hotel, Toronto, on the 15th inst.: "I purpose going to the Northwest about the last week in May. We are buying mounted infantry cobs now, from 14.2 to 15.1, and positively no higher, ages 6 to 9. I am instructed to let the ranchmen know now, so that they may train and break in their horses to saddle, to stand, to be mounted, and answer the bit or snaffle. It will be a great favor if you will let it be known that our commission is coming to purchase that class of horse." He says that he will probably visit Cochrane, High River, Macleod and Pincher Creek. Col. Dent has been buying on an average of 800 horses a month this winter.

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## The History of the Cream Separator



Dr. De Laval.

The First Separator.

—  
"Dr. DeLaval's Work.

—  
Development in Europe.

—  
The American and Canadian Factories

—  
Five Hundred Medals Won.



Sir John Bernstrom.

One of the great movements in modern dairying has been the development of methods and machinery for separating cream from milk. No one fifty years ago dreamed of anything better than the old shallow pan method. But through the invention of a Swede, named Schwartz, the ice method was introduced during the fifties into northern Europe. This was a great step forward over the shallow pan system as it enabled the operator to overcome the exigencies of the weather. In 1860, another great advance was made when the first machine to separate cream from milk by centrifugal force was introduced. This came as a great surprise to the dairymen of that day. These early machines were, however, only made to bring the cream to the surface and did not absolutely skim the cream from the milk. This had to be done by hand as before. The result was that the invention in question was but an interesting effort in the right direction without being of any practical importance to the dairy industry. It was not until 1877 that the perfect working cream separator, so largely in use to-day in every dairy country, was invented by Dr. Gustaf De Laval, at Stockholm.

Knowing that The Farming World readers would be interested in more detailed information regarding the development of the cream separator idea, a representative interviewed Mr. F. E. Benedict, Manager of the Ontario offices of the De Laval Separator Company in this city. When asked as to the reception which Dr. De Laval's invention met with in Europe he said:

"The following year after his invention the machines were so far perfected that they could be put upon the market, where they soon acquired, under the name of De Laval Separators, approbation and praise in spite of the fact that on the start they had to combat pre-

judice and distrust. During the first year, eight creameries were induced to try the separator. The year following fifty-four were sold, and in 1880 one hundred and sixteen, of which one-half went to the Agricultural Schools in the different countries of Europe. The ice being thus broken the sale has been augmented continually from year to year. Now, more are sold each day than were sold during the whole year of 1880, the production having thus increased 360 fold during the past twenty years. There have been made and sold up to the beginning of 1900, 225,000 De Laval separators."

"In 1883 Dr. De Laval's factory was bought by a stock company under the name of the "Societe Anonyme Separator" (Swedish Aktiebolaget Separator) the direction of which company in 1886 was confided to Mr. John Bernstrom, now Sir John Bernstrom, who by his great energy and high commercial capacity has raised it to the position it now occupies, the most important and the most prosperous of the industrial enterprises of Sweden."

### THE HAND SEPARATOR.

Were hand separators made at the beginning?

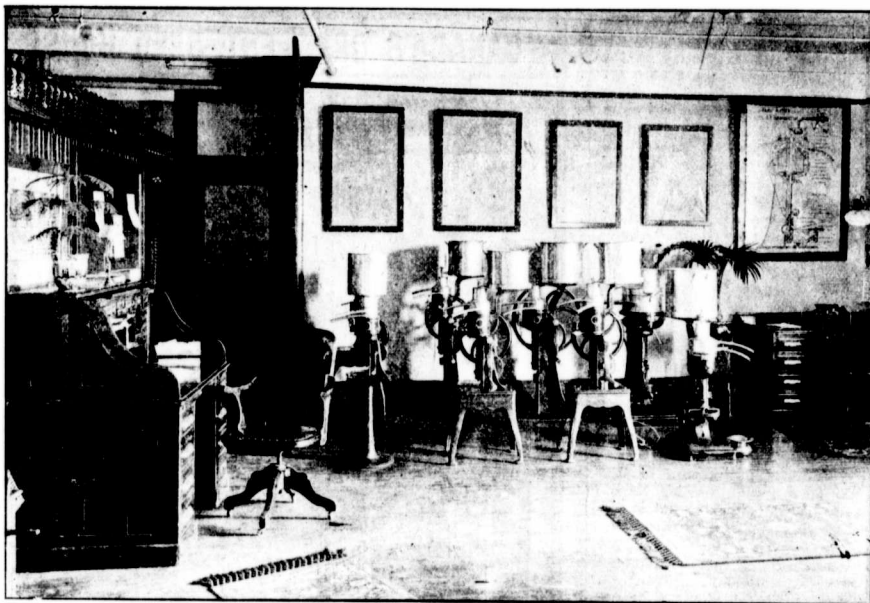
"No. Before 1886 only separators to be run by power were made, but by the end of the year the company began to put out and sell smaller sizes to be operated by hand, the use of which has increased by hundreds of thousands. In consequence of their saving both time and money these machines have become the most useful of all the tools used by dairy farmers. De Laval hand separators are now made to skim from 250 lbs. to 1,000 lbs. whole milk per hour according to the capacity."

What other improvements have been made? In reply to this Mr. Benedict said:

"A little after the hand separators were perfected, the company commenced to make machines run by a direct application of steam by the turbine method. The sale of these machines has also been large, especially in countries where their economy has been recognized; (1) in the matter of first cost, (2) small space occupied, (3) and ease of



Corner of Toronto Offices, De Laval Separator Co.



Show Room, Toronto Offices, De Laval Separator Co.

maintenance. Separators run by power, either belt or turbine, are now made to skim all the way from 1,000 lbs. to 4,500 lbs. per hour."

"In 1892 the Separator Company bought the exclusive rights in the "Alpha" patent, which invention not only increased the capacity of the machines but still further improved their skimming qualities. This placed the separators of the company far in advance of any made by their competitors. With this important improvement the name "Alpha-Laval" was adopted. It has been preserved without modification and is registered in all parts of the world. The name

"Alpha-Laval" therefore stands for the best cream separator made up to the present time."

60,000 SEPARATORS A YEAR.

Where are the European factories located?

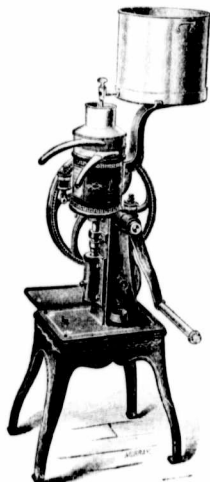
"The principal factory of the Separator Company," said Mr. Benedict, "is located at Stockholm and is one of the most important establishments of the Swedish capital. About 1,000 persons are employed there and in 1899 there were made more than 35,000 separators, representing a selling value of more than \$2,000,000. In 1901 nearly 60,000 were made in all. Besides the principal factory the company has shops and branch companies in Europe and in North America. The total annual sales in all the factories were for 1899 in excess of \$1,000,000. "To attain these great results, the Separator Company has a vast number of clerks and employees in their different establishments, besides general agents in the greater part of the world, and local agents under their orders to the number of 5,000 or more. Apart from all this force working directly for the success of the separator business there are a certain number of specialists, not only in the dairy industry, but in other agricultural branches each contributing by his work,

through the Separator Company, to the general good of agriculture."

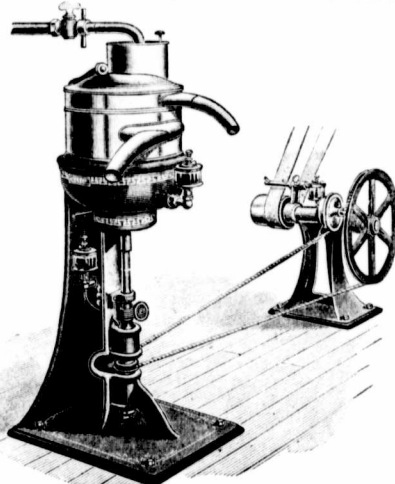
HONORS IN EUROPE.

Tell us about some of the honors the De Laval separators have won Mr. Benedict?

"It was quite natural," he said, "that so great a concern as this company should have been represented at the Paris International Exposition in 1900 and should do honor to the country where it originated. Few visitors to the Exposition passed by the food section without being struck by the splendid "Alpha-Laval" exhibit, artisti-



Baby No. 1, De Laval Hand Separator.



Alpha No. 1, Belt Power Separator.

cally composed of numerous little detached pieces of the separators. Besides this, all interested in the milk industry were able to see for themselves at a special pavilion not only how easy it was to skim with an "Alpha-Laval" separator, but also learn how to make first quality butter with the cream thus obtained. The company which had already received in the different countries of the world 462 first prizes for their excellent "Alpha-Laval" separators, captured likewise the highest award at Paris. The jury of class 37, group VII, placed the company in the first rank of those decreed."

#### DE LAVAL SEPARATORS IN AMERICA.

We understand your business has made rapid advancement in America, Mr. Benedict?

"Yes indeed; in addition to the foregoing account of the European branch of the De Laval organization the splendid factory of the company at Poughkeepsie, N. Y., employs in the neighborhood of 500 hands and turns out on an average a perfect machine every six minutes, while the important plants at Chicago, San Francisco and Montreal, keep busy a large body of skilled men. Branch offices and warehouses have also recently been established in Toronto and Winnipeg to supply the ever increasing demand from Canadian dairy farmers."

"At the Pan-American Exhibition held at Buffalo last year, the De Laval machines, received the only Gold Medal (highest award) on cream separators alone. One other maker received a bronze medal, and another a concern a gold medal on its cream separators—Babcock testers—and churns, or one award on their combined exhibit. The supremacy of the De Laval machines at Buffalo is a continuation of their triumphant record at all previous great exhibitions since 1879. At the World's Fair, Chicago, 1893, they received the gold and only medal awarded by the regular jury of awards and were the only separators used in the Model Dairy. At Antwerp in 1894, and at Brussels in 1897 they received the highest awards. At Omaha in 1898 the gold medal, and again at Paris in 1900 the pre-eminent Grand Prize, as already fully set forth. Nearly 500 medals, being a portion of those awarded the De Laval Separators in their career of twenty-two years, are on exhibition at the general offices of the company in New York."

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#### A TRUE SAYING

#### "Imitation is Flattery."

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To imitate is to impose upon the buyer thereof and mislead those wanting the genuine. Ask for **Steele, Briggs' "ROYAL GIANT" Sugar Beet**

It is supplied only in 1 lb. packages, as represented in above cut. See that their name is upon the package.

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If your local dealer cannot supply you send order direct for "Royal Giant."

PRICE (Carriage Paid)

5 lb. lots or more, 20 cts. per lb.  
In less quantity, 35 " "

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#### What Growers Say.

"'ROYAL GIANT' gives a surprisingly heavy crop of clean, handsome roots, and easily harvested."

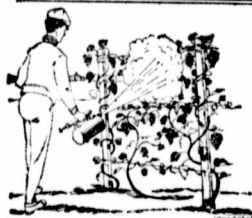
"It beats them all; wish I had planted all my sugar beet crop with your 'Royal Giant.' I shall do so this season."

"I never had a crop like 'Royal Giant' gave me; they are large, clean and easily taken up; keeps solid all winter."

"You recommended me to plant your 'Royal Giant.' I did so, and had the finest root crop I have ever grown; all animals upon the farm eat it with relish."

Use Steele, Briggs' "ROYAL GIANT."

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with steel closed ends, last a generation; no expensive wearing parts; 27 in. and 30 in. diameter; 5 to 12 feet long; steel frames.

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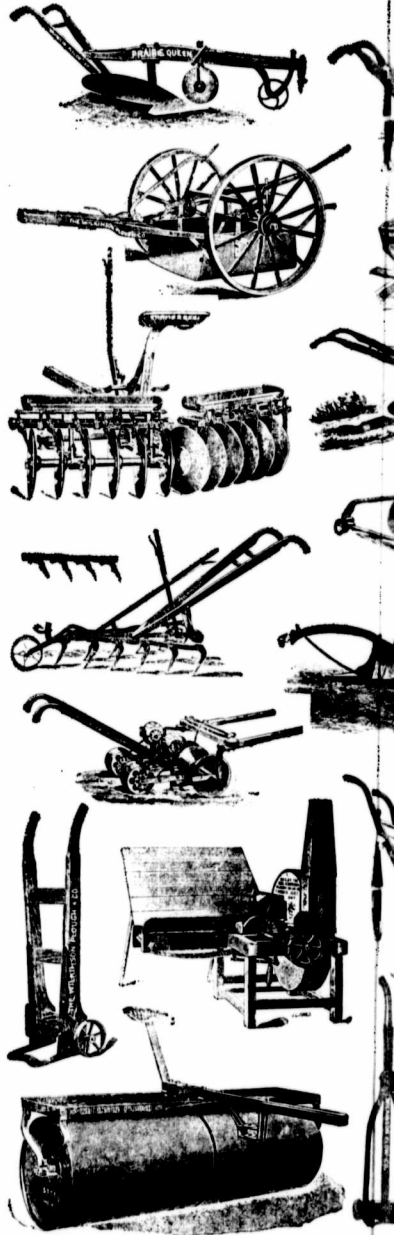
One or two row, with or without shafts.

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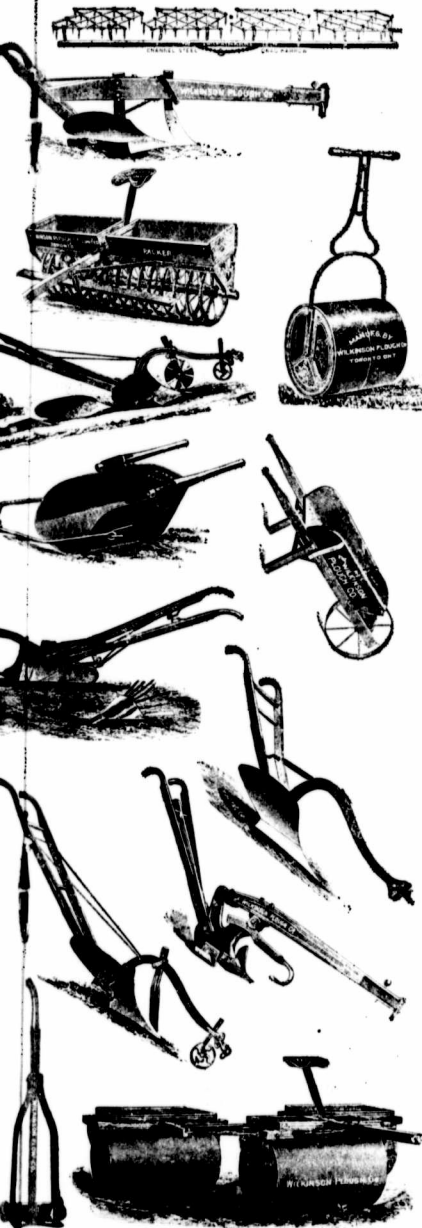
## Wheel and Dray Scrapers

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ridge up the land—there is no better system of cultivation.

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of every description for home, farm, stable, brickyard, wood, railroad, etc.

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Several styles and sizes.

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| 5. Cabbage, Winningstadt.               | 24. Onion, Yellow Danvers.          |
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| 16. Herbs, Sage.                        | 35. Salsify, Sandwich Island.       |
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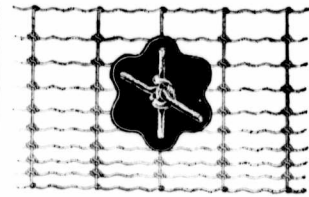
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4. It is fearless and independent in discussing matters affecting the farmer's interests.
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6. It is the Official Organ of the Farmers' Institute System of the Province of Ontario.
7. It is the only paper in the Dominion containing a regular department devoted to the cultivation of Sugar Beets.
8. Its Market Review and Forecast is compiled by an expert and is thoroughly reliable. This feature of the paper each week is alone worth many times the yearly subscription price.
9. It contains each week a Home Department in which appears articles, stories and what not of interest and value to both old and young in the home.
10. During the year several numbers of special interest are published, such as our Annual Autumn Number, our Horse Number, Poultry Number, Dairy Number, etc. These numbers are very much larger than the ordinary issues, and in themselves are well worth the careful reading of every Farmer and Live Stock Breeder.

(CUT THIS OUT)

The Farming World  
EVERY WEEK \$1.00 A YEAR  
Shipping in Advance  
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TORONTO

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Confederation Life Building, TORONTO.  
I enclose \$1.00, for which send THE FARMING WORLD for one year to  
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P.O. ....  
F.W., Apr. 8, '02.

# The Sugar Beet World

Devoted to Sugar Beet Culture in Canada and Allied Industries. Specially Representing the Farmers' Interests

Edited by JAMES FOWLER

## Newmarket.

The Newmarket Sugar Co., Ltd., has been incorporated. It is not intended to do much this year, except to lay the foundation for success. The first effort will be made to secure the acreage, and if the farmers will take hold in proper shape an effort will be made to get a factory built, if not the project will be given up. It rests with the farmers, without them no factory can hope to succeed. Newmarket offers splendid opportunities for the successful operation of a factory, in so far as other things are concerned and it is up to the farmer to show his feeling in the matter.

## Dresden.

Capt. Jas. Davidson, of Bay City, Michigan, the principal owner of the factory building at this point has returned from the south, and is expected to visit the works soon. Rapid progress has been made, but with the arrival of Capt. Davidson more energy will be put forth and the contractors pushed to a greater effort. The factory must be done on time, or a heavy penalty will be exacted. The American Construction Company who have the contract are building a large factory at Sebewaing, Michigan, both plants being exactly alike. Acreage contracts have been a little disappointing, two factories within a few miles of each other are too many for the first year or before the industry is well started, but the Dresden factory will have more beets than most of the factories in Michigan had the first year of their existence.

## Warton.

Work upon the Warton Beet Sugar factory will be started within a few days and rushed to completion, and the directors are confident, that their factory will be the first in Ontario to turn out sugar. The beet seed is expected in a few days and will be distributed to the farmers as early as possible.

Mr. W. K. Snyder will have charge of the agricultural end of the enterprise the first year.

## Wallaceburg.

The factory at this point is well under way and will be completed fully a month before the beets are ripe or ready to be worked up. The acreage contracts are not quite up to expectations though sufficient have been secured to make a good season's work. A few more contracts will yet be made, and quite a quantity of beets will be grown for which no contracts have been signed.

## Galt.

The special committee appointed to visit New York and to interview the promoters, have returned and announced that there is no possibility of getting a factory built this year, and with the late promoter at any time. It is a great disappointment, but though delayed it is bound to come, the local people being determined to put the matter through themselves. The contracts with the farmers will be renewed, and an early start will be made in the fall to get the factory built.

## Berlin.

The ground has been broken for the sugar factory at this place, and in a few days as many men as can possibly be employed will be put at work. The contractors have erected an office and put in a telephone.

The plans show a four and five story building 300 feet long. Warehouse 50 x 144 feet, machine shop 25 x 75 feet, cooper shop 40 x 70 feet, seed house 30 x 60 feet, five beet sheds with a capacity of holding 10,000 tons of beets.

The plans for the office building are not yet prepared but it is to be a strong building, fitted in keeping with the rest of the works. The whole establishment is to be of the very best material, thoroughly up to date in every particular. The contractors agreeing to put up as good a factory as any in the United States or Canada, if not better. Sunday is a gala day

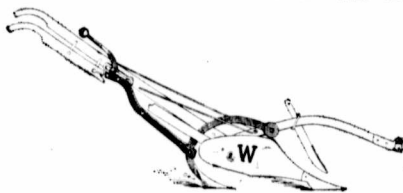
around the site, hundreds of people visiting the place, and are more than surprised at the magnitude of the works as laid out.

## Pulp Feeding.

The manager of the Standard Cattle Co., of Nebraska, has this to say about pulp feeding:

"We have no figures of results of feeding pulp to cattle, as this is the first winter in which we are feeding pulp to cattle in any volume, and the feeding season is not yet half through, therefore the only figures I can show you are those of sheep feeding. It will take years before there is any valued recorded experience in pulp feeding. I send you figures regarding our cattle feeding in order that you may see what a variety of products is fed to cattle and where the pulp will come in. No doubt we are this winter making a valuable saving of food products by the use of pulp, but we cannot demonstrate it in figures. I send you also some of our tables, which may aid you a little. We are this year feeding 4,000 cattle and 31,500 sheep, which are being fed on pulp with other products. And we have also been able to make a very good use of the beet tops left in the fields, having grazed our cattle altogether through a period of more than sixty days on as many as 1,500 acres of beet fields after harvesting getting therefrom possibly as much as \$10,000 in food. In this part of

## The Vessot Subsoiler



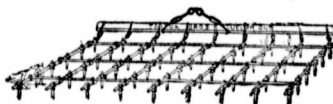
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Attaches to any plough. Improves any farm, and assures a crop in any season, wet or dry. No extra draft on horses.

**SOLD ON TRIAL.** S. VESSOT & CO., 108 FRONT STREET EAST, TORONTO.

## STEEL HARROWS



Tolton's Section and Flexible all Steel Harrows have an unequalled record. Made in all suitable styles and sizes, for different soils, or in widths to suit purchasers. Pre-eminently the most efficient, strongest, and longest wearing harrows ever manufactured is our unqualified guarantee. Parties wishing a first-class harrow will do well to write us direct or apply to the local agent.


OUR MOTTO: "Not how Cheap, but how Good."

TOLTON BROS.

Guelph, Ont.

the country where corn has been the only food product understood and appreciated by farmers, pulp has been little appreciated, and probably some experiments of feeding in midwinter have not been successful. It is gaining ground however, in public opinion. Where it can be fed without freezing, its value is no doubt great enough to be well worth considering in a sugar proposition. I have been very careful about what I have said about pulp, but we feel now that it has greater value than we have ever yet felt free to claim for it. I append hereto our superintendent's opinion as to the value of beet pulp. In feeding 300 steers in one yard, we fed from one and one-half to two loads of cut fodder per day with all the pulp they could clean up. The fodder weighs about 3,000 lbs. to the load. This year we figure 30 per cent. corn in the fodder which would make from 6 to 8 lbs. of corn to the steer per day, besides all the pulp he could eat. We got some of the yards up to 60 lbs., but they eat from 40 to 50 lbs. to the head per day. So I believe the cattle on from 8 to 10 lbs. of grain, a fill on beet tops once a day, and all the pulp they can eat, will make a better gain than on a full feed of grain alone. By the time our beet tops were used up we had the cattle, as you are aware, up to a decent grain ration about 10 lbs, besides what was in the fodder. As soon as we stopped feeding pulp we were compelled to feed each yard of 300 cattle from 30 to 50 cwt. of cut fodder more than they had been getting; and still with this increase the cattle did not look nearly so well. I am of the opinion that cattle, say on a 15-lb. ration of grain and 40 lbs. of pulp, will make a better gain than cattle on a 25-lb. ration of grain without any pulp; the only trouble exists in cold weather stopping feeding outside. If one could have cattle ready to feed as soon as the pulp could be obtained, say September 15th to December 15th would give three months of good weather, and with the proper care, if one wanted to crowd either cattle or sheep, they would be in pretty good shape for a grain finish by that time. I believe one gets better results, or at least is able to see the results better, on older cattle than younger. There are a number of milk cows on the place being fed on pulp and straw, without any grain whatever, and the cows kept up a good flow of milk and also gained in flesh. I believe pulp fed with corn fodder, straw or other dry foods creates better digestion, and animals are consequently able to get more good out of each product. Making a rough estimate I should say that where a person has stock, beet tops are worth from \$5 to \$8 per acre. With grain the price it is this year, I would value pulp at \$4 per ton."

Defining By Ear—A teacher requested each scholar to give a sentence containing the word "toward." One boy, of nine years, evolved: "I toared my pants!"



### Page Woven Wire Fence

Owing to the variations of the Canadian climate, considerable allowance must be made in all fences for contraction and expansion, which makes an ordinary wire fence unserviceable, as when it expands it becomes so loose as to prove of little value. Note this makes it elastic and self-regulating. The Page Wire Fence is made of "Page" wire, which is twice as strong as ordinary wire. Prices are particularly low this season. 50,000 miles of Page fences now in use. We also make Gates, Ornamental Fences and Poultry Netting. The Page Wire Fence Co., Limited, Walkerville, Ont. 2

The continuous coil of this makes it elastic and self-regulating. Note this makes it elastic and self-regulating. The Page Wire Fence is made of "Page" wire, which is twice as strong as ordinary wire. Prices are particularly low this season. 50,000 miles of Page fences now in use. We also make Gates, Ornamental Fences and Poultry Netting. The Page Wire Fence Co., Limited, Walkerville, Ont. 2

## Copper and Brass Work

Of Every Description.  
Special attention given  
to Plants for Beet Sugar  
Factories, Glucose, &c.  
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Will Contract for complete Plants in any part of the world for Brewers, Distillers, Beet Sugar Factories, Refineries, Glucose Works, Etc., Etc.

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### SUGAR MACHINERY

CLEVELAND, OHIO

Will contract to build complete beet sugar plants, including all machinery and buildings; also furnish the necessary technical and skilled help to operate them. . . . .

Now Building the Factory at Berlin.

## The Kilby Manufacturing Co.

FOUNDERS and MACHINISTS

Corner Lake and  
Kirtland Streets,

**Cleveland, Ohio**

New York Office:  
220 Broadway.

Builders of Complete Machinery for Beet, Cane and  
Glucose Sugar Houses and Refineries.

# The Agricultural Gazette

The Official Bulletin of the Dominion Cattle, Sheep and Swine Breeders' Association, 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 Review.

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 10,000 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 15th 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.

A. P. WESTERVELT, Secretary,  
Parliament Buildings, Toronto, Ont.

### FARM HELP EXCHANGE.

The Farm Help Exchange has been started with the object of bringing together employers of farm and domestic labor and the employees. Any person wishing to obtain a position on a farm or dairy, or any person wishing to employ help for farm or dairy, is requested to forward his or her name and full particulars to A. P. Westervelt, Secretary, Live Stock Associations. In the case of persons wishing to employ help, the following should be given: particulars as to the kind of work to be done, probable length of engagement, wages, etc. In the case of persons wishing employment, the following should be given: experience and references, age, particular department of farm work in which a position is desired, wages expected and where last employed.

These names when received together with particulars will be published FREE in the two following issues of the "Agricultural Gazette" and will afterwards be kept on file. Upon a request being received the particulars only will be published, the names being kept on file.

Every effort will be made to give all possible assistance, to the end that suitable workers, male or female, may be obtained. Every unemployed person wishing to engage in farm or dairy work is invited to take advantage of this opportunity.

### Help Wanted.

Wanted a man to work on a farm situated on the banks of the Rideau River, 10 miles from Ottawa. General farming. Wages will range from \$19 to \$22 a month according to experience and usefulness. No. 942. a.

Wanted.—Right away a reliable man with no bad habits, one who can milk and do general farm work. \$18 per month for 7 or 8 months. References required. No. 943. a.

Wanted—A married man (without children preferred) to take charge of a 90 acre farm, 3½ miles south of London. Must be a good practical farmer, understanding the care and feeding of cattle. He would have a farm hand to assist him. Permanent job to satisfactory man. Wages \$200 a year with brick house and garden supplied. References required. Work to begin at once. No. 938. b.

Wanted—A good smart reliable boy, about 14 or 15 years old to work on a farm near Warton. Good wages to smart boy. No. 939. b.

Wanted—A man to work on a 100 acre farm. No milking, light work, general farming. Wages \$150 a year. No. 940. b.

Wanted.—A married man, with good executive ability, to take full charge and responsibility of an 800 acre farm, of which 600 acres are under crop. Would be required to look after 9 team of horses, cattle and other stock as well as farm machinery, etc. Farm situated 13 miles from Winnipeg and 1½ miles from railway station. To work either on a salary or a man with capital would be given equal interest in the farm. No. 941. b.

### Situations Wanted.

Wanted a position on a farm, dairy preferred, by a young man who has had experience in all kinds of farm work, milking and looking after stock, is capable, willing and trustworthy. Address H. Montrose, Weston, Ont. a.

Wanted a position by a young man as groomsmen or taking care of horses, who has had three years experience in this kind of work. No. 991. a.

Wanted a position by a middle aged man on a farm where the work is not too heavy, either a dairy or fruit farm or taking care of horses. Can furnish credentials as to sobriety, fidelity and constancy. No. 992. a.

A young man, 17 years of age, born and reared in the city of Toronto, but who has some experience in farm work, desires position by the year on Ontario farm. He is able and willing to do any kind of farm work. No. 985. b.

Wanted, a position as manager by a married man, aged 38 years, who has had 25 years' experience as gardener, fruit, vegetable and gardening generally. Understands the care of poultry and bees. Total abstainer. No. 986. b.

Wanted a position by a middle aged man, as farmer or foreman. Accustomed to the care of horses and cattle, understands farm machinery and is a good market gardener. Can furnish good references. No. 987. b.

Wanted by a single man a position as teamster on a farm; understands the care of horses and all farm work. Can furnish good recommendations; good wages expected. No. 988. b.

Wanted.—A situation in creamery or city dairy, making delicious butter, ice cream and cheese, clarify and pasteurize milk and cream. Ten years' experience, Dairy school graduate and winner of two gold medals. No. 984. b.

I wish to communicate with some person having a farm of 160 to 200 acres to rent, suitable for mixed farming. The farm should not be more than five miles from a railway station.

A. P. Westervelt.

### Domestic Help Wanted.

A young married woman desires a position for the summer either in Port Arthur or Fort William accustomed to working on a farm. The daughter 11 years old could help with the work. No. 989. b.

**N.B.—Where no name is mentioned in the advertisement, apply to A. P. Westervelt, Parliament Buildings, Toronto, giving number of advertisement.**

### Farmers' Institutes.

Under the head the Superintendent of Farmers' Institutes will each week publish matter relating to Institute work. This will include instruction to secretaries and other officers, general information about Institutes and Institute work, suggestions to delegates, etc. He will also from time to time review some of the published results of experiments conducted at the various Agricultural Colleges and Experiment Stations of Canada and the United States. In this way he hopes to give Institute members some valuable agricultural information which they might not otherwise receive, on account of not having access to the original publications. If any member at any time desires further information along any of the lines discussed, by applying to the Superintendent he will be put in direct communication with the Institution that has carried on the work.

G. C. CREELMAN,  
Superintendent Farmers' Institutes.

### Helping The Dairy Industry.

BY G. C. CREELMAN, SUPT. OF FARMERS' INSTITUTES.

The Farmers' Institutes of the Province of Ontario have now a total membership of over 20,000 persons. Every settled township in the Province is represented and every county holds a series of meetings each year. Up to this time these meetings have been of a general character, but it is our opinion that the time has now come for specialization, fruit meetings in fruit sections and dairy meetings in dairy divisions. Such subjects as cultivation of the soil, growing of corn, conservation of moisture, destruction of weeds and such topics as all farmers are interested in will continue to be discussed more or less at all Institute meetings.

## SPECIAL DAIRY MEETINGS.

We have achieved remarkable success with our dairy products on the markets of the Old World. This has assured our dairymen a good price the year round for their products and has induced many general farmers to make a specialty of the dairy business. It is therefore with the hope that we may be able to help in some measure those who are producing the milk, that we have during the past few weeks been holding special dairy meetings for farmers. As reported in these columns recently, meetings were held all the way from Avlmer, Elgin County, to Stirling in Hastings, and from reports received, these meetings, without exception, were appreciated as shown by the large attendance.

In the Western part of the province the Institutes were represented by Mr. A. Elliott, of Galt, and in the East by Mr. Henry Glendinning, of Manilla. These gentlemen were also assisted by practical men who understood the manufacture of butter and cheese so that no question arose in reference to the production, care, handling or manufacture of milk but what some member of the delegation was able to throw light on the subject.

## IN ONTARIO COUNTY.

This county has long been noted for its fine farms, good farmers and splendid live stock. It has never been considered much of a dairy county. The reason for this is that the county is a very long one from north to south and the condition of soil and water differ materially in different parts.

South Ontario has long been noted as a Shorthorn district, and it is seldom that the sale of Shorthorn cattle occurs anywhere in this province without some of them having come from the neighborhood of Whitby, Columbus, Brooklin, Greenwood, or Myrtle. Even at the Provincial Sale held in March so far east as Ottawa, forty-nine out of sixty-five male animals offered for sale came from the southern part of this county.

North Ontario is not so. Here the country is more broken, large tracts of good pasture land, plenty of fresh water lakes and streams, so that the people naturally take to the dairy industry. In this regard we would like to say that probably no man has done more to help this particular branch of the work than Mr. Joseph E. Gould, of Uxbridge. In fact it is generally conceded that no man has done so much to spread the gospel of corn and ensilage throughout the entire province as this same Joe Gould.

## THE CANNINGTON MEETING.

This was well reported in the Sun of last week, and we take from its columns at this time some of the facts brought out by the speakers. Mr. Henry Glendinning who clearly proved the fallacy of the old saying that a "profit" is not without honor except in his own country' discussed the subject of the

"Dairy Cow and How to Feed Her". Being within five miles of his own home Mr. Glendinning thoroughly understood the conditions under which the farmers were labouring.

"I have," said Mr. Glendinning, "had the privilege in connection with Farmers' Institute work of driving over a large part of Ontario. In no part of the province have I found, on the average, better soil, better natural drainage, or a better class of farm buildings than we have here. Down in Leeds, where Mr. Derbyshire comes from, the land is not nearly equal to ours. Not over 85 per cent. of the land down there is tillable, the rest being broken with rocks. And yet land there will sell for \$20 an acre more than it will here. Why? "The answer is simple. While we were still growing grain for sale the people of the East had turned

tle and we have our butter and cheese to the good."

Then, dealing in a general way with the cow part of it, Mr. Glendinning made these points:

We have our heifers come in at two years, and we keep them milking for 12 months straight. That fixes the milking habit so that they never get over it. We breed them so that their second calf will come 14 months after the first, thus allowing them to go dry for two months between the first and second calves. June is the worst possible month of the year to have a cow come in.

## IMPORTANCE OF WATER.

Water is, perhaps, the most important element in dairying. This will be more clearly understood when it is stated that 80 per cent. of the blood of the animal is water, that 50 per cent. of the whole body is water, and that of the milk 87 per cent. is water.

See, then, that your cows have all they can drink; and, to ensure drinking freely, let each animal have her own allowance of salt. Do not give the animals their salt in common. They will not use it so freely in that way.

You get a faint idea of what cows will drink when you hand-pump a coal oil barrel cut in half full of water and find a couple of cows empty it before you know where you are. You are glad when the last cow has left the drinking-place. Is it surprising, when the pumping is left to a boy or a hired man, that the cows sometimes go



Henry Glendinning.

their attention to dairying. While we were impoverishing our land and ourselves by selling oats at 14c to 24c a bushel and wheat at about 60c, they were enriching their farms and making profit for themselves by selling their product in the form of cheese in the Old Country market."

## WHAT DAIRYING HAS DONE FOR THE EAST.

"That is right," put in Dan Derbyshire, who, in his capacity of president of the Eastern Dairymen's Association, was in the chair; "that is right. With our poorer soil our farmers were making double the income that yours were."

"But," continued Mr. Glendinning, "we are doing better now. We are feeding more on our land than formerly. We shall not, however, reach our full measure of development until we absolutely cease hauling grain to the local warehouses for sale.

"Our development in feeding, has been mainly in the direction of fat cattle. In this respect we lead the province, as is shown by our victories at the Winter Fair and the position taken at the recent sale of pure-bred stock at Guelph. But there is more money in dairying than in beef cattle even."

## PORK EQUAL TO BEEF.

"That's a fact," Mr. Derbyshire interjected again. "In Leeds and Grenville we make more out of our bacon—a side line to dairying—than you do out of your beef cat-

## The Flow of Milk will be increased.



Why go to all the trouble of keeping cows and get only about half the milk they should produce.

## Dick's Blood Purifier

strengthens the digestion and invigorates the whole system so that the nutriment is all drawn from the food. It takes just the same trouble to care for a cow when she gives three quarts as when she gives a pail. Dick's Blood Purifier will pay back its cost with good interest in a few weeks.

50 cents a package.

Leeming, Miles & Co., Agents,  
MONTREAL.

Write for Book on Horses and Cattle free.

## Never Had a Complaint

BUFFALO, Mo., Feb. 19, 1902  
The Lawrence-Williams Co., Cleveland, O.  
Upon seeing your ad. in the American Druggist, we applied for some of your pictures. We are the only people in town handling the GOMBAULT'S CAUSTIC BALSAM, but we never had a single complaint on its account.

DR. A. M. JONES, Druggist.



thirsty? The only way in which animals can be assured a full supply is by having water always before them so that they may help themselves at will.

#### SUCCULENT FOOD IN WINTER.

Cows never give as freely of milk as when on fresh clover grass. That is largely because of the succulence. You get the same feeding value in well-cured clover, but you do not get the succulence. You can supply the succulence in winter by the use of silage and the ration will be properly balanced by the addition of clover hay and bran. By this mixture you get succulence, balance and bulk—all these being essentials to successful feeding.

It is a mistake to feed a small ration. A certain amount of food is used up in keeping the cow alive. It is on what you get the cow to assimilate over and above what is required for maintenance that you get your profit in the milk-pail.

#### THE QUESTION PERIOD.

After Mr. Glendinning was through, the usual questioning period followed, the answers to these questions being partly given in the meeting and partly in interviews afterwards.

R. C. Brandon—You feed your calves skim milk and flax seed—the latter taking the place of the fat in whole milk. How much flax seed do you use per calf?

Mr. Glendinning—About one handful per calf—ground and boiled.

#### WATER AND BACTERIA.

D. Annis, Woodville—You have water before your cows all the time. Does not that cause a development of injurious bacteria in the stagnant water?

Mr. Glendinning—Not necessarily. With an automatic drinking trough, by means of which fresh water comes in automatically as the cow empties the trough by drinking, a fresh supply is introduced five or six times a day. Thus the water never becomes either stagnant or warm, and bacteria will not develop at 60 degrees or less. In my case I have a trough the whole length of the stalls; the cows lift the covers when they want to drink and the trough is cleared periodically by flushing through a waste pipe at the end.

Mr. Brandon—There would be danger where the water was not changed frequently.

#### SELL WHEAT AND BUY SHORTS.

Mr. Annis—You say wheat is not a balanced ration, and that the valuable food for cattle in the grain is in the shorts and bran. Would it pay us to sell wheat at 65 cents per bushel and buy shorts at 90 cents per hundred weight?

Mr. Glendinning—I believe it would. You sell at over a cent a pound and buy at 9-10 of a cent. Wolf figures that when wheat has a feeding value of \$21.97 per ton bran is worth \$18.97 and shorts \$21.80. The shorts are thus practically even to wheat in feeding value; they cost less than wheat and they help to balance up a ration with ensilage while wheat will not.

Besides while a ton of wheat contains less than \$8 worth of fertilizing material, a ton of bran has some \$12 worth and shorts somewhere about the same. Of course, this is on the assumption that the wheat is full weight. If it is not full weight, you cannot get 65 cents for it, and, on the other hand, shrunken grain contains, Professor Henry says, pound for pound more feeding value than does full-weight wheat, because there is in it a greater proportion of protein. The question of distance of haul in exchanging wheat for shorts also comes into account in all this.

#### USING CHAFF TO ADVANTAGE.

Mr. Annis—How can you use chaff?

Mr. Glendinning—It can be mixed with the ensilage. William Rennie, when farm superintendent at the O.A.C., mixed his feed—ensilage, cut clover, chaff, and pulped roots—the day before using. The different feeds were put in one heap, layer on layer, and the heating and steaming made them all practically one, and everything was cleaned up.

#### TURNIPS, MANGELS OR CORN.

Mr. Brandon raised the turnip question, and Mr. Derbyshire gave the reply.

"If," said the latter, "you feed but 15 or 20 pounds of turnips, and give these directly after the morning milking, and then sweep your stable thoroughly so that no foulness is left, you may escape. But even then there is danger that the butter will, if held, develop a bad flavor."

"Besides," added Mr. Annis, "why risk it? You can raise more mangels to the acre than you can of turnips, and there is no risk with the former."

"You can," added Mr. Derbyshire, "do still better with corn. Seven years ago a man, who had been raising grain as his money crop, on a farm within five miles of Brockville, was starved off the place. He was succeeded by a man who followed a wholly different method. The latter broke up an old sod in a field that had been in pasture fifteen or twenty years, and on that he planted corn. He harrowed the land with a harrow with the teeth sloping backwards until the corn was as high as my hand. Then he started the scuffler, and he kept the old gray mare going with that until the crop was too high to allow of further cultivation. That corn grew until beyond my reach, and I can reach fairly high; it had cobs as long as my forearm, and when we weighed the crop on a rod square it showed a yield of over 30 tons to the acre. That man has followed the same system ever since, and last year, from less than 100 acres, he sold over \$2,000 worth of milk and hogs."

#### MR. ZUFELT ON THE BUTTER AND CHEESE.

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dairy product that should follow as a result of carrying instruction to the man behind the cow.

"We are," said he, "annually exporting about seventeen and a half million dollars worth of cheese to the Old Country. The great bulk of that cheese sells on an average at 3c below the best home-made English cheese. Some few of our select cheese sell up with the best English. That shows that we can produce as good an article as is produced in England. Now, if all our cheese is, by means of educating the milk producers and makers, brought up to the English level, that will mean increasing the value of this product by 25 per cent. That would add over four and a quarter millions to the value of our exports of cheese without the increase of a pound in the output. Even if but 2 per cent. were added to the value, that would figure up to \$350,000 a year."

#### AN ABSOLUTE LOSS.

But Mr. Zufelt did not confine himself to cheese. He referred also to butter. "In butter," said he, "there is an even greater loss than in the case of cheese. This is because in butter making the factory system has not yet been generally introduced. Poor home dairy butter is selling to-day at 15c, while choice creamery is going at 25c. There is a loss of 8c per lb. That is money absolutely lost. No one is benefited. When money is stolen it is not lost—some one gets it again. But in this case the loss is as complete as if you took so many bills and burned them in the stove.

"But this is not the whole of it. By turning out a poor product we not only reduce the average price, but we check consumption. A pound of poor butter will go further than two pounds of good. Every pound that is not good reduces consumption to that extent, and thus lessens the market for that which we are producing."

#### THE KEYSTONE OF SUCCESS.

Then dealing more with matters of detail relating to the dairy industry, Mr. Zufelt made these points:

Cleanliness is the Keystone of Success. The cow should be brushed clean before milking; the milker should have clean hands; he should be dressed in clean clothes, and the cow should be milked in a place where there is no dust or dirt. Dust laden as it is with bacteria, is one of the greatest enemies we have to guard against.

After the milk has been drawn from the cow it should be aerated in a pure atmosphere. Aerating in an impure atmosphere causes injury rather than benefit. Next reduce the milk to a temperature of 60 degrees. Do not mix the morning's milk with that drawn the evening before unless both bodies are first brought to the same temperature. Better not mix at all.

#### THE CURSE OF THE INDUSTRY.

Cheapness is the curse of the dairy industry. Patrons of factories see the cent they save by

squeezing the maker down to the lowest possible limit; they do not see the dollar they lose by inefficiency. It is poor economy to save a quarter of a cent a pound on the cost of making a pound of butter and to lose 2c in the value of the product.

#### THE TRUE SPIRIT OF CO-OPERATION.

There is not enough of the true spirit of co-operation in this industry. The milk producer thinks his part is done when he delivers his milk at the factory; the maker too often has no interest in the business outside of what he gets for turning his milk into cheese or butter. We should all realize that we are all equally interested in the product until it is finally placed before the consumer in England. Until this fact is realized, we shall not attain our proper place in the market of Great Britain.

Let co-operation be shown in another way. Instead of having a wagon call at alternate farms for milk, have it call at every farm on the route. That will cut the cost of hauling nearly in half. Instead of having half or a third of the farmers in the neighborhood of a factory as patrons have them, all as patrons. The more milk you have handled under one roof the less the cost per hundred weight of handling.

Mr. Zufelt, on concluding, was asked a number of questions:

Is it possible to have the milk taken from cows in such clean condition that straining is unnecessary?

Yes. The makers of the finest quality of Swiss cheese refuse to allow the milk from which that cheese is made to be strained.

In answer to another question, Mr. Zufelt described the milk stand used in some of the Eastern counties. This stand is well away from the buildings. It is on a level with the wagon. The floor is of slats  $1\frac{1}{2} \times 2$  inches, three-quarters of an inch apart. The sides are of lath and the whole is neatly roofed. By this means the dust and rain are excluded, and the cans protected against contamination by dogs or other animals.

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## The Farm Home

### Let Us Be Content.

BY JAMES WHITCOMB RILEY.

O heart of mine, we shouldn't  
Worry so!

What we've missed of calm we  
couldn't

Have, you know!

What we've met of stormy pain,  
And of sorrow's driving rain,  
We can better meet again  
If it blow.

We have erred in that dark hour  
We have known;  
When the tears fell with the show-  
er.

All alone—

Were not shine and shower blent  
As the gracious Master meant?  
Let us temper our content  
With His own.

For we know not every morrow  
Can be sad;

So forgetting all the sorrow  
We have had,

Let us fold away our fears,  
And put by our foolish tears,  
And through all the coming years  
Just be glad.

### Home Dairying—How to Make It More Profitable.

Laura Rose, Instructor in the  
Home Dairy, O. A. C., Guelph.

The thought which comes to me as I begin to write, is: Can I say anything new? If not, may I then repeat something which may be of help to those who make butter on the farm. Many who receive The Farming World know me, and as I talk to you on paper—I would rather it were face to face—I feel we are friends, interested in like things, and all of us eager and willing to learn.

Although creameries and cheese factories are established in nearly every district in Ontario, and while I quite advocate patronizing such, still there is, and will continue to be made a large amount of butter on the farm.

Where help is plentiful and a choice article of butter made and sold at the highest market price it pays to manufacture butter at home. But it is a deplorable fact that a very large percentage of the butter sold on our markets falls far below the standard of real good butter, and consequently, brings a price in keeping with its quality, and not only that, but such butter has a tendency of lowering the price of all dairy butter, and we see it quoted at prices from four to eight cents below that given for the best creamery.

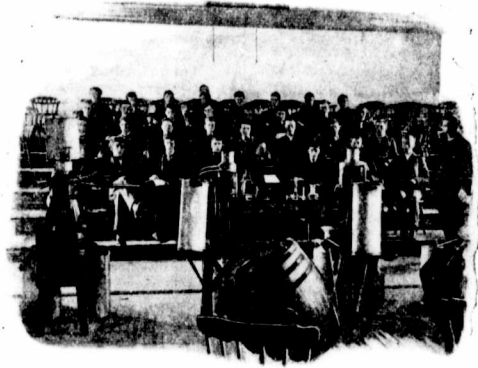
Generally speaking, the milk when first drawn, is pure and good. That the product from it is poor is due solely to the manner in which it has been handled, and shows a great lack of skill and management on the part of the maker. This ignorance of the art of handling milk and making butter

is yearly robbing our farmers' wives (for they usually get the butter money), of millions of dollars. Yes, this is only too true, and we must do our best to better the conditions.

In the first place I would ask you to carefully look over your herd, see that your cows have a thrifty, healthy look and conform to the true dairy type. Set a standard, and as soon as possible, work your herd up to that standard. It is not demanding too much of a well cared for cow, to say, she should give in a year 6,000 lbs. of milk, testing 3.6 per cent. butter-fat, or make in the neighborhood of 250 lbs. of butter.

milking, the cow has kicked. It is only natural she should do so. When we are hurt, do not we give expression to the fact? You must, if you wish to get the most from your cows, gain their confidence and love, and they will be glad to do all in their power to fill the milk pail and if space allowed, I might show you to what a great extent a cow can control the milk flow.

Can anyone write an article on dairying and do her duty, without mentioning cleanliness? Hardly, I think. Cleanliness is really the key note to successful results. The milk and cream must be kept as free as possible from dirt. It is



A Class in the Home Dairy, O. A. C., Guelph.

Have some system of determining what each cow is worth to you. By occasionally weighing and testing the milk from each cow you may discover you have cows in your herd not paying for the food they consume, let alone bringing in a profit. We must, if we want to make dairying pay, give more attention to the milking qualities of our cows.

The next thing I would urge is feeding liberally. Milk is made from the food the cow eats, and if you have the right kind of a cow, the more food you can induce her to eat, the greater profit she will return to you in the milk pail. Many, especially in the winter, feed only to the maintenance ration—you get no profit from that food. It is what you feed in excess of what goes to keep the cow that brings you in your profit.

There is another thing which you can bestow upon your cows, and which will go far toward increasing the returns. It is that which may be had for nothing, and yet many do not know its worth—thoughtful consideration and kindness—that consideration which instinctively tells a person that cows should not be outside in damp, cold weather; that kindness which withholds the blow, when because you have pressed a sore spot when

not the dirt that is seen that is alone to be dreaded. It is the unseen foes that float in the stable atmosphere or the badly-ventilated milk cellar, or hide away in the cracks and crevices of the milk pails and cans, that often cause serious trouble. If a first-class article is the aim of the butter-maker, she must see how and where the cows are milked, and must exercise the greatest care in having everything in connection with the dairy clean and sweet.

A heavy loss is sustained in the creaming of milk. Where eight or more good cows are kept, it pays to buy a cream separator, for with a separator the milk is handled with less labor, and more butter is made.

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Where deep cans are used, plenty of ice should be put up. To do good creaming the milk should be immediately set and brought quickly to a temperature of from 40 degrees to 45 degrees, and held at that for at least 24 hours. Ice or snow should be used in the tank in winter, as well as in summer. Setting the cans out in the cold does not do effective skimming. This winter I tested some milk set in the cold for two days, and the samples tested from six-tenths to over one per cent.

In ripening cream, it is much the safer plan to add some culture or starter, then you have some idea what flavor to expect in the butter. Occasionally, but in, I have allowed

cream to sour "of its own sweet will," and it was a surprise, the difference in the butter as compared with that gotten from cream properly ripened. The cream may be held sweet until the day before churning, then heated to 60 degrees or 65 degrees, and one quart of nice flavored sour milk added to every ten quarts of cream. Stir several times during the day, and at night cool to churning temperature. Another very satisfactory method of ripening cream is to add a small amount of sour milk or cream to the first gathered sweet cream. Stir well each time fresh cream is added and hold at a temperature which will not develop too much acid.

If you have not a good churn, buy one. I prefer a barrel-shaped one with no dashers or breakers inside. Be sure to get one large enough, for it should never be more than half full, and better only a third full, in starting. Have your cream at a temperature which will bring butter in half an hour. Strain in the cream and churn until the butter is the size of wheat grains. Some ladies say to me: "Why, I always gather my butter into lumps. I never think I get all the butter from the cream when I leave it in small particles." But you do get just as much butter, and there is so much in favor of having it in the granular form. The butter-milk drains off better, the butter is more thoroughly washed and chilled and the salt is more evenly distributed through the butter.

Butter is worked to expel the moisture and to work in the salt. This must be done in such a manner as to not make the butter salty or greasy. For this purpose there is nothing nicer than the lever butter worker. It does the work much easier and better than the bowl and ladle.

The matter of salt depends on the taste of the consumer, but educate people to take lightly salted butter. It is too bad to hide the sweet aroma and fine flavor of

good butter by over salting. Besides, people will eat more fresh than salt butter, and that is what we want. Three-quarters of an ounce per pound when salting on the worker, or one ounce when salting in the churn is considered sufficient.

The final finish of the butter has much to do with its sale. Persons cannot be too particular in the packing of their butter. The buyer judges largely by the general appearance of the butter as to the manner of its manufacture and quality. Let us from the very first until the last touch is given to the butter, do the very best we know how, remembering that "Trifles make perfection, but perfection is no trifle."

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4080 Fancy Waist, 32 to 40 Bust.

The foundation lining is snugly fitted and closes at the centre front. The waist proper is plain across the shoulders and drawn down in gathers at the waist line, but the front is made with a yoke of lace, below which the material is tucked for a short distance, then falls in soft becoming folds, and closes at the left side beneath the jacket. The sleeves, as shown, are full and gathered into deep-pointed cuffs, but can be made plain when preferred. At the neck is a stock that matches the yoke and closes at the centre front. The bolero is both novel and graceful. The back is smooth and plain, but both fronts and sleeves are laid in narrow tucks, stitched with corticelli silk. Finishing the neck is a round collar that is extended down the edge of the fronts, where it gives a jabot effect. The sleeves, in Hungarian style, are in elbow length and are slashed at the lower edge.

To cut this waist in the medium size,  $3\frac{1}{2}$  yards of material 21 inches wide,  $2\frac{1}{2}$  yds. 32 inches wide, or  $1\frac{1}{2}$  yards 44 inches wide will be required, with  $\frac{3}{4}$  yards of all-over lace for collar, yoke and cuffs for the under bodice;  $\frac{1}{2}$  yards 21 inches wide, 3 yards 27 inches wide or  $1\frac{1}{2}$  yards 44 inches wide for bolero, with  $\frac{1}{2}$  yards of lace applique to trim as illustrated.

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D. T. McAINISH, PUBLISHER.  
J. W. WHEATON, EDITOR.

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## Questions and Answers.

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T. C., Dorland, Ont., forwarded a specimen found in his apple orchard and wished to have it identified. Dr. Fletcher, Entomologist and Botanist, Central Experimental Farm, Ottawa, to whom we sent the specimen for identification replies as follows:

"The specimen sent by your subscriber at Dorland, Ont., which he found in his apple orchard is the cocoon of the Cecropia Emperor Moth, the black object inside being the chrysalis. This is a large and striking insect but is not uncommon. Although the caterpillar feeds on the leaves of the apple tree it is never abundant enough to cause serious injury. The moth which comes from these cocoons is a magnificent creature with wings expanding nearly six inches, of a general soft grey colour with the body striped with bright red and white, and each wing has a large crescent shaped mark."

## THE PUBLISHER'S DESK

### Crowded Out.

Owing to the demand made this week by our advertisers some of the regular departments of the paper have been crowded into small space, and several important articles have had to be held over until next week. We believe, however, that the bill of fare presented in this issue will compare favorably with any single number of any agricultural paper heretofore put out in Canada.

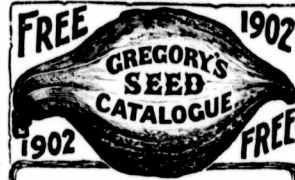
### Our Advertisers.

It is a fixed policy with this paper to admit into the advertising columns only such announcements as the publisher believes to be reputable and trustworthy. Everything that looks like a fake is excluded. Our readers are invited to report to us any dishonorable treatment they may have received at the hands of any advertiser. It will usually be an advantage to mention THE FARMING WORLD when writing to advertisers.

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From a dollars and cents point of view

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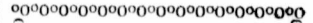


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The Monthly Statement Card shown here is exact size of front. It is made of stout Manila, and can either be delivered by the milk-hauler or sent to the patron in an ordinary envelope. On back of card rules are given for "The Care of Milk." The Cards are now ready; order early.

**PRICE:**  
25c. for 100; or a package of 1000 for \$2.00 post-paid.

A factory of 100 patrons will require from 800 to 1,000 tickets during the season.

—Address—

## The Farming World

Confederation Life Building, Toronto

### Monthly Statement

Of Milk delivered at the \_\_\_\_\_  
Factory during the month of \_\_\_\_\_

By \_\_\_\_\_

PREPARED BY THE FARMING WORLD, TORONTO

	1ST WEEK	2ND WEEK	3RD WEEK	4TH WEEK	5TH WEEK
	LBS.	LBS.	LBS.	LBS.	LBS.
Monday	.....	.....	.....	.....	.....
Tuesday	.....	.....	.....	.....	.....
Wednesday	.....	.....	.....	.....	.....
Thursday	.....	.....	.....	.....	.....
Friday	.....	.....	.....	.....	.....
Saturday	.....	.....	.....	.....	.....
Weekly Totals	.....	.....	.....	.....	.....
Per cent of butter fat in milk	.....	.....	.....	.....	.....

Total milk supplied for the month.....lbs.

Total butter-fat supplied for the month.....lbs.

On the dates underlined the milk was sour or badly tainted.

The butter-fat test covers the milk supplied for the week or weeks intervening between the last test and the one indicated by the per cent. of fat in above table.

Mistakes or complaints, if reported to the maker or the secretary, in writing, will be promptly attended to.

Read carefully and observe the rules governing the care of milk on the back of this card.

# How I Cure Weak, Puny Men



Give me a man broken down from excesses, dissipation, hard work or worry, from any cause which has sapped his vitality. Let him follow my advice for three months and I will make him as vigorous in every respect as any man of his age.

I will not promise to make a Hercules of a man who was never intended by nature to be strong and sturdy. Even that man I can make better than he is; but the man who has been strong and lost his strength I can make as good as he ever was. I can give back to any man what he has lost by abuse of the laws of nature.

A man who is nervous, whose brain and body are weak, who sleeps badly, awakes more tired than when he went to bed, who is easily discouraged, inclined to brood over imaginary troubles, who has lost ambition and energy to tackle hard problems, lacks the animal electricity which the Dr. McLaughlin Electric Belt supplies. The whole force of vitality in your body is dependent upon your animal electricity. When you lose that by draining the system in any manner my Belt will replace it, and will cure you.

**Fred Lint, Selkirk, Ont., writes:**—"Dear Doctor, I am well, and words cannot express my gratitude for the healing powers which your Belt has given me. May the Lord bless your business, and that the Belt will cure many more poor wrecks, as I was about three months ago."

Letters like that tell a story which means a great deal to a sufferer. They are a beacon light to the man who has become discouraged from useless doctoring. I get such letters every day.

My Belt has a wonderful influence upon tired, weak nerves. It braces and invigorates them, and stirs up a great force of energy in a man.

I make the best electrical body appliance in the world, having devoted twenty years to perfecting it. I know my trade. My cures after everything else has failed are my best arguments.

**S. Wilson, Clinton, Ont., writes:**—"I suppose you have wondered if I was alive. Well, I am, and I am happy to say that I feel better to-day than I have for the last four or five years. I was continually taking medicine and getting no benefit. I prayed for death to relieve me, but thank God and your Belt I am better now and working every day."

Give me a man with pains in the back, a dull ache in his muscles or joints, "come and go" pains in his shoulders, chest and side, Sciatica in his hip, Lumbago, Rheumatism or any ache or pain, and my Belt will pour the oil of life into his aching body and drive out every sign of pain. No pain can exist where my belt is worn.

**A. McKenzie, Brookholm, Ont., says:**—"Just a few words about the Electric Belt. It is not so easy for a man suffering and taking all kinds of drugs for sixteen years or more to be cured. However, I have every confidence in your Belt, and I feel as though I am completely cured. Your Belts with other parties in this locality are giving great satisfaction."

If you are doubtful of its ability to cure your case you can make arrangements to get the Belt and

## PAY WHEN CURED.

They come every day from everywhere. There is not a town or hamlet in the country which has not cures by Dr. McLaughlin's Electric Belt.

Now, what does this mean to you, dear reader? If you are not what you ought to be, can you ask any better proof to make you try it? Is there a remedy which is as simple, as easy to use, as sure to cure and as cheap as Dr. McLaughlin's Electric Belt? I have not seen one. You must try it. In justice to yourself, and to those who look to you for their future happiness, try it now. Act this minute. Such a matter ought not to be delayed.

It's as good for women as for men. Worn while you sleep, it causes no trouble. You feel the gentle glowing heat from it constantly, but no stinging, no burning, as in old-style belts.

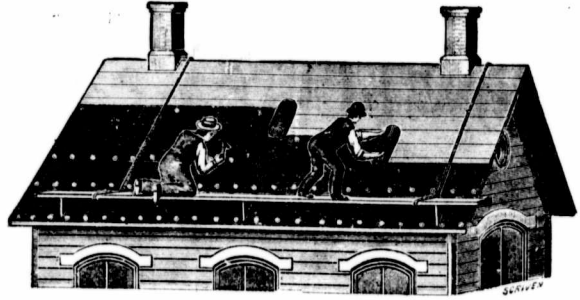
**SPECIAL NOTICE.** Look out for those old-style blistering scorers that burn and scar the flesh, they are offering a cheap imitation of my cushion electrode. It is a sham; don't accept them if you value your health.

**FREE BOOK** Every man who admires the perfection of physical strength should read my beautifully illustrated book. It tells how strength is lost and how I restore it with my Electric Belt. I will send this book, closely sealed, free upon request if you will send this ad. If you are not the man you should be, write to-day.

**DR. B. A. McLAUGHLIN, 130 Yonge Street, Toronto, Ont.** OFFICE HOURS—  
9 a.m. to 8.30 p.m.

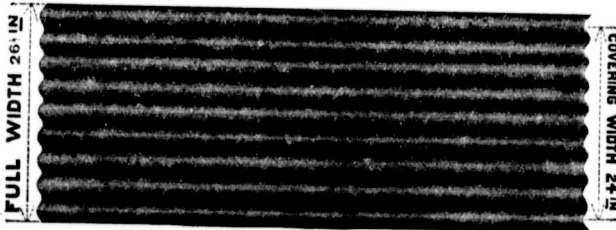
**Factory Buildings**

There is great need of better factory buildings in Canada. We venture the statement that in no country in the world are there to be found so many poorly built and poorly equipped cheese and butter factories as in the Dominion. It is time that the old buildings, the old vats and the old presses, that have done duty for a quarter of a century were replaced by new ones. The quality of our products will never reach the highest standard of excellence until we have better buildings and better equipment for making butter and cheese.



**USE MICA ROOFING** For Flat or Steep Roofs. It is Waterproof, Fireproof, quickly and very easily laid, and cheaper than other roofing.  
 Send for sample **MICA ROOFING CO.,** 101 Rebecca Street  
 Hamilton, Canada.

**CORRUGATED GALVANIZED IRON**



For Roofing and Siding.

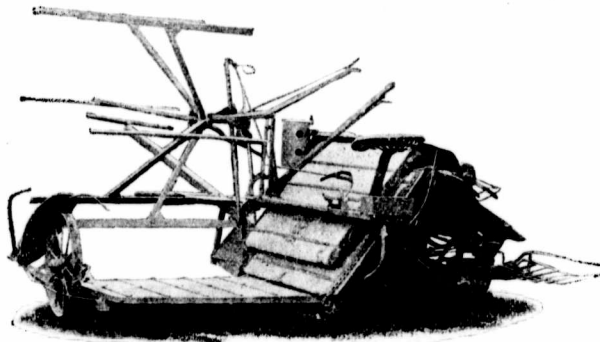
**Durable, Fireproof, and Cheap**

manufactured by

**WHEELER & BAIN, TORONTO**

**THE NOXON OPEN-BACK BINDER**

Is acknowledged by all Practical Farmers to be the best.



**Some Special Features:**

Built of Steel Throughout  
 Open Back  
 Removable Dividers  
 Telescopic Tacker Shaft

Three Packers  
 Weight Trip  
 The Lightest Made  
 A Pair of Ponies Can Handle It

Runs Without Noise  
 Always Reliable  
 No Neckweight  
 Handles Tangled Grain Perfectly

**Every Purchaser Gives a Testimonial**

**THE NOXON CO., Limited, INGERSOLL, ONT.**



**Kitchen Comfort**

During the past few years the men folks of the farm have been steadily adding to their outfits in labor-saving machinery until even the most chronic grumbler will admit that his part of the work is rather light. The housewife's turn has come. The drudgery of the past is giving way to a condition of comfort and comparative luxury. Many contrivances are finding a way into the farmer's home which tend to lighten labor. Nothing, perhaps carries with it such an air of solid prosperity as a perfect and up-to-date range, with aerated oven. In any home it is suggestive of the costly and more luxurious comforts of life. In selecting a range it will not do to experiment. It must have back of it a good name and the guarantee of reliable and competent manufacturers. The one that seems to fulfil all these conditions best is known as The Souvenir. The Gurney-Tilden Co., of Hamilton, Ont., make about four hundred different styles and sizes of Souvenir stoves and ranges. They are perfect in design, construction and durability and for utility and convenience of service they are unequalled. In fact they represent all the improvements that can be successfully combined in a modern stove.

They say that bad cooking drives many a boy, and girl too, off the farm and that bad cooking is largely responsible for the condition of one's morals. But why discuss the matter further? By all means move the old stove out into the wood-house and put in a new up-to-date kitchen range.



Attention is drawn to the Beaver Post Hole Digger, shown in the accompanying cut. The claims made for this implement are well founded and such as appeal to every intelligent farmer and fence man. First, its construction is simple; the material, which is wholly steel except the gas pipe bundles, leaves no room for breakages. With it you can sink a hole close beside a wall or in a fence corner, enabling you to remove an old post and substitute a new one with one digging and with no re-

moving of the fence. In short, it is durable and speedy, hence economical; will dig any sized hole and is especially recommended for bush land, where posts make it impossible to use old-fashioned tools. Hon. John Dryden summarizes the whole matter, saying, "I never purchased an implement which gave me such complete satisfaction." See ad. on another page.

# BUG DEATH

Kills Potato, Squash and Cucumber Bugs; Currant, Gooseberry and Tomato Worms; and all Bugs and Worms that eat the leaves of plants.

**BUG DEATH** is not poisonous. It prevents the blight. It FEEDS the plant.

The increased yield of crop more than pays for the **BUG DEATH** used.

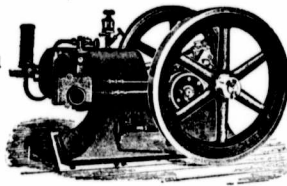
Send for our Booklet, we send it free.

**Bug Death Chemical Co. St. Stephen, N.B.**  
Limited

## The Goldie & McCulloch Co. Limited

GALT, ONT.

**THE MODEL GAS and GASOLINE ENGINE** is admirably adapted for creamery or farm work.



Send for Catalogue Dept. N.

**WE ALSO MAKE**

Wheelock Engines, Ideal Engines, Gas and Gasoline Engines, Boilers, Pumps, Water Wheels, Flour Mill Machinery, Wolf Gyrotors, Emery Stone Choppers, Oatmeal Mill Machinery, Wood Working Machinery, Shingle Machinery, Heading and Stave Machinery, Wood Rim Split Pulleys, Iron Pulleys, Shafting, Hangers, Gearing, Couplings, Friction Clutch Couplings, Friction Clutch Pulleys, Chain Tackle, Safes, Vaults and Vault Doors.

## FIVE PER CENT. IN GOLD.

By means of a 5% GOLD BOND POLICY you can secure a guaranteed investment and protect your family in case of your death.

WRITE FOR PAMPHLETS.

POLICIES ISSUED ON ALL APPROVED PLANS.

# Confederation Life

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**NEW BOOKS**  
FOR THE  
**Business Farmer**

**Animal Breeding.** By Thomas Shaw, Professor of Animal Husbandry at the University of Minnesota. Author of *The Study of Breeds, Forage Crops Other Than Grasses, Soiling Crops and the Silo, etc.*

This book is, beyond all comparison, the most complete and comprehensive work ever published on the subject of which it treats. It is the first book of the kind ever given to the world which has systematized the subject of animal breeding. It includes thirty chapters, each of which treats of some particular phase of the subject. Illustrated, substantially and handsomely bound in cloth, 5 by 7 inches, 400 pp. Price, 1.00. One new subscription to *THE FARMING WORLD* and "Animal Breeding," both for \$2.00.

**The Study of Breeds.** By Professor Thomas Shaw.

Origin, history, distribution, characteristics, adaptability, uses, and standards of excellence, of all the pedigreed breeds of cattle, sheep and swine in America. The accepted text book in colleges, and the authority for farmers and breeders. 372 pages, 12 mo., 5 by 8 inches, for full page plates. Price, postpaid, \$1.00. One new subscription to *THE FARMING WORLD* and "The Study of Breeds," both for \$2.00.

**Soiling Crops and The Silo.** By Professor Thomas Shaw.

The growing and feeding of all kinds of soiling crops, conditions to which they are adapted, their plan in the rotation, etc. Not a line is repeated from the *Forage Crop* book. Best methods of building the silo, filling it and feeding ensilage. Illustrated, 12mo., 5 by 8 inches, 361 pages. Price, \$1.00. One new subscription to *THE FARMING WORLD* and "Soiling Crops and the Silo," both for \$2.00.

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How to cultivate, harvest and use them. Indian corn, sorghum, clover, leguminous plants, crops of the brassica genus, the cereals, millets, field roots, etc. Intensely practical and reliable. 298 pages, illustrated, 12 mo., 5 by 8 inches. Price, \$1.00. One new subscription to *THE FARMING WORLD* and "Forage Crops Other Than Grasses," both for \$1.70.

**Milk and Its Products.** By Henry H. Wing, Professor of Dairy Husbandry in the Cornell University.

A treatise upon the nature and qualities of dairy milk, and the manufacture of butter and cheese. 12mo., cloth. Price, \$1.00. One new subscription to *THE FARMING WORLD* and "Milk and Its Products," both for \$1.70.

**Fruit.** A Practical Guide to the Picking, Storing, Shipping and Marketing of Fruit.

The subject has been treated strictly from the standpoint of the fruit producer. The commission business, for instance, is thoroughly and fairly discussed, and the commission men can hardly help but be pleased with the advice given, yet it is all plainly directed to the benefit of the fruit grower. Evaporating and canning are handled the same way—not by telling how to run a canning factory or a commercial evaporator—but by explaining those points which are of interest to the man who grows the fruit. The whole subject is tersely, plainly put and adequately illustrated. It is a book which every one can read and enjoy, and which no fruit grower, large or small, can do without. Illustrated, 5 by 7 inches, pp. 250. Cloth, price postpaid, \$1.00. One new subscription to *THE FARMING WORLD* and "Fruit," both for \$1.70.

**Cabbage, Cauliflower and Allied Vegetables, from Seed to Harvest.** By C. L. Allen.

A practical treatise on the various types and varieties of cabbage, cauliflower, broccoli, Brussels sprouts, kale, collards and kohlrabi. An explanation is given of the requirements, conditions, cultivation and general management pertaining to the entire cabbage group. After this, each class is treated separately and in detail. The chapter on seed raising is probably the most authoritative treatise on this subject ever published. Insects and fungi attacking this class of vegetables are given due attention. 50 cents. One new subscription to *THE FARMING WORLD* and "Cabbage, Cauliflower and Allied Vegetables, from Seed to Harvest," both for \$1.25.

**Prize Gardening.** How to Derive Profit, Pleasure, Health, from the Garden. Compiled by G. Burnap Fiske.

Five thousand gardeners all over America kept a daily record of the methods and results for a whole season, and reported the same fully in competition for many and large prizes. They represented all grades from the small amateur to the professional market gardener. This unique book summarizes this most useful of all this experience. Illustrated with many charts, sketches, etc., from original photos, 322 pages, 5 by 7 inches, bound in cloth. Price, \$1.00, postpaid. One new subscription to *THE FARMING WORLD* and "Prize Gardening," both for \$1.70.

ADDRESS—  
**THE FARMING WORLD**  
Confederation Life Building, Toronto.

**CHICKENS  
DUCKS  
GEESE  
TURKEYS**

**WANTED**

**DRESSED OR LIVE POULTRY RECEIVED**—We will forward empty crates for live poultry and pay charges on all out-going crates. Prompt remittance by Express Order will be made on arrival of shipments less express charges if not prepaid. We do not purchase on commission, but pay in full for all birds on arrival.

**Toronto Poultry and Garden Produce Co., Limited**

470 Yonge Street - TORONTO

**Scales**

**FOR EVERY PURPOSE  
SPECIAL PRICES  
EASY TERMS**

By a special arrangement with one of the oldest and most reliable scale manufacturers in Canada we are able to furnish Dairymen, Stockmen and others with Scales of any style or capacity at exceptionally close prices, and on small monthly payments. This arrangement has been made in the interest of the readers of *THE FARMING WORLD*, and no special inducements can be offered to anyone whose subscription is not paid in advance.



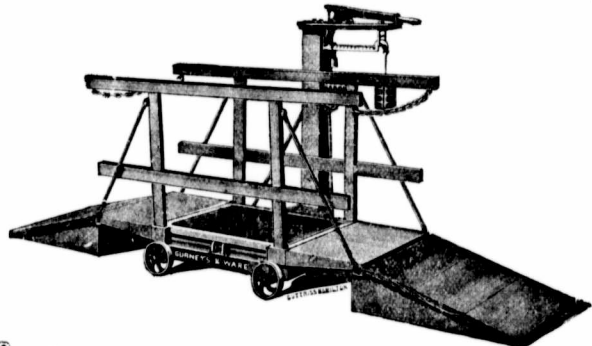
**Dairy Scale**



**Family Scale**

**Half Ounce  
to  
240 Pounds**

Government Inspection Certificate forwarded with each Scale.



**The Live Stock Scales** have a capacity of from one to three tons, and weigh from one pound up. When rack is off may be used for grain.

If you need a Scale, large or small, for any purpose, fill out the following blank and mail to us. We can save you money. Anyway it won't cost you anything to get our terms:—

**THE FARMING WORLD,**

Confederation Life Building, TORONTO.

Please send me particulars, price, terms, etc., for a Scale which will weigh about..... lbs., and suitable for weighing.....

NAME.....

P.O.....

It is understood that this is not an order.

# Market Review and Forecast

Office of The Farming World, Confederation Life Bldg.

Toronto, April 7th, 1902.

There has been an improved tone in general trade during the week and the future is full of promise. There is a steady feeling in the money market, bankers demanding 5 per cent. on call. Discounts are rather quiet at from 6 to 7 per cent.

## Wheat.

There is no improvement in wheat, if anything the market is not as strong as a week ago. The world supply of wheat in sight is nearly as large as it was at this time last year, and as there is only about three months till the new crop is harvested, there is no good reason for any advance in prices. In connection with this it must be noted that last year's crop of wheat in the United States and Canada was from 150,000,000 to 200,000,000 bushels larger than that of 1900. The only factor that might cause an advance is an unfavorable report regarding the growing crop. So far it has come through the winter well.

The markets of the week have not been active. Cables have been slow and quietness prevails excepting perhaps in Manitoba wheat, which has been more active. Here the market is dull at about 71c for red and white at outside points, 65c to 66c for goose and 71c to 71½c for spring east. On Toronto farmers' market red and white bring 70c to 80c, goose 66c, and spring file 67c per bushel.

## Oats and Barley.

On the whole there is perhaps a little stronger feeling in oats. A big corner is mentioned at Chicago. Prices are steady here at 40½c for No. 2 white middle freights. On the farmers' market oats bring 46c to 48c per bushel.

Barley rules steady here at from 48c to 53c at outside points. On Toronto farmers' market malt barley brings 54c to 60½c and feed barley 53c to 54c per bushel.

## Peas and Corn

Peas continues steady here at about 80c per bushel at outside points. On the farmers' market they bring 84c per bushel.

The corn market rules steady. Car lots of Canadian No. 2 mixed are quoted here at 55½c and No. 2 yellow at 56c west, or from 60c to 61c, Toronto.

## Bran and Shorts

Ontario bran is selling at Montreal at \$18.50 to \$19.00, and shorts which are scarce at \$22.00 per ton in car lots on track. City mills here sell bran at \$18.00 and shorts at \$20.00 in car lots l.o.b. Toronto.

## Potatoes and Beans.

The potato market rules in the buyer's favor. Ordinary potatoes are selling at Montreal at 65c to

## CANADA'S PREMIER COMPANY

Head Office: Toronto Street  
Toronto

With the **LARGEST** Paid-up Capital Reserve Fund Assets

Receives sums of \$100 and upwards on which interest at four per cent. per annum is paid half-yearly, for which investors have the most

### UNQUESTIONABLE SECURITY

Full particulars on application.

THE CANADA PERMANENT  
AND WESTERN CANADA  
MORTGAGE CORPORATION

68c per bag in car lots. Here prices are lower at 55c to 57c for car lots on track. On Toronto farmers' market potatoes bring 60c to 75c per bag.

The bean market keeps quiet. Car lots of primes are quoted at Montreal at \$1.10 to \$1.15 and \$1.15 to \$1.20 per bushel in a jobbing way.

## Hay and Straw.

Farmers who did not succeed in disposing of their hay earlier will hardly realize as much for it as a month or two ago. There is reported to be considerable hay in farmers' hands, especially east. Some farmers who contracted hay to Americans complain that contracts have been repudiated and they cannot get now within \$1.50 to \$2.00 per ton of what they bargained for. There has been a great scarcity of cars in getting hay out and consequently there is a lot left on farmers hands. The market however, rules steady. From \$7.50 to \$8 are the ruling prices at country points east for baled in car lots l.o.b. on track. The market here rules steady at a slight reduction from last week's quotations, the figures being \$10.00 for car lots of No. 1 timothy and \$5.00 for baled straw. On Toronto farmers' market timothy brings \$11.00 to \$13.00, cover \$7.50 to \$9.00 and sheaf straw \$8.00 to \$9.00 per ton.

## Eggs and Poultry.

There is a slight improvement in the egg market, though English quotations are lower. At Montreal, new laid are quoted at 12½c to 13c in case lots. Here the market rules steady at about 12c for new laid in case lots. On Toronto farmers' market, new laid bring 12c per dozen.

Dressed poultry is reported very scarce at Montreal. Choice turkeys sell there at 13c to 14c, chickens 12c to 13c, geese 7c to 8c and ducks 10c to 11c to the trade. There is little doing in poultry here. Toronto farmers' market quotations are: Live and dressed chickens 70c to \$1.00 and ducks \$1.00 to \$1.25 a pair and turkeys 15c to 18c and geese 8c to 9c per pound.

Live poultry like dressed are scarce. The Canadian Produce Co., Ltd., 36 and 38 Esplanade St. East Toronto, will pay until further notice for live chickens, 8c, for ducks and turkeys 11c, for geese 6c per lb. All must be young birds. For hens 5c per lb. Dressed poultry, dry picked (except hens), ½ lb. higher. These prices are for weight on arrival. Crates for live poultry supplied free, and express paid up to 50c per 100 lbs. of chickens. No thin birds will be taken.

## Seeds.

The bulk of the seed trade is over for this year, still prices keep up. At Montreal, Alsike sells at \$14 to \$17, red clover \$9.00 to \$10.50, and timothy \$7.00 to \$8.50 per cwt. Here seeds sell in a jobbing way at \$10.00 to \$17.00 for alsike; red clover \$7.50 to \$9.50 and timothy \$7.75 to \$8.50 per cwt.

## Maple Products.

Receipts of maple syrup have been heavy, especially at Montreal, where new syrup is selling at 70c to 80c for large tins and 50c to 60c for small tins, to the trade.

## Cheese

The cheese trade, though quiet at the moment, is firm. Stocks are getting very low and most holders



## Trees! Trees!! Trees!!!

We have a full line of Fruit and Ornamental Trees for Spring, 1902, at lowest possible prices. Headquarters for packing dealers' orders.

Farmers wishing to buy first-class stock absolutely first hand and without paying commission to agents, should write to us at once for a Catalogue and Price list.

Don't wait until the last minute, as you will be disappointed. Place orders early and secure the varieties you want. Correspondence solicited.

WINONA NURSERY CO., Winona, Ont.

**WANTED—BUTTER, POULTRY, EGGS**

We have a large outlet, having Twenty-one Retail Stores in Toronto and suburbs.  
Payments weekly. Established 1854.

**The WM. DAVIES CO., Limited**

Head Office—Retail Dept.

Correspondence invited. 24 Queen St. West  
TORONTO

are not offering, expecting higher prices later on. Some Quebec cheese sold during the week at Montreal at 10½¢ to 11¢. Regular quotations there are: Finest Westerns, 11½¢ to 11¾¢, finest Easterns 11¢ to 11½¢ and under grades 10½¢ to 10¾¢. The prospects are that the season will open out well. Some fodder cheese is being made but it is not likely that it will be made in sufficiently large quantities to influence the market. The less of it made the better. If all factories would not begin making till May 1st, it would be better for the season's trade.

**Butter**

The butter market continues about the same, choice creamery being in demand. The English market is firm with an improved tendency. The Trade Bulletin sums up last week's trade as follows:

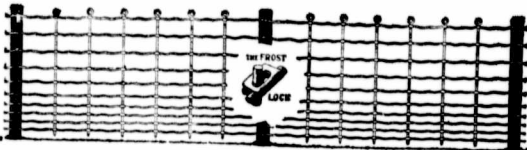
"The market is still divided into two sections, precisely as we quoted it four weeks ago, fresh new milk creamery being scarce and firm at 21½¢ to 22¢, small tubs bringing a fraction more. Old laid made creamery, however, is slow sale, and holders are willing to make concessions in order to realize, sales of which are reported at 17½¢ to 20¢. Quite a number of factories are now making butter, and the supply of fresh-made goods is expected to increase shortly. In dairy butter sales aggregating about 400 packages of Western were sold this week at 13¢ to 14½¢, mostly for shipment to New York, which cost 20¢ to 21¢ laid down there, freight duty and commission."

Choice creamery and dairy are scarce here, while inferior dairy is too plentiful. Choice creamery sells readily at 22¢ to 23¢ for prints and 21¢ to 22¢ for solids, and dairy at 18¢ to 20¢ for pound rolls, 17¢ to 17½¢ for large rolls and 14¢ to 16¢ for tubs. On Toronto farmers' market lb. rolls bring 18¢ to 22¢ and crocks 15¢ to 17¢ per lb.

**Cattle.**

The cattle trade continues to maintain its strong position. At Chicago, during March, the receipts have been the largest on record, and the general average of the prices the highest ever paid during March. Extra prime steers are quoted there at \$7.20 to \$7.40 and export or shipping steers (1350 to 1600 lbs.) \$6.75 to \$7.15 per cwt. Cable reports con-

**Five little minutes** are all the time Perri's Davis' Painkiller needs to stop a stomachache, even when it is sharp enough to make a strong man groan. Don't be fooled by imitations. 25c. and 50c.

**Frost Wire Fence is a Strong Fence.**

The 10 wires and 6 stay fence has heavy uprights. There is not a weak spot in its construction. It will last three times as long as other fences. Place your order for **Frost Fence**, satisfaction guaranteed.

Write for Catalogue. THE FROST WIRE FENCE CO. LTD., WELLAND, Ont.

tinne strong, live cattle being quoted on Friday at 13½¢, dressed weight. The run of live stock on Toronto cattle market on Friday was not as large as was expected, comprising 1,236 cattle, 991 hogs, 287 sheep and lambs and 157 calves. There was some improvement in the quality of the cattle offered earlier in the week. Eight car loads of the best cattle seen here for sometime were brought in by Mr. Isaac Groff, of Waterloo. Many of them were equal in quality to the best Chicago cattle and showed clearly that as good cattle could be produced in this country as in any country. These were sold by private sale, and the price is not definitely known, but is estimated that Mr. Joseph Gould paid fully 6¢ per lb. for them for export. Trade generally was good and prices firm. Feeders and stockers sell well at quotations. Butchers' cattle of good quality continue active.

**Export Cattle.**—Choice loads of heavy shippers are worth from \$5.75 to \$6.00 per cwt., medium exporters \$5.00 to \$5.60 and light ones \$4.65 to \$4.90 per cwt. Heavy export bulls sold at \$4.12½ to \$4.50 and light ones at \$3.40 to \$3.80 per cwt., choice export cows sold at \$4.00 to \$4.50 per cwt.

**Butchers' cattle.**—Choice picked lots of these, equal in quality to the best exporters, weighing 1,100 to 1,150 lbs. each, sold at \$5.00 to \$5.50 per cwt. Choice picked lots of butcher's heifers and steers, 925 to 1,025 lbs. each sold at \$4.60 to \$4.90, good cattle at \$4.50 to \$4.75, medium at \$4.00 to \$4.40, and inferior to common at \$3.75 to \$4.25 per cwt.

**Feeders.**—Light steers, 900 to 1,000 lbs. each sold at \$4.00 to \$4.60 per cwt.

**Stockers.**—Yearling steers weighing 400 to 800 lbs each sold at \$3.20 to \$4.00, and off colors and those of inferior quality at \$3.00 to \$3.25 per cwt.

**Calves.**—These are in steady demand at Buffalo. Good to choice veals bring \$7.25 to \$8.00 per cwt. At Toronto market good to choice calves bring \$4.00 to \$6.00 per cwt. and \$2 to \$10 each.

Milch cows and springers sold at \$30 to \$50 each.

**Sheep and Lambs**

There is a little better market in lambs and prices are a little high

er than a week ago. On Friday, sheep were steady at \$3.50 to \$3.75 per cwt. Yearling lambs sold at \$4.50 to \$5.75 per cwt. and spring lambs at \$2.00 to \$6.00 each.

**Hogs**

As we intimated a week ago, hogs advanced 25¢ per cwt. during the week, select bacon hogs selling at \$6.25 and lights and fats at \$6 per cwt. Unculled car lots sold at \$6.10 per cwt.

For the week ending April 12th, the Wm. Davies Co., Toronto, will pay \$6.15 per cwt. for select bacon hogs, \$5.90 for lights, and \$5.90 for fats.

The Trade Bulletin's London cable of April 11d. re Canadian bacon reads thus:

"The market is firm at a further advance of 1s, with a good demand for Canadian."

**Horses**

Local trade continues to improve at Montreal, the demand being chiefly for workers. Some heavy drafts sold at from \$150 to \$200 each, and a couple of fine carriage horses at \$200 to \$250 each. Some light roadsters have changed hands there at \$120 to \$180 each.

A big livery stock sold at Grand's on Tuesday realizing about \$10,000 for horses and carriages. The horses a useful lot of general purpose and drivers sold at from \$60 to \$135 each. Trade generally is fairly good and business active. At present city horses are selling cheaper than those held by farmers.

**EGGS FOR HATCHING** reduced to \$1.00 per setting. High class Buff Leghens, Barred and White Plymouth Rocks. Good hatch guaranteed.—L. T. McGUIVER, GALT, ONT.

**FOR SALE**

Shorthorn Bulls from 10 to 11 months old. Also some choice 2 year old heifers, all red and low set down.

JAMES BROWN,

Thorold, Ont.

**QUEENSTON HEIGHTS SHORTHORNS.**

Scotch and Scotch-topped choice young cows and heifers for sale at moderate prices.

HUDSON USHER,

Queenston, Ont.

## About Poultry

### GEESE.

Geese can be fattened cheaply, as they will eagerly consume chopped turnips or any other kind of cheap material at this season, but to get them fat they should have corn also. A goose should not be too fat, as such are objectionable, but they should be fat enough to present an excellent market appearance. The young geese that have not fully completed their growth, cannot be fed too liberally, as they will not become extremely fat until matured. They do not bring as good prices as turkeys, but their flesh is preferred by many, owing to its being free from dryness, and although dark in appearance, is juicy and of good quality. The feathers are an important item, and will pay for the expense of preparation. Considering their freedom from disease, and their willingness to consume all kinds of food, they are very profitable to those who have large flocks.

A goose will lay about twenty eggs, but may be induced to lay as many as thirty if she is removed from the nest, and with good management will hatch two broods. A large goose will cover at least a dozen eggs, and she usually begins to lay about the middle of February or during March. The gander is a faithful attendant, sometimes keeping close to his mate while she is incubating, for the purpose of driving away intruders. The period of incubation is about twenty-nine days. Grass is highly relished by geese, and they may be pastured, but such location should be of a character suitable for close cropping, as geese endeavor to eat tops and roots together. They are very voracious, and eat anything that is fit for food.

They may be plucked for feathers two or three times during the summer, and will yield about a pound of feathers per annum worth from sixty to seventy-five cents. Geese will pair if the proportion of sexes is equal, but three geese may be permitted with one gander as a limit. They are easily restrained within enclosures by clipping their wings.

### DUCKS

Ducks, too early allowed their liberty on large pieces of water, are exposed to so many enemies, both by land and water, that few reach their maturity; and, even if some are thus fortunate, they are not disposed afterward to return to the farm-yard and submit quietly to regular habits. They may be kept in health in small enclosures, by a good system of management, though we fear, with very little, if any, profit, which is the point to which all our advice must tend. There is no doubt that ducks may be made profitable as egg producers, but the quality of their eggs, and the extra labor required to obtain them (for, unless they are got up every night and confined, they

will drop their eggs carelessly here and there, where many of them will not be found), will not allow them to compete with the hen, in that capacity. Also, a duck lays when eggs are most plentiful, while hens' eggs may be procured at all seasons.

The best mode of rearing ducklings depends very much on the situation in which they are hatched. On hatching, there is no necessity of taking any of the brood away, unless some accident should happen; and, having hatched, let the duck retain her young upon the nest her own time. On her moving with her brood, prepare a coop and pen upon the short grass, if the weather be fine, or under shelter, if stormy. Keep a wide and shallow dish of water near by them, and renew the water quite often. Their first food should be crumbs of bread, moistened with milk; curds, or eggs boiled hard and chopped fine, are also relished by, and are good for them. After a few days, Indian meal, boiled and mixed with milk, and if boiled potatoes, mashed, be added all the better. All kinds of sopped food, buckwheat flour, barley meal and water, mixed thin, worms, etc., suit them. They are extremely fond of angle-worms, grubs, and bugs of all kinds; for which reason it may be useful to allow them a daily run in the garden. All the different substances mentioned agree with young ducks, who show, from their most tender age, a voracity which they always retain. It is necessary to prevent accidents, to take care that ducklings come regularly home every evening, and precautions must be taken before they are allowed to mingle with the old ducks lest the latter should ill-treat and kill them, though ducks are by no means so quarrelsome and jealous of new comers as common fowls always are.

### Operating Incubators.

(By M. M. Johnson.)

Although there are lots of good type worn out on the moisture and temperature, there is not much in the moisture question further than serving a purpose with some in convincing other people that they are scientific on the incubation question. The real candid facts are, it is not a question at all, as it is understood by some; it is simply a question of ventilation and temperature, instead of moisture and temperature. The egg is getting rid of moisture during incubation, instead of absorbing it. The question of ventilation and governing the speed of drying out the egg is the question. Correct ventilation of the egg chamber carries off the correct amount of moisture. Too much ventilation carries the moisture off too fast; or, in other words, the egg dries out too fast; the lack of ventilation fails to carry off enough moisture; the egg does not dry out

## Poultry and Eggs.

Advertisements under this head one cent a word. Cash must accompany all orders under \$2.00. No display type or cuts allowed. Each initial and number counts as one word.

**BROWN** Leghorns, **Prolific** early layers; Strain won at Pan-American. Stock for sale—Minorcas, Barred Rocks, Chicest Strains, Eggs in season. JOHN B. PETTIT, Fruitland, Ont.

**REID'S** Great Prize Winners. They have won 9900 prizes in my own hands. Send for list of varieties. W. W. REID, Ayr, Ont.

**BARRED ROCKS.** Stock and Eggs for sale from prize-winners at leading shows. Eggs by the hundred or setting. Prices right. Write stating your wants. ELIAS SNEDEC, Burgessville.

**EGGS** for setting. Silver grey Darksings from splendid stock. John Taylor, Jr., Gait, Ont.

**PINE HILL STOCK FARM** can supply eggs from the following varieties, choicest of stock: B. Langshans, L. Brahmas, Barred and W. Rocks, G. S. L., and White Wyandottes, S. G. Darksings, W. and Brown Leghorns, Buff Cochins and Golden Sealright Bantams, \$1.00 per 13 eggs; Pekin Duck eggs, \$1.00 per 11; M. Bronze Turkey eggs, \$2.00 per 9; Toulouse Geese eggs, 40c. each. D. A. GRAHAM & SON, Theford, Ont.

**EGGS FOR HATCHING.** Single Comb White Leghorns and Barred Plymouth Rocks, \$1.00 per 13. HARRY D. NORTON, Allison, Ont.

**FOR SALE**—Eggs from choice matings of Barred Plymouth Rocks and Mammoth Pekin Ducks—\$1.00 per setting. F. C. TREVARTHEN & SON, Belleville, Ont.

**SEND** your name for Circular of Standard-bred Plymouth Rocks and Wyandottes. The breeds for utility and export. Eggs reasonable. PYRAMID POULTRY YARDS, Newmarket, Ont.

**EGGS** Three Dollars Hundred—Pitts Minorcas, E. B. Thompson; Bradley Bros, Liffell Strain; 15 egg 75c. All birds scoring 92 to 95 points. N. H. SMITH, Hilbury, Ont. Lock Box A.

**BUFF ORPINGTONS.** Imported this season from England, 8 birds costing \$125. 8 hid buff egg-laying layers. Barred Rocks, E. B. Thompson's White Wyandottes, Indian Games, true black type for export. I won leading prizes and sweepstakes at the Ontario and Brandon shows. Incubator eggs \$2.50 per 100. J. W. CLARK, Importer and Breeder, Osnafca, Ont.

**WHITE ROCKS.** Good laying strain, eggs one dollar. Cockerels, one dollar. Supply limited. Order early. HIGHWORTH POULTRY YARDS, West London, Ont.

### "VIGILANT" NEST

SLIDING-ADJUSTABLE

(Patented Can. & U.S.)

The only nest in the

World which positively

prevents hens from eating

their eggs.

Simple—Effective—Durable

No springs—Eggs

cannot break. The inclined nest gathers them

safely in lower section. Prevents fleas, or parasites, etc. Everlasting, never failing, comfortable.

Thousands now in use. Ask your dealer

for it or write L. P. MORIN, Inventor, Mir,

13 Antoine St., St. Hyacinthe, Que.

Price 45c. each. AGENTS WANTED.



enough. A good incubator looks after the moisture question by having a correct ventilation system. It's just as easy and as plain as the nose on a man's face, and the more we fool with other notions the more we are perplexed, and the more room the empty theories will have.

Although there are lots of honest differences on the moisture question, there is not much difference on the temperature question. All concede that 103 is about the right temperature. Personally, I prefer a temperature of 104. Having watched the temperature question for a number of years with a view of finding out, I am very confident that 104 will produce just as many live chicks and much stronger chicks. The very best all-round

**A FORTUNE IN EGGS.**

I get so many letters from my old home about preserving eggs, that I will answer them through your paper. I started 1888 with \$30, bought eggs at 8 to 10 cents in summer, preserved them and sold in winter at from 25 to 30 cents a dozen. I preserved eggs 12 years and made \$30,000. My niece started in 1894 with \$10, which she reinvested each year, with the profits and now she has \$16,346 all made from \$10 reinvested for 8 years. You can buy eggs from 8 to 10 cents and sell them from 25 to 30; figure the profits yourself. To preserve them costs a cent a dozen. I can't answer letters as I travel, but any person can get desired information by addressing the PEOPLE'S SUPPLY CO., New Concord, Ohio, enclosing a 2 cent stamp; they started me. This is a good business for city or country. G. GREEN.

**The Daniels Incubator**

WE CAN SAVE OUR PATRONS 25 PER CENT. ON

**Incubators, Breeders, Bonemakers, and all Poultry Supplies, Creamery Machines and Poultry Crates**

Our aim for past 16 years has been satisfaction to every customer. Our large collection shows we have not failed in our aim. Send for our free catalogue. We don't sell catalogues, but straight honest goods. This or your money back.

**C. J. DANIELS**  
196-200 River St., Toronto, Ont.

**SHOEMAKER'S BOOK ON POULTRY**



and Family Almanac for 1902. 100 pages 129 engravings, the finest work of its kind ever published. Gives recipes for making excellent poultry, recipes for all diseases of fowls, plans and diagrams for building poultry houses, tells you how to raise chickens profitably, gives description with illustrations of the leading varieties of home fowl, incubators and poultry supplies at lowest prices. It is an encyclopedia of chicken information. Many more things than to anyone interested in poultry. You positively cannot afford to be without it. Sent postpaid, on receipt of price. Toronto. Address: **B. O. Shoemaker, Box 83, Freeport, Ill.**

**INCUBATORS AND BROODERS**

**Incubators and Brooders**  
All kinds of Poultry Supplies.  
CATALOGUE FREE.  
**A. J. Morgan, Mfr., London.**



**Cramping Machines**  
Fattening Coops,  
Incubators and Brooders  
All kinds of Poultry Supplies.  
CATALOGUE FREE.  
**A. J. Morgan, Mfr., London.**



**CYPHERS INCUBATOR,**  
World's Standard Hatcher.  
Used in Europe, Experiment Stations in U. S., Canada, Australia and New Zealand, also by America's leading poultrymen and thousands of others. Gold medal and highest award at Pan-American, Oct. 1901. 16-page circular free. Complete catalogue, 100 pages, \$2.00, mailed for 50c.  
Ask nearest office for book No. III

**CYPHERS INCUBATOR COMPANY,**  
Baltimore, N. Y., Chicago, Ill., Boston, Mass., New York, N. Y.

**Toronto Incubators**



Absolutely self-regulating. Supply their own moisture. Will hatch every hatchable egg.  
Used by largest breeders.  
Catalogue free.

**T. A. WILLETT,**

514, Dundas Street, Toronto

**W. R. BOWMAN**  
Mt. Forest, Ontario

Is offering 2 richly-bred Shorthorn Bulls at \$80; one Polled Angus Bull \$85; Plymouth Rock eggs 5 settings for \$2; Yorkshires always on hand.

hatches I ever made, or ever heard of being made, were with an average temperature of 104, with the thermometer lying on top of the eggs. By average temperature I mean this way: 103 for the first week, 104 for the second, and 105 for the third. The question might be asked, why the three different temperatures?

The reason is due to the growth of the embryo chick and the natural animal heat as the chick grows.

With a great many the temperature and moisture question is nearly the whole thing. Their delusion about this is largely responsible for a lot of low average hatching. The temperature and ventilation are only a portion of making big hatches. As soon as the egg starts to incubate, the shell contains a live thing, and it must have exercise and change of conditions to grow and develop into a strong, robust chick, able and willing to kick out of the shell and grow after it is out. Yes, it does read nice to turn the eggs with a simple twist of the wrist; it carries the idea to the inexperienced that it saves a lot of labor. The real facts are that it does not take over five minutes to turn 200 eggs by hand, and while you are doing it the eggs get the necessary airing. They get the soft, natural motion for turning, no scraping, etc. The chick adjusts itself to every movement of the egg. It is exercise for it. The airing the eggs get while being turned contracts the shell; the warmth in the egg chamber expands it again. The natural outcome of the expansion and contraction is the breaking up of the shell's fibres, and when the chick is due to hatch it is strong enough and the shell weak enough. Somehow or other the laws of nature and things require us to do something to get something, and operating incubators has not escaped the law. Operating an incubator does not require much work; but to get the best results we must do some work. Just as sure as the machine is a good one and we do our part, just that sure are we to get good results.

We have had occasion several times to refer to the rapid development in recent years of the live stock trade between the Eastern and Western provinces of the Dominion. During the month of December and the first eight days of January forty-six cars of grade and pure bred cattle were shipped from Eastern Canada to British Columbia. These cars contained 2,223 head and cost in the East something over \$30,000. In addition to this a large number have recently been sent to the Northwest Territories and we learn from Mr. F. W. Hodson, Dominion Live Stock Commissioner, through whose efforts this trade has been largely brought about, that orders are now on hand for additional shipments to be made shortly to the Territories. The wise and generous treatment of the Canadian Pacific Railway in granting reduced freight

**ALVA FARM GURNSEYS**

The Typical Dairy Breed



Good Animals of Both Sexes for Sale

SYDNEY FISHER, Knowlton, Que.

DAVID McCRAE, Janefield, Guelph, Canada, Importer and Breeder of Galloway Cattle, Clydesdale Horses, and Cotswold Sheep. Choice animals for sale.

**JOHN DRYDEN**  
BROOKLIN, ONTARIO

BREEDER OF CRUICKSHANK SHORTHORNS and CHOICE SHROPSHIRE SHEEP

Choice Young Bulls and Ram Lambs for sale. Write for prices.

**IMPERIAL HOLSTEIN-FRIESIAN STOCK FARM**

A few choice HOLSTEINS, both sexes, bred from Pan-American prize-winner.

WM. H. SIMMONS,  
New Durham, P. O., Ont.

**ANNANDALE STOCK FARM HAS FOR SALE**

4 Holstein Bulls, 1 month to 12 months  
10 Improved Yorkshire Boars, 2 months to 10 months  
8 Sows, 2 months

The above are eligible for registering, and certificates will be furnished.

6 Holstein Grade Bulls, 2 months to 10 months, from the best milkers in the Annandale herd. Correspondence promptly answered. Inspection specially invited.

The Annandale Stock Farm  
Tilsburg, Ont.

**Rapids Farm Ayrshires**

Reinforced by a recent importation of 20 cows, 2 bulls and a number of calves, selected from noted Scotch herds, and including the male and female champions at leading Scotch shows this year. Representatives of this herd won the first herd prize at the exhibitions at Toronto, London and Ottawa.

Come and See, or Write for Prices

Young Bulls and Heifers for sale, bred from high-class imported stock.

**ROBERT HUNTER,**  
Manager for W. W. Ogilvie Co.,  
Lachine Rapids, Quebec

**"WOODBINE FARM HERD" of Holstein Friesians**

Offers a few choice bulls now fit for service, sired by Homestead Albino Paul De Kol out of dams sired by Dora Beet's 3rd Pieterje Netherland. For particulars and prices address,

A. KENNEDY,  
Ayr, Ont.

**T. Douglas & Sons, Strathroy, Ont.**



Breeders of Shorthorns and Clydesdales

100 Shorthorns to select from. Herd bulls (imp.) Diamond Jubilee = 28861 = and Double Gold = 37802 =. April offering - 8 grand young bulls, and cows and heifers of all ages. Clydesdales - 1 three year old stallion and one four-year old mare (in foal).

Farm one mile north of town.

## PURE-BRED STOCK

### NOTES AND NEWS FROM THE BREEDERS

*These columns are set apart exclusively for the use of breeders of pure-bred stock and poultry. Any information as to importations made, the sale and purchase of stock and the condition of herds and flocks that is not in the nature of an advertisement will be welcomed. Our desire is to make this the medium for conveying information as to the transfer of pure-bred animals and the condition of live stock throughout the country. The cooperation of all breeders is earnestly solicited in making this department as useful and as interesting as possible. The editor reserves the right to eliminate any matter that he may consider best suited to our advertising columns.*

#### Horses.

Special attention is directed to the announcement of Messrs. Morris, Stone & Wellington elsewhere in this issue. They are perhaps, the largest importers and breeders of Shire horses in Canada. They have been engaged in the business for twenty years, and during that time have imported a large number of stallions and fillies among them being the best Shire horses ever brought into this country. At their splendidly-equipped stock farm located at Font Hill, Ontario, they have at present between forty and fifty pure bred Shires of both sexes, that cannot be beat. By careful attention to selection and breeding, and by importing only the very best, they have been enabled to bring their horses up to the present standard of excellence. As would be expected, the name of Morris, Stone & Wellington have figured prominently in the prize list at our leading Fairs for a number of years. We can only refer to this in a general way. At the Toronto Industrial, the Western at London, and the Toronto Horse Show they have been among the noted prize winners, which may be taken as a sure indication of the high quality of their stock. Among the more notable winnings have been the Prince of Wales prize and sweepstakes at the Industrial.

Mr. John Cran, Kirkton, has disposed of a couple of nice Shetland ponies to Mr. John H. Morrison, Sussex, New Brunswick, Canada. One is a mare and the other a stallion. The ponies are remarkably fine specimens of the breed, and they are certain to create highly favorable comment in their new home. The dams were bred by the late Mr. Campbell-Macpherson Grant, of Drumduan, Forres, the sire being the noted prize pony Harold, now at Rosehaugh.—North British Agriculturist.

Messrs. A. & W. Montgomery, Netherhall and Banks, Kirkcudbright, have this week shipped a number of choicely-bred Clydesdale stallions to three of their customers in the United States. They number 18, and amongst them are several handsome, big horses, of quite outstanding merit, which could easily have been let here to earn plenty of money. Two three-year olds, by that grand horse, Lord Colum Edmund (9280), which was sold when a yearling for £1,300, are worthy of special notice. They are up to big sizes, with the best of feet and legs, broad, clean bones, and uncommonly good action. They should sell well on the other side. Other two are by the powerful premium horse, Prince of Johnstone (9986), winner of the

district premiums of Kilsyth and Cumbernauld, and Perth and Coupar-Angus, as well as numerous prizes. The sire of Prince of Johnstone was the celebrated champion horse Prince of Carruchan (8151), which was shown six times at the Highland and Agricultural Society and the Scottish Stallion Show, and always carried off the first ticket. Amongst the others is a get of the big dark-colored horse Jordanshaw (3343), which left good stock wherever shown. His dam was the Margaret's Mill Prince of Wales mare, one of the best of her sire's produce, and his sire was the champion horse Top Gallant (1850). Another is a grandson of the renowned champion horse Prince Alexaader (8899), which when a foal was sold for £1,200, won the H. and A. S. Show championship when a yearling, and the Cawdor cup when a three-year old. He bred some of the best of stock, and the sire of the horse shipped was one of his sons which gained many prizes. Two are sons of the renowned Macgregor (1487), than which no Clydesdale stallion of his own or any other day ever won more prizes and left a greater number of prize-winning stock. The dam of one of these horses shipped was a grand-daughter of the world-famed Moss Rose (6203), whose career was never equalled as a filly and mare of the Clydesdale breed. A thick, well-bred horse of superior quality and pedigree was got by the noted prize and premium horse Montrave Sentinel (10094). This fine horse gained first prize at the Highland Society and at Edinburgh, and numerous district premiums. There is no better type of cart horse in Scotland to-day. More than one are got by the big dark brown horse Mains of Airdies (10379), whose sire was Prince of Wales (673), and his dam the invincible mare Pandora, by Darnley (222). One is a son of Prince of Clay (10417), whose sire was Prince Alexander (8899), and his dam, Pandora; he won the Glasgow premium and cup when three years old, and many other premiums. A capital horse of approved usefulness in Cumberland, was got by the Cawdor cup champion horse Royal Gartly (9844), which twice won the Cawdor cup, and left excellent stock in all the districts in which he travelled. Many champions have been got by Royal Gartly, and this is a good horse which has crossed the Atlantic. His dam was from the famous Keir stud. There are also horses in the shipment got by the Highland and Agricultural Society's first prize horse Gallant Prince (10552), and



WILL NOT SCAR OR BLEMISH.

## GOMBAULT'S CAUSTIC BALSAM

Is the safest and most effective lotion or blister for ailments of

### HORSES and CATTLE

and supersedes all caustery or fring.

It is prepared exclusively by J. E. Gombault, ex-Veterinary Surgeon to the French Government Stud.

As a **HUMAN REMEDY** for Rheumatism, Sprains, Sore Throat, etc. it is invaluable.

Every bottle of Gombault's Balsam sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials etc. Address:

THE LAWRENCE-WILLIAMS COMPANY Cleveland, Ohio,  
OR 21 FRONT STRE T WEST, TORONTO, ONT.



**FLEMING'S LUMP JAW CURE**  
Trade Mark.

## LUMP JAW

Easily and thoroughly cured. New, common-sense method, not expensive. No cure, no pay. FREE. A practical illustrated treatise on the absolute cure of Lump Jaw free if you ask for Pamphlet No. 327. Fleming Bros., Chemists, 20 Front St., West, Toronto, Ont.



**ROCK SALT** for horses and cattle, in ton and car lots. **TORONTO SALT WORKS, Toronto**

## For Sale

A thoroughbred Jersey pedigreed heifer calf 10 days old, also cow 3 years old—milking 10 days.

**Geo. Millar,**  
68 O'Connor St., Ottawa, Ont.

## Clonmore Shorthorns

4 YOUNG BULLS 4

11 to 14 months, well bred growthy fellows. Prices Right.

F. G. MORTON,

Clonmore - - - - - Allandale P. O.

Spoooner's "PHENYLE"  
Powder  
"Phenyle" **GERMICIDE DISINFECTANT.**

### KILLS CHICKEN LICE

and Lice on Horses and Cattle, and Ticks on Sheep. Keeps them Healthy. Easily applied; no dip required.

60lb. boxes, 1lb. packages, ..... 25c. lb.  
70lb. pails, ..... 15c. lb.  
400lb. barrels, ..... 10c. b

If your Druggist does not sell it, send direct to

**ALONZO W. SPOONER,**  
Laboratory, PORT HOPE, Ont

It will cure and prevent hog cholera.

His son Knight o' Cowal, whose produce are big, weighty, and extra well-colored. Knight o' Cowal (10074) had a great show career, and left capital selling stock wherever he travelled. The last we shall name is a strong well-colored horse, got by the H. and A. S. champion horse of 1896, King of the Roses (10027), a horse of great size, and noted premium winner. Altogether this is one of the best selling shipments sent to America for a long time, and the various consignees should do well with the horses. — Scottish Farmer, March 1st.

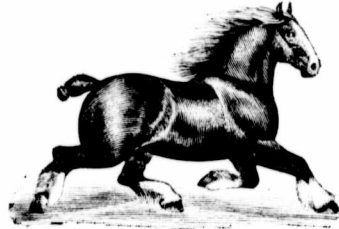
**Cattle.**

According to Thornton's Circular of Shorthorn transactions, there were exported from Great Britain for the three months, ending December 31st, 1901, 217 Shorthorns. Of this number, three went to Africa, 47 to the United States, 1 to South America, 1 to New Zealand, 24 to Russia, 1 to Siam, 10 to South Africa, 31 to Germany, and 118 came to Canada. The Canadians mentioned as importing Shorthorns during this quarter are: E. Beattie, Gore Bay, Ont.; H. Cargill & Son, Carleton, Ont.; Hon. M. H. Cochrane, Hillhurst, Quebec; W. C. Edwards & Co., Rockland, Ont.; W. D. Platt, Hamilton, A. Isaac, Bomantou; John Isaac, Markham; A. Johnston, Greenwood; J. E. Meyer Kossuth; R. Mitchell & Sons, and J. F. Mitchell.

George Rice, Curries Crossing, Ont., writes the Holstein-Friesian Registrar as follows:

"Sales from Brookbank Herd have been as the auction bills say, 'too numerous to mention.' I think I may say I have initiated a live, new breeder to the ranks of the black-and-whites in the person of Dr. A. L. Lewin, of Pittsburgh, Pa. I have sold him a good lot. Among them is Josco Priele, that noble cow that made such a sensation at Toronto and the Pan-American, winning first prize in her class and gold medal (sweepstakes female). Jewel Sylvia, first as a three-year-old at Toronto this year, first as a two-year-old at Toronto, Kingston and Ottawa in 1900. She is a very promising young cow of the Jewel, Texal and Sylvia strains. Her dam, Oxford Jewel, gave 91 lbs. of milk in one day. She is a sister of Daisy Texal 2d, 68 lbs. in twenty-four-hour public test at thirty-six months of age. Pauline Pietertje Clothilde, first at Toronto, second at the Pan-American as a two-year-old. Her dam was Lady Pietertje's Koyging, first-prize cow at London, 1899. Jemima Worthsmall, first-prize yearling at Toronto, third at the Pan-American; she is a rare, good one. Winnie De Kol, a yearling heifer, granddaughter of Winnie R., Advanced Registry record 17,502 lbs. in one year. To head the herd, Homestead Albino De Kol went along. He won first as a three-year-old, first in aged class at Ottawa,

HEADQUARTERS FOR

**SHIRE HORSES**

The Largest Importers and Breeders of Shire Horses in Canada.

FOR SALE THIS SPRING

3 Stallions, and 15 Brood Mares and Fillies—All Registered

Parties wishing to examine stock will be met at depot by writing us a day or two in advance

Fenwick Station, on C.P.R. Port Robinson, or Welland, on G.T.R.

**Morris, Stone & Wellington**

Font Hill P.O., ONTARIO

**International Stud Barns**

Importers of Clydesdales and Shire Stallions

Our last importation was Sept. 6. Our next importation will arrive March 16. A few Canadian stallions for sale cheap. Write for particulars. Remember, next arrival March 16.

J. B. HOGATE, Sarnia, Ont.

**W. C. EDWARDS & CO. Breeders and .....Importers****LAURENTIAN STOCK and DAIRY FARM, North Nation Mills, Que.**

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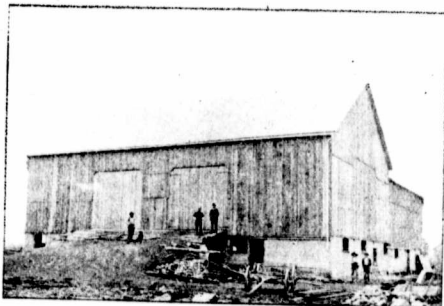
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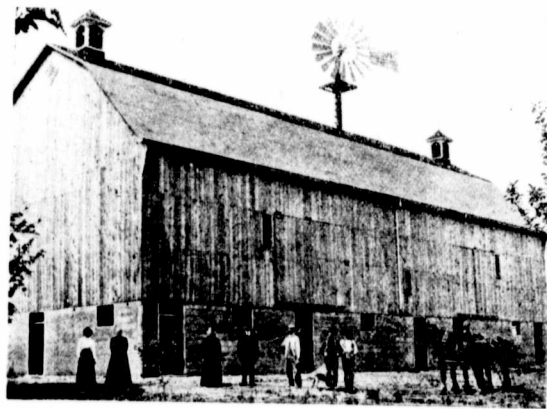
BARN OF ALLAN McMANE, ELMA TOWNSHIP.  
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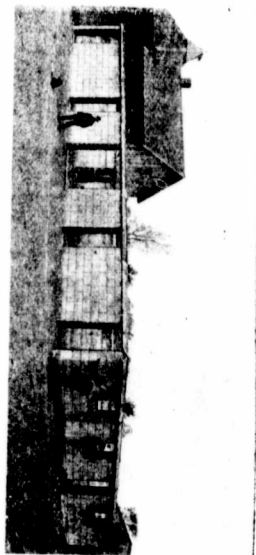
CONCRETE RESIDENCE OF JOSEPH HARRIS,  
near Kerwood, Ont.  
Size, ..... Built with Thorold Cement in 1902



BARN OF WM. PATTON, SOUTH CAYUGA, ONT.  
Size of basement walls, 31 x 60 x 9 feet. Built with Thorold Cement.



BASEMENT BARN OF JOHN SMITH, BAYSIDE FARM, PORT WHITEY.  
Size of walls, 40 x 100 feet, 8 feet high.



BARN OF MR. D. J. WYKOFF, SIMCOE, ONT.  
Size 70 x 62, walls 9 feet high. Built with Thorold Cement.

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Is especially adapted for  
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**Barns, Stables,  
Silos,  
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Cheese Factories,  
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Write for prices and all particulars

# ESTATE OF JOHN BATTLE, THOROLD, ONT.

**FOR SALE**

Imported Shire Stallion, color brown, stands 17 hands, weight 2600 lbs., splendid action, flat clean bone, good worker, has always been sure fall getter, have matched teams, quiet. This horse is sound and right in every particular. Registered in England and Canadian stud book no 220. Parties interested can see stallion at Tottenham.

**JOHN SEMPLE,**  
Box 73, Tottenham, Ont.

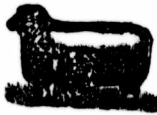
**A. HAGAR**

Bellevue Stock Farm, Plantagenet, Ont., breeder of Scotch Shorthorns and pure bred Shropshire Sheep. Young bulls and heifers or sale, also Shearing Rams and Ewes.  
**Prices Reasonable.**

**FOR SALE**

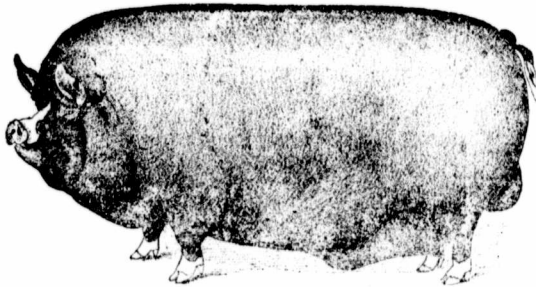
A choice lot of Shorthorn bulls 10 to 18 months old, sired by Imported British Statesman - 208533 - (63720) and cows of the Mara family, will be sold cheap at prices to suit purchaser. **Fitzgerald Bros.,** Mount St. Louis P.O., Elmvalle Station.

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Choice ewe lambs and ewes of all ages. Prices to suit times. Orders booked any time for 1902, show stuff for 1902. Fitting a specialty. Burford Station. Telegraph & Phone **J. H. JULL & SONS,** Mt. Vernon, Ont.

**LARGE ENGLISH BERKSHIRES**



(Big Tom)

**Big Tom** (one of the boars in my herd). Winner of 8 First Prizes. Weight, 833 lbs at 2 years. Height 3 ft. 1 in. From between ears to point of nose, 6½ in. From root of tail to point of nose, 6 ft. 6½ in. Heart girth, 6 ft. 2 in. Around arm, 19½ in. This Boar is perhaps the largest and best boar in America, and an easy feeder; and his pigs are extraordinary growers. We can offer some choice young stock from him, as we have the get of several other prize boars, and out of sows of the best imported blood from England. We won 40 prizes in 1901 at such shows as Toronto, Ottawa, Guelph, etc. Come and see me, or send for circular. Prices reasonable. Also Shropshires and Scotch Collies.  
**W. H. DURHAM, York Lodge, East Toronto P.O., Ont.**  
(Successor to Durham & Cavan).

Kingston and Woodstock; second at Toronto. This is the identical herd that won second prize in the great display at the Pan-American. Mr. H. Lawry of Belmore, Ont., purchased the young bull, Edgley Frena 2d's Count. Mr. Hotsion, Innerkip, Ont., took White Rose Albino De Kol. Mr. C. H. Best, Corinth, Ont., secured Winnie Win's Albino, whose dam, Winnie Win, won the Provincial Test this year. In fact the dams of all these bulls are in the Advanced Registry.

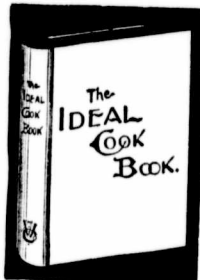
**Swine.**

Mr. W. H. Durham informs us that he has recently bought out the interest and good will of Mr. L. J. Cavan in the York Lodge herd of Berkshires, having become sole owner of all the stock. He intends to increase still further the popularity of this herd. He is pleased to note that there never was a better lot of young stock in the herd than at present, including the get of the famous boar "Big Tom," (who is considered by many as the best boar seen in Canada for years). Also the get of the noted American boar, Lord Windsor II., perhaps the most noted bred boar in America, being a double descendant of Lord Windsor 30461, who won thirty-seven firsts and champion prizes at all the leading shows of England and America, (including the World's Fair, Chicago). The pigs from Lord Windsor II. won prizes at every show where they were shown in 1901. The get of Baron Lee 5th are also to be found here, and he produced many winners for Mr. Durham in 1901, including the first prize Barrow at the Provincial Winter Fair, 1901. Baron Lee 5th is perhaps the longest boar to be found anywhere. Space will not allow mention of the good sows (some of them imported from England), that are breeding at York Lodge. When in the city, a few minutes' ride on the Kingston road cars will take you to York Lodge, where you will be welcomed by Mr. Durham.

**Children for Adoption**

One to three months.—Harold G., fair complexion, auburn hair and blue eyes. Boy B., dark complexion, brown hair and blue eyes. Margaret B., Ruth G., Aretta L. and Lily M., fair complexion, brown hair and blue eyes. Four to six months.—Boy I. and Wm. S., fair complexion, fair hair and blue eyes. Ruby H., fair complexion, brown hair and blue eyes. Nine to twelve months. Alex. C., Alvin E. and Frederick T., fair complexion, fair hair and blue eyes. Four years.—Paul C. and Reg. T., fair complexion, fair hair and blue eyes. Six years.—Edgar D., fair complexion, fair hair and blue eyes; Douglas S., fair complexion, auburn hair, brown eyes.

The society has no older boys or girls available at present. Application should be addressed to the Secretary, 33 Confederation Life Building, Toronto.  
J. Stuart Coleman, Secretary.



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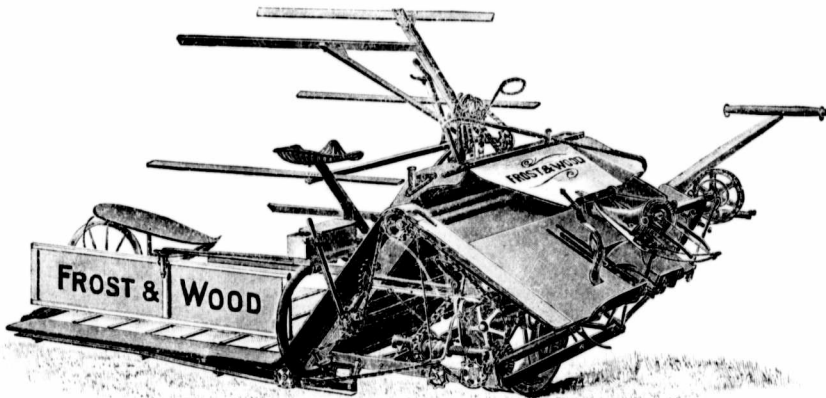
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# **THE FROST & WOOD** **New No. 3 Binder**

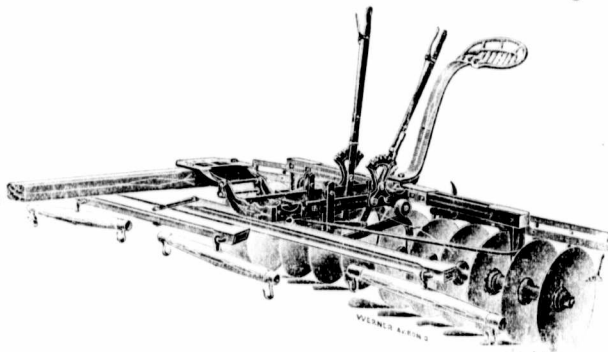
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Made in  
8 Sizes,  
Cuts 6,  
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**UNEQUALLED IN UNEVEN LAND, BAKED CLAY OR SOD.**

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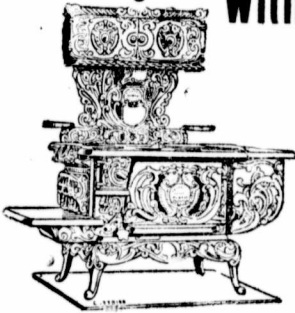
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