

THE Farming World

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FOR FARMERS AND STOCKMEN

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The Farming World

For Farmers and Stockmen

Vol. XV

JANUARY 21st, 1902.

No. 3

The Chief Factor in Dairying.

ONE of the strong points brought out at the Western Dairymen's meeting last week, a report of which appears elsewhere in this issue, was the important place which the patron occupies in our cooperative dairy system. This was most forcibly emphasized by the Hon. Mr. Dryden in his address on Wednesday evening and also by Mr. G. C. Creelman, Superintendent of Farmers' Institutes. While the patron is a most important factor he is also the most difficult one to reach and instruct as to what his duties are in connection with the care of milk. Not that he is less susceptible to intelligent and definite instruction than any other individual, but that he is so isolated as to be beyond the reach of the methods ordinarily adopted in reaching the maker and the other factors in the concern. But this is the situation, and as good cheese cannot be made without good milk the patron must receive attention, no matter how great the cost. While it is all important that proper facilities should be provided for curing the cheese and carrying it in a perfect condition to the consumer, the real foundation must not be neglected. We are therefore very glad to see that both the Eastern and Western Associations are taking active means to reach the patron. It is a large task, but definite, persistent methods with this object in view will accomplish much.

The Auction Sales.

Farmers and others desiring to procure good stock for breeding purposes should keep in mind the coming auction sales to be held at Guelph and Ottawa next month. This method of buying and selling pure bred stock was successfully launched last year at the points named. That it has proven a most effective way of bringing buyer and seller together, and of disposing of the surplus stock to advantage was shown last February, when 259 animals, including cattle and swine, realized the grand total of \$17,962.50.

But these sales will not run themselves. There must be active cooperation on the part of the breeder, who has good stock to sell and of the one who desires to obtain good stock. Last year's experience, however, showed that to a very large degree both buyers and sellers were willing to cooperate in making these sales a success. And the prospects for the coming sales are on the whole as good and in several respects better than they were a year ago, when

the first sales were being advertised. We learn that a number of the leading breeders are saving their best animals for these sales. It seems certain, therefore, that a much better class of animals will be offered this year than last.

It is hardly necessary to enumerate the advantages to be derived from these sales. If they serve no other purpose than to advertise Canadian pure bred stock abroad they will pay well for the expense and time put upon them. Last year there were several buyers from a distance and among them one from the United States, who bought largely of the animals put up at auction. There is no reason why the number of outside buyers should not be largely increased this year. These sales should be well advertised in the United States and in all the provinces of the Dominion.

However, because there are buyers from a distance should be no reason for our own farmers and breeders to refrain from buying. It is not in the best interests of the live stock trade of this country that all the best animals should be bought by outsiders. The more of these higher priced animals we can keep in the country the better. In this connection read the remarks of the Hon. Mr. Dryden before the live stock judging class at Guelph, published elsewhere in this issue. He lays special stress upon the necessity of using well bred bulls for improving the grade cattle of the country. This is good advice and the auction sales supply a splendid opportunity for obtaining good animals at market prices for use on the grade stock. If one farmer feels that he cannot afford the price let a few farmers in his locality combine and purchase a good bull for use on their herds. In this way the best blood will be introduced and the average quality of the cattle of the neighborhood greatly improved.

The Beef Carcass Awards at Guelph.

Though the Ontario Winter Fair of 1901 is a thing of the past, it is still being talked of in many localities. We recently received a communication from a subscriber, who was a large exhibitor at the last show, in which he expresses some dissatisfaction with the management and with the manner of awarding prizes in the beef carcass competition. In regard to the block test, he says:

"The block test at Guelph seemed out of harmony with the judging of the live animal. If it is a Fat Stock Show why not carry it out to the letter. If it is to be a Lean Stock Show, that can be

found in some barnyards on every concession in the Province, no need to go to Guelph to see it. I would like if you would have this discussed. I think the dead to the live weight should have something to do with it. How do they do in Chicago? I see that every first prize animal has to go on the block test there."

As we pointed out some weeks ago, the judging in some of the carcass competitions was out of harmony with the judging of the animal when alive. If the judging of an animal alive and in carcass form does not harmonize to some extent at least, the educational value of this part of the show is very much lessened. The farmer or producer can only be educated as to the right type of finished beef animal to produce by the appearance of the live animal. But if the ideal set up alive is not the right one when killed, all this educational work is without avail. In the bacon hog classes this lack of harmony does not exist and the animal taking a first place when alive is pretty sure to stand well up to the front in the carcass competition. But it has taken time to reach this position. And so, perhaps, time will be required to properly adjust the judging as between the live and dead animal in the beef classes. Still there is no need of the entire lack of harmony that was shown in the live and dead cattle class at Guelph last month. Either the live or the carcass ideal was wrong. The judges in these classes should get together before another show and come to some more definite understanding as to the type of animal alive and dressed best suited to market requirements. If this is not done we are afraid the beef carcass feature of this most successful show will drop behind.

Our correspondent objects also to the heavy entrance fees charged exhibitors in the beef cattle classes. He instances the case of a medal valued at \$5 being given by a citizen of Guelph for the best grade steer bred and fed in the county of Wellington for which an entrance fee of \$2 was charged for each entry. We do not know whether there is a real grievance in this or not. If the entrance fee seems out of proportion to the results obtained and is imposing a hardship on the exhibitor, it certainly should be lowered. We have every confidence in the management, however, and only draw attention to this matter in order that, if necessary, the question may be fully considered by them. We would be glad to hear from other exhibitors on the points raised.

Our Western Letter

Western Canada's New Railway System. What it Means to the Country.

Winnipeg, Jan. 13th, 1902. On Monday evening, December 30th, the citizens of Port Arthur celebrated the completion of the Canadian Northern line between Winnipeg and Lake Superior, by a complimentary banquet to Messrs. Wm. McKenzie and D. D. Mann. The following day, December 31st, these gentlemen and many distinguished citizens of Ontario and Manitoba left Port Arthur on the first train to make the through trip, arriving in Winnipeg on New Year's Day of 1902. The people of Manitoba may at last congratulate themselves upon the completion of an undertaking that has occupied the attention of their successive governments for ten years or more. The building of a competing line of railway to the lake with the aim of controlling freight rates has been the fondest hope of this province, and after many attempts by their successive administrations it remained for Premier Roblin to accomplish this long-cherished plan.

It is now close on to a year since the Government of Manitoba closed the contracts for the construction of a connecting line between the Ontario and Rainy River Railway and the Manitoba South-Eastern section of the Canadian Northern, running eastward from Winnipeg. Never before has a contract of this character received wider discussion and never has a government offered greater facilities for such discussion. In public speeches, in conference with trade organizations, and on the floor of the Legislature the Premier has demonstrated the soundness of his bargain in the face of a great deal of factious opposition, by private and public individuals and corporations. Indeed, the very voluminousness of the arguments pro and con have somewhat obscured the prime conditions of the bargain. Two contracts are included in the "deal." First the lease of the branch lines of the Northern Pacific lines in Manitoba, and the assignment of this lease to the Canadian Northern by the Government. This transfer of the Northern Pacific branches to the Canadian Northern was consummated on the 25th May last. The railway company pays all rentals and operates the branches as an integral part of their system. The second contract concerned construction of the line from Port Arthur to Winnipeg. The Government of Manitoba agreed to guarantee principal and interest on the company's bonds to the extent of \$20,000 per mile for the 290 miles of the Ontario and Rainy River road, and to secure this amount took first mortgage on the entire system of the company in Ontario and Manitoba.

In consideration of this guarantee, the Government of Manitoba secures the right to fix the freight rates over the Company's lines in Manitoba and between Manitoba points and the lake for thirty years, and at the end of that time may purchase the system at a valuation.

What does this mean? The Province becomes responsible for the payment of interest and principal of \$5,800,000 of four per cent. bonds secured by first mortgage on eight hundred and fifty-eight miles of railway. Should the earnings of the road not pay the interest when due the government must make good the deficiency. As long as the earnings are sufficient for this purpose the government may reduce the freight rates to any point they choose. Should the government be obliged to meet any deficit they may at once foreclose their mortgage and assume owner's rights.

Will the road pay? There can be no doubt, whatever on that point. It opens up a portion of New Ontario, containing some of the finest land in that Province. It penetrates a region containing immeasurable deposits of the richest mineral ores, especially iron. It will develop a large area of valuable lumber and pulpwood forest. Most important of all, it will be fed by nearly eight hundred miles of line running through the rich grain fields of Manitoba. Adding the former issues of bonds of the Manitoba lines to those now issued the total bonded indebtedness on 854 miles of railway included in the mortgage is \$10,344,000, or \$12,056 per mile. This is the least amount of bonded debt of any railway in America. The Canadian Pacific is bonded for an average of \$45,097, the Northern Pacific \$44,145. The fixed charges are thus the least of any railway on the continent, \$482 per mile. The operating expenses are thus greatly lessened and the net income augmented. With the traffic in sight there is not the faintest fear of any call being made upon the finances of the Province.

But supposing, by the reduction of the freight on wheat to six cents per bushel the entire interest charges and the rental of the Northern Pacific Railway lines were thrown upon the province, and the sum of \$724,000 were thus drawn from the treasury; even then the Province would be the gainer by the transaction. There are, at least, 42,000,000 bushels of wheat for export this year. The present freight rate is nine cents. The saving on this item alone would, therefore, put \$1,260,000 in the pockets of our farmers. Within ten years this export will be doub-

led and the proportionate saving likewise. In view of these facts, and the extreme improbability of the road not meeting its obligations the bargain cannot be considered otherwise than as a most advantageous one for the province and the West in general.

At the same time New Ontario is reaping untold advantages through Manitoba's enterprise. Her mines, forests, fisheries and agricultural resources will undoubtedly respond to the favorable conditions thus secured and a new era of progress may be expected. Prince Albert and Edmonton in the Northwest look forward to the coming of the new line which, the promoters expect, will be completed from Quebec to the Pacific eight years hence. The present mileage of the railway is distributed as follows: Ontario 354 miles, Minnesota 50, Manitoba 883, Northwest Territories 22, Total 1,309. Of this total the main line forms about 800, and the branches about 500 miles. Almost every mile of the country through which the road passes will be revenue-producing. The Manitoba main line and branches have been self-sustaining, even when compelled to hand over the cream of their traffic to the C. P. R.

The crop of 1901 and the developments which have followed it have been sufficient justification of the forecasts of Premier Roblin and his colleagues. The impossibility of a single line of railway serving this vast country has been amply demonstrated. The requirements of the present are so great that we begin to wonder whether the two systems of railway, the old and the new, will be equal to the immediate future.

Manitoba has helped herself and her neighbors both east and west. She has, by lending her credit to the great enterprise of the Canadian Northern Railway Company, secured a position unique in its advantages—the absolute control of freight rates, the key of the commercial situation. Competing lines must meet the rates fixed by the Government, and from the moment that that line commences handling through traffic to the lake ports we shall hope to hear no more of extortionate freights in the West. M. B.

Ontario Sugar Company.

The prospectus of the Ontario Sugar Company, Limited, which is published in this issue, brings before the inviting public of the Dominion an enterprise which will have a practical bearing on the future prosperity of the province. It has completed such arrangements for the practical carrying on of the industry as to assure to it a sound and permanent success, which can alone guarantee to the investors solid and profitable investment. The attention of those looking for investment for their funds may well and fairly be directed to the prospectus of the Ontario Sugar Company.



DR. WM. SAUNDERS, DIRECTOR DOMINION EXPERIMENTAL FARM SYSTEM

Grains, Fodders, Roots, Potatoes

A comprehensive bulletin has been issued by Dr. Wm. Saunders, Director of the Dominion Experimental Farms, giving the results of a large number of experiments conducted at all the farms of the system during 1901, with oats, peas, barley, spring wheat, Indian corn, turnips, mangolds, carrots, sugar beets and potatoes. The average results are also of six and seven year tests on such plots of these varieties. The experiments were conducted with the object of gaining information as to the relative productiveness of the different sorts and their earliness in ripening. The Bulletin is No. 39 and may be had on application to the director of the Experimental Farms, Ottawa.

The salient points of the Bulletin are summarized by Dr. Saunders as follows:

The result of the testing of varieties for another year strengthens the conclusions reached in the past as to the importance of choosing the best and most productive sorts for seed if we are to realize the largest crops. Further experience also confirms the view that there are marked and fairly constant differences in the productiveness of varieties grown side by side, under similar conditions. A few points in support of this will be cited.

Of the 41 different sorts of oats which have now been under trial for six or seven years at all the

Dominion experimental farms, only 18 of these have at any time appeared in the list of the best twelve. Hence many of the same varieties appear every year in the productive list. The average crop given by these 12 best sorts for the past six or seven years has been 72 bushels 24 lbs. per acre, while the remaining 29 varieties have averaged during the same time 66 bushels 2 lbs., a difference in favor of the most productive sorts of 6 bushels 22 lbs. per acre. This receives additional significance when we recall the fact that every bushel of oats added to the average crop of the Dominion puts about one million dollars into the pockets of Canadian farmers.

In barley this constancy in productiveness is even more marked. Of the 30 different sorts which have been under trial for the past six and seven years, 10 of these have appeared in the best 12 every year for the whole period and 14 only have found their way during this time into the list of the best twelve. While the 12 most productive sorts have given an average crop for the whole period of 45 bushels 30 lbs. per acre, the remaining 22 sorts have averaged for the same period 41 bushels 45 lbs., or nearly four bushels less per acre.

In the returns for the trial plots of spring wheat similar evidence is found. Of the 31 varieties of this cereal which have been tested for

six or seven consecutive years, 8 of these have appeared among the most productive every year for the whole period. Comparing the best twelve varieties for 1899 with the best twelve for 1900, we find that eleven of them are the same, and comparing the best twelve for 1900 with that for 1901, we find the list exactly the same.

Similar evidence could be furnished from the trial plots of all the other crops, but enough has been brought forward to show that the opinions advanced are well founded. Should it become a general practice among farmers to choose for sowing those varieties which have been shown to be most productive and give them reasonably fair cultivation, there is no doubt that this would result in a material increase in the average crops of the country and thus make farming increasingly profitable.

Trade With South Africa.

The shipments of agricultural products to South Africa by the Dominion Department of Agriculture now amount to about six or seven ship loads a month. In view of the demand that is likely to arise for agricultural and other products Hon. Mr. Fisher, Minister of Agriculture, sought permission from the Imperial War Office to carry such merchandise as Canadian manufacturers and merchants might want to send to South Africa on steamboats chartered for cargo for the War Office. The War Office has assented to this, and in future such vessels sailing from St. John will take merchandise designed for South Africa. It should be delivered at St. John the last week of every month beginning with February.

Canadian Fairs Association.

The annual meeting of the Canadian Fairs Association will be held in the Court House, Toronto, on February 19th and 20th, 1902. Among those who will deliver addresses are: Hon. John Dryden, James Mitchell, Goderich; F. Metcalf, Blyth; D. G. Hamner, Burford; W. B. Sanders, Stayner; Dr. James Mills, O. A. C.; G. B. Hood, Guelph; A. J. Reynolds, Scarborough; C. A. Zavitz, O. A. C.; F. W. Hodson, Ottawa; J. E. Brethour, Burford; Geo. Gray, Newcastle; C. C. James, Deputy Minister of Agriculture; H. B. Cowan, Ottawa; and G. C. Creelman.

Ontario Still Ahead.

Mr. Arch. Smith, Superintendent of the Strathroy Dairy School attended the Wisconsin Dairymen's meeting during the first week of January, where he gave an address. He thinks the Wisconsin dairymen have a great deal to learn before they reach Ontario in the quality of her cheese.

Western Dairymen Meet

A Large Gathering—Important New Work Mapped Out

Woodstock was the "Mecca" to which the thoughts of the dairymen of the western part of this province were directed last week. The occasion was the 35th annual Convention of the Dairymen's Association, of Western Ontario. This organization well maintained its reputation for gathering together large audiences of practical and well informed men. In Oxford County, more cheese is made than in any other county in the Dominion, and Woodstock is its centre. The attendance of makers was good and not a few of the leading dairymen and farmers of the district were present.

PRESIDENT'S ADDRESS.

The opening address of the President, Mr. R. M. Ballantyne, dealt in a comprehensive way with the trade of the past season. He estimated that there had been made last season in Canada a total of 2,650,000 boxes of cheese, as compared with 2,800,000 boxes in 1900 a decrease of 150,000 boxes. As a large quantity of milk was diverted from cheese-making to butter-making, our exports of butter had largely increased and this more than made up for the falling off in cheese. The exports of butter from Montreal during the season of navigation, showed an increase of 154,330 pkgs., and as the milk that will make 1 lb. of butter will make 2½ lbs. of cheese it is evident that the make of Canadian dairy products last year was greater than ever. From his experience in handling large quantities of dairy products in Montreal during the past season he was safe in stating that on the whole the quality of the cheese made west of Toronto, was better than that of any other district in America. There were, however, exceptions but he thought the statement on the whole true.

The points of excellence in Western Ontario cheese are: Their stylish appearance, greater regularity in the make, well finished ends, and they are better boxed than the cheese of Eastern Canada; but you have some marked defects that must not be overlooked, and one, if not the main one, is bad flavored cheese.

From observation during the past year, I am satisfied that the practice many salesmen adopt of waiting for a favorable market, has a great deal to do with it. The practice of waiting for a more favorable market, is not adopted to any extent in the East, and it should not be adopted in the West. If it is adopted the cheese that are being held are subjected to a summer temperature, which is usually a high temperature, for sufficient time to evaporate a large amount of moisture and make the cheese dry. If the cheese are several weeks old extreme heat such as we have in hot spells will melt a por-

tion of the fat in them, increasing the condition of dryness, injuring their appearance and causing them to develop bad flavors. I am quite satisfied that the time is coming when cheese will be handled much as butter is now handled, except of course, that we shall not have freezing temperatures for cheese, but we will have a cooled temperature all the time from the hoop to the retailer, and we will then have cheese from which the moisture has not been dried out. We will have cheese that have not developed a strong rancid flavor, and on account of the improved conditions of handling, it will not be necessary to make the stiff, dry cheese we are now making. The increased weight of the cheese alone would more than pay any expense there might be, to say nothing of the better price, superior quality always commands.

He expressed satisfaction with what had been done by the Government towards establishing refrigeration transportation service for dairy products, but desired to see this service extended both on sea and land, sufficiently to accommodate all the cheese and butter sent out of Montreal. Cooler methods should be adopted in handling cheese throughout and everything possible should be done to prevent them from becoming heated in the curing rooms and while in process of transit to the seaboard. It is now within the power of the factories to have cold storage warehouse for cheese and he would like to see these utilized more by the factories for curing purposes.

DIRECTOR'S REPORT.

The directors' report recommended the raising of the annual fee to \$2.00, as formerly, and that bound copies of the proceedings of the convention be prepared at once and sent to each member. Reference was made to the experiments now being conducted at the Ontario Agricultural College, which are likely to prove of so much value to dairymen. The high quality of Canadian creamery butter should be maintained.

The total receipts of the association for the year were, \$6,169.82, and disbursements \$5,198.51, leaving a balance on hand of \$971.31.

INSTRUCTOR'S REPORTS.

The three instructors of the association, Messrs. A. Smith, James Morrison and James Bristow, presented comprehensive reports. A noticeable and pleasing feature was that less time had been spent in testing milk and prosecuting dishonest patrons. This is along the right line, but the system will never be perfect till the whole time of the instructors is given up to instructing the makers and patrons. Sixty meetings of patrons were

held of which Mr. Smith addressed fifty, Mr. Morrison seven and Mr. Bristow three.

Instructor Smith who visited the creameries, pointed out that while our creamery butter had acquired a good reputation in England, there was still room for improvement. One of the chief defects in the butter is excessive moisture, and poor keeping quality which is largely due to the care the cream receives at the farmer's home, the high churning temperature and lack of skill on the part of the maker. To improve cheese better and larger factories should be erected and a sufficient number of instructors employed to visit every factory in the province. Mr. Morrison advised less washing of curds and only where it was necessary in quick working or sour curds. He recommended makers to be particularly careful regarding the quality of the milk received next season and accept none that would not make first-class cheese. Mr. Bristow pointed out that while there were first-class buildings in his district, quite a number were far from that. The chief defects were poor buildings and bad floors, which allowed slops, etc., to leak through causing bad odors about the building. Means should be provided for controlling the temperature in curing. He strongly advised makers to thoroughly clean their factories before beginning in the spring.

CHEESE MAKING.

Mr. G. G. Publow, of the Kingston Dairy School, gave one of his practical and common sense addresses to makers. He touched on somewhat different lines from what he took up at Whitby. He took up the factors which produce quick and slow ripening curds and showed why it was important that makers should know these things. To go on working according to set rules without an intelligent knowledge of why things were done, did not admit of progress being made. The successful maker must know why as well as how to do things. The factors which cause quick ripening are: milk with high acidity, a large amount of rennet, a large amount of moisture, a small amount of salt and a high temperature in curing. Those conducive to slow ripening are: milk with low acidity, a small amount of rennet, a small amount of moisture, higher temperature in cooking, a large amount of salt and low curing temperature. To work intelligently and successfully the maker should know the state of the cheese market at the different seasons and the kind of goods required. Good cheese cannot be made without good milk, and when it is made should be cured at a proper temperature. A uniformly low temperature with plenty of moisture were conducive to good curing of cheese.

In the discussion which followed, Mr. Publow stated that the cause of dry, hard cheese, was the lack of moisture in the curd. From 92 degrees to 96 degrees would be suit-

able temperatures for cooking to in the spring. The cause of tough leathery cheese was insufficient acidity for the moisture taken out.

COLD STORAGE FOR HOT WEATHER FOR CHEESE.

Prof. Dean, of the Ontario Agricultural College, addressed the convention on this subject in which he outlined the experiments conducted at the college already published in these columns. He was prepared to recommend that if cheese of July and August makes were put into cold storage as soon as made, there would be fewer complaints as to flavor. There were cold storage plants already in the country, that might be utilized for this purpose. But where factories had not cold storage they should cooperate and erect central cold-storage curing stations for a group of factories, where the cheese could be taken as soon as made. The Government would pay one-fifth of the cost of erecting such stations up to a total cost of \$2,500, and this offer should be taken advantage of by the factories. He pointed out the commanding position which the Ontario Agricultural College occupies to-day. It was the centre of thought and education in agriculture, and would eventually become a great agricultural university.

The president in commenting on Prof. Dean's address, stated that he had examined the cold storage cheese and found the texture flavor and color that of a perfect fall cheese. Prof. Dean stated that a cheese cured in cold storage would be in the same condition at the end of four months as the cheese in the ordinary curing room is at the end of four or six weeks. This elicited a question as to whether patrons would have to wait four months for their money, to which Prof. Dean replied that:

"It is a question of waiting a short time for our money or spoiling our reputation abroad for cheese. I think you would prefer waiting. Besides, that financial part of it could easily be arranged with the banks who would advance money on secured cheese."

BITTER FLAVOR IN CHEESE.

Prof. F. C. Harrison, of the Agricultural College, discussed the cause of bitter flavor in cheese. The cause of this flavor was not of bacteriological but of yeast origin. In one case where bitter milk had been examined, the organism causing the bitter flavor had been found to be in the mixed milk of all the patrons. The cause was ascribed to the carrying of sour whey home in the cans. In answer to question he explained the difference between flavors caused from the milk coming in contact with odors and those caused by some organism.

Dr. Vanslyke, of Geneva, N. Y., followed with his address on the curing of cheese and as it was precisely the same as given at Whitby, it will not be necessary to refer to it at length here.

TUESDAY EVENING.

The Tuesday evening session was given up to short speeches and music. Great disappointment was experienced that the Hon. Mr. Fisher who was expected for this session was unable to be present. Short addresses were given by D. Derbyshire, president of the Eastern Dairymen's Association, A. F. MacLaren, M. P., Mayor Mearns of Woodstock, and Andrew Pattullo, M.P.P. The last named speaker referred to the organization of the first cheese market in Woodstock, 25 years ago and gave some interesting reminiscences of the early days of dairying in Oxford County, which he stated had the honor of being the birth place of the cooperative cheese factory. The association was a great educational institution and like the Agricultural College and the Farmers' Institutes, was rendering admirable service to the cause of agriculture.

SUMMER CREAMERIES.

This subject was taken up by Aaron Wenger, Ayton, and Arch. Smith, superintendent of the Strathroy Dairy School. Mr. Wenger started the first cooperative creamery in Ontario. He began by operating a whole milk creamery, where the milk was set in large vats and the cream skimmed off and made into butter. He afterwards changed to the cream gathering plan, which system he is using to-day and which is the system largely in use in making summer butter in factories.

Mr. Smith pointed out that fully two-thirds of the summer creameries in Ontario were conducted on the cream gathering plan, and these made about four-fifths of the summer creamery butter made in this province. The creamery has been the means of finding a market for Canadian butter and of greatly improving the quality. For the British market a uniformly good quality with less salt was required. The only way of securing this was in the creamery plan. In butter-making as in cheesemaking it was hard to get farmers to take proper care of the milk. The creameries are now selling their product more readily and in a fresh condition. Cement floors should be put in where possible. He recommended painting the interior and exterior of all buildings regularly. A mixture of cement with skim or whole milk made a very good cheap paint. If creameries were organized into groups with a man over each group more uniformity would result. There was a more universal use of hand separators. These, if handled properly, save labor, prevent loss of cream, insure better skim milk and better cream at the factory. The farmer should cool his cream as soon as separated and cool each separate lot of cream before they are put together. On the maker's part he should have an intimate knowledge of the ripening of milk. The alkaline tests should be used. The chief defect in cream gathered butter was too much moisture and poor keeping qualities.

Mould on butter can be prevented by salt brine or formalin. Must have drier butter with better keeping qualities. Though good butter could be made in the home dairy the uniformity and better keeping qualities required for the export trade can only be had in the cooperative creamery. Mr. Wenger objected strongly to the practice followed by some private dairymen of branding their butter as creamery and selling it as such. This was dishonest and injurious to the creamery butter trade as this home dairy butter sold at from three to four cents less per lb.

PASTEURIZING.

Some very valuable data in regard to pasteurizing for butter-making were given by Prof. F. C. Harrison and J. A. Ruddick, Chief Dairy Expert, Ottawa. The former dealt with the subject largely from the scientific standpoint under the heading "Continuous Pasteurizing for Butter Making." The Danes pasteurize 90 per cent. of their milk or cream for butter and it would be more advantageous if the practice were more largely adopted here. There was greater liability of bad infection in winter than in summer. Prof. Harrison then outlined the experiments conducted at the College in pasteurizing at 140, 160, 185 and 195 degrees. The results showed that at 140 degrees 40-776 bacilli per cubic centimetre of milk were left, at 160 degrees 1,300, at 185 degrees 80, and at 195 only 40. A temperature of 185 degrees will kill the tuberculosis germ in milk. At 195 degrees, however, there was a danger of the milk foaming while it added greatly to the cost of pasteurizing. A temperature of from 180 to 185 degrees gives the best results. It was important to cool the milk immediately to below 60 degrees after pasteurizing as the germ life would not develop so quickly. Germ life develops rapidly between temperatures of 60 to 100 degrees.

Mr. Ruddick's discussion was more from the practical standpoint. We have secured a copy of his paper, which we will publish later. He strongly recommended a continuous pasteurizer such as the Reid, Lister or Danish machine in preference to the bulk pasteurizer. Pasteurize the milk when the alkaline test show 4-10 to 6-10 of 1 per cent. of acidity.

LOSSES FROM WASHING CURDS.

Prof. R. Harcourt, chemist at the Ontario Agricultural College, gave the results of some experiments conducted to find out the losses of casein and fat in the washing of curds. Some makers wash every curd after milling. Washing will remove some of the bad flavor and decrease the amount of acid. In over-ripe milk the flavor has been improved and good cheese made by washing. The washing, however, does not reach the inside of the cubes of curd and therefore only affects a portion of the whole. Washed curd may develop open texture in cheese. At the college a

batch of curd was divided, one part washed after milling with water at 98 degrees and the washing and drippings collected and the other part unwashed. The results showed a decided loss of casein and fat in the washed portion as compared with the unwashed part. There was less weight of cheese from washing. Prof. Dean had found a loss of 1.1 lbs. of cheese in every 1,000 lbs. of milk from washing curds.

MECHANICAL REFRIGERATION.

Mr. Wright of the British Refrigerating Co. gave some valuable information on this subject and the method of fitting up the holds of steamships for carrying dairy products. There are three methods of refrigeration: the brine circulation system, the direct expansion system and the cold air system. The last named was the system most largely used in this country and the one adopted in fitting up the holds of vessels. All cheese sent over in refrigerated chambers during the past season arrived in good condition.

The president pointed out that the demand for cold storage accommodation on vessels was very much in excess of the supply. The Government should induce ship owners to take up this work. Refrigerator cars for cheese were also needed.

Mr. Ruddick pointed out that the Hon. Mr. Fisher hoped to have 25 vessels fitted with cool chambers for carrying cheese next season.

FACTORY BUILDINGS.

Mr. Ruddick addressed the convention on this subject on largely the same lines as at Whitby the week previous. He strongly advised the use of cement floors for which purpose Portland cement was best suited. Basement curing rooms are cooler than those above ground. If windows and doors are not tight there will be warm air coming in which will bring in moisture.

BUYING AND SELLING CHEESE.

Mr. A. Pattullo, M. P. P., gave a short address on the subject dealing largely with the conditions affecting the sale of cheese at the Woodstock cheese market. He prefaced his remarks by the statement that cheese markets were places where cheese was not sold. This is true of many of the markets today. Buyers and sellers get together but do not do any business in the regular way. How to remedy this was the problem. In his opinion the salesmen had the matter entirely in their own hands. If they would resolve to sell only on the board and stick to it the question would be solved. By selling off the board the salesmen break down the only protection they have. Salesmen are much more likely to be criticized by the patrons if they sell on the "curb" than if they sell on the board. There was no industry in Canada from which farmers suffered less commercial losses than cheese. If an official referee were appointed to be called in in case of

dispute as to the quality it would be an advantage to all concerned. Buyers do not discriminate enough in price as between good and bad factories. Central curing stations may solve the market problem. The present system was becoming more irksome and onerous on the maker than it ought to be.

An animated discussion took place. Mr. Derbyshire stated that all cheese should be sold on its merits, which would do more than anything else to bring about improvement in quality.

Harold Eagle pointed out that at the Brantford market all the members sold regularly on the market and the results had been very satisfactory.

Mr. Lockhart, a patron, stated that buyers should buy the cheese, make a deposit as a guarantee that the goods will be taken. Other sellers, including S. P. Brown, contended that this should be done. Under the present plan the buyer is not bound to take the cheese when bought.

Messrs. R. Johnston and A. F. MacLaren contended that all cheese should be inspected before they are bought. Buyers would then buy only when they had orders. Mr. MacLaren, as a buyer, stated that he was quite willing to inspect cheese before they were bought and salesmen should compel inspection before buying. Mr. I. W. Steinhoff did not think it would work to insist upon inspection before buying.

TWO IMPORTANT ADDRESSES.

On Wednesday evening two important addresses were delivered by A. F. MacLaren, M. P., and the Hon. John Dryden. Mr. MacLaren after commenting upon the cheese exhibit, particulars of which will be found below, and also the dairy display at the Toronto Industrial Exhibition, gave some most important facts in regard to the transportation problem. We have secured a copy of this part of his address which we will publish in full next week. The figures given by him particularly as regards the carrying of cheese are most important and show that this and other trades of the country are being discriminated against with a vengeance in the matter of railway and ocean freight rates as compared with similar industries in the United States.

Mr. Dryden's address dealt largely with the work of the Association and ways and means of improving the quality of our cheese and getting it to the consumer in good condition. He referred to the warning given him by Mr. Fisher at Whitby, that if something were not done Canadian cheese is likely to lose the position it holds in the English market to-day. Mr. Dryden was confident that there was some way of holding this position and greatly improving upon it. It can be done if every man connected with the business will do his duty. There were seven links in the chain of progress as applied to the cheese industry. The first and most important just now was the owner

of the cow or the man who supplied the milk. Good milk is absolutely necessary in order to make fine cheese. The patron very often does not understand what his duty or responsibility is and this Association should aim to inform him. He cannot be got at through the convention. It is necessary to reach him by some other way. He must be visited at home, and if he won't learn, the factories should not accept his milk. He was willing to assist the Association as much as was in his power to reach the patron, either through home instruction or some other means. If the Association could not do this work, it might be necessary to appoint government instructors to do this work. It must be done somehow and the sooner the better.

The second link in the chain was the milk drawer, who could be easily controlled. Then followed the maker, who ought to be the strongest. He was under the opinion that the maker had reached a stage where he might be left to the dairy schools, where proper instruction could be had. The fourth link was curing cheese. Whatever is needed to properly cure the cheese should be secured at once. If cold storage, the Ontario Government would supply one-fifth of the cost up to \$2,500 or \$500. The next link was the carrying of cheese from the factory to the station. Next followed railway transportation. The Dominion Government should help here. To get what was required the dairymen must go to the railways as an organized body. Freight should be so reduced and cars so fitted as to carry cheese at a reasonable rate and in good condition. The seventh and last link was ocean transportation. Canadian producers have never been fairly treated by the steamship companies. Public ownership might help matters.

Every link in this chain must be made strong. The farmer should not be too conservative in his methods as he must make what the market wants.

Short addresses were made by I. W. Steinhoff, E. Bourbeau, chief dairy instructor, Quebec, and G. C. Crealman, Supt. of Farmers' Institutes.

THE CLOSING SESSIONS.

On Thursday the sessions were given up largely to discussions and the arrangement of future work. A number of one-day meetings will be held in March, with the object of reaching the patrons of the factories. The places decided upon are Aylmer, Arkona, Atwood, Ingersoll, Dunnville, Stawer, Wallaceburg, Waterford, Harriston, Strathroy, Ripley, and Pinkerton. Meetings at the following places were recommended, providing that responsible committees make application in due time and become responsible for all local arrangements: Brussels, Drayton, Victoria, St. Mary's, Mitchell, Pinkerton, Owen Sound and Flesherton.

BY PRODUCTS OF THE DAIRY.

F. W. Hodson, Dominion Live Stock Commissioner, in addressing the convention, stated that he did not think that the dairy industry could be made profitable to the farmer unless the by-products were taken advantage of. He dwelt particularly upon the raising of hogs, and said that the cheese factory or creamery owner, as he was the one man in a position to conveniently reach the farmer, should place himself in a position to be able to inform his patrons of the best means for producing the best bacon. In that way he would benefit himself and the farmers at the same time. Mr. Hodson then exhibited a range of illustrations showing the sort of hog that should be aimed at, and the sort that should be avoided. Speaking of the refrigerator car service, he incidentally said that many of the complaints heard as to unsatisfactory service are due to station agents and others along the railways stealing ice from the cars, the doors of the ice bins not being locked. He himself had seen it done. He spoke also of the Industrial Exhibitions, and said that more competent judges, especially in the live stock departments, should be appointed, and prizes given only to the producers, and not to anyone who might buy, borrow or steal his exhibit.

DAIRYING IN QUEBEC.

Mr. Bourbeau gave an interesting address on the syndicate system and factory inspection in Quebec. The development of this system had been most remarkable, and today the majority of the factories in Quebec are organized into groups, each group has an instructor, and over these instructors there are chief instructors, so that there is a complete chain making for uniformity in the quality of the cheese and butter products. Quebec has in this the most elaborate and complete system of instruction in dairy matters of any place in the world. The quality of her dairy products are gradually improving, and it will not be long before they will equal those of the other provinces of the Dominion.

In the arrangement of meetings Mr. Creelman explained that he was willing to co-operate with the Association as far as possible in assisting instructors and makers to reach their patrons.

RESOLUTIONS.

The following resolutions were passed: "That the Association express its opinion of the importance of improvements being made to the Canadian canals and waterways, and to the St. Lawrence River, in order that the Canadian producers may be placed in the very best position possible for competition with the producers of other countries for the British and foreign trade, and that this resolution be transmitted to the Minister of Railways and Canals; that the Minister of Agriculture at Ottawa

be asked to take such steps as will insure a sufficient supply of refrigerator cars for shipment of cheese during the coming season, and also provide icing stations at shipping centres, and that the City of Toronto be informed of the Association's appreciation of its action in passing a by-law providing for improvements to the Industrial Exhibition buildings."

THE PAN AMERICAN.

Mr. J. N. Paget read the report of the committee that had charge of the exhibit of dairy products at the Pan-American. Of the Canadian cheese exhibitors not one failed to secure a diploma, and only two in the butter class. The gold medal for the best exhibit of cheese came to Ontario.

OFFICERS FOR 1902.

Hon. President, Hon. Thomas Ballantyne, Stratford; Hon. Vice-President, John Prain, Harriston; President, Aaron Wenger, Aytom; First Vice-President, James Connolly, Porter Hill; Second Vice-President, J. N. Paget, Canboro; Third Vice-President, Robert John-

ston, Bright; Directors, I. W. Steinhoff, Stratford; Harold Eagle, Attercliffe Station; John H. Scott, Culoden; Thos. Ballantyne, jun., Stratford; T. B. Millar, London; John Brodie, Mapleton, and A. F. MacLaren, M. P., Stratford; representatives to the Toronto Industrial Exhibition, A. F. MacLaren, M. P., J. N. Paget; representatives to the Western Fair at London, T. B. Millar and John R. Isaac.

DAIRY PRODUCT EXHIBITS.

BUTTER.

Creamery Butter in Prints—1, W. K. Macleod, Vanneck, 97.5 points; 2, James Ireland, Beachville, 97 points; 3, J. R. A. Laing, Avonbrook, 96.5 points.

Creamery Butter in Bulk—1, E. M. Johnston, Innerkip, 98 points; 2, G. M. McKenzie, Ingersoll, 97.5 points; 3, Wm. Waddell, Kerwood, 97 points; 4, James Ireland, Beachville, 96.5 points.

CHEESE.

White Cheese, Made Between 15th and 30th September—1, W. G. Medd, Medina, 97 points; 2, W. J. Goodwin, Brussels, 96½ points; 3,

Continued on page 52.

Correspondence

The Export Bacon Trade.

Editor The Farming World:

A great many undesirable hogs are being marketed by the farmers throughout the Province of Ontario. These are being converted into export bacon, and forwarded to Great Britain, and because of their quality, are sold there at a loss. This loss must ultimately be born by the farmers, although the packers at the present moment, are being severely punished.

As an example, we quote the condition of the trade at the Geo. Matthews Company's factory, Ottawa, for the months of November and December, 1901, and the first week of January, 1902. In November, 1901, a total of 8,970 pigs were received at this factory. Of these 5,793 were selects, 1,602 were lights, 1,244 were light fats, 86 were heavy fats, 97 were sows, 5 were stags, 13 were cripples, and 220 were stores, these latter being lean pigs, unfit for any purpose. Of 515 hogs received at the factory in December, 1901, the selects numbered 2,375, the lights 1,172, the light fats 720, the heavy fats 51 and the sows 74, the stags 7, the cripples 35 and the stores 217. From the 2nd to the 4th of January, 1902, 1,069 hogs were received. Of these 276 were selects, 508 were lights, 156 light fats, 10 heavy fats, 14 sows, 6 stags, 7 cripples and 92 stores. This makes a total for the nine weeks of 8,854 selects, 3,282 light, 2,120 light fats, 147 heavy fats, 135 sows, 18 stags, 55 cripples, and 529 stores. Total 15,190.

Pigs termed selects are those that can be made into the best

class of Wiltshire bacon, and are the sort that have made Canadian bacon famous on the English market. In order to keep up the price of hogs, the packers must receive the sort of hogs that will make the finest Wiltshire sides. To make this the packers must have smooth, deep, well-fed pigs, with a large amount of lean meat in the carcasses, in proportion to the amount of fat. They must be well finished and weigh on reaching the packing house from one hundred and eighty (180) to two hundred (200) pounds. On the pigs termed lights the packers lose at least one dollar per head. The light fats can be cut up and put into the retail trade, but too large a number of these light pigs would at any time, glut the local market. The heavy fats can be worked up, when not too numerous, but will sell for at least one-half dollar per hundred, live weight, less than selects. Sows and stags are very poor property, and can only be used in supplying a very inferior trade. In order to be of any value to the packers, sows and stags should be made as fat as possible. Cripples are of little or no value to the packers, and are always fed at a loss to the farmers. Stores should never reach the pork packers, yet thousands of them are sent every week to the market by the farmers.

If the farmers continue to market such a large number of undesirable pigs, it will seriously injure the Canadian bacon trade in Great Britain, and will bring about greatly reduced prices for hogs throughout Canada.

F. W. Hodson.
Ottawa, Jan. 11, 1902.

The Sugar Beet World

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

Edited by JAMES FOWLER

Sugar Beetlets

The sugar industry gives promise of soon leading all others in Michigan.

The busy season of thinning and hoeing lasts about forty days, beginning in early June, and the harvest, beginning in October, lasts into November. The hauling to factory runs into January.

As a rule there is very little difficulty in getting labor during the busy season. As the demand is certain to be permanent and as factory hands will be needed labor will flock in.

The size of the crop is contingent upon the season as well as upon the soil and skill of the farmer.

The cultivation of beets will furnish employment to a large number of boys.

The thinning and hoeing comes for the most part after the close of the schools, and the topping is over soon after the opening of the full term.

An active boy can earn one dollar per day in thinning beets, or even more if he wishes to work by the row and becomes an expert at it.

The cost of production is the part that interests the farmer most. If he figures the cost of his oat crop on the same basis as his beet crop, he will be satisfied to raise beets and nothing else.

The by-products from factories are being used extensively, the pulp for feeding purposes and the lime for fertilizers.

The farmer should utilize his beet tops, though if he receives the beet pulp free of charge he can afford to allow the leaves and tops to remain on the ground.

Berlin

The Ontario Sugar Co.'s prospectus is now being distributed here and there are many applications for stock coming in. The people of this vicinity had already subscribed for over \$75,000 of the stock before the prospectus was out and they are taking up the matter again, now that they have something tangible before them. It is expected that all the stock allotted to this section will be over subscribed. Acreage contracts are still being solicited and the full amount required for a long season's campaign has been secured. After this week Prof. A. E. Shuttleworth, the company's agriculturist, will devote the whole of his time to instructing the farmer how to prepare his land in the spring and the best methods of cultivation in order to secure the best results.

Galt

The amount of stock required to be subscribed for the erection of the sugar factory has been secured. The other conditions in regard to the site and acreage contracts have been also arranged and it is now up to the company to go on with the work. It is hoped that within the next few days work will be begun.

For Stock Feeding.

Capitalists are arranging to erect extensive sheds at Lansing, Michigan, for the purpose of feeding on a large scale cattle and sheep. Their feed will consist of "beet pulp" and hay, the diet being very successful. Several hundred will be purchased and shipped to that point and fattened for the market. It is not the intention to conduct a slaughter house in connection with the feeding sheds at the present time.

Lansing, Mich.

The sugar factory at this point has closed after a successful run of about 90 days. For over 40 days, or about half the season, the factory was operated upon beets from Canada, which were most satisfactory. If Ontario can supply such beets as were shipped to this factory there is no reason why a sugar factory could not be highly successful there. Most of the farmers shipping this season will grow beets for the Wallaceburg factory, which is owned and controlled by the same parties as the Lansing factory.

Whitby.

We shall have a factory for the season of 1903. Already negotiations are under way for a plant, and had it been two months earlier there is no doubt plans could have been arranged for the season of 1902, but the time was too short, and it is thought best to take plenty of time rather than rush the work and get a late start. Work of securing acreage will proceed during the spring and summer.

Sugar Duties.

The British Cabinet meeting on Monday bids fair to be the most fateful to the history of the West Indies, and may vitally affect the United States. Lord Salisbury and his colleagues will then decide whether Great Britain will put a countervailing duty on sugar. Colonial Secretary Chamberlain will submit a statement, made up on the unimpeachable evidence of the West In-

dian authorities, that if this step is not taken the sugar industry in the West Indian Islands will be dead within a year, and the West Indies will be hopelessly bankrupt. The British sugar delegates to the Brussels Conference will also report that there is no likelihood of the continental nations abolishing bounties unless Great Britain declares her intention of imposing countervailing duties, should the bounties be continued.

The preliminary sessions of the Brussels sugar conference have convinced the British delegates that the continental powers desire, at the most, only to amend the bounty system, and that this is chiefly due to the hope of placating their own consumers.

The Feeding Value of Beet Pulp.

Some of the sheep feeders of Larimer County have asked Field and Farm for an opinion regarding the value of sugar beet pulp as a part of the ration for lambs. It is to be regretted at this time that so few practical experiments have been made along this line, but from reliable sources we are informed that four tons of beet pulp are equal in value to one ton of good alfalfa hay. A ton of beet pulp occupies approximately thirty cubic feet of space. The value of beet pulp is somewhat improved by souring and it is better feed for stock than the beets themselves inasmuch as any foreign salts which may be in the beets are washed out in the making of sugar, hence increasing the feeding value of the pulp. Six to ten pounds is the proper ration for young sheep on full feed. Alfalfa hay and beet pulp may be used largely for fattening, but it is advisable to finish off for the last two or three weeks on dry feed, such as corn or cornmeal.

Beet pulp is no doubt one of the best and cheapest foods for sheep and our Larimer County friends should allow none of the refuse of the Loveland factory to go to waste. Pulp contains about 90 per cent of water and 10 per cent of solids. The solid matter is composed mostly of the cell walls of the beets and hence contains considerable crude fiber and a trace of ash. It is best, however, to feed it with a coarser ration such as bran, alfalfa, sorghum, etc. While it is true that the pulp soon ferments after being thrown on the dump or siloed, still there is nothing in fermented pulp that is in any way injurious to stock. At Carlsbad, New Mexico, during one campaign over 5,000 head of sheep were fed on pulp and alfalfa in pens adjoining the factory

grounds. The feeding was in every way a success and the gentlemen who owned the stock were anxious to contract for the entire output of pulp the following season.

In feeding cattle on this material John W. Rheimers, of Grand Island Neb., has had very good success and says: "When I begin feeding I use for the first few days from twenty to twenty-five pounds of pulp a head daily with hay and a little grain or meal mixed with it. Then I increase gradually to forty or fifty pounds. I have also tried eighty to ninety pounds but am positive this is a disadvantage in fattening steers as they eat less grain and meal. Too much pulp is inclined to be loosening. Cattle can be put on a full feed of grain much quicker with pulp as it helps digest food and lessens the danger of over-feeding or getting the cattle stalled and foundered. After feeding from ninety to one hundred days I would advise going back gradually to twenty or twenty-five pounds of pulp and increasing the grain food, of which each feeder must judge for himself as to the amount his stock can stand.

I find it better to feed ground feed with pulp rather than whole grain, but the pulp is beneficial with any kind of food. I have found when feeding pulp with the same amount of roughness and grain that generally is required in the West to fatten cattle that I would put on an extra gain of from fifty to seventy-five pounds a head, or I can make the same amount of gain as I obtain in the ordinary way of feeding in three-fourths of the time and save considerable grain and roughness. I have fed fresh pulp direct from the factory and also so-called sour pulp after it has been in silo. The pulp will keep in silo for years but it will shrink some. The result is virtually the same in feeding either kind of pulp, and I consider them equally good, only that sometimes it may locate in Canada.

Alcohol from Beets.

The first of several plans for the utilization of the refuse from sugar houses was put in operation in Bay City on Saturday last, when the process of manufacturing alcohol from the refuse molasses from sugar houses was put in motion by the Michigan Chemical Company. This is the first plant of this kind in America and to Mr. Jos. Kohn, an expert along the lines of beet sugar manufacturing, is due much of the credit for the establishment of the plant here and its plans and operations. The first finished product will be turned out during the week.

There is little or no apparatus used in any of the different portions of the plant which will be in motion beyond the pumps which force the liquid from one vat to another. The molasses will run from the huge tanks to the fermenting vats but the process of manufacture is a secret and no visitors are allowed at the plant. This secrecy is observed because

much of the apparatus installed at the plant is new and improved and patents applied for by the engineer who invented them and built the local plant have not yet been granted. There are only four sim-

ilar plants in the world, two located in Austria, one in Belgium and one in France, which manufacture alcohol from beet sugar refuse and none of these have the improved machinery which is used here.

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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', 50c.

BENEFITS OF MEMBERSHIP.

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

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

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

The name and address of each member, and the stock he has for sale are published once a month. Over 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 profitable buyers resident in Canada, the United States and elsewhere.

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

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

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

List of Stock for Sale.

DOMINION CATTLE BREEDERS' ASSOCIATION.

Shorthorns.
Bonnycastle, F., Campbellford.—2 yearling bulls, 9 bull calves, cows, heifers, heifer calves.

Chapman, J. C., St. Thomas.—2 bulls, 10 and 15 months; 2 yearling heifers and heifer calves.

Douglas, J., Caledonia.—10 bulls, 8 to 14 months; young cows and heifers.

Gallagher, R., Perm.—2 cows, 2 heifer calves.

Hausner, I., Weisenberg.—2 bulls, 16 months; bull, 11 months; 2 bull calves, cow, heifer, 2 heifer calves.

Martyn, J. W., Canton.—3 bulls and 7 heifers, 1 to 2 years.

Milne, D., & Son, Ethel.—6 bulls, 8 to 20 months; cows and yearling heifers.

Morton, F. G., Allandale.—4 bulls, 1 year.

Robinson, E. L. & W. G., Wallace.—Bull, 9 months; young cows, heifers and calves.

Ross, A. F., Nairn.—2 bulls, 2 heifers, 2 years.

Segeworth, R. & E., Monck.—2 bull calves, 2 heifer calves.

Sherwood, T., Fergus.—4 bulls, 12 to 24 months; cow, 2 yearling heifers, bull calf.

Galloways.

McCrae, D., Guelph.—8 bulls, 14 bull calves, 30 cows and heifers.

Holsteins.

Smith, S. E., Dundas.—Bull, 11 months.

Avshires.

Yuill, J., & Sons, Carleton Place.—Bull, 14 months; 4 bull calves, 4 months; females, all ages.

Aberdeen Angus.

Sharp, J., Rockside.—2 bulls, 14 months; bull, 3 years; females.

DOMINION SHEEP BREEDERS' ASSOCIATION.

Leicesters.

Armstrong, G. B., Teeswater.—Ram lambs, ewes, ewe lambs.

Shropshires.

Yuill, J., & Sons, Carleton

Place.—Ram, 2 years; 4 ram lambs, ewes, all ages.

Cotswolds.

Bonnycastle, F., Campbellford.—Ewes, ewe lambs.

McCrae, D., Guelph.—20 rams, 12 shearing ewes.

Dorsets.

Hunter, J., Wyoming.—Ewes and rams.

DOMINION SWINE BREEDERS' ASSOCIATION.

Berkshires.

Bonnycastle, F., Campbellford.—Young pigs, 2 to 6 months, both sexes.

Bowman, T. E., Berlin.—Sows, 4 months.

Hausner, I., Weisenberg.—2 sows, young sows, 24 boars and sows, 3 and 4 months.

McCrae, D., Guelph.—2 brood sows.

Yuill, J., & Sons, Carleton Place.—Boar, 10 months; 3 boars, 10 weeks; sows, all ages.

Yorkshires.

Honey, R., Brickley.—15 boars, 1 to 3 months; 16 sows, 1 to 8 months; sow, 2 years.

Rogers, I., Weston.—40 pigs, 2 to 7 months, both sexes.

Russell, F., Cedarville.—40 boars and sows, 2 to 8 months.

Chester Whites.

Bowman, T. E., Berlin.—Boars and sows, 3 to 4 months.

Tamworths.

O'Dell, W. H., Belmont.—15 sows, 10 months; 10 pigs, 1 month, both sexes.

Live Stock Meetings.

The annual meeting of the following associations will be held at the Palmer House, Toronto, this month:

Dominion Cattle Breeders' Association, Jan. 23rd at 1.30 p. m.

Dominion Sheep Breeders' Association, Jan. 24th, at 9.30 a. m.

Dominion Swine Breeders' Association, Jan. 24th at 1.30 p. m.

Board of Provincial Winter Fair, appointed at above meetings, Jan. 24th at 7.30 p. m.

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 accepted 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.

A man with experience in general farm work. Must understand the care of horses. Must be reliable, able and willing to milk; sober, active and good tempered. Wages \$200 for a good man. No. 877. a.

Servant girl wanted to do general house work on a farm. Must give references as to character. Good wages to commence at once. No. 876. b.

Situations Wanted.

Wanted a position by a married man as foreman on a stock farm. Good references. No. 967. b.

Wanted—A position by a married man with three children, on a dairy farm; capable of taking full charge, experienced in the care of stock, farm machinery, etc. Can supply good references. No. 968. b.

Wanted—A position on a dairy farm as butter maker, capable of taking full charge or doing general farm work. No. 969. a.

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 this 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.

Farmers' Institute Notes.

By G. C. Creelman, Superintendent.

The Institutes are now in full swing and good reports are coming in from the different Institutes.

W. H. Metcalf, secretary South Brant Institute, writes to say:

"We had the largest meeting we ever had at the regular meeting in Burford. There were over 500 people present at the evening meeting. Miss Maddock addressed an overcrowded house of ladies in the afternoon, the house being so packed that many had to stand."

Of the meeting at Oshweken on the Indian Reserve, Mr. Metcalf says that the interest is increasing each year. A number of the Indians delivered addresses which were all practical and well delivered.

John McKee, secretary of South Oxford Farmers' Institute, writes:

"We were favored with good weather and had a grand meeting last week; over 300 people present at the afternoon meeting at Norwich and as many at night. At Mount Elgin there were 75 in the afternoon and 850 at night. Mr. Nash and Mr. Stevenson were much appreciated by the people."

In South Bruce we have some of the most energetic Institute officers in the Province. At the Walkerton meeting there were 175 in the afternoon and 850 at night. Mr. James A. Lamb, the secretary, writes:

"This was undoubtedly the best Institute meeting ever held here. We got 61 new members; had splendid discussions, the best of order and good attention at the evening meeting. Many people were turned away from the doors, and this notwithstanding the fact that two other meetings were being held in the town."

This argues well for the next annual meeting of the Ontario Fruit Growers' Association, which is to be held at Walkerton.

Mr. Alex. McNeill writes from the Peterboro District:

"Our meetings have been well attended so far. In East Peterboro, unfortunately, the secretary was ill at the time of our meetings but Mr. Houston, a very energetic young man, admirably filled his place. We have been fortunate in having at some of the meetings Mr. A. E. Silverwood of Lindsay, who presents the subject of poultry raising to the farmers. He is very enthusiastic, and being well educated and an old school teacher, expresses himself well. He is doing a great deal for the poultry business of this neighborhood."

Butter Making.

BY MISS ALICE HOLLINGWORTH
BEATRICE, MUSKOKA.

(Continued from last issue.)

Q.—Does the casein increase in milk in the same proportion as the fat?

A.—No. The casein in milk is fairly constant, while the fat varies according to the breed, the time of the year and the individuality of the cow.

Q.—Can you feed fat into the milk?

A.—The quantity of fat may be increased by feeding, but the fat constituent cannot be increased,

provided the cow is in normal condition, and giving a normal quantity of milk.

Q.—How long should cream stand at churning temperature before churning?

A.—From six to eight hours.

Q.—What is meant by pasteurizing?

A.—By the term "Pasteurize" we mean heating the milk or cream up to a temperature of 160 degrees F. in water at 180 degrees F. and keeping it at that temperature for 20 minutes, then cooling down rapidly to the temperature of the air.

Q.—What is the object and benefit of pasteurizing and why is it called pasteurizing?

A.—The object of pasteurizing is to destroy as far as possible any bacteria that may be in the milk. The system is called pasteurizing after Mr. Pasteur, who first invented it in connection with the beer industry.

Q.—Why is cream harder to churn in winter than in summer?

A.—1st, because the cows are in an advanced lactation period; 2nd possibly because of the change in food, also because the temperatures are not so easily regulated.

Q.—Will buttermilk do for a starter for home dairy work instead of cream?

A.—Yes, if it is from butter that has given a good flavor, and is of good keeping quality.

Q.—How many times ought butter to be worked?

A.—When it is intended for immediate use one working is sufficient, but for keeping two workings are preferable.

Q.—Does food affect the quality of milk?

A.—If a cow is giving its normal quantity of milk the fat constituents cannot be permanently increased by feeding.

Q.—Do you approve of coloring butter?

A.—Yes, if the market demands it. Care should be taken not to use too much. A nice June tint is about right for Canadian market.

Q.—How would you ripen cream on the farm?

A.—Each time the cream is taken out of the can for churning the cream can should be well washed and scalded, and put in the sun if possible. Before churning take out a cupful of cream (provided it is of a nice flavor, etc.) and use this as a starter. Each time the separating is done cool the cream down before mixing with the cold cream in the can. When the cream is put in with the old cream care should be taken that both are thoroughly mixed with the original starter in order to cure the cream uniformly.

Q.—When I gather my butter in granules, some is sure to run off in the buttermilk.

A.—Mrs. A. Kinney, Grandview: Use a strainer dipper and you will at once overcome this difficulty. Also the Lever butter worker is a

very labor-saving device for the home dairy. We also prefer the revolving churn to the old-time friend.

Q.—What can I do with cream that I have churned for a day and cannot get butter from?

A.—This difficulty has been overcome by heating the cream to a temperature of one hundred, and churned at that temperature. A professional butter maker at one of our meetings said, "Heat the cream up to one hundred and sixty degrees, then take it down to eighty degrees in about twenty minutes, and churn at that temperature."

Q.—What is the cause of this trouble?

A.—Not having proper feed, cold and badly ventilated stable is thought to be the cause in many cases.

Q.—Would you advise putting four gallons of milk into two creamers?

A.—No, not unless your creamers are small.

Q.—Do you use a starter to ripen cream?

A.—No, not latterly, as I found I understood my cream better without the use of a starter.

Q.—What can I do with hard churning cream? Sometimes I cannot get the butter at all; then again it breaks, but is in such small particles I cannot gather it together.

A.—Probably one cause may be churning at too low a temperature; also there may be cows in the herd which have been long in milking. The latter cause is oft-times remedied by adding nearly half as much water as you have cream, and at the same temperature. Then turn the churn a short time and let stand for say fifteen minutes, then draw off the water. This lady in trouble used no thermometer. We many of us know from past experience that mother's finger was not very accurate in determining temperature. Use a thermometer; we are much more sure of what we are doing then.

Q.—Why do you prefer churning from thirty to forty minutes rather than having the butter only ten or fifteen minutes in coming.

A.—There are three things to be considered—the richness of the cream, the temperature of the churning and the amount of butter-fat remaining in the buttermilk. The lower temperature that we can possibly churn at gives a better grained butter and a more exhaustive churning. The best results cannot be obtained if the butter comes in less than thirty minutes. We churned at a temperature of sixty-five in winter. This was creamer cream.

Q.—Is ensilage good food for dairy cows?

A.—We have had no experience with ensilage.

Q.—When offering a brick print of butter for sale should it weigh one pound?

A.—Yes, the same as a bag of potatoes must weigh ninety pounds.

Q.—Do you think the one-pound print the most desirable way of making up butter?

A.—I think it less work than weighing and forming into one-pound rolls; if there is any difference it is given to the prints for cutting for table use.

Q.—Have you any theory whereby turnips can be fed to the dairy cow, and not give the butter a turnip flavor.

A.—We have not; we decided some time ago that turnips had no place in the rations of a dairy cow.

Q.—What roots did you prefer?

A.—The sugar beets and mangels.

Q.—Is it better to use pails in the summer, if you have not ice to use with the creamer?

A.—Yes, as you cannot secure the best results from creamers without the use of ice in both summer and winter. I met one lady this winter who kept her creamers sitting on the back verandah on a bench with no water or ice near them, and expecting the cold wind around the creamers was sufficient change of temperature. When the milk was brought in from the stables in the winter it has oftentimes cooled by being mixed in cold tin pails. Heat it to a temperature of two degrees, also having the creamers warm, then plunge at once into the cold water, packing the ice closely around the creamer. Cover it closely and warm, leaving ventilation at the top.

Q.—Will it pay to buy a separator where only eight cows are kept?

A.—Yes, it has been proven so. (A voice in the audience): We have only eight cows. Last year we bought a separator and it paid for itself last summer.

Q.—Do you advise using ice on butter when taking to market in the summer?

A.—If you can possibly get along without ice we think it better to keep it off of the prints. The butter box, with separate apartments for ice, is the most convenient for summer use.

Q.—About how much butter color should I use for one gallon of cream?

A.—About ten drops.

Q.—Why do you prefer keeping cream in tin rather than crock?

A.—The crocks are porous, the tin can be kept perfectly pure and sweet.

Q.—How long do you allow the butter to stand after salting before printing?

A.—At least from twenty minutes to one hour.

Q.—Do you place the creamery butter higher than farmer's butter?

A.—Let us see. Apparently today creamery butter is taking first place. Farmer's butter made at home should stand favorably side by side with the best creamery butter that can be produced. Having control of every detail in the home dairy they can equal, nay, rival the creamery butter. The butter makers to-day in our creameries have much to overcome in order to bring forward this article

to take a high place. We hear of some creameries having closed. Why? Because they cannot secure pure-flavored milk.

Guelph Dairy School.

AN AUSPICIOUS OPENING.—VISITORS GIVE ADVICE.

Monday, Jan. 13th, will be remembered by members of the Dairy Class of 1902 as a red-letter day in their course. The forenoon was devoted to visiting the different departments at work. Dr. Mills then invited the visitors to luncheon at the College. At two o'clock the chair was taken by Mr. D. Derbyshire, Brockville, President of the Eastern Ontario Dairymen's Association. He congratulated the Dairy School upon the excellent attendance and upon the fact that there were so many nice, bright, smart-looking young ladies in the class. He urged upon them the importance of being above "the average man" or woman. "Average men" were stepping on each other's toes looking for something to do, whereas the world is looking for men above the average. He said that the instructors of the school were the best to be found anywhere and if the members of the class did not succeed it would not be the fault of the instructors.

Dr. Mills in a neat address of welcome to the students and visitors, said that the College was glad to have so large a representation of the cheese and butter makers, and dairymen and women present. His address may be summed up in two words: Be clean.

Mr. Woodward, the official Government referee stationed at Montreal to settle differences of opinion between buyer and seller as to the quality of cheese and butter, made a very favorable impression. He pointed out that in his experience the past season the chief defects in cheese as they came to Montreal were "off," "rancid" and "irrity" flavors, and cheese open and acid in body and texture. The latter he considered due to the injudicious use of "starters." The boxing of cheese should also receive more attention.

Prof. Dean closed with a few words, expressing pleasure that men like Messrs. Derbyshire and Woodward should honor the Dairy School with their presence. He further said that the object of "Opening Day" was to give students a stimulus to do better work than ever, and to encourage them to become men and women above the average—in fact leaders of thought in their respective localities. Several pieces of music by members of the class interspersed the addresses, and the gathering closed with "God Save the King."

Collateral Evidence—"Johnny," said the minister, "I hope your father lives in the fear of the Lord." "I guess he does, sir. He never goes out on Sunday without he takes his gun."

A Maritime Winter Fair Building

So highly pleased were the citizens of Amherst, N. S., with the success of the Maritime Winter Fair, held in that town last month, that immediate action was taken to have the show permanently located there. It was suggested that the county and town should combine to erect and equip a suitable building and to maintain the same for a term of ten years. Acting on this suggestion, a public meeting was called, at which the citizens unanimously authorized the town council to borrow the sum of \$10,000 to provide the necessary accommodation. It is confidently expected that the county of Cumberland will also vote several thousand dollars for the same purpose, and it is practically assured that Amherst is to be the home of a Winter Fair, which will prove as great an educational factor in the Maritime Provinces, as the Guelph Winter Fair is in Ontario.

Western Dairymen Meet.

(Continued from page 57.)

T. O'Flynn, Tavistock, 96 points; 4, G. M. McKenzie, Ingersoll, 95½ points.

White Cheese, Made Between 15th and 31st October—1, W. B. Thompson, Nile, 96½ points; 2, Frank Boyes, Kingsmill, 96 points; 3, J. H. Williams, Lyons, 95½ points; 4, Connolly Bros., Thamesford, 95 points.

Colored Cheese, Made Between 15th and 30th September—1, Frank Travis, Courtland, 97 points; 2, Connolly Bros., 96½ points; 3, T. O'Flynn, 96 points; 4, Alex. McKay, Brookside, 95½ points.

Colored Cheese, Made Between 15th and 31st October—1, George A. Boyes, Putnam, 96 points; 2, J. Connolly, Malcolm, 95½ points; 3, Frank Travis, 95 points; 4, J. J. Parsons, Jarvis, 94½ points.

The judge of cheese was Mr. A. F. MacLaren, M. P., and of butter Mr. I. W. Steinhoff, both of Stratford.

Note.—The members' badges at the convention were supplied by the Canada Salt Co., Windsor, Ont., makers of that excellent brand of dairy salt, known familiarly as Windsor Salt. These badges were neat and tasty and brought out words of praise for the energetic manager of the Salt Co., Mr. E. Henderson, through whose generosity they were secured from the dairymen present.

What is a Dozen?—At a country school in England it is said that one of the examiners in a general exercise wrote the word "dozen" on the blackboard and asked the pupils to each write a sentence containing the word. He was somewhat taken aback to find on one of the papers the following sentence: "I dozen know my lesson."

The Farm Home

It Isn't the Thing You Do.
 It isn't the thing you do, dear,
 It's the thing you leave undone,
 That gives you a bit of heartache
 At the setting of the sun.
 The tender word forgotten,
 The letters you did not write,
 The flowers you might have sent,
 dear,
 Are your haunting ghosts to-
 night.

The stone you might have lifted
 Out of a brother's way;
 The bit of heartsome counsel
 You were hurried too much to
 say;
 The loving touch of the hand, dear,
 The gentle and winsome tone
 That you had no time nor thought
 for,
 With troubles enough of your
 own.

These little acts of kindness,
 So easily out of mind,
 These chances to be angels
 Which even mortals find—
 They come in night and silence,
 Each chill, reproachful wraith,
 When hope is faint and lagging,
 And a blight has dropped on
 faith.

For life is all too short, dear,
 And sorrow is all too great,
 To suffer our slow compassion
 That carries until too late,
 And it's not the thing you do,
 dear,
 It's the thing you leave undone,
 Which gives you bitter heartache
 At the setting of the sun.
 —Margaret Sangster.

Cooking Lessons at the O.A.C. Dairy School.

No. 1.

The opening session of the Domestic Science course in connection with the O. A. C. Dairy School took place last Thursday. Besides the ladies in attendance at this dairy school, over fifty other ladies from Guelph and vicinity have registered for this special cooking course. Many others would like to join, but cannot be accommodated. By the interest shown it is apparent that women have at last awakened to the fact that the art of cooking is a science that cannot be learned in a haphazard way in one's own kitchen.

Mrs. Jean Joy of the Toronto Technical School, has been engaged to give the series of demonstrated lectures.

In addressing the class she first spoke of the requirements of the human body putting on the black board the average composition of a man weighing 148 pounds.

Oxygen	92.4 lbs.
Hydrogen	14.6 "
Carbon	31.6 "
Nitrogen	4.6 "

Phosphorous	1.6 "
Calcium	2.8 "
Sulphur24 "
Chlorine12 "
Iron02 "
Potassium34 "
Magnesium	
Silica	
Flourine02 "
	148 lbs.

In order that the entire body be properly nourished it is necessary that these elements be found in the food consumed, whether it be liquid or solid.

The difference between digestion and assimilation was explained. Digestion is the process of so dissolving and chemically changing the food that it may be assimilated. Assimilation occurs when the food has become like or resembles blood and is in a condition to be taken up by the lymphatic system into the circulation.

A large chart was on view showing the average composition of many of our commonly used foods, such as potatoes, apples, butter, cheese, bread, peas, beans, lowl, fish, etc. Mrs. Joy pointed out how these foods differed in composition, some such as cheese and beans, are exceedingly high in proteids, or nitrogenous materials which build up muscle in the body, while potatoes and bread are high in starch or carbonaceous materials which furnish heat, fat and energy as does also fat in food. The ash or mineral part is necessary to supply material for the bone structure. Water enters very largely into all parts of the body.

Improperly cooked food loses in a great measure its value as a body builder and sustainer. A careless cook is just as necessary for the country's welfare as a good druggist and should prepare her foods with as much care and skill as the druggist uses when mixing his medicines.

At the close of her lecture Mrs. Joy solicited questions. One lady asked how to tell when an oven was hot enough. Mrs. Joy replied that if a piece of note paper browned in the oven within from three to five minutes, the heat was sufficient for light cakes and small cakes, but large, rich cakes, such as pound or fruit cake, requires a slower oven. The heat should be sustained throughout the baking. Cakes not only fell from the jarring of the stove, but often it was due to the sudden closing in of cold air by the quick shutting of the oven door.

This led to a discussion on the essentials to look for in a good range. Plenty of well arranged draughts was the most important requisite. A small fire pot was regarded as an economizer of fuel, and it should never be filled to within an inch or two of the top. It is well to have a large ashpit and a good-sized oven.

Mrs. Joy prepared from the following recipes a dish of creamed potatoes and a pan of small sweet cakes called jumbles.

CREAMED POTATOES.

Peel and cook in boiling, salted water the potatoes, drain and shake dry, cut into small cubes and pour over a sauce made as follows: mix and melt together a tablespoon each of butter and flour, add a cup of heated milk, let boil, then add a little salt and pepper. Potatoes so prepared are nice to serve with cold meats.

JUMBLES

$\frac{1}{2}$ cup butter.
 $\frac{1}{4}$ cup sugar.
 1 cup flour.
 $\frac{1}{2}$ teaspoon nutmeg or other flavoring.

1 egg.
 Cream together the butter and sugar, add the egg, then the flour and nutmeg. Mould with the hands into balls the size of small walnuts, and put a piece of candied peel or angelica on each, place wide apart in a pan which has been dusted with flour and cook in a rather hot oven. They flatten out like small cookies and are nice served at afternoon tea.

Laura Rose,

Jan. 14, 1902

O.A.C.

Farming World Helpmates

BY M. E. GRAHAM.

What education should the girl receive who expects to become a successful helpmate for the up-to-date farmer?

EDUCATED GIRL GOOD TO WORK.

To be a helpmate for the up-to-date farmer a girl should receive the highest education her parents can procure for her. But how often to hear elderly people who are fairly educated themselves, say that to educate their children they are no good to work. Certainly, there are some whose education seems of little value to them, but go into the majority of country homes and where will you see more refinement and more watchfulness in all that pertains to their own interests than displayed by the educated in those homes?

Do you covet learning's prize?
 Climb her heights and take it.
 In ourselves our fortune lies;
 Life is what we make it.

Farmer's Daughter.

Will you kindly send me your real name, not for publication, but I have put all the others in my note book and labelled the list, "Farming World Helpmates?" Don't you think we might continue discussing subjects in this department of The Farming World?

Answer to your question in The Farming World, as follows:
 The education should be thoroughly, healthily "physical," and practically kitchen-dairy "first."

**Brains
on
the
Farm**



As much needed there as anywhere to be successful. Don't plod; learn to farm intelligently through our home study course in **MODERN AGRICULTURE**. Treats of soils, tillage, drainage, fertilizers, crop rotation, stock feeding, dairying, etc. **Wm. F. Brooks, Ph. D., Mass. Agr. College.** Head of Dept. Text-books free to our students. Send for 5c page book of terms all about us. **THE HOME CORRESPONDENCE SCHOOL, THREE BUILDING, TORONTO.**

with as much mental as she can calmly masticate and digest, following.

Yours truly,

F. M. Mickle.

(Short and to the point. What do you mean by healthily physical?)

LOVE ESSENTIAL.

(This is the only writer who mentions love as part of her education, but you know, my prairie flower, that there is no man so likely to be loved as an up-to-date farmer, and no girl so lovely, lovable and loving as those that have been described.)

A young "up-to-date" farmer requires for his partner a young woman, who, like himself, is thoroughly "up-to-date." The following are a few of her qualifications:

(1) She must be very much in love with her husband. Whatever may be said to the contrary, that old-fashioned sentiment, "love," is greatly needed to round and smooth off the square corners, acquired in contact with a critical, though not always unkindly, world.

(2) She must be in sympathy with his work, and very much in sympathy. Whatever is of interest to the husband should meet with ready sympathy from the wife, who should be an attentive and interested listener to all plans and projects—approving or disapproving as the plans unfold, in a kindly, thoughtful and I might say, tactful manner. Two heads are better than one, my dear, if one is a sheep's head, and that your own.

(3) She should be a girl with firm muscles. A sound body usually possesses these iron cords. A sound head and cheerful heart generally go with both of the preceding, and a woman who does not go about complaining when "days are dark and dreary" will be an impetus to the farmer, stronger and more powerful than even he himself can understand, but he does know who makes life's sunshine for him.

(4) She should know the qualifications of a good butter maker. Emergencies arise in all farmers' homes when to be able to take the butter making in charge, has saved a great deal of expense and has saved the farmer his reputation as a butter maker. Therefore, my girl, whoever you are, be ready to

take off the dainty cuffs, and roll up the sleeves, or better still, don the clean, useful wrapper or dainty shirt waist, and enter the dairy, knowing that your help will meet with approval and give satisfaction because it has knowledge behind it.

(5) She should know how to cook plain cookery—especially good bread. A good bread-maker will be a good cook, simply because having mastered all details of bread-making, the thought acquired is easily turned to the more intricate and less needed pie and cake-making.

(6) She should know how to make her own dresses. Not because she needs to make them now, but because she may sometime. Information is easily carried around.

(7) She should know how to nurse and cook for the sick. I don't want the farmer to get sick, my love, but you never know, and to be able, has a good deal of cure about it.

(8) Then, lastly, I would have you a Christian little woman, to be up-to-date. Men need so much of the heaven of home to lead them to live for the heaven above. The wife who really possesses the Christ love can usually possess all the qualities needed in an up-to-date farmer's wife.

Yours faithfully,

Prairie Rose.

(I would like to hear from you and others on other subjects of interest to The Farming World. There are many up-to-date women, even though not college trained, who have ideas. It is ideas, not learning, big words, or even correct spelling and grammar that we want.)

Hints by May Manton.

WOMAN'S ETON BLOUSE JACKET,
NO. 4017.

In spite of the tendency towards long and three-quarter coats the



4017 ETON BLOUSE.
32 TO 40 BUST.

smart blouse Eton has renewed its hold on the popular fancy and is more in demand than ever for suits

All You Need To Know

if interested in Practical Education, is the name of our Splendid School, the

Central Business College

TORONTO

We thoroughly prepare young people for the business duties of life by our complete courses in **Accounting, Telegraphy, Shorthand, Typewriting, Etc.** We provide a dozen Capable Teachers, and Eighty Typewriting Machines, and produce good results.

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W. H. SHAW, Principal
Yonge and Gerrard Sts., Toronto.

as well as for separate wraps. The added basque gives a more seasonable effect, but none of its smartness is lost when that portion is omitted. As represented it forms part of a zibeline costume in rich dark red and the lapels are faced with fancy velvet in black and white, the edges being simply tailored with double rows of machine stitching. The garment is simply fitted with wide under-arm gores and shoulder seams. The fronts lap in double breasted style when closed, but may gracefully be worn open as illustrated. The neck is finished with a double collar that rolls over at the seam. The basque portions fit smoothly over the hips meeting closely at the back and flaring slightly apart at the front. It is seamed to the lower edge and the belt conceals the joining. The coat sleeves flare stylishly over the hands and the garment is warmly interlined and lined with white satin. Velvet, corduroy, kersey, broad cloth, chevot and all heavy wool suiting will develop satisfactorily by the mode.

To cut this jacket in the medium size 4 yards of material 21 inches wide, $3\frac{1}{2}$ yards 27 inches wide, 2 yards 14 inches wide or $1\frac{1}{2}$ yards 54 inches wide will be required, with $\frac{1}{2}$ yards of facing 18 inches wide to make as illustrated.

The pattern No. 4017 is cut in sizes 32, 34, 36, 38 and 40 inches bust measure.

The price of above pattern post-paid is only 10 cents. Send orders to The Farming World, Confederation Life Building, Toronto, giving size wanted

A Deadlock in the House—"Mamma," "Well, Freddy?" "You licked me last week for whaling Jimmie Watts, and papa licked me yesterday 'cause Johnny Phelps whalped me." "Well?" "I'm wondering, mamma, what'll happen sometime when it's a draw."

Fishing with Faith—Boy (on the stump, who has been patiently watching the strange angler for about an hour): "You ain't caught anything, 'ave yer?" Stranger: "No, not yet, my boy." Boy: "There wasn't no water in that pond till it rained last night."

The Farming World.

A PAPER FOR FARMERS AND STOCKMEN.

Publisher, . . . D. T. McATISSIE.
Editor, . . . J. W. WHEATON, B.A.

The Farming World is a paper for farmers and stockmen, published weekly, with illustrations. The subscription price is one dollar a year, payable in advance.

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Letters should be addressed to:
THE FARMING WORLD,
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TORONTO.

QUESTIONS AND ANSWERS

COLT WITH ITCHY SKIN.

W. S. writes: "I have a colt that is always rubbing his neck and tail very much. He is very itchy and seems to be uneasy. What would be a good remedy to apply?"

At this season of the year, when colts have long coats, they may very often be troubled with lice. It would be well, therefore, to examine carefully the neck and around the root of the tail for vermin. However, lice or no lice, it would do no harm to wash the parts with a strong solution of Little's Phenyle or Jeye's Fluid, one part of the fluid to fifty parts of water and repeat every eight or ten days. Spooner's Phenyle Powder advertised in these columns will kill all kinds of lice and is easily applied.

Live Stock Judging at Guelph.

A LARGE CLASS—MR. DRYDEN'S ADDRESS.

(Specially Reported.)

The classes for live stock judging organized by Prof. G. E. Day of the Ontario Agricultural College at Guelph opened January 8th in the live stock room of the agricultural building. So many applications were received from all over the country that the class had to be divided, half coming as above stated and the other half to begin two weeks later. The course includes the judging of beef breeds, dairy cattle, sheep, swine, and heavy and light horses, and there has also been added the judging of seeds and grains under the direction of Prof. Zavitz of the Experimental Department.

The first class assembled with

over one hundred present and the counties of Ontario well represented, several well known breeders and exhibitors attending. Prof. Day began with the score card and had the class score a Polled Angus heifer. Shorthorn heifers followed, Hereford, Angus and Shorthorn calves, Galloway cows and feeding steers. The class of bulls included Galloway, Aberdeen-Angus and Shorthorn, and the discussions were lively and interesting. Mr. J. C. Snell of London gave his experience in breeding Shorthorns, and on Friday Hon. John Dryden, a talk on the type of beef, bull needed by the breeder, and gave his own experience in importing and handling Shorthorns.

At the close of the afternoon judging Mr. Dryden gave a talk on stock breeding. He said he was pleased to see so many availing themselves of the advantages to be gained by those attending the class. The lessons to be learned here are intended to be applied on your own farms. You will find the beef breeds are judged on very different lines from those in use for dairy cattle. We need in this, our business of breeding and feeding, intelligent thought. The farmer in our country who succeeds must work with his hands, but thought goes before work. You must have a definite purpose in your work, carefully thought out. How can you think without some knowledge? You ought to have a definite aim in your work, obtain all the knowledge you can regarding your markets and then with intelligent thought direct your work. Breeding for beef production we have to look to three things, viz.: quality, quantity, and economy. Put quality first, but do not stop there. With it get quantity. You can not have too much quantity if you have with it good quality, but in getting quantity it must be done at a moderate cost. Here economy comes in. We must have an animal made at a profit. Therefore we want an easy, economical feeder. Some have said, get a good animal and it will sell itself. When dull times come, if you produce the best you will find a market if anyone can.

Some may ask if it is necessary to have pure bred stock. I do not think so. Some must breed pure bred stock but not all are able to do it successfully. The bulk of breeders must breed and feed for the butchers' block, rather than for the show ring. Men have to spoil animals to win at shows. They are overfed and their breeding qualities may be impaired. For beginning a grade herd I would use breedly, roomy, large cows. By breedly I mean motherly cows. I would use a pure bred bull of a good type, such as you have seen here to-day in one of the bulls shown. Not too large but of good type. Compact, strong, masculine type for the bull. For breeding steers you should have—you must have—a good bull pure bred. I would for breeding steers—say for 40 cows—give \$300 for a bull that suited me rather than take one I did not like for

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 count as one word.

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

ALL Prize-Winning Strains—Bronze Turkeys, sired by Imported Tom, that won second at Pan American—Narragansett Turkey and Pekin Ducks. A ELLIOTT, Pond Mills, Ont. London Exp.

BUFF Rocks, White, Golden, Wyandottes, Brahmas, Andalusions, Brown Leghorns, Rouben Ducks, Toulouse Geese, White Turkeys. A stock: \$1 to \$4 JAMES MATHERAL, Drumto, Ont.

BRONZE TURKEYS—My stock has won first and second premiums at the largest shows in England, Ireland, United States, and Canada. My stock pleases customers, as I have sent out 500 turkeys and only four were dissatisfied. Choice stock now for sale. W. I. Bell, Angus, Ont.

FOR SALE—Mammoth Boone Turkeys of extra quality and bone. Tom's \$2.50, hen's \$2.00. Also some White Wyandottes and Barred Rock Cockerels. Satisfaction guaranteed. Sam. Snowden, Box 205, Bowmanville, Ontario.

FOR IMMEDIATE SALE. Ten pair English Ring Neck Pheasants and a number of Barred Rock Cockerels. R. M. LEE, Box 323, Galt.

\$50. It costs less for feed for good steers than for poor ones.

Some say the bull is half the herd. Mr. Marr says it is very much more. Study well in buying a bull. Do not buy one that does not suit you because he has a long pedigree, but do not buy one that does suit you until you have carefully studied his pedigree. Have his sires been like good animals? Beware of an animal of mixed breeding. A mixed pedigree may be good but it may be doubtful. He is not likely to be prepotent. Look at the pedigrees of the Scotch bulls closely bred along good lines for many years. By long, careful, judicious selection they have become very prepotent. One pedigree may be ten times as good as another because bred along better lines and you want to learn this if you are breeding pure bred stock. I would prefer a moderately good bull with a good pedigree to a better individual without such good ancestors. But some things are essential. You must have breadth and depth in a beef sire, broad in front, a well sprung rib and a good straight hind leg. Do not make color a lad but get the best bull you can afford. When you get a good bull be kind to him, treat him well, and you will have a great amount of pleasure in your work. Mr. Dryden was loudly applauded at the close of his very practical address.

Live Stock Meeting.

Mr. Henry Wade, secretary, announces live stock meetings in Toronto for the first week of February as follows. This is known as stockmen's week and breeders from all parts of the country will be welcomed at any or all of these gatherings:

Feb. 3rd—Monday afternoon 2 p. m., Hackney Horse Society, Albion Hotel. Evening 7.30, Directors

Shorthorn Association, Albion Hotel.

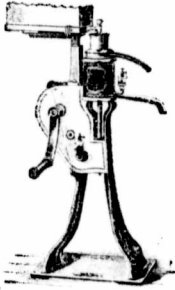
Feb. 4th—Tuesday morning 11 a. m., Dominion Shorthorn Breeders' Association, Richmond Hall, 27 Richmond St. West. Afternoon 2 p. m.

Feb. 5th—Wednesday morning 11 a. m., Directors Ayrshire Association, and afternoon 2 p. m., Ayrshire annual meeting, Richmond Hall, 27 Richmond St. W. Evening 7.30, Carriage and Saddle Horse Association, Albion Hotel.

Feb. 6th—Thursday morning 10.30, Shire Horse Association, Albion Hotel. Afternoon 2 p. m., Horse Breeders' Association. Evening, annual dinner (if any).

Cream Separators.

The rapid and substantial growth of the centrifugal cream separator industry in recent years speaks eloquently of the progressive methods which are being employed in a business representing more capital than any of the great lines of manufacturing. We refer to dairying. The up-to-date dairyman is interested in the separator because it brings him more money direct than old methods and makes his pigs and calves laugh and grow fat. We take pleasure in presenting herewith an illustration of the U. S. Cream Separator, made by the Vermont Farm Machine Co., Belows Falls, Vt. This machine has



been for years a popular favorite and recent improvements make it better than ever. There are but two cups in the separator bowl and they can be quickly and easily cleaned. In the U. S. the milk passes through three compartments, each of which is a separator in itself, and to which is due the close and thorough separation for which the machine is noted. One piece frame, close gearing, ball bearing and self oiling features insure long life, safety and easy running. These separators are made in all sizes, so whether you have one cow or one hundred it will pay you to write for catalogue and mention *The Farming World* when writing.

Owing to the large growth of the Vt. Farm Machine Co., necessitating an increased office force, they are erecting a three-story brick building adjoining their factory for office purposes. This building is thoroughly modern in every way, particular attention having been

given in heating and ventilation, has a fire proof vault and fitted with a complete telephone system for communicating with the different departments of both the office and factory.

This firm uses graphophones quite extensively in its correspondence department and find them very convenient and practicable, and this new building is being fitted with a separate electrical system for running these.

Winter Management of Brood Mares.

Opinions differ among horsemen as to the best way of managing the brood mares during the winter season. Some believe in giving them the run of the lot, with shed shelter, and allowing them to be completely idle. This has been a very common practice among the breeders of pure bred stock, either of the driving or draft classes. Their chief object of course is to get a foal. They considered that in following this practice they were doing what was best for the health of the mare. It has been found, however, that light labor is not only more conducive to the thrift of the mare during this season, but it is also more favorable to securing strong and vigorous foals. Consequently, on the ordinary farm where a few mares are kept, and these lightly worked, we find that the mortality from weakness in foals is less than it is at many breeding establishments where every care is taken to add to the comfort of the mare. Of course where large bands of brood mares are kept it is impossible to work them all, but on the ordinary farm where a few are kept, it is the best management to give them. There are some things to specially guard against in the case of brood mares whether they are worked or allowed to run at large. One of the most common sources of trouble is due to their slipping on ice. This is a matter which can hardly be prevented unless extra care is taken to guard against it while they are at work, or by seeing that such places do not exist in the yards. Where a band of mares are allowed to run together, another very fertile source of trouble is from one to two among them of mean disposition, that continually annoy the others and finally give expression to their viciousness by kicking. This very often not only results in permanent injury, but frequently produces a deformed or dead foal. Such mares should in some way be kept from the others. The approaches to stable doors are quite frequently another cause of trouble. These are sometimes too steep and may have become worn so as to afford very insecure footing, and unless special attention is drawn to it, one is likely to consider it too small a matter to be immediately attended to. Where the mares run loose it quite frequently occurs that they crowd each other in the doorway, and because of this become hipped or injured in a less serious way. As the time of foaling approaches, if

Fruit.
Its quality influences the selling price. Profitable fruit growing insured *only* when enough actual

Potash
is in the fertilizer. Neither quantity nor good quality possible without Potash.

Write for our free book giving details.
GERMAN KALI WORKS,
57 Nassau St., New York City.

The SQUASH KING

We have been the original introducers of more varieties of squash than all our brother seed men combined. Here's a partial list: Hubbard, Marblehead, Victor, Warren, Butman, Chestnut and Golden Bronze. Our annual catalogue of Vegetable and Flower seed sent Free.

If you want the purest grass seed sold in the U. S. try our

J. H. GREGORY & SON,
Marblehead, Mass.

ORDER SEED CATALOGUE FOR 1902

Thomas-Phosphate

FOR SALE CHEAP

We offer this famous fertilizer at the greatly reduced price of

\$15 PER TON

Farmers, Gardeners and Fruit Growers who have used this fertilizer will appreciate this great reduction in price.

THE KING MILLING CO.

Limited

SARNIA, Ontario

CONSTIPATION INDIGESTION TORPID LIVER

These are the great curses which afflict three-quarters of the present generation. Sufferers from either one or all of them must always feel miserable, and sooner or later become chronic invalids, unless to themselves and a barren and nameless to friends and family. There is one sure, safe and absolute cure which you can test without any expense. Our remedy is **Egyptian Regulator Tea**, a preparation of which we will send you free and prepaid on request. Unless you find our claims are true, we must be the losers by this liberal act. Shall we send you the trial package, and lead you to perfect health and happiness? Address,

THE EGYPTIAN DRUG CO., New York.

in winter, there is no more satisfactory arrangement than to have a dry, well bedded box stall for the use of the brood mare. Some think that it is better for the mare to foal in the pasture or paddock, but we have known colts to permanently injure themselves and in one or two cases kill themselves by being allowed too much liberty just at this time. When they get on their legs and become sufficiently strong to stand and walk a little, they are very likely to overdo it, but if confined in a box stall there is less danger. To prevent anything of this kind occurring in a box stall it is necessary to see that it is dry and well bedded, for if it is slippery and damp and the foal endeavors to get on its feet it may strain itself so as to result in a permanent injury. It is also very necessary that the quarters should be dry, because it has been quite definitely determined that joint troubles in colts are largely due to the infection of the naval cord in filthy quarters.—The Homestead.

Chicago Carcass Contest.

The contest of dressed beef which came at the close of the recent International Stock Show at Chicago was very interesting. It proved that the animals which win in the show room are not always the best on the block. There were fifty-one carcasses in the contest and after the judging the meat was sold at auction, bringing from 7½ to 11½ cents per pound.

The Angus Elm Park Lad made the champion carcass and was first in the two-year-old class. The steer was fattened by the Michigan Agricultural College, weighed 1620 pounds alive and dressed 1023 pounds or 63.15 per cent. The champion steer at the show, the Hereford Wood's Principal, which weighed alive 1645 pounds, dressed 1102 pounds, or 66.99 per cent, but was hardly considered by the judges in the carcass contest as he was too fat. Below are given the net and gross weight, per cent. of beef, tallow and hide and breed of different animals:

Breed	lbs	lbs	P cent	P cent	P cent
Hereford	1,645	1,102	66.99	5.78	6.20
Hereford	1,520	960	63.16	5.99	6.91
Hereford	1,350	864	64.00	6.89	6.67
Hereford	1,940	1,272	65.57	8.04	5.41
Hereford	1,785	1,158	64.87	7.02	6.67
Hereford	1,120	687	61.34	9.82	7.32
Hereford	1,690	985	61.56	9.06	7.19
Grade	1,840	1,172	63.70	11.09	5.38
Grade	1,550	1,042	67.23	8.00	6.58
Grade	1,765	1,171	66.35	9.18	5.67
Grade	1,805	1,158	64.16	8.59	5.21
Grade	1,460	894	61.23	7.81	7.19
Grade	1,320	734	55.61	7.42	7.42
Shorthorn	1,785	1,157	64.82	13.00	4.51
Shorthorn	1,630	1,045	64.14	5.92	5.26
Shorthorn	1,800	1,188	66.00	9.86	4.78
Shorthorn	1,820	1,197	65.77	10.05	5.22
Shorthorn	1,165	774	66.44	7.73	6.00
Grade	1,710	1,105	64.61	9.36	5.61
Grade	1,655	1,037	62.66	8.76	5.20
Grade	1,540	1,056	68.57	9.35	5.00
Grade	1,845	1,194	64.72	10.73	5.04
Grade	1,620	1,024	63.20	12.03	4.63
Grade	2,245	1,441	64.19	12.03	4.63
Grade	1,240	789	63.63	7.50	5.48
Angus	1,620	1,023	63.15	8.77	5.19
Angus	1,625	1,027	63.41	7.26	5.78
Angus	1,690	1,122	66.39	8.58	5.68
Angus	1,450	938	64.34	6.34	6.14
Gr. Angus	1,390	867	62.37	10.43	6.04
Grade	1,560	1,024	65.66	10.00	5.48
Galloway	1,570	975	62.10	5.61	6.43
Galloway	1,415	906	64.03	6.15	6.71

Galloway	1,290	806	62.48	6.74	6.12
Galloway	810	497	61.35	4.70	8.02
Galloway	1,060	668	62.55	7.45	7.45
Devon	1,700	1,148	67.53	4.06	5.24
Red Poll	1,720	1,093	63.55	11.98	6.10
Red Poll	1,680	1,013	60.30	12.98	5.54
Red Poll	1,230	792	64.39	6.99	6.18
Red Poll	1,135	688	60.62	6.78	7.05
Grade	1,545	1,107	67.30	8.21	6.08
Grade	1,540	1,009	64.93	9.22	5.52
Grade	1,425	863	60.56	6.53	6.53
Grade	1,015	616	60.69	7.88	6.60
Grade	680	429	61.76	5.15	8.09
Grade	1,525	995	65.31	8.13	5.31
Grade	1,695	1,054	62.07	6.66	5.18
Grade	1,640	1,109	67.62	8.84	5.12

Ontario Veterinary College

The Christmas examination of the Ontario Veterinary College was held in the College buildings, Toronto, Dec. 20th. The following gentlemen, after passing a stringent examination before the usual examining board, were awarded diplomas:

Graduates—Wilson A. Bisbee, Cleveland, Ohio; Alexander Doherty, Ellesmere, Ont.; J. Leonard Faragher, Lorain, Ohio; Albert T. Ford, Neustadt, Ont.; A. P. Lubach, Boonton, N. J.; John L. McCoy, Sussex, N. J.; William D. McMullen, Chilton, Wisconsin; Arthur E. Melhuish, Toronto; T. C. Neff, jun., Long Glade, Va.; Robert J. Norton, Owen Sound; J. Arthur Royce, Lincoln, Neb.

Tit-Bits tells the following story:

An Irish farmer went into an ironmonger's shop to buy a scythe. After serving him the shopman asked him if he would buy a bicycle.

"What is that?" queried the Irishman.

"It's a machine to ride about the town on."

"And, sure, what might the price of it be?"

"Fifteen pounds."

"I'd rather see fifteen pounds in a cow."

"But what a fool you would look riding around the town on the back of a cow!"

"Not so big a fool as I would look trying to milk a bicycle!"

The Conquest of Opportunity—

At a picnic given the wails of Chicago, a plate of tarts was passed to two little urchins, evidently chums. One, whose mouth was too full for utterance, and plate too full for even an extra tart, shook his head; not so his neighbor, who added the tart to his pile of goodies. In a few minutes another one had so reduced his plate that he asked for the refused dainty, when he was told they were gone. Whereupon his little friend was heard giving him this philosophical advice: "The time to take tarts, Bob, is when they're a-passing!"

Prepared for Emergencies—Mr. and Mrs. Jones conversed at the table so earnestly that they forgot to serve Adele, their four-year-old. At last, in a break of the dialogue, she said: "Mamma, please pass me the salt." "The salt, child? What for?" "Oh, I might need it in case papa should give me any meat."

OXFORDS AT BRANT FARM



Choice ewe lambs and ewes of all ages. Prices to suit times. Orders booked any time for show stuff for 1902. Fitting a specialty. Burford Station T'graph & Phone J. H. JULL & SONS, Mt. Vernon, Ont.

"SPRING BROOK" Holsteins, Tamworths and Barred Rocks.

One bull, 11 months old; 2 bull calves, 6 weeks; 4 heifers in calf; 1 cow; 2 heifer calves, all De Kols. Tamworth, 2 hours ready for service; 1 sow; 6 best young pigs of both sexes ready to ship; 6 B.K. Cockerles. Look for bargains owing to change of location. A. C. HALLMAN, New Dundee, Ont.

DAVID McCRAE, Jansfield, 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.

WANTED TO BUY

Some young Aberdeen Angus Females of low-flock type and good breeding, registered in the A.H.K. Give description and prices. Address: J. W. BURT, Comingsby, Ont.

MILKING STRAINS OF SHORT-HORNS FOR SALE

Young bulls of prime quality; also a few females in calf to an imp. bull.

H. C. GRAMHAM, Alisa Craig, Ont.

IMPERIAL HOLSTEIN-FRIESIAN STOCK FARM

10 Young Bulls from one month to four months, bred from Winnie R's De Kol.

W. H. SIMMONS, New Durham, Ont.

Glen Crescent Shorthorns and Oxfords

Two Young Bulls by imp. "Precious Stone" and imp. "Blue Ribbon" for sale. Can spare a few more Oxford females.

J. W. WIDFIELD, Uxbridge, Ont.



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

OAK LODGE YORKSHIRES



are acknowledged to be the best type of bacon hog to produce the ideal carcass for the best English trade. CHAMPIONSHIP HERD AT TORONTO INDUSTRIAL EXHIBITION FOR NINE YEARS also swinestakes on Dressed Carcass at Provincial Winter Show. We have on hand now a large herd of different ages. Our prices are reasonable and the quality is guaranteed to be choice. Write

BRETHOUR & SAUNDERS, Burford, Ontario

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 co-operation 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 better suited to our advertising columns.

Cattle.

The Royal Agricultural Society of England has issued the prize sheet for the show to be held at Carlisle from Monday, July 7th to Friday, July 11th next. The total value of the prizes offered (exclusive of champion prizes and medals given by breed societies) is £6,001, of which sum £1,250 is contributed by the Carlisle Local Committee, and £245 by various breed societies. The prizes thus provided by the Carlisle Local Committee are for different descriptions of riding, driving, agricultural and draught horses, in which department the local prizes amount to £704. They will include seven special classes for hunters, two for riding cobs, one for Hackneys, one for ponies, three for Fell ponies, one for polo ponies, three for harness horses and ponies, six for agricultural horses, and two for draught horses, the last named to be exhibited on one day of the show only.

Following a consignment of Shorthorns already sent to Canada this season, Mr. George Isaac, Bomanton, Ontario, has just secured a further shipment of two dozen valuable Shorthorns from the north, through Mr. S. Campbell, Kinellar, Aberdeenshire. This consignment comprises sixteen yearling heifers, seven heifer calves, and one bull calf. Of the lot, five were bred by Mr. George Bruce, Heatherwick, Inverness, four by Colonel M. Rae, Clunes; three by Mr. A. Campbell, Oronstone; three by Mr. J. W. Gordon, Oswald, Beaulieu; five by Mr. John W. Crau, Keith; three by Mr. D. C. Morris, Ainstler; and one by Mr. Campbell himself. The animals comprised representatives of all the leading strains in the country. They were shipped last week from Glasgow, and should give every satisfaction in their new home.—North British Agriculturist.

Swine

One of the famous Yorkshire boars from the herd of Mr. Sanders Spencer, of Holywell Manor, was exported recently from Hull, England, to head one of the best herds of Yorkshires in Germany. The boar was one of the prize pen at the Royal and other shows during last season, and has done some considerable service in the breeder's herd at Holywell.

First Farmer—And you didn't have a single cow shot?

Second Farmer—No; I disguised all my cows as deer.—Detroit Journal.

A Noted Agricultural Scientist.

Another noted English agricultural scientist has gone to his long home, in the person of Sir Joseph Gilbert. For fifty years Sir Joseph collaborated with the late Sir John B. Lawes in the world renowned agricultural investigations carried on at Rothamsted. His association with Sir John began in 1843. He visited Canada and the United States in 1882 and 1884 to study the conditions of agriculture in these countries. Like his distinguished coworker, the late Sir J. B. Lawes, Sir Joseph passed from this scene of action just when agricultural science, as never before, is becoming more and more the standby and helpmate of the up-to-date farmer in nearly every country. The important place which this science occupies to-day is in no small degree due to the eminent services rendered by these two distinguished investigators.

Grandpa's Absentmindedness—A little girl who was trying to tell a friend how absentminded her grandpa was, said: "He walks around thinking about nothing, and when he remembers it, he then forgets that what he thought of was something entirely different from what he wanted to remember."

More Loving Than it Seemed—Walter's mamma was very sick with rheumatism, and he was rubbing her arms, when she said: "Walter, it is too bad that mamma is such a trouble to you." Walter replied, cheerfully: "Never mind, mamma, if you are only just alive, we don't care how much you suffer."

A Budding Philanthropist—Mother: "What did you do with that medicine the doctor left for you?" Small Boy: "I heard there was a poor boy ill in the back street, and I took it round and left it for him."

Why She Didn't Laugh—A little three-year-old girl went to a children's party. On her return she said to her parents: "At the party a little girl fell off a chair. All the other girls laughed, but I didn't." "Well, why didn't you laugh?" "Cause I was the one fell off."

The Old Question—"Why can't I have coffee, mamma?" "Because it isn't good for you, Willie." "Does the Lord know it isn't good for me?" "Of course." "Then what does he make it taste so good for?"

Combault's
Caustic
BalsamThe Great French
Veterinary Remedy.A Safe, Speedy and Positive cure
for ailments of

HORSES and CATTLE.

As a HUMAN REMEDY for Rheumatism, Sprains, Sore Throat, etc. it is invaluable.
Every bottle of Caustic Balsam sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charge a post, with full directions for its use. Send for descriptive circular, testimonials, etc. Address:

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OR 21 FRONT STREET WEST, TORONTO, ONT.

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The only nest in the World which positively prevents hens from eating their eggs.

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No springs—Eggs cannot break.

The inclined nest gathers them safely in lower section.

Prevents flies, parasites, etc.

Everlasting, never failing, comfortable.

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AGENTS WANTED

for the NEW PICTORIAL STOCK DOCTOR AND LIVE STOCK CYCLOPEDIA, revised to 1901 with the assistance of the Professor of the Ontario Agricultural College, Guelph. The finest illustrated, cheapest and best book of its kind ever published. Large wages for agents. Particulars mailed free. Address—

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FOR IMMEDIATE SALE.

SPLendid 300-Acre Farm, 5 miles from Brantford, 240 acres cleared. Three two-story stone houses, 11 rooms, cellars full size. Frame barn 45 x 100, all 3 other barns, 3 drive-houses, 2 sheds, 20-acre orchard. 60 rods from railway, excellent soil. For full particulars, address

S. G. READ,
Broker, 129 Colborne St., Brantford, Ont.Spooner'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.
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If your Druggist does not sell it, send direct to

ALONZO W. SPOONER,
Laboratory, PORT HOPE, Ont
Will cure and prevent hog cholera. 70

Market Review and Forecast

Office of The Farming World,
Confederation Life Building,
Toronto, Jan. 20th, 1902.

An increase wholesale trade is reported during the week for spring delivery with prospects of a gradually improving trade from this out. Remittances have improved. The splendid season in the Northwest has given a new impetus to trade there. Money seems ample for all legitimate purposes, but rates remain firm at 5 per cent on call. Commercial paper is discounted at 6 to 7 per cent.

Wheat.

There has been a somewhat fluctuating market in wheat during the week. On Thursday, May wheat sold down to 79½¢, a drop of 4½¢ from the week previous, though it closed at 80½¢. Generally speaking, the situation is not as strong as a week ago. U. S. Government Crop Report for December, shows a larger increase in last year's yield than was at first reported and this rather depressed the speculative market. Reports from Britain seem to indicate a falling off in the continental demand, while cable reports show lower values. There has been considerable activity in Manitoba wheat. Quotations at Fort William have ruled at 72¢ to 72½¢ for No. 2 hard and 68½¢ to 70¢ for No. 1 northern. The market here is more active to-day. Red and white is quoted at 75¢ to 76¢, middle freights, goose at 67¢ and spring at 75¢ for No. 1 east. On Toronto farmers' market red and white bring 75¢ to 81¢, goose 67½¢ and spring fine 70¢ to 72½¢ per bushel.

Oats and Barley.

The oat market is quieter, and lower prices prevail. Some shipments of Canadian oats to England have been made during the week, showing that prices on this side have dropped sufficiently to admit of business being done at a profit. As oats are firm there and in good demand, more business may be done. Quotations here are 41¢ to 42½¢, as to point of shipment. On the farmers' market oats bring 46¢ to 47¢ per bushel.

Barley is not so strong as it was and prices here range from 50¢ to 56¢, as to quality and point of shipment. On the Toronto farmers' market malt barley brings 54¢ to 63¢ per bushel.

Peas and Corn.

An easier feeling is reported in peas and sales at country points east of Toronto have been made at 82¢ to 82½¢, f. o. b. Prices here are 82¢ for No. 2, middle freights.

The market for Canadian corn has declined. Car lots of Ontario are quoted at Montreal at 68¢ to 69¢, a drop of 3 cents on the week. Quotations here are

57¢ for Canadian yellow and 57½¢ for mixed West.

Bran and Shorts.

Ontario bran is quoted at Montreal at \$20 to \$20.50 per ton, in car lots. City mills here sell bran at \$19 and shorts at \$21 in car lots, f. o. b., Toronto.

Potatoes and Beans.

The potato market keeps firm. Car lots of prime quality are selling at Montreal at 85¢ per bag. The market keeps steady here at 65¢ for cars on track. On Toronto farmers' market potatoes bring 75¢ to 80¢ per bag.

There is little change in the market for beans. Car lots of primes are quoted at Montreal at \$1.35 to \$1.40 and jobbing lots at \$1.40 to \$1.50 per bushel. The outlook for prices being well maintained seems bright. Stocks are reported light in the United States and last season's yield, especially in Michigan, was only about one-half to one-third of a crop.

Hay and Straw.

The English market for Canadian hay rules steady. More liberal receipts are reported at points east and prices are 25¢ to 50¢ per ton lower for baled hay. Montreal quotations are: Timothy \$9.25 to \$11.00, clover mixture \$8.25 to \$8.50 and clover \$7.50 to \$8.25 per ton in car lots. Car lots of baled straw sell there at \$5.00 to \$6 per ton. Prices are steady here and the demand good at \$9.50 to \$10.00 for No. 1, and \$8.00 to \$8.50 for No. 2 in car lots on track. On Toronto farmers' market timothy brings \$10.50 to \$12, clover \$7.00 to \$9.00 and sheaf straw \$8 to \$9 per ton.

Eggs and Poultry.

The English egg market is lower. But this will hardly affect matters on this side, where dealers can

hardly get enough fresh eggs to supply the demand. Selected held fresh are selling at Montreal at 28¢ to 30¢ and new laid at 35¢ to 36¢ in large lots. There is a strong demand here and fresh gathered sell for 24¢ to 25¢ in case lots. Strictly new laid are not offering. On Toronto farmers' market new laid bring 25¢ to 35¢ per dozen.

There are many complaints of Western shippers with regard to account sales of dressed poultry sent to Montreal for the holiday trade. A great deal of it arrived in bad condition. Good fresh stock however, sells readily there where very little choice stock is to be had. Choice fresh killed dry picked turkeys are quoted at Montreal at 12¢ to 13¢, chickens at 10¢ to 10½¢, geese at 6½¢ to 7¢ and ducks at 8½¢ to 10¢ per lb. to the trade. Offerings are light here and prices are steady at 9¢ to 11¢ per lb. for turkeys and 8¢ to 9¢ for geese and 30¢ to 90¢ per pair for ducks and 30¢ to 50¢ for chickens in jobbing lots. On Toronto farmers' market live and dressed chickens bring 45¢ to 70¢ and ducks 75¢ to \$1.00 per pair and turkeys 8¢ to 11¢, and geese 8¢ to 9¢ per lb.

Until further notice the Canadian Produce Co., Toronto, will pay 5¢ per lb. for spring chickens, 2½¢ per lb. for hens (including last year's birds), and 5¢ for ducklings. Dr. Boulbee, manager of the company, will be glad to address Farmers' Institutes on export poultry where desired.

Seed.

Canadian red clover seed is selling well in England with prospects of a more active demand later on. Red clover seed is firm at Montreal, where quotations are \$8.50 to \$10 per cwt. for red clover, \$10 to \$12 for alsike, and \$6 to \$6.50

The Canada Permanent & Western Canada Mortgage Corporation

Interest at

3½% on Deposits of One Dollar and Upwards. | 4% on Debentures for \$100 and upwards for 1, 2, 3, 4, or 5 years.

Payable Half-Yearly

Assets, \$23,000,000.

Office—Toronto St., Toronto.

OUR PRICE FOR CHICKENS HAS GONE UP

Our demand has doubled. Deal with a reliable firm; be careful of strangers. See our prices on this page.

THE CANADIAN PRODUCE CO., TORONTO

ALWAYS MENTION THE FARMING WORLD WHEN WRITING ADVERTISERS.

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

per cwt. for timothy. On Toronto farmers' market alsike brings \$6.50 to \$8.50, red clover \$5 to \$5.40, and timothy \$2.50 to \$3.25 per bushel.

Cheese.

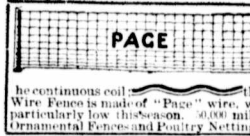
There is a healthier condition of the market on both sides of the Atlantic in cheese though stocks are believed to be higher than was at first reported. Generally speaking the market is firmer and higher and finest Westerns have sold at 10½¢ and finest Easterns at 10¢ at Montreal during the week. The English cable is 1s higher with a better demand.

Butter

The firmer condition of the butter market reported last week has been accentuated and the outlook just now is for a firmer market and higher prices between now and spring. There is a good export and home demand, the latter being sufficient to absorb the bulk of the supplies. Shipments of Australian butter have fallen off considerably this year, which has helped to strengthen values in Britain. Fine to choice creamery is quoted at Montreal at 20½¢ to 21¢ and fair to good at 19¢ to 20½¢ per lb. There is a good demand for creamery here at 20¢ to 22¢ for prints and 19¢ to 20¢ for solids. The dairy butter offering is not so much in demand on account of its inferior quality. Pound rolls are quoted at 17¢, large rolls at 15¢ to 16¢, and tubs at 14¢ to 16¢ in jobbing lots. On Toronto farmers' market lb. rolls bring 16¢ to 21¢ and crocks 15¢ to 18¢ per lb.

Cattle

The cattle trade shows little change, generally speaking. The rush of supplies at Chicago and other American markets has lowered values somewhat, but this is only temporary and the market quickly recovers under regular conditions. On Toronto cattle market on Friday there was a large run of live stock composed of 1,351 cattle, 3,600 hogs, 1,489 sheep and lambs and about 25 calves. The quality of the fat cattle offered was much the same as for a few weeks back. Too many light unfinished cattle are coming forward. Trade was brisk for all well-finished export or butchers' cattle. Export cattle sold readily, and more would have been taken. The highest price paid was \$5.40 per cwt. for one load of choice well-finished shippers, by Joseph Gould. Heavy feeders of good quality are readily bought up at \$3.80 to \$4.00 per cwt. and short keep feeders are worth \$4.00



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. 40,000 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

to \$4.25, and one very choice load of this class was reported sold at \$4.50 per cwt. Stockers are in fair demand and best quality bring \$3.00 to \$3.25 per cwt. Quite a few light cows are coming forward but only one sold at top quotation.

Export Cattle—Choice loads of these are worth from \$4.70 to \$5.25 per cwt., and light ones \$4.25 to \$4.65 per cwt. Heavy export bulls sold at \$3.85 to \$4.25 and light ones at \$3.40 to \$3.65 per cwt., choice export cows sold at \$3.50 to \$4.00 per cwt.

Butchers' Cattle—Choice picked lots of these, equal in quality to the best exporters, weighing 1,150 to 1,260 lbs. each, sold at \$4.25 to \$4.50 per cwt., good cattle at \$3.85 to \$4.15, medium at \$3.40 to \$3.65 and inferior to common at \$2.60 to \$3.25 per cwt.

Feeders—Heavy, well-bred steers from 1,100 to 1,200 lbs. each, sold at \$3.80 to \$4.00, and other quality at \$3.50 to \$3.75 per cwt. Light steers, 900 to 1,000 lbs. each sold at \$3.50 to \$3.75 per cwt.

Stockers—Yearling steers weighing 500 to 800 lbs. each sold at \$2.75 to \$3.25, and off colors and those of inferior quality at \$2.50 to \$2.75 per cwt.

Calves—These are in steady demand at Buffalo. Good to choice veals bring \$8.00 to \$8.50 per cwt. At Toronto market ordinary calves bring \$2 to \$10 each.

Milch cows and springers sold at \$22 to \$56 each.

Sheep and Lambs.

There was a large run of lambs but prices for choice grain fed ewes and wether lambs were firm, while those of common quality were easy. Sheep ruled easy at \$3 to \$3.25 for ewes and \$2.25 to \$2.50 per cwt. for bucks. Lambs were steady at \$3.75 to \$4 each and \$3.75 to \$4.60 per cwt.

Hogs.

The hog market has taken an easier turn as we pointed out last week. At Toronto market on Friday there was a large run and prices declined to \$6.50 per cwt. for select bacon hogs, \$6 for fats and \$6.25 for lights. Lower prices are looked for this week. Unculled lots sold at about \$6.37½ per cwt. For the week ending Jan. 25th, the Wm. Davies Co., Toronto, will pay \$6.37½ per cwt. for select bacon hogs, \$6.12½ for lights and \$6.12½ for fats.

The Trade Bulletin's London cable of Jan. 16 re Canadian bacon reads thus:

PAIN-KILLER is more of a household remedy than any other medicine. It meets the requirements of every home. Cures cramps and dysentery and is the best liniment made. Avoid substitutes, there is but one Pain-Killer, Perry Davis'. 25c. and 80c.

"The market is dull and easy, although holders are averse to begin making concessions."

Montreal packers last week paid \$6.75 for bacon hogs.

Horses.

The only export demand at present is for remounts. At Montreal there is little doing in the local market, though several sales of heavy draughts and carriage horses are reported there within the quotations below:

Carriage horses	\$175—\$350
Heavy draughts	125—225
Light roadsters, drivers and saddles	100—250
Remounts	115—160
Common stock	50—80

The situation here is about the same. There is little or nothing doing at Grand's, excepting in second grade horses. Business is, however, expected to pick up shortly.

Give a sailor's definition of a kiss? A pleasant smack.

VIRGINIA FARMS FOR SALE.

Good land. Mild, healthy climate. Schools convenient. Low prices, easy terms. Free catalogue. R. B. CHAFFIN & CO. (Inc.), Richmond, Va.



Satisfied People.
That's the kind that use the **MARILLA**

Incubators and Brooders. If they are not satisfied we refund their money. Larger hatcheries, perfect systems of regulating temperature, moisture and ventilation. All these points explained in our catalogues. Send for two 5c stamps.

MARILLA INCUBATOR COMPANY, BOX 103, ROSE HILL, N. Y. Machines may be seen at the store of our Agents, G. J. DANIELS, 196 River St., Toronto, Canada.



Cramping Machines

Fattening Coops, Incubators and Brooders. All kinds of Poultry Supplies. CATALOGUE FREE. A. J. Florgan, Mfr., London.

Catarrh and Consumption

Have spent nearly 50 years in the treatment of the above named troubles and believe I have effected more permanent cures than any specialist in the history of medicine. As I must soon retire from active life, I will, from now on, send the means of treatment and cure as used in my practice. Free and post-paid to every reader of this paper who suffers from these loathsome, dangerous and disgusting diseases. My treatment will positively give prompt relief and cure in the worst cases. This is a sincere offer which anyone is free to accept. Address, H. C. LAWRENCE, 114 West 32d St., New York, N. Y.

THE MATERIALS USED IN "THE D. & L." EMULSION are the finest the market affords regardless of expense. Taken in cases of wasting diseases, loss of weight, or loss of appetite, with great benefit. Davis & Lawrence Co., Ltd., manufacturers.

PPNY-BALSAM cures all coughs. It soothes, it heals, it cures quickly and certainly. Ppny-Balsam sells more widely every year. Manufactured by the proprietors of Perry Davis' Pain-Killer.

The Ontario Sugar Co.

Incorporated Under the Ontario Companies' Act

LIMITED

Authorized Share Capital, - - \$1,000,000
DIVIDED INTO 10,000 SHARES OF \$100 EACH

OFFER OF \$250,000 STOCK FOR SUBSCRIPTION AT PAR

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HEAD OFFICE, 22 VICTORIA STREET, TORONTO, ONT.

Prospectus.

THE ONTARIO SUGAR COMPANY, Limited, has been incorporated with power to manufacture, refine and sell Sugar, Syrups and other products of the Sugar Beet and Sugar Cane; to grow Sugar Beets; to feed, fatten and sell live stock, and generally to deal in any article required or produced incidental to the carrying on of the business of the company.

The Beet Sugar Industry.

The present annual consumption of sugar in Canada is estimated to exceed 320,000,000 lbs., and is rapidly increasing. Most of it is Beet Sugar produced in various European countries and merely refined in Canada. We pay foreign countries for our annual importation in the neighborhood of \$8,000,000.

Careful analyses of Sugar Beets grown in this province, under the direction of the Ontario Government, show that our climate and soil are admirably adapted to beet culture and that the crop would be profitable to the farmer. There is at present no Beet Sugar factory in the Dominion. We can and should grow and manufacture our own sugar as well as our own flour.

Location of Factory.

The Company propose to erect their first factory at the Town of Berlin in the County of Waterloo, in the centre of a large and well cultivated farming district. The farmers are chiefly of an industrious German class, accustomed to growing extensive root crops, and the soil is a rich, deep, friable clay loam. The roads are the best, enabling farmers to haul heavy loads and for long distances. The site is adjacent to the Grand River which furnishes a supply of good water and drainage.

Factory.

The Company propose to have erected by a thoroughly reputable firm of sugar-factory builders, under suitable guarantees as to capacity, efficiency, etc., a first-class sugar factory, having a guaranteed minimum capacity to work up 800 tons of beets per day of 24 hours into standard granulated sugar.

Output.

Professor A. E. Shuttleworth, Ph.D., the Company's Agriculturist and Chemist, under whose direction the experiments by the Ontario Government have been conducted, reports at this date having secured contracts for 4,450 acres of beets, and guarantees 5,000 acres for the first year's campaign. This acreage, on the basis of 14 tons to the acre, should produce from 14,000,000 or 15,000,000 pounds of granulated sugar.

Concessions.

The Town of Berlin has passed a by-law, subject to legislative sanction, granting to this company a cash bonus of \$25,000 and exemption for 10 years from taxes other than school rates.

The farmers have also agreed, subject to legislative sanction, in lieu of a bonus from the Township of Waterloo, to give a rebate of 33½ cents per ton in the price of beets the second year, which is considered equal to \$20,000.

The Ontario Legislature has granted for three years a bounty of \$75,000 per year to be divided among the factories in operation, as provided in the Act.

Profits.

It is confidently believed that this investment will prove a desirable and profitable one, and that the industry has the essential elements of stability and permanence.

Capital.

It is estimated that, for the present undertaking, \$600,000 will be required. \$150,000 stock has been subscribed or applied for at par, \$250,000 is now offered to the public at par, and the balance required, not exceeding \$200,000, will be raised by the bonds of the Company.

In this Company there is absolutely no preference of any kind; all have one shareholders on exactly the same terms. There is no promotion or preference stock. The Company has been organized for the investment only and with the view of establishing the industry in the Province.

The charter provides for sufficient capital stock, which may hereafter be issued, should it be deemed expedient to erect other factories or make the by-products an additional source of revenue.

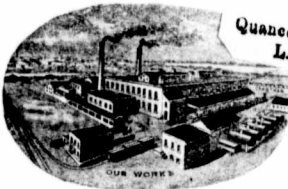
THERE IS NOW OFFERED FOR SUBSCRIPTION AT PAR STOCK TO THE EXTENT OF \$250,000, payable 10 per cent. on application, 10 per cent. on allotment, and the balance on call—not more than 20 per cent. at one time, and calls not nearer together than thirty days.

The Directors reserve the right to allot only such subscriptions and for such amounts as they may approve. If no allotment is made, the deposit will be returned, and if a partial allotment is made, the surplus deposit will be applied toward the amount payable on allotment. In making allotments regard will be had to the order in which applications for stock are received.

Subscription Lists will be opened at the Bank of Nova Scotia, in Toronto and in Berlin, at 10 a.m. on Saturday, January 18th, and close at 1 p.m. on Saturday, the 25th inst. Cheques accompanying subscriptions will be made payable to the order of the Bank of Nova Scotia in trust for THE ONTARIO SUGAR COMPANY, Limited.

Subscription Forms and all further information may be had on application to the said Bank in Toronto, or in Berlin, or to the Secretary, Mr. James Fowler at the Head Office, 22 Victoria Street, Toronto, or to the Managing Director, Mr. S. J. Williams, at his office in Berlin.
TORONTO, January 14th, 1902.

GOOD OR POOR CROPS
Which Will It be for 1902?



BY USING
FREEMAN'S HIGH-GRADE FERTILIZERS
Good and paying crops will be the result.

Walkerville, Ont.
W. A. Freeman Co. Limited, Hamilton.
Dear Sirs,—Enclosed herewith please find cheque for **THREE HUNDRED AND TWENTY-EIGHT DOLLARS AND FIVE CENTS (\$328.05)**, being amount of your account for FERTILIZER and freight. I had a small sample tested and am glad to say it was found to be good. I hope it may all be of the same quality. Yours truly,
(Signed) **HIRAM WALKER.**

Prices, Catalogue and Information on application. A good thorough farmer wanted in every section to represent our High Grade FERTILIZERS in any territory not already taken up.

The W. A. Freeman Co., Limited
Hamilton, Ontario

**Windsor
Salt
Makes
Good Butter
Better
Yet!**

BEST GROCERS SELL IT



MY! WHAT A COMFORT THAT BRANTFORD MILL IS

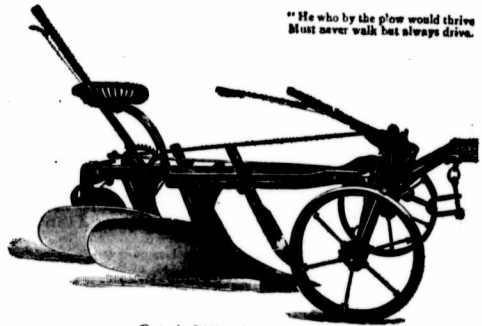
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HAPLEY
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BRANTFORD, CAN.

POWER AND PUMPING MILLS
STEEL TOWERS AND FLAG
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PUMPS, MAPLE LEAF GRAIN
GRINDERS, BEE SUPPLIES

BE UP-TO-DATE Save Money, Labor and Team
by using
...ONTARIO RIDING PLOW

is a lighter draft than any other plow doing the same work. Anything asked to do it can do with less strain on team or ploughman.
Best plow made and can be run by any man, woman, boy or girl who knows how to manage a team.

"He who by the plow would thrive
Must never walk but always drive."



Send for
Catalogue

Ontario Riding Plow.
The Perrin Plow Co., Limited Smith's Fall,
Ontario

MISSOURI COLLEGE OF AGRICULTURE.
Columbia, Mo., Oct. 30, 1901.

The machine (U.S.) did excellent work, and, as a rule, I believe it skimmed a little closer than the others we had in use. The record was invariably .02 of 1 per cent. or lower, sometimes a mere trace of fat in the skim milk.

C. L. WILLOUGHBY,
Instructor.

ILLINOIS COLLEGE OF AGRICULTURE.
Urbana, Ill., June 29, 1901.

Enclosed find records of work done with your 3 cream separators (U.S.) at the Dairy School. These are very creditable records, and we think any cream separator company can feel proud of them. Your machines have not given us the slightest trouble during the semester.

OSCAR ERF,
Prof. Dairy Husbandry.

RECORD AT THE PAN-AMERICAN MODEL DAIRY

DeLaval average skim milk test.	.0172,	butter milk test.	.121
United States	" "	.0136	" "
Gain of U.S. over DeLaval	.0034		.012

The above shows that the DeLaval Separator left 25 per cent. more butter fat in the skim milk than the United States. An immense waste that amounts to a very large sum of money upon the dairy products of the world. Enough to pay for a United States Separator to replace every DeLaval Separator now in use.

PROF. SPILLMAN, Director Washington Experiment Station, in *Ranch and Range*, Seattle, Aug. 15, 1901, reports the following tests of skim milk from dairymen using the U. S. Separator:

.00, .00, .01, .01, .04

MISS. AGRICULTURAL & MECH. COLLEGE.
AGRICULTURAL COLLEGE, MISS.,
Dec. 13, 1901.

The Separator (U.S.) has done perfect work.

J. S. MOORE,
Acting Professor.

THE ABOVE ARE ONLY A FEW OF THE MANY PROOFS THAT
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