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FARM AND DAIRY

AND
&
RURAL HOME



DEVOTED TO
BETTER FARMING
AND CANADIAN
COUNTRY LIFE



Toronto, Ont., January 3, 1918

Comm. of Conservation
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IN PASTURES GREEN—THREE COWS RUNNING IN R. O. P. THAT HAVE BEEN SEPARATED FROM THE REST OF THE HERD AND GIVEN SPECIAL PASTURE

—Photo taken on farm of J. H. Dent, Oxford Co., Ont.

ISSUED EACH WEEK.

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ONE DOLLAR A YEAR.

AND A RURAL HOME

We Welcome Practical Progressive Ideas.

Trade increases the wealth and glory of a country; but its real strength and stamina are to be looked for among the cultivators of the land.—Lord Chatham

VOL. XXXVII

TORONTO, ONT., JANUARY 3, 1918

No. 1

“Mac” from Glengary County, Replies to “Oxford”

The Pure Bred Cow, He Says, is a Good Investment, Even for the Beginner

I HAVE been greatly interested in “Oxford’s” article which appeared on the front page of Farm and Dairy October 25th, under the heading “Should a Beginner Start with Purebreds?” Having had a few years’ experience with both grades and pure-breds, I take the liberty of making a few comments upon the article. While Oxford has brought out many good points, I think the general impression given is somewhat misleading.

“Oxford” acknowledges the extra source of revenue derived from sales of pure-bred stock for breeding purposes. In my opinion this is but one of many features in which the pure-bred excels. Now, Mr. grades, do not imagine me to be a knacker of good and my contention, borne out in actual experience, is that for the pure-bred to displace her grade sister, she must do so on a straight economic basis. This is what she is doing in many herds all over Canada.

One of the chief reasons why it is more profitable to invest in pure-breds lies in the value of the pedigree. Not only is this so in the selling of surplus stock, but also to an even greater extent in the buying of foundation stock. Many people look upon a pedigree as a somewhat useless appendage to the otherwise inferior animal, but others know that the pedigree, with records attached, is the only sure means of knowing the producing ability of the ancestry of an animal. The Record of Merit and Record of Performance are means whereby a man may verify his opinion of a pure-bred in the present while the man who goes out to buy a grade cow has nothing to guide him but the word of the present owner, the appearance of the cow and the reputation of the herd. None of these tests are by any means infallible guides.

Good Grade Cows Hard to Buy.

Further, good grade cows are not so easily bought as “Oxford” seems to imagine. One cannot then off bushes after the manner of picking berries. The farmers who own them do not usually want to sell, and when they do the price is good and high. A buyer would not care to invest in a grade cow unless she was at the time showing every evidence of being a producer and at that time her market value would be above par, while a registered cow can be bought on the strength of her pedigree and past record even if her present condition will not warrant her selling anywhere near her real value. It is a saying among horsemen, “Buy a horse when he is thin and sell him when he is fat.” This is just as sound a policy in the buying of dairy cattle, particularly pure-breds. Anyone who attends the sales held throughout the country can see the truth of this statement. Many animals of excellent breeding and productive value, just because they are in poor condition, are picked up at small cost by shrewd buyers who know their real value.

“Oxford” states that low grade pure-breds are a poor investment at any price. I quite agree, and would also place in the same list the “ordinary scrubs,” which “roam the fields in summer and the barn yards in winter.” If, however, the latter is his ideal of successful dairying, it is not mine. What he requires are not grades or pure-bred, but just “scrubs.” They are the sort for such conditions, and there is a decided difference between scrubs of all kinds and good cows, whether pure-breds or grades.

These “Artificial Conditions.”

On the other hand if the artificial conditions of which he speaks are necessary for satisfactory milk production with pure-breds, are they not also necessary in the case of good grades,

which must of necessity have several crosses of pure-bred blood. Again, if the pure-breds have become accustomed to those artificial conditions through past generations, are they not in a better position to stand up under them than grades accustomed to “roaming the fields in summer and the barnyards in winter?” Do not grade cows taken from such conditions and placed under the aforementioned artificial conditions present a similar case to that of the North American Indians who, under natural conditions, were the healthiest race on earth, but who have fallen down completely under the artificiality of modern civilization.

Regarding the bull, if a bull of good breeding is necessary to produce proper results in a pure-bred herd he is not even more necessary to produce the same results in a grade herd. In fact, our grade cattle enthusiasts are quite strong, and rightly so, on the absolute necessity of the best pure-bred sires available. The advantage is with the pure-bred, as the extra revenue from stock sales pays the expense of the bull.

Can Beginners Afford Them?

The common fallacy that a beginner cannot afford pure-breds is an idea which features quite strongly in “Oxford’s” article. I recently had occasion to look up in the herd books the ancestry of many of Canada’s best cows, and was surprised to find what a large percentage of them were bred by practically unknown breeders. These animals were bought later by breeders, who recognized their possibilities in many cases at prices far below their present value. We are all aware how new families and strains are constantly springing into prominence by just such means as this. Let me state an example which has come under my own observation.

Several years ago a farmer who was short of capi-

tal wished to invest in a pure-bred female. Having some idea of pedigree he bought a young cow from a practically unknown herd, for which he paid the sum of \$60. That cow has for several years qualified in R. of P. with a considerable margin. She has had seven heifer calves. The oldest was sold when young, and is now one of the most valued animals in a prominent Ontario herd. The next in age is a very likely candidate for Canada’s list of 20,000 lb. cows, while the younger ones are bidding fair to follow the same course. Can you calculate what per cent. interest that farmer is reaping and will continue to reap on investment of \$60? Would \$50 invested in a grade give such results?


In a recent issue of Farm and Dairy there was a photo of a pure-bred cow which was bought for \$40 and sold later on for \$600. Could such a spread as this be realized on a grade animal?

The experience of a young dairyman of western Ontario is well worth quoting here. He had always had a desire for a pure-bred herd, but the price was much above his purse. For many years he had just plodded along in straight hand-reared farming and a few “ordinary cows.” Five years ago, his ambition forced him to make the change. In addition to several good grades, he purchased one pure-bred animal, and the following year another. Both these cows were the right foundation type, strong, large and producers. With his grades he adopted the same methods as he would with pure-breds, putting the entire herd on the R. O. P. basis. Of course, he was a born dairyman, and in the first year they averaged him 4,300 lbs. and in the last year when he held his sale of grades, the herd averaged him 10,700 lbs., and naturally brought prices much higher than any other grade herd that year—on going for \$185 after producing \$150 in cream for him that season. In the meantime his pure-breds had increased to a goodly herd, and the young breeder is fully experienced now to handle them to the best of advantage. His grade herd had paid the way both in experience and cash for the introduction of the pedigreed producers.

These are not isolated cases. If space were to permit I could multiply them many times. This all goes to prove that the careful buyer, by watching his chance, can buy good pure-bred cows even if his capital is limited.

In conclusion, let me say that it has been my privilege for the past fifteen years to have fed, milked and cared for in general, a herd of good dairy cows, composed of both pure-breds and grades, intermingled in the one stable, and under quite ordinary farm conditions. During the latter ten years of this time, every milking of every cow, both grades and pure-breds, was weighed, and occasionally tested. Given the same care and treatment in every way I have seen the pure-breds gradually outclass their grade sisters in economy of production, in both quality and quantity of milk, in general health, and freedom from the disorders common to dairy cattle. This has been my experience, it may not have been the experience of every one, but basing my opinion upon it I would advise the beginner who feels capable of handling either the good grades or pure-breds to secure at least one or two good pure-breds, and if he is a careful buyer he can get them at a price which will suit his pocket.

Never buy a cheap animal just because it is cheap. That is a different policy from the one I have mentioned. It is this difference that “Oxford” in his article has pointed out.



Cost of Producing 100 Pounds of Milk

INVESTIGATION made by Purdue University and the United States Department of Agriculture to determine the cost of producing milk, shows the following facts regarding the cost of production: (Average winter, six months):

	Pounds Rate, ten Cost		
Grain feed	41.2	\$50.00	\$1.08
Carbohydrate roughages	45.3	10.00	.226
Corn stover-timothy	25.3	20.00	.333
Legume roughages	105.5	8.00	.522
Misty silage	151.1	8.00	.522
Bedding	21.1	8.00	.522
Total cost feed and bedding			\$2.16
LABOR REQUIRED TO PRODUCE 100 LBS. MILK. (AVERAGE FOR ENTIRE YEAR.)			
Man hours	24	.20	.48
Horse hours	48	.12	.58
Total labor cost51
OVERHEAD COST OF PRODUCING 100 LBS. MILK. (AVERAGE FOR ENTIRE YEAR.)			
Total478
Figured same as year 1916-17514
Total			\$3.140

Extending the Influence of the City Milk Demand

A Visit with Mr. Fred Dean, Manager of the City Milk Shipping Plant at Woodstock, Ont.

THE growth of Canadian cities in the last score of years is the direct cause of a great transformation in the dairy industry. Whereas a few nearby farmers once adequately supplied all the requirements of the town and city or milk, this trade has developed to a point where it is practically all of the milk and cream produced within many miles of their borders. The commonest sight at any rural station within easy reach of a big city is a stack of badly battered, but still useful milk cans. Lately, in the case of our larger cities, the milk supply from the nearby townships has become insufficient to meet the ever growing need, and city dairy companies have been going still further afield and establishing milk shipping stations. At these stations milk is collected from neighboring farms, cooled and shipped in ice cars to the parent concern in the city. The most important of these stations in Ontario was established at Woodstock some years ago by the Toronto City Dairy Company. A brief situation for such a plant could not have been selected, and a brief visit with Mr. Fred Dean, the manager, early last September, gave one of the editors of Farm and Dairy a pretty accurate idea of the magnitude of the business conducted at the Woodstock plant.

"We will receive over 12,000,000 lbs. of milk this year," remarked Mr. Dean. "Last year we paid out to our patrons \$198,000. In the eight months of this year we have paid out more money than we did in all of last year. Most of the milk is shipped to Toronto as milk. Part of it, about 3,000,000 lbs., we will condense in our plant here. We also purchase cream from farmers and purchase this year will total 250,000 lbs. fat. The condensed milk, I may add, is used by the City Dairy Company for the ice cream purposes in place of the usual starch fillers."

"And what has happened to the Woodstock district cheese factories since you came in the field?" we asked.

Dairying on the Increase.

"Oh, there is still lots of competition," Mr. Dean assured us. "Since we came in two cheese factories have burned down, but they were small ones. Within a radius of seven miles there are six cheese plants, Neilson's power factory, and our own plant, and all are doing better than ever. The explanation is more cows. Farmers who were grain growers a few years ago are now in cows, and the increased milk flow has met the increased demand and kept us all supplied."

"The price of milk has been increasing then?" we suggested. Mr. Dean told of the increased dairy output of the district. Mr. Dean referred to his books. "In 1912 we paid \$1.28 a cwt. for milk," he told us. "In 1913 we paid \$1.42; 1914, \$1.41; 1915, \$1.46, and 1916, \$1.50. This year, although the year's rates are not completed, we are paying about \$2.30 a cwt. The cost of delivery to the plant here, which the patron pays, runs from seven and three-quarter cents to 12½ cents per hundred pounds of milk, and 40 cents a cwt. for cream."

"Do your patrons have to observe the regulations imposed on dairy farmers who deal directly with the city?" was our next query.

"The conditions under which the milk is produced must be the same in both cases," replied Mr. Dean. "We take samples of each patron's milk three or four times a month and test twice a month for it. The result of this test is sent to the farmer along with the disks from the sediment test. We do not take milk that tests under 3.25 per cent. fat. We have never had to reject a patron's milk because it fell under this standard, although some of it runs pretty close to the mark. When a patron begins to get in danger, he usually buys a Jersey or two to bring up his test, which speaks volumes for the productiveness of the Jersey."

All Farms Inspected.

"And how about sanitary requirements?"

"The Toronto Board of Health maintain an official at Woodstock who looks after all milk shipped from Oxford county to Toronto. He visits farms and inspects dairies, cattle, stables, utensils. He can forbid any farmer to ship milk if he likes. In case he is suspicious of tuberculosis he tests the cows and the farmer has to get rid of them if they re-act or stop shipping milk."

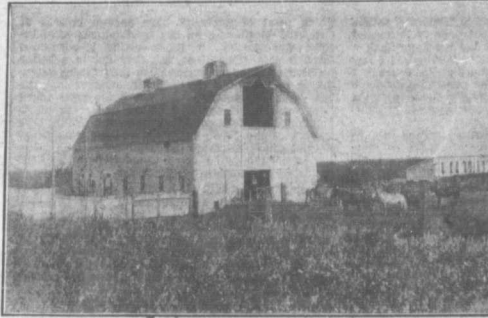
"The advantage of a plant such as this," explained Mr. Dean, "is that milk is in our hands soon after it leaves the farm, and we have a chance to cool it properly and then ship it in lead cans. We use 1,000 tons of ice yearly in icing cars alone, and the quality of milk received in Toronto under this plan has been so satisfactory that another shipping plant is being established at Listowel."

At Mr. Dean's request we then passed out from the

office to inspect the plant. We found every convenience for handling milk in great quantities with a minimum of labor. The morning's milk was just coming in, and as it poured from the farmer's cans it passed immediately to the cooling vats where it was reduced almost to the freezing point by mechanical refrigeration. An important part of the plant is the condensing equipment, with which it is possible for the company to handle all milk received without loss. The cars on which the various products of the plant are loaded are switched right up to the doors and both icing and loading are accomplished with a minimum of labor. "We are also planning to install a power plant," remarked Mr. Dean. "This may not go in till next spring. The milk powder will be used for ice cream purposes."

Few Pat on Under \$100 a Month.

On our return to the office we looked through the milk books for the previous month. Altogether we



Farm Buildings on an Alberta Settlers' Farm on the Grand Trunk Pacific. Mr. W. M. Williams, owner of the buildings illustrated, was a city man and native of Pennsylvania, previous to moving on to a homestead in Alberta. He is doing well with a combination of live stock and grain growing.

went over the records of 160 patrons, and of that number only 39 patrons had received cheques of less than \$100 in the month. The highest cheque ever issued to one individual dairyman in one month was \$1,062.72 last June to a patron milking 59 or 60 cows. These figures emphasize the important part that the cow plays in keeping up the farm incomes of the Woodstock district. "I don't think," said Mr. Dean, in commenting on these figures, "that any of our farmers are specialized dairymen. Mixed farming is the rule here with dairying as its principal feature."

"How is the price to the patron arranged?" "The producers have their own association," explained Mr. Dean. "The association submit prices to us and then the price is decided at a joint meeting between ourselves and the Milk Producers' Association. I might explain that we do not insist on contracts as to amount of milk to be delivered. We take all of the milk the patron brings along. During the hot weather we insist that the patron deliver milk every day of the week. If he holds his milk over Sunday he must skim it. During most of the year we take in milk Saturday night, rather than on Sunday."

An All the Year Supply.

"And how does the supply of milk hold out in the winter months?" was our final query.

"We get a fairly stable supply of milk the year round," the manager assured us. "June, of course, runs up bigger than other months, but farmers are now milking more cows in winter. In the winter, too, we have about 25 more patrons who, during the cheese factory season, send their milk there."

In the afternoon we took a run out with Mr. Dean in his new car to visit a few of what, Mr. Dean frankly confessed, were his best patrons. They must have been. In almost every case the stables were electric lighted, milking machines were installed and the dairy herds were composed of high grade Hereford cows. In one case a group of patrons were threshing with a co-operatively owned hydro-electric power outfit. All were making the production of milk for the city of Toronto, 50 miles away, their chief business. This is the business of city milk production extending itself: Where will the move-

ment end? He would be a bold man who would endeavor to predict.

From our visit with Mr. Dean we could not help but be impressed with the absolute fairness and impartiality of the company's dealings with the farmer, and the very great increase in business during the first eight months of 1917 over all the previous year is abundant evidence that the patrons of the Toronto City Dairy Co. are not slow to appreciate the fact.

Roughage is an important item in the calf's ration. At two to three weeks of age a calf should have all the good clean hay it will eat. With skim milk and alfalfa hay, little grain will be needed.

A Comfortable Dairy Barn

With Special Reference to the Basement

COMFORT, neatness and economy in construction characterize the new barn that shelters the Ayrshire herd of Mr. Rennieck, Vankleek Hill, Ont. Finished as it is in a battleship gray with white trimmings, in conformity with the other farm buildings, and flanked with two stave silos, the new barn lends an air of distinctiveness to Elm Lane, St. Catharines, Ont. Farm. Even a stranger driving out from "the Hill" looking for Mr. Rennieck's place, knows that "he's there" when he comes within sight of the barn.

The new barn is of plain construction—33 x 66 feet with a wing 30 x 40 feet. The basement of the barn proper accommodates a fine herd of Ayrshires, and that of the wing is furnished with box stalls for calves.

The first thing about the barn that strikes the observer is the construction of the basement walls. These are made of cedar blocks, set in mortar. Cedar blocks make one of the best walls obtainable for dairy barns. The wood acts as an insulator, and results in

a warm, dry stable. Moisture will not form on the wooden walls as it does on stone or concrete, and Mr. Rennieck informs us that the barns was never cold last winter, although some of the windows were open all the time, and this in addition to the ventilating system. The wall looks good; for the round ends of the blocks as they lie in the mortar give the appearance of round boulders or cobblestones. This cedar wall is a cheap one for anyone who can get the cedar blocks. Fortunately, Mr. Rennieck has all the cedar he wants in his own bush. In less than a day all the blocks needed for the basement were cut with the circular saw.

The stable equipment is thoroughly up-to-date and includes water constantly before the cows. The water is supplied from a large never-falling spring, some distance from the barn, through the agency of an hydraulic ram. With a five foot, two-inch head, the ram lifts the water 47 feet to the barn.

In front of the cows Mr. Rennieck has fitted up a rack that prevents the cows knocking feed out of the manger. This also acts to prevent the cows stepping up too far in their stalls. All manure therefore falls in the gutter, and keeping the cows clean is a comparatively easy matter. A milking machine has not yet been installed, but will be put in in the spring.

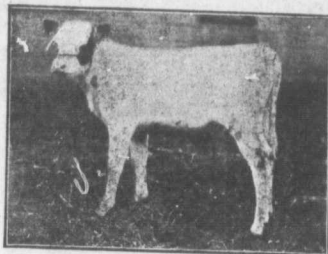
Mr. Rennieck is building up a nice herd of Ayrshires. His herd sire, Dunlop Choice Peace (imported), is a son of Hobsland Perfect Peace and Dunlop Charlotte. Some R. O. P. work has been done in Mr. Rennieck's herd, two cows, Middleton Fleckie 2nd and Lady Alice, qualified in the R. O. P. in 1916. They are now preparing for further work to be carried on this winter. One cow from this herd, White Ploss, toured the West a couple of years ago with Ness' exhibition herd. This cow was champion female at the Vankleek Breeders' Show in 1915. Mr. Rennieck is getting a nice stock of young steers on hand of his own breeding. His herd sire is a good representative of the breed, and is making his effect felt in the herd.—S. R. N. H.

The cow's ration is used for two purposes—to maintain body weight and produce milk and butter fat. If the ration is limited, a good cow will suffer in condition and lose in production.

Where a Milker Replaces a Man

A Visit with G. D. Mode of Bonny Brae Farm, Vankeek Hill, Ont.

S. R. H. Hodgins, Associate Editor, Farm and Dairy.



A Promising Youngster.

This is a young son of Eileen, Mr. Mode's famous old cow. As long as such type young stuff is coming on prospects for the future of the herd are bright.

A 350-acre farm with 50 head of pure bred Ayrshires and but one hired man? The answer is a mechanical milker. For many years Mr. G. D. Mode, of Vankeek Hill, was prejudiced against milking machines. He was afraid that such a machine would work havoc in his pure bred herd. But avers which he has grouped together in his power house, it would be impossible for himself and his hired man to run his farm and keep up his large herd of pure breeds.

Bonny Brae Farm is the home of such well known Ayrshires as Eileen, who produced in one year 12,825 lbs. milk, giving 685.48 lbs. butter fat, and Hazel of Bonny Brae, a Canadian champion three-year-old Ayrshire, who produced 22,129 lbs. milk and 861 lbs. of butter fat in her first two years milking. The farm is beautifully situated on a hill about a mile and a half distant from the village of Vankeek. The present owner, G. D. Mode, received the farm from his father, who in return had handed down to him.

The former owner of the farm, G. D. Mode's father, was well known among his neighbors as belonging to the hard working school of old-time farmers. The push which characterized him had been handed down to the present owner, G. D. Mode, who is recognized as an exceptionally good farmer and an enthusiastic breeder of Ayrshires. To him belongs the credit of building up the splendid herd of Ayrshires which has made his farm famous. His father had tried out several different breeds of cattle, but it was for Drummond to start in persistently building towards his ideal of a good Ayrshire herd. And that he has gone far toward realizing this ideal is well known to those acquainted with Ayrshire breeding in Canada.

The visitor to Bonny Brae Farm gets a good impression of the place on his arrival. The farm "looks well from the road." The present owner established a fine lawn between the house and the road in the space that was formerly taken up by some unproductive fruit trees. Along one side of the driveway is a fine perennial border. The house is one of the big comfortable houses to be found only on farms a couple of generations removed from the settler's cabin. It is equipped with electric lights and running water, as are the barns which, although not new, are comfortable, and with their two silos give a good substantial look to the farm.

The Power House.

The outstanding feature of Bonny Brae Farm is the efficient power house which stands between the house and the barn, and cuts down labor in both. Were it not for the labor saving devices which are to be found in this house, much more help would be required in the running of this large dairy farm, and life would not be so sweet for Mr. and Mrs. Mode.

The power house is 10x30 feet and is divided into three compartments. In one compartment stands a 6 h.p. engine and an electric dynamo. The engine turns an overhead line shaft, which runs the length of the building, working the machinery in the different compartments and projecting from the south end of the building far enough to hold a pulley which is used when wood is to be sawed or when other similar jobs need doing. The compartment holding the engine and the dynamo is the width of the building, and eight feet long.

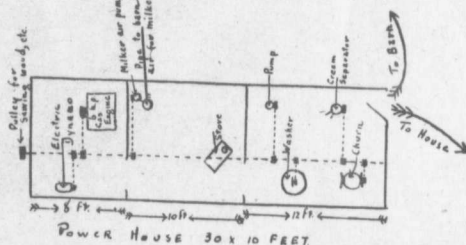
Next room contains the pump and vacuum tank of the milking machine, a pipe running out from here to the barn and along in front of the cattle. This room is also the width of the building and 10 feet in length. A stove has been installed for heating the water used in washing the milker, cream separator and the churn. Mr. Mode has had two taps put on the vacuum pipe close up to the tank in this room. He is therefore able to attach the milking

apparatus here and wash up his milker in this room instead of being compelled to carry the hot water out to the barn.

The next room (which is the one entered first) has a cream separator, a pump from which water is pumped to the barns and to the cream house, a churn and a washer. The engine runs at the same time the milking machine, the cream separator, the pump and the electric dynamo regularly twice a day. It also runs the washing machine on wash days and the churn whenever it is required to do so, but butter is not usually made on the farm, the cream being shipped to Montreal.

The Farm Lighting System.

The electric lighting plant used on the farm of Mr. Mode has been in use for five years and has given excellent satisfaction. Twenty-eight lamps supply the necessary light in barns and in the house. The current is generated by a small electric dynamo. Sixteen jars upstairs store the current, and light is always on tap. Outside of the cost of installing the system, which was about \$500 altogether, Mr. Mode considers his cost of lighting as practically negligible. The extra work of running the dynamo does not appear to make any difference with the engine when it is running. One-half horse power is enough to



operate the dynamo. It certainly seems to bring farm life closer to what it should be when one is able, by turning a switch, to light up the house or stable instantly.

Enthusiastic Advocate of Milker.

"The greatest labor saver on the farm," said Mr. Mode, as we inspected his power house, "is the milking machine. No one could be more prejudiced against milkers than I was until I had given one a trial. I was always afraid that it would ruin my pure breeds. A year ago last June, however, I found myself up against it for farm help and installed a milker. The 30 cows on which I used the milker last year have all freshened since, and none of them shows the slightest ill effects from being milked in that manner."

A year ago in June, Mr. Mode's hired man and wife left him just as haymaking was coming on. Mr. and Mrs. Mode were left with 32 cows to milk morning and evening in addition to the ordinary farm work. They did this for two weeks and by that time were pretty well disgusted with dairy farming. Mr. Archibald, from the Experimental Farm, Ottawa, happened along and recommended that they get a mechanical milker. He invited Mr. Mode to come out to the Experimental Farm and see their work,

and after an inspection of this machine Mr. Mode decided to install one.

"Milkling those 32 cows twice a day in addition to the farm work, was too much," said Mr. Mode, looking back on those dark days. "It used to take Mrs. Mode and me until eight o'clock every night to get done with the milking. Now we start in milking at a quarter to five and at six o'clock we are all through and are able to jump in the car and go off for the evening. Mrs. Mode never has to come out to the dairy barn now."

"If dairymen realized for one moment what a milker will do," continued Mr. Mode, "everyone with over a dozen cows would have one."

"Do any of your cows object to being milked by the milker?" I asked.

"Not in the slightest," replied Mr. Mode. "We have only one cow in the stable that was at all difficult to milk. When we used to milk her by hand we never attempted to do so without first tying her feet. Since we have got the milker, however, we have had no trouble with her."

Thirty-eight cows are now milked at Bonny Brae Farm with the milker. It is a four unit machine and milks 26 to 28 cows in an hour. Mr. Mode handles the milker entirely himself. He looks after the machine and carries the milk to the separator. The hired man strips the cows, assisted by Mr. Mode's two boys of seven and eight years, the oldest of which can strip 10 cows. "It is not a big task to strip the cows after the milker," states Mr. Mode, "if the milker is used during the whole of their lactation period. This is especially true with young heifers that have never known any other method of milking. They let their milk right down."

"Five gallons of gasoline runs the engine a week. It therefore costs me \$2 a week to milk 36 to 40 cows, separate the milk, pump the water to the barns and house, generate electricity and run the washer."

A concrete cream house stands next to the separating room. This has a tank in which running water is provided to cool the cream, and another compartment in which the cooled cream is placed in ice.

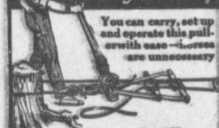
Farm Practice.

Mr. Mode is a dairy farmer. His herd of 80 pure bred Ayrshires is the main thing on the farm. All (Continued on page 7.)

The barns and silos on Bonny Brae Farm as they look from the road.

Photograph taken on a dull rainy day.

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Notes, Queries and Answers

Payment of Wages

IF A hires with B for six months at so much a month, and A gives B a month's notice that he is going home, will B have to say to the wages? Can B insist on A for damages if A quits?—Subscriber, Simcoe Co., Ont.

If it be an established fact that A hired for six months without any condition regarding the termination of the contract, then he has no right to terminate the contract by giving notice, and if the law allows him the period of six months has expired, he is liable to pay damages to B for loss B sustains. A will be entitled to recover B's wages for the number of complete months that he worked and the wages and damages can be set off one against the other, the balance being payable by the person by whom the larger amount is found owing.

Mortgage and the War

IHAVE a mortgage on a farm made April 1st, 1913, which will be due April 1st, 1918. If the mortgage is still on, does it close this mortgage and get my money, if I can not close the mortgage, will the law allow me to raise my interest to a higher per cent? The man who owns the farm sold it to me, I am subject to my mortgage and he takes a second mortgage for his money. If the man comes to me who bought the farm and wants me to renew my mortgage, will he do it and still have wages come in ahead of mine? Will wages come in ahead of mine?—E. P. York Co., Ont.

Under your mortgage dated 1st April, 1913, you cannot, without consent of the court, take steps to foreclose your mortgage until April 1st, 1918. If the mortgage is in arrears with his interest or fails to pay his insurance. There is nothing to prevent you making

Coming Events

- Experimental Union, Guelph, Jan. 8-9, 1918.
- Eastern Ontario Dairymen's Association Convention, Perth, Jan. 10-11.
- Western Ontario Dairymen's Association Convention, Stratford, Jan. 15-17.
- Annual Meetings of Live Stock Breeders' Associations, Toronto, Feb. 5-8.
- British Columbia Dairymen's Association Convention, Chilliwack, Feb. 6-7.
- Provincial Dairy Convention, Edmonton, Alta., Feb. 29-31.

ing a bargain with the mortgagee to increase the rate of interest. This mortgage can be extended for a further period without losing your priority over the second mortgage, but you had better consult your solicitor when the time comes for doing this.

Can Son be Drafted?

IF I am not a naturalized citizen and have no vote in the coming election, how have the tribunals any right to take my son away for military service?—H. H. Perry, Sound District, Ont.

In order to answer the question which you ask would necessitate having a great deal more information about yourself and your son than have been given. As this is an important matter you are recommended to see a solicitor in your own district.

Hard to Milk

IHAVE a cow that freshened in February and about a month afterwards, her stall stools stopped on one leg by itself. Since then it has been tough to milk. What would be best treatment?—A. H. Gloucester Co., Ont.

It is probable that the milk duct has become constricted as a result of the injury. This is hard to correct. Little progress for inserting into the teat between milkings, can be procured from dealers in veterinary instruments, or

one can be made out of a piece of dry hardwood. They have a bulb on each end and are constructed in the centre. Must be perfectly smooth and must be thoroughly disinfected by immersing in boiling water each time before inserting. This treatment in many cases succeeds in dilating the vent. Do not try cutting.

Farm Management

Save the Liquid Manure

INVESTIGATION by experiment shows have shown that the urine voided by animals contains over half of the fertilizing value of the excreta—about three-fourths of the total nitrogen and four-fifths of the total phosphorus in the solid manure. It has been shown also that the nitrogen and phosphorus in the urine are more readily available to plants than that in the solid excrement. The mixing of solid and liquid manure, therefore, insures not only a better fertilizer but a better balance fertilizer.

The waste of liquid manure may be largely prevented by the use of sufficient bedding, or in case of stabled cattle, by the construction of manure closets which should be provided with special diaphragm pumps for removing the liquid manure to the field turel for other purposes. The mixing of the liquid with the solid manure and bedding and hauling directly to the field is doubtless the plan which is best suited to the average farmer, or the liquid manure may be run into the pit with the solid manure and thus preserve both, since the liquid prevents the fermentation and drying of the solid manure.

Corn Cultivation

EDITOR, Farm and Dairy—Some months ago I read an article in your paper on corn cultivation. This article stated that, at the Illinois Experiment Station, big yields of corn had been secured from plots where the weeds were kept scraped off the surface with the hoe, as were secured from other plots kept free from weeds and cultivated regularly. A few weeks later, Mr. W. C. Good stated his belief that excessive cultivation was of little if any advantage in corn growing, and still later Mr. G. A. Brethen came back and stated his belief that when we stopped cultivating the corn stops growing. Although now the corn is in the silks, I will not add my opinion. At least I will be in good time for next spring.

Now, Mr. Editor, I believe in very shallow cultivation for corn, and if we could cultivate shallow it would be all right. The hand hoe is the only implement I know of, however, with which we can cultivate corn so shallow that we will not injure roots. Years ago, the regular way in our district was to cultivate the corn twice and hoe twice. We had good corn and plentiful crops and acreage was small. We would cultivate the first time when the corn was nicely up, and then just before haying, when corn is a foot high. The first hoeing was between the two cultivations, and the last hoeing after the last cultivation. I have seen cases where the last cultivation was done in just that way, but the field and the other part not covered at all. The first and cultivated half would yield badly, while the second half would crop on growing and produce more than the first. The corn was cultivated a little late in the season, too deeply, and perhaps with the hillers on.

As help became scarce, we invested in a two-row corn cultivator. We kept this machine going from the time the corn was too big to harrow until haying time, when the corn became

too tall to straddle the rows. Then we generally stopped cultivating. At first we thought that perhaps we should have kept right on and cultivated. My father, however, always thought that it was better to quit when we were through with the two-row machine. I started to investigate. While the corn was too tall to straddle the rows, I would go back between the rows and dig down into the soil to find the corn roots. I found that they made good roots all over the whole field and that they came very, very near the surface. It then did not take me long to conclude that we could not cultivate in the way we were doing.

My conclusion is that, in a pliable soil, the drying out of the soil will form a mulch, and that in any case the roots form a sufficiently compact mat under the surface to absorb practically all moisture that might seek to escape by evaporation.

The whole question hinges upon whether the lack of late cultivation or the inevitable injury to the roots by practicing it is of the greater consideration. I would not care to follow any plan that would injure these roots.—C. G. M., Glenarry Co., Ont.

Tractor Queries

IPREFER two front wheels and two back wheels. The majority of the weight should be upon the two back wheels. The roller road type prevents the tractor from being very maneuverable of cultivating, and so curtails the usefulness of the tractor. When operating upon soft ground, extensions may have to be added to one or to both of the back wheels, also different or more extended lugs might have to be used. More attention will have to be paid to the width of the rim of the back wheel as regards the size or capacity of the lugs attached thereto. Farm tractors supplied with caterpillar traction can operate upon very soft ground. These machines should be made more costly as to first cost, and much more costly to operate, the repairs required by the caterpillar attachments being very considerable.

Certainly Tractors should be made so that they will turn in as short a distance as possible, and the implements behind the tractor should also be operated as closely as possible to the tractor, and the tractor driver should be as near the implements as possible.—Louis Simpson.

The Less Known Clovers

A FORTY-ACRE plot of sweet clover at Macdonald College was cut across diagonally the first mow after seeding, half of being mowed after the other half was cut. Early in June this year, shortly before cutting, the half of the plot which had not been disturbed the previous fall, was cut higher than the other half, which had been cut in the fall. Fall cutting, however, had not killed any of the plants. Does this indicate that it is inadvisable to pasture sweet clover the first year?

A similar plot of black medick, which is also of the clover family, was treated in exactly the same way, but was exactly the opposite. The stem of medick was killed by not cutting in the fall. This would seem to be an argument for close pasturing of medick.

Crimson clover has been experimented with at Macdonald College, but under Canadian conditions, it is only an annual. It has been killed out every winter.

Some of the other clovers, is a perennial and a good plant when the ground is not fertile enough for alfalfa. It is very popular in Europe as the dry forage is a richer feed than alfalfa, but it does not yield as heavily, however, as alfalfa. At Macdonald College it is grown in a small way, usually yielding one crop a year, but two crops in good seasons.—F. E. E.

Where a Milker Replaces a Man
(Continued from page 5.)

crops grown are grown to feed the cattle. Twelve to 15 acres of corn are grown every year to supply ensilage for the herd. A few oats are grown for horse feed, but most of the grain area is devoted to such mixed grain as oats and barley for grinding for cattle feed.

Twenty-six to 30 calves are registered each year on Bonny Brae farm and last year 20 were sold for breeding stock. This adds of the business brings in substantial monetary returns, but the main source of income on the farm is from the cream which is shipped to Montreal. Mr. Mode will soon have good assistance from his two boys. They are only seven and eight years of age respectively yet, but they are already deeply interested in breeding work and know every cow and calf on the farm intimately.

Two cars are kept on the farm. A Ford has been used for four years with an outlay for repairs of 40 cents. This was spent for two patches for the tires and for a new fan belt. The tires on three of the wheels have never been touched yet, either the inner or outer. The outer tire is worn out, but they are using the spare. This car is used for delivering cream and for driving during bad weather. A new car which has only been in use this year, a Reo, is their pleasure car. It also has run this year without the need of any repairs.

In speaking of the cars and the milking machine, Mrs. Mode summed up her feelings in this way: "If I were to be told that we had to give up either the cars or the milker, I would say, take the cars, but leave the milker."

SHEEP AND SWINE

Buildings for Sheep

THE high prices being realized for wool and mutton make sheep look good to the farmer. Many farmers are, therefore, adding a small flock to their stock. To farmers just setting into sheep the problem of housing presents itself. What sort of shelter is necessary for sheep? Will a suitable shelter be expensive? These are the questions asked by the new or the prospective sheep owner.

As a general rule the beginner should give his attention first to the quality of the sheep and afterwards to the barn. Almost any kind of barn will do for a sheep shelter, provided it is waterproof, roomy, well drained and well ventilated. Sheep stand the very cold temperatures, provided the air is dry and drafts are prevented. In estimating the size of building required for sheep, at least 18 square feet should be allowed for each ewe, exclusive of the space for pens, passages or racks.

One of the first considerations in the shelter for sheep is ventilation without drafts. These animals are naturally provided with the cold, but in a damp shed or in one where they are exposed to drafts, sheep will catch cold readily, and sickness will leave its effect not only in a smaller lamb crop in the spring, but also in the decreased quality of the wool. If possible provision should be made to allow the sunshine into the sheep barn.

The sheep shelter should be provided with a lamb creep. This may be made by fencing off part of the barn in such a way that the older sheep cannot get underneath the fence while the lambs can. By such a system the lambs will be able to get extra grain and so keep up their growth. Arrangements should also be made for separating sick ewes, or those with very young lambs, from the rest of the flock. If a few fence gates are

lifted off in the fall they will serve a useful purpose in the sheep barn during the winter.

The sheep barn should be provided with plenty of feeding racks. It is important that seeds and chaff be kept out of the wool in the highest prices are to be realized, and the best time to start in the production of clean wool is when you are building the feed racks. "V"-shaped racks are the most popular for feeding sheep. If they have a tight bottom they can also be used for feeding grain and roots. With the addition of a number of feed racks and several fence gates, almost any barn space can be fixed up into a suitable shelter for a small flock of sheep.

Sheep Raising Prospects

THE good prospects for wool and mutton have certainly given the humble sheep a new status among farm beasts. Things are going to hold good for sheep right along. In normal times beef usually leads in our country. Top prices for good beef are usually better than top for either pork or mutton. But mutton has run away from beef in price. The reason for this is not that of greater suitability of mutton for either local or foreign feeding, but

is directly due to the profits arising from production of mutton and wool combined. Fifteen or sixteen dollars invested in a good grade ewe will bring all this money back in ten months from the wool and lamb combined. This is fast and likewise sure. The absolute shortage of meat and the awful wastage of clothing combined intensify the wins on sheep investments.

In any case it is hard to see how the men who have sheep or those buying in just now can go wrong. Meat and wool are two of the scarcest essential commodities in the world. Wool is a commodity in a class by itself for shelter and endurance. Mutton is a quickly and cheaply produced substitute for heavier meats, and its low cost of production is in its favor for domestic use. This use is likely to increase. One of the prominent officials of the Food Conservation Commission forecasts the forbidding of the home consumption of beef within a few months. If this happens the best cuts of mutton will go to the local price of bacon now—about fifty cents a pound.

Every farmer should keep all his ewes, and might breed the biggest of his ewe lambs if he is keeping grades. They will need a little extra care to keep them growing and full fleeced.

Wether lambs should be carried over at least until Easter. Town men should be encouraged to buy surplus ewes, such as the thin ones that go to the packing plants sometimes, and put them out on shares. There will be good prices for lamb, mutton and wool next year.

Next to swine, sheep make the best kind of contribution to the farm living by furnishing a supply of whole some fresh meat in conveniently small carcasses. It is very cheaply produced. It is always possible to pick out of a flock a fat dry ewe or thick lamb that is just right for killing without any special feeding. A 90-pound lamb will dress fully 40 pounds, and it is doubtful if the cost of production of the lamb can be figured above a dollar and a half. Cured meat is too much used on the farm, and the sheep is the best animal to vary the meat diet, especially in summer time.

There are other advantages of sheep keeping. It requires a small capital outlay for foundation stock or buildings, and makes a light demand on labor in its care, winter or summer. It is the best kind of stock through which to encourage an interest in live stock in children as it is inexpensive and easily cared for.—J. McCall, Alberta.



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Farm and Dairy

AND

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Peterboro and Toronto.

Subscription Price, \$1.00 a year. Great Britain, \$1.25 a year. For all countries, except Canada and Great Britain, add 60c for postage.

Advertising Rates, 12 cents a line flat, \$1.68 an inch an insertion. One page 60 inches, one column 12 1/2 inches. Copy received up to Saturday preceding the following week's issue.

Peterboro Office—Hunter and Water Streets.
Toronto Office—37 McCaul Street.

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CIRCULATION STATEMENT.
The paid subscriptions to Farm and Dairy approximate 20,000. The actual circulation of each issue, including copies of the paper sent to subscribers, who are but slightly in arrears, and sample copies, varies from 20,500 to 22,000 copies. No subscriptions are accepted at less than the full subscription rates.

Sworn detailed statements of circulation of the paper, showing its distribution by counties and provinces, will be mailed free on request.

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We guarantee the every advertiser in this issue is reliable. We are able to do this because the advertising columns of Farm and Dairy are as carefully edited as the reading columns, and because to protect our readers, we turn away all unscrupulous advertisers. Should any advertiser herein deal dishonestly with you as one of our paid-in-advance subscribers, we will make good the amount of your loss, provided such transaction occurs within one month of the date of this issue, that it is reported to us within a week of its occurrence, and that we find the facts to be as stated. If a condition of this contract that in writing to advertisers you state: "I saw your advertisement in Farm and Dairy."

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PETERBORO AND TORONTO

"Read not to contradict and to confute, nor to believe and take for granted, but to weigh and consider."
— Bacon.

Our Railroad Policy

ON the same day last week the governments of Canada and United States announced their railway policies. The Canadian announcement leads us to believe that the railway barons are still in power at Ottawa. According to the judgment handed down to us by the Board of Railway Commissioners, there will be an increase of fifteen per cent. in passenger rates in all parts of Canada with the exception of British Columbia, and a ten per cent. increase in freight rates in the West, and a fifteen per cent. increase in the East. The companies are still in undisputed control of this greatest of all public utilities. The United States government, on the other hand, has followed the example of England, and the gigantic railway systems of that country have been nationalized in order that transportation facilities may be made to more fully serve the war needs of the allies and the domestic requirements of the country.

This unification and coordination of railway systems is the policy that has been consistently advocated for Canada by the organized farmers. The farmers' organizations waged what they had been led to believe was a successful fight against freight increases, contending that a union of all the roads under government ownership and operation would result in better service and a chance of profit on the venture even at the old rates. Freight increases, they pointed out, might help needy roads, but would result in great gain also to the roads that need no assistance and are to that extent a burden on the general public. Even with the increases that are now granted, no guarantee is required that the increased revenues will be devoted by the railway companies to improving their service. Such coordination of effort as there is, is still left in the hands of a board of railway executives.

We in Canada are lagging behind the United States and England in the organization of our transportation facilities. It is not a showing of which we have any cause to be proud.

The Need for Organization

ONE statement made by Mr. John Kennedy of the United Grain Growers, Limited, at the recent U. F. O. Convention, should be carefully pondered by every Ontario farmer who has not yet seen it to ally himself with the farmers' movement of that province. The threat held out by Mr. Kennedy is, that the capitalistic interests are now forming an organization within themselves to which all stock holders in commercial corporations will be asked to subscribe. The object of this organization will be partly to protect the legislative favors that they now enjoy and which are threatened by the growing power of organized agriculture and organized labor, but more to see that the after-war debt is placed on the farmers and wage earners rather than the capitalists. This organization will not work in the open, as does the Canadian Council of Agriculture or the Trades and Labor Council of Canada. Rather it will be their plan to conduct an insidious campaign at federal and provincial capitals to influence our legislators on their behalf. Their success with similar campaigns in the past probably gives the privileged interests every reason to put their faith in the wherewithal of which campaign funds are made. The success of such a movement would practically mean the reduction of Canadian farmers and of laboring men to the position of tax paying serfs.

The two forces that stand in the way of rural of privileged interests are organized agriculture and organized labor. Neither are as yet powerful enough to control legislation. Certainly they are not strong enough to cope with an organized money power. Ontario farmers are the best organized in Eastern Canada, but even here the proportion of farmers organized is very small, some 12,000 farmers being affiliated with the U. F. O. out of the 260,000 farmers in the province. In Western Canada the farmers' organizations are more influential. In both east and west, however, there is need for further vigorous organization work. There was no lack of enthusiasm at the recent meeting in Toronto, and if the delegates to that convention carry their enthusiasm home with them and there transmit it into organizing effort, there is no reason why the membership of the U. F. O. should not be doubled this winter.

The Call of the Farm

THE call of the farm is for labor and still more labor. The need for foodstuffs is urgent. The civil and military populations of this and other countries must be fed. The supply of this much needed food will be directly in proportion to the number of experienced laborers engaged in its production. During the past three years, farmers have been working as they never worked before. Their wives and children have been helping to the limit of their ability. Mr. Stonehouse, speaking at the recent U. F. O. convention, estimated the length of the farmer's working day during the past season at fourteen hours, and he did not overstate the case. And yet, in spite of the tremendous efforts that have been made, the acreage under crop in Eastern Canada has been decreasing. The crops of 1918, if we read aright the signs of the times, will not be up to the standard of the past three seasons and unfavorable weather conditions next year might precipitate famine conditions in this country.

For this decreasing production of foodstuffs, farmers are in no wise responsible. They have worked as no class in the community has worked, and that without the stimulus of excessive profits or of exorbitant wages for themselves and families. Extra exertion on the part of those who remain on the land, however, cannot make up for the missing effort of the great number whom the war has removed from rural districts. Even before the war started, the farm-reared boys who once manned our farms, had in large measure answered the call of the city and Canadian-bred farm workers were comparatively few in number. Their places have been taken by

emigrants, and those Old Country men, be it said to their credit, were among the first to answer the call when war broke out. Many of the Canadian boys also responded nobly but inadvertently to the appeals of recruiting sergeants, and now we have the Military Service Act operating to still further reduce the supply of farm labor. The net result of this depletion of labor has been a corresponding decrease in agricultural production, and that at a time when food is more needed than ever before.

Supplying the Labor

THE food situation calls for vigorous action. Two lines of endeavor would tend to ease the situation—the placing of more labor on the farms and the providing of more efficient equipment. In meeting the demands for labor it must be borne in mind that inexperienced help, while useful at certain seasons, cannot take the place of the boys and men who are "to the manor born," or who have had farm training. Few farmers would care to trust a green hand with expensive machinery and a spirited team, and it is with teams and machinery that the greater part of the work on the modern farm is done. So far as is possible, therefore, all farm boys should be allowed to remain on the farm and be exempt from the operations of the Military Service Act, so long as they are engaged in the agricultural production. When there are more sons on any one farm than are absolutely necessary, the lads who then become liable for service, should be given the alternative of helping other farmers who are not so happily situated. Even this, however, would be merely a drop in the bucket of the farm's total requirements if production is to be what it should be. The remainder of the help needed must come from the city.

This city help need not necessarily be inexperienced. In our towns and cities are many men who came originally from the farm, many of them attracted there since the war began by the lure of high wages in munitions plants. If at all possible these men should be induced to return to the farms for the summer season at least. To secure their services, two courses are open—conscription for production or such high prices for farm produce as will enable farmers to pay wages commensurate with those now paid by city employers of labor. In the unskilled class, high school boys have already rendered much appreciated assistance the season through and a well organized campaign should make available much unskilled adult labor to help in harvesting the crops.

Mechanical equipment to a certain degree may be a substitute for labor. Tractors, milking machines and wider working machinery, all tend to increase the efficiency of the farm workman. The steadily advancing prices of all of this equipment, however, is proving a serious handicap to its use. These prices are at present enhanced by an almost prohibitive protective tariff. In no one way can our law makers so convincingly prove their interest in the production of foodstuffs as by removing those obstructive duties which are a serious handicap on the farming business. There may even be cases where it would be wise for the government to take steps to supply tractor power, as the Ontario government has already done. Yet the best of mechanical equipment will replace only a small portion of the men who have been removed from the army of production. The first essential is man power.

We realize that we have merely touched on the outskirts of this great problem. Its solution calls for statesmanship of a high order. If anything is to be done to increase production next season, it must be done in the next two or three months. It would be a national calamity if our armies at the front were to be weakened because of a deficiency in the supply of food. It would be equally regrettable if the spirit of the people at home were to be broken by under-nutrition. Yet this is the danger we face if labor is not made available to the farmer at a wage which is reasonably proportionate to the price of farm products.

Prof. Geo. E. Day.

FEW men are better known to the live stock fraternity of America than Prof. Geo. E. Day, who has recently resigned his position as Professor of Animal Husbandry at Guelph to become secretary of the Dominion Shorthorn Breeders' Association. In Canada Prof. Day has long been known as our premier livestock man. Born and brought up on a farm in Wellington Co., Ont., Prof. Day's earliest associations were with beef cattle, which were a specialty on the home farm. When 21 years of age he left the farm to attend the Guelph

College Institute, and then spent several years teaching a rural school. He entered the O.A.C. in the fall of 1891, taking the first two years concurrently. He was the gold medalist of the institution in 1892 and graduated in 1893, the college course then being a three-year one. In October of the same year he was appointed lecturer in agriculture, and shortly after became Professor of Animal Husbandry and farm superintendent.

PROF. GEO. E. DAY
Secretary Dominion Shorthorn Breeders' Association.

Prof. Day is probably best known in connection with swine investigations which he has conducted, he being one of America's leading experimentalists in this line. He is the author of "Productive Swine Husbandry," which is widely used as a text book in the United States as well as in Canada. He will have the best wishes of all Canadian farmers in the new work which he has undertaken.

Dominion Grange Meets

THE 43rd annual meeting of the Dominion Grange was held in the Labatt Temple, Toronto, at the close of the U.F.O. conventions. The worthy master, J. C. Dixon, of Moorefield, occupied the chair, assisted by Bro. W. E. Wardell and Henry Glendinning. Reports showed progress during the year; although no new granges were organized, some showed considerable gains in membership.

The secretary-treasurer's report showed a balance on hand of \$1064.12, which was considerably augmented by dues brought to the meeting by delegates. It was decided to print in pamphlet form the proceedings of the meeting for circulation among the members, a practice that has been discontinued for the last three years.

The People's Salt and Soda Co. at Kinrossville is one of the institutions of the Grange that has stood the test of time. The worthy master and Bro. Howard Bertram, of Midhurst, were appointed to look into the matter of dormant granges holding stock in the company. The following motion was passed unanimously: "That the executive be a committee with power to meet the directors of the United Farmers of Ontario to make arrange-

ments for a permanent basis of affiliation of the Dominion Grange with that body, instead of each subordinate grange affiliating or not year by year, which is the present mode of procedure.

The annual banquet was held in the Queen Mary Tea Rooms. Both the proceedings of the afternoon and the banquet of the evening were conducted in good old-fashioned grange style, and were thoroughly enjoyed by the grangers present.

The following officers were elected for 1918: Worthy master, J. C. Dixon, Moorefield (re-elected); worthy overseer, Howard Bertram, Midhurst; secretary-treasurer, N. E. Burton, Port Stanley; asst. sec.-treas., Miss Hattie Robinson, St. Thomas; chaplain, W. McCrae, Guelph; lecturer, Alfred Gifford, Meaford; steward, William Oke, Wilby; asst. steward, Henry Glendinning, Manilla; lady asst., Miss Alice Palmer, Middlemarch; gate-keeper, W. J. Goodfellow, Allandale; coroner, Miss Phoebe Wilby, Pomona; Miss Lena Hill, St. Thomas; executive committee—W. E. Wardell, St. Thomas; Judson Austin, Simcoe; Wm. McCrae, Guelph; Auditor, John Ditchard, Gorrie; representatives on Toronto National Fair Board, W. McCrae, London; Western Fair, W. E. Wardell.

The New President

THE new president of the United Farmers' Cooperative Company, Limited—Mr. R. W. E. Burnaby, of York county—is one of the lights from the East—he comes from Nova Scotia. On leaving his native province, Mr. Burnaby embarked on a business career, and in business he was more than ordinarily successful. A few years ago, however, his love for the farm reasserted itself, and he is now farming at Jefferson, Ont.



R. H. E. BURNABY,
President of the U.F.O. Cooperative Co.

where he has established an unusually good Holstein herd, and promises to make as great a success of himself as a farmer as he was previously successful in commercial life. His experience in both cases will stand him in good stead as president of the Cooperative Company.

Mr. Burnaby has taken a keen interest in farmers' cooperative movements ever since he re-established his connection with agriculture. He is one of the live wires in the Toronto Milk and C-ram Producers' Association, and his interest in the United Farmers' Cooperative Company is evident by his work in their local club at Jefferson, and in a wider field he has taken a leading part in the sale of stock during the last few months. As president of the company he will exercise a vital influence on the progress of the most promising farmers' movement ever launched in Ontario.

An Important Message
To Every Cow Owner

There was never a time in the history of the world when the saving of every ounce of butter-fat and every particle of effort and time was so important as now.

There was never a time when the use of a late improved De Laval Cream Separator meant so much to every cow owner.

This is true whether you are using no separator, some inferior separator, or even an old style De Laval machine.

Fortunately it happens to be not only a matter of patriotic duty but at the same time one of dollars-and-cents advantage as well.

A New Type De Laval Cream Separator skims cleaner and produces a better quality of cream than any other separator or skimming method.

Likewise, by reason of its easier turning, easier cleaning, greater capacity, simplicity and durability, it saves time and labor over any other machine or method.

Moreover, the use of a De Laval Cream Separator is better than any other way of utilizing milk because it keeps the valuable skim-milk on the farm.

Nor should the installation of an improved De Laval machine be delayed a single day. It begins saving the first day it is put in, and will likely have paid for itself by spring.

We guarantee all this to be true—but the better way is to demonstrate it in your own dairy to your own satisfaction.

That every De Laval agent is glad of the opportunity to do—without any obligation on your part unless satisfied that every claim made is fulfilled.

There are local De Laval agents almost everywhere. If you don't know the nearest one simply address either of the main De Laval offices as below.

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U.F.O. Convention Items

Over Seven Hundred Farmers were in attendance. Nearly Seven Thousand Dollars (\$7,000.00) stock in the United Farmers Cooperative Company, Limited, was subscribed in a twenty-minute whirlwind campaign.

Watch the U. F. O. grow in 1918. Information sent on application regarding organization.

Duplicating Order Books, per dozen . . . \$1.00
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All Club secretaries should use them.
One Hundred and Fifteen Clubs and Four Thousand Members were added in 1917.

We want these figures doubled in 1918. Let every Club put its shoulder to the wheel—Make your Club set a new high record in both business and membership.

The United Farmers' Cooperative Co.
Limited

2 Francis Street

Toronto, Ontario



It is always safe to learn, even from our enemies
—Colan.

The Heart of the Desert

(Continued from last week)

"YOU aren't strong enough to do any good and seem one must stay here to run things."

So again Katherine was left to pace the veranda. All night the search went on. Jack sent messages to the neighboring ranches and the following morning fifty men were in the saddle seeking Rhoda's trail. Jack also sent into the Pueblo country for Kut-le, feeling that his aid would be invaluable. It would take some time to get a reply from the Indians and in the meantime the search went on rigorously with no trace of the trail to be found.

John DeWitt did not return to the ranch until the afternoon after Rhoda's disappearance. Then, disheveled, with bloodshot eyes, cracked lips and blistered face, he dropped exhausted on the veranda steps. Katherine and Jack greeted him with quiet sympathy.

"I came to get fixed up for a long cruise," said John. "My pony went lame and I want a flannel shirt instead of this silk thing I had on last night. I wish to God Kut-le would come! I suppose he could read what we are blind to."

"You bet!" cried Jack. "I expect an answer from his friends this afternoon. I just had a telegram from Porter, in answer to one I sent him this morning. I caught him at Brown's and he will be here this afternoon. He knows almost as much as an Indian about following a trail."

They all spoke in the hushed tones one employs in the sick-room. Jack tried to persuade DeWitt to eat and sleep but he refused, his forced calm giving way to a hoarse. "For heaven's sake, can I rest when she is lying out there!"

John had not finished his feverish preparations when Billy Porter stalked into the living-room. Jack entered, the telephone rang and Jack answered it. Then he returned to the eager group.

"Kut-le has gone on a long hunt with some of his people. They don't know where he went and refuse to look for him."

Billy Porter gave a hard, mirthless laugh.

"Why certainly! Jack, you ought to have a hole bored into your head to let in a little light. Kut-le come. Can't you find Rhoda's trail. Kut-le in love with Rhoda. Kut-le an Indian. Rhoda refuses him—he goes off—gets some of his chums and when he catches Rhoda alone he beats her. He will keep a man behind, covering his trail. Oh, you easy Easterners make me sick!"

The Newmans and DeWitt stood staring at Porter with horror in their

eyes. The clock ticked for an instant, then DeWitt gave a groan and bowed his head against the mantelpiece. Katherine ran to him and tried to pull his head to her little shoulder.

"O John, don't! Don't! Maybe Billy is right. I'm afraid he is! But one thing I do know. Rhoda is as safe in Kut-le's hands as she would be in Jack's. I know it, John!"

John did not move, but at Katherine's words the color came back into Jack Newman's face.

"That's right!" he said stoutly. "It's a devilish thing for Kut-le to do. But she's safe, John, old boy. I'm sure she is."

Billy Porter, conscience-stricken at the effect of his words, clapped John on the shoulder.

"Aw! shucks! I let my Injun hate get the best of my tongue. Of course she's safe enough; only the darn devil's got to be caught before he gets



Juvenile patriots: Doing their "bit" to beat the Hun.

to Mexico and makes some padre marry 'em. So it's us to the saddle a whole heap."

"We'd better get an Indian to help trail," said Jack.

"You'll have a sweet time getting an Injun to trail Kut-le!" said Porter. "The Injuns half worship him. They think he's got some kind of strong medicine; you know that. You get one and he'll keep you off the trail instead of on. I can follow the trail as soon as he quits covering it. Get the canteens and come on. We don't need a million cowboys running round promiscuously over the sand. Numbers don't help in trailing an Injun. It's us two weeks and we'll outfit for that. But we'll get him in the end. Crook always did."

There was that in Billy Porter's voice which put heart into his listeners. John DeWitt lifted his head, and while his blue eyes returned the gaze of the others miserably, he squared his shoulders bravely.

"I'm ready," he said doggedly.

"Oh, let me come!" cried Katherine. "I can't bear this waiting!" Billy smiled.

"Why, Mrs. Jack, you'd be dried up and blown away before the first day was over."

"But Rhoda is enduring it!" protested Katherine, with quivering lips.

"God!" John DeWitt muttered and flung himself from the house to the corral. The other two followed him at once.

It was mid-afternoon when the three rode into the quivering yellow haze of the desert followed by a little string of pack horses. It was now nearing twenty-four hours since Rhoda had disappeared, and in that time there had been little sand blowing. This meant that the trail could be easily followed were it found. The men rode single file, Billy Porter leading. All wore blue flannel shirts and khaki trousers. John DeWitt wore Eastern park fashion, with short stirrup, rising from the saddle with the trot. Jack and Billy rode Western fashion, long stirrup, an inseparable part of the horses, a fashion that John DeWitt was to be forced to learn in the fearful days to come.

Billy Porter declared in a loud voice from the head of the procession. "Of course, Kut-le has taken to the mountains. He'll steer clear of ranches and cowboys for a while. Our chance lies in the Billy Porter covering his trail after he gets well into the ranges. We will get his trail and hang on till we can outfit him. If he was alone, we'd never get him, but he resides in the mountains and is hampered by Miss Rhoda and I trust to her to hammer him a whole lot after she gets her hand in."

All the rest of the burning afternoon they moved toward the mountains. He was quite dusk when they entered the foothills. The way, not good at best, grew difficult and dangerous to follow. Billy led on, however, until darkness closed down on them in a thick cactus-stem canon. Here he halted and ordered camp for a few hours.

"Lord!" exclaimed DeWitt. "You're not going to camp! I thought you were really going to do something!"

Billy finished lighting the fire and by its light he gave an impatient glance at the tenderfoot. But the look of the burned, sand-grimed face, the bloodshot eyes, blazing with anxiety, caused him to speak patiently.

"Can't kill the horses, DeWitt. You must make up your mind that this is going to be a hard hunt. You got to call out all the strength you've been storing up all your life, and then some. We've got to use common sense. Lord, I want to get ahead, don't I? I've seen Miss Rhoda. I know what she's like. This ain't any joy ride for me either. I got a lot of feeling in it."

John DeWitt extended his sun-blistered right hand and Billy Porter clasped it with his brown paw.

Jack Newman clapped his throat.

"Did you give your horse enough rope, John? There is a good lot of grass close to the canon wall. Quick as you finish your coffee, old man, roll in your blankets when I yell. We'll rest all midnight when the moon comes up, eh, Billy?"

DeWitt, finally convinced of the good sense and earnestness of his friends, obeyed. The canon was still in darkness when Jack shook him into wakefulness but the mountain peak above was a glorious silver. Camp was broken quickly and in a short time Billy was leading the way up the wretched trail. DeWitt's four hours of sleep had helped him. He could, to some degree, control the feverish anxiety that was consuming him and he tried to turn his mind from p'etrating Rhoda's agonies to castigating himself for having unlearned even though Kut-le had left the ranch. Before leaving the ranch that afternoon he had telegraphed and written Rhoda's only living relative, her Aunt Mary. He had been thankful as he wrote that Rhoda had no mother. He had so liked the young Indian; there had been such good feeling be-

tween them that he could not yet believe that Porter's surmise was wholly correct.

"Supposing," he said aloud, "that you are wrong, Porter? Supposing that she's—she's dying of thirst down there in the desert? You have no proof of Kut-le's doing it. It's only founded on your Indian hate, you say yourself."

"That's right," said Newman. "Are you sure we aren't wasting time, Billy?"

Billy turned in his saddle to face them.

"Well, boys," he said, "you've got half the county scratching the desert with a fine-tooth comb. I don't see how we three can help very much there. On the other hand we might do some good up here. Now I'll make a bargain with you. If by midnight to-



The Introducers.

night we ain't struck any trace of her, you folks can quit."

"And what will you do?" asked Jack.

"Me?" Billy shrugged his shoulders. "Why, I'll keep on this trail till my legs is wore off above my boots" and he turned to guide his pony up a little branch trail at the top of which stood a tent with the telltale wind-lash and forge close by.

Before the tent they drew rein. In response to Billy's call a rough-bearded fellow lifted the tent flap and stood suppressing a yawn, as if visitors to his claim were of daily occurrence.

"Say, friend," said Billy, "do you know Newman's ranch?"

"Sure," returned the prospector. "Well, this is Mr. Newman. A young lady has been visiting him and his wife. She disappeared night before last. We suspicion that Cartwall, that educated Injun, has stole her. We're trying to find his trail. Can you give us a bunch?"

The sleepy look left the prospector's eyes. He crossed the rocks to get a hand on Billy's pommel.

"Geef! Ain't that ugly!" he exclaimed. "I ain't seen a soul. But night before last I heard a screaming in my sleep. It woke me up but when I got out here I couldn't hear a thing. It was faint and far away and I decided it was a wildcat. Do you suppose it was her?"

DeWitt ground his teeth together and his hands shook but he made no sound. Jack breathed heavily.

"You think it was a woman?" asked Billy hoarsely.

The prospector spoke hesitatingly. "I'd be before, I'd a gone on a hunt. But it was all kind of in my sleep. It was from way back in the mountain there."

"Thanks," said Billy, "we'll be on our way."

"It's four o'clock. Better stop and have some grub with me, then I'll join in and help you."

"No!" cried DeWitt, breaking his silence. "No!"

"That's the young lady's fiancéer," said Billy, nodding toward John.

"Sho!" said the prospector sympathetically.

Billy dried his reins.

"Thanks, we'll be getting along. I guess. Just as much obliged to you. We'll water here in your spring."

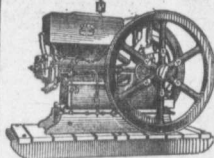
They moved on in the direction

whither the prospector had pointed. They rode in silence. Dawn came

(Continued on page 12.)

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kitchen. Note the built-in ironing board, a very convenient arrangement. The dinner wagon may stand here also, or be left in the little back hall between the kitchen and dining room. The table may be in the centre of the kitchen or by the window according to what it is being used for. There is also a ventilated cleaning cupboard in the corner of the washroom behind the door.

The basement is conveniently arranged. It is intended that the laundry work will be done in the basement. A large concrete cistern is planned for, underneath the concrete cellar floor, thus occupying no cellar space.

The perspective of plan "E" is shown in the exterior view. The roof lines look a little "high." This was done in order to get a good attic room. Should this not be required, the roof may be given a flatter pitch, which will add to the appearance of the house.

The working drawings, specifications, and bill of material, which can be had for the same nominal fee as was given in connection with the other prize plans, (viz. \$3.00 if ordered by residents of Manitoba, and \$5.00 if sent out of the province) will not be ready for distribution until the middle of January, 1918.

It is anticipated that a bulletin presenting all the plans in the series so far shown, together with a few others, will shortly be printed and offered for free distribution through the Publications Branch, Manitoba Department of Agriculture, Winnipeg.

COOK'S CORNER

The Question of Sugar

THE necessity of conserving supplies of sugar, which was emphasized by the shortage of shipping, has resulted in stern economies among the Allies. Before the war, England had the largest per capita consumption of sugar of any nation—82 1-3 pounds per person per year. This has now been reduced to 26 pounds per person per year, or about one ounce per day per person. In Great Britain prices have now been fixed for jam and jellies. There is no sugar for the homemade product. In France the people are on rations of 1 1/2 pounds per person per month, which the Government distributes at about 25 cents per pound. In Italy, because of the shortage of sugar supplies, the Government has set a retail price of \$1.25 for a box containing 2 1/2 pounds. In Germany the present sugar ration is only 77 pounds per person per month. In the United States and Canada the per capita monthly consumption of sugar is about 7 1/2 pounds.

The Food Controller has asked Canadians to reduce their consumption of sugar by at least seven ounces per week per person and, in order to provide larger supplies to meet the necessary requirements of the Allies, a further reduction to three pounds per person per month may be urged. Steps have already been taken to curtail the use of cane sugar in candy-making and the use of sugar or molasses in distillation of potable liquors has been prohibited.

About 60 per cent. of the sugar consumed in North America is imported from Cuba so that the Cuban product is the dominating market factor. The International Sugar Commission, representing the Allied countries as well as the United States Food Administration and the Food Controller for Canada, is endeavoring to secure the Cuban production at a reasonable price. By curtailing consumption in this country so that the necessity of securing the Cuban crop is not so urgent, the

people of Canada will be assisting the Sugar Commission, the Allied countries and themselves in obtaining supplies for spring and summer at lower prices than would otherwise be possible.

Soup—An Appertizing Winter Dish

WHO of us but can appreciate a good plate of soup on a cold winter's evening? Some people use soup to quite an extent all the year round, but cold winter weather and hot soup makes an ideal combination. More than ever in the days of food conservation, soup is being found an economical and satisfying dish. In order that nothing may be wasted, products such as potatoes, carrots, cabbage, parsnips, etc., have been boiled and use it as a foundation for soup. It is surprising, too, the amount of nourishment which heretofore has been wasted in this way.

How many of Our Women Folks keep a stock pot on the back of the stove, in which material for soup making is kept on hand? For those who have not been in the habit of keeping stock would do well to study the most complete and economical methods of extracting from meat or cooked beef makes the best stock, with the addition of cracked bones, as the glutinous matter contained in these renders it unpalatable. They should be boiled with the meat, which adds to the strength and thickness of the soup. Two ounces of such bone contain as much gelatine as one pound of meat. Mutton is too strong in flavor for good stock, while veal, although quite glutinous, furnishes very little nutriment.

The shin bone is generally used, but the neck or "chicken piece," as the butchers call it, contains more of the substance that you want to extract and makes a stronger and more nutritious soup than any other part. Meats for soup should always be put on to cook in cold water, be covered and allowed to simmer slowly for several hours. Stock is not as good when made entirely from cooked meats, but a family which requires a large joint roasted frequently, the bones and bits of underdone pieces, etc., all assist in imparting a rich dark color to soup. In cold weather these can be gathered up for several days, put to cook in cold water, and when done, strained and set aside until needed.

Soup will be as good the second day as the first if heated to the boiling point, but it should never be left in the pot, but turned into a dish. It should not be covered up while hot, as this will cause it to sour very quickly. Here are a few hints to help you making which are worthy of remembrance:

Before heating soup a second time, remove all the fat from the top, otherwise the flavor will be spoiled.

Thickened soups require nearly double the seasoning used for thin soups or broth.

Coloring is used in some brown soups, the chief of which is brown burnt sugar.

For white soups which are of veal, lamb or chicken, none but white vegetables should be used, and rice, barley, vermicelli or macaroni for thickening.

Grated carrot gives a fine amber color to soup and should be put in as soon as the soup is free from scum. We will publish any recipes for soup in this article, but there are many ways in which it may be varied. Probably some of Our Women Folks have some particularly good recipes for economical soups. If so, we would be glad to have them sent along, so that they may be published for the benefit of others.

The Heart of the Desert

(Continued from page 14.)

slowly, clearly. The peaks lifted magnificently, range after range against the rosy sky. There was no trail. They followed the possible way. The pale little cow ponies clambered over rocks and slid down inclines of a frightful angle as clevery as mountain goats. At ten o'clock, they stopped for breakfast and a three-hour sleep. There was some time before DeWitt could be persuaded to lie down but at last, perceiving that he was keeping the others from their rest, he took his blankets to the edge of the ledge and lay down.

His sleepless eyes roved up and down the adjoining canon. Far to the south, near the desert floor, he saw a fluttering bit of white. Now a fluttering bit of white, far from him by ways, means something! Tenderfoot thought he was, DeWitt realized this and sleep left his eyes. He sat erect. For a moment he was tempted to call the others but he resisted. He knew. He would let them rest while he kept watch over the little white beacon, for so, unaccountably, it seemed to him. He stood it hungrily, and then a warm comfort and a certain closeness came to him and he fell asleep.

Jack's lusty call to coffee woke him. DeWitt jumped to his feet and with a new light in his eyes he pointed out the discovery. The meal was disposed of very hurriedly, and having Jack to watch the camp, John and Billy crossed the canon southward. After heavy scrambling they reached the foot of the canon wall. Twenty feet above the water, a man in a white cloth, catching any sort of hand and foot hold, John clambered upward. Then he gave a great shout of joy. Billy, neck deep in the muck, had pinned in one end was in his hands! DeWitt slid to the ground and he and Billy examined the scarf tenderly, eagerly.

"Is that you! I told you!" exulted Billy hoarsely. "See that watch fastened to it? Wasn't that smart of her? Bless her heart! Now we rot to rest above, somehow, and find where she dropped it from!"

CHAPTER VI.

Entering the Desert Kingdom.

"We'll start now," said Kut-le. Alchise led out the horses. The squaws each threw an emaciated, sleeky leg across a pony's back and followed Alchise's fluttering shirt up the mountain. Kut-le stood holding the bridle of a so-called horse on which he had fastened a comfortable hide-backed saddle.

"Con Rhoda," said. "Till short-on the stirrups after you are mounted."

Rhoda stood with her back to the hill, her blue-veined hands clutched the rough corners of either side, horror and fear in her eyes.

"I can't ride cross-saddle!" she exclaimed. "I used to be a good horsewoman in the states, but I'm so rotten now even kneeling in the saddle is out of the question."

"Anything except cross-saddle is utterly out of the question!" roared the Indian, "on the sort of trails we have to take. You might as well begin to control your own knees as start. I'm going to have an expert rider in your place by the time you have regained your strength. Come, Rhoda."

"The girl turned her face to the afterlook. Brown and pitiless by the distant crimson ranges. She shuddered and turned back to the young Indian who stood watching her. For a moment all the agony of her situation was concentrated in horror of another night in the saddle.

"Kut-le, I can't!"

"Shall I pick you up and carry you over here?" asked Kut-le patiently.

(To be Continued.)

The Makers' Corner

Butter and Cheese Makers are invited to send contributions to this department, to ask questions or matters relating to cheese making, and to suggest subjects for discussion.

Zufelt on Oleomargarine

"I BELIEVE that oleomargarine is here to stay," remarked Mr. L. A. Zufelt, Superintendent of the Kingston Dairy School, in conversation with an editor of Farm and Dairy. "The question now is, how best can we control it? The United States has found the problem of control almost unresolvable, and all other countries have had difficulty in preventing oleomargarine being generally palmed off on the people as butter. I have an idea for controlling it which I believe might well be adopted. Why not have a regulation prohibiting all who deal in butter from dealing in margarine and also prohibiting any concern from manufacturing both products?"

"The big packers who are manufacturing oleomargarine," continued Mr. Zufelt, "also handle butter very extensively. In allowing both of these products to come under the same control we run the risk of a dangerous monopoly. If, on the other hand, we insisted on separate manufacture, and refused to allow any wholesalers or retailers who deal in butter to handle margarine, we would bring the margarine under much better control."

Mr. Zufelt's suggestion is worthy of consideration. Or are the powers favoring the present arrangement powerful enough to prevent any change, no matter how desirable?

New Zealand Cheese Prices

CAPABLE advice from New Zealand announces that arrangements have been made on behalf of the Imperial Food authorities to take the exportable surplus of New Zealand cheese for the season of 1917-18

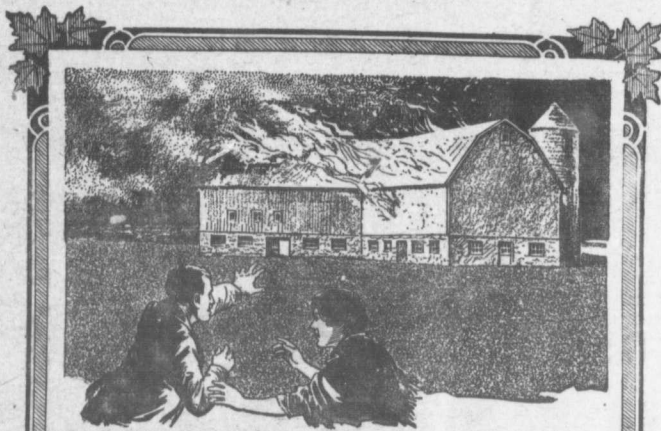
Buttermaker Fined

IN the police court at Mount Forest, before Mr. G. L. Allan, police magistrate, on Thursday, Dec. 15th, a fine of \$10 and costs was imposed in each of two cases against the Wellington County Creamery of Arthur. The charges were for selling and keeping for sale butter containing more than the legal percentage of water as provided by the Dairy Industry Act of 1914.

at 20c net per pound, free on board steamer, the factory is to pay the first three months' storage and insurance and to receive 90% in 28 days. The factories also make an allowance of 2½% on the marked weight of the cheese to cover shrinkage.

Quality Butter vs. Oleo.

THE day is passed, both in this country and Canada, when poor quality dairy products can be protected by legal prohibition from legitimate competition with wholesome substitutes. The number of such substitutes successfully made from vegetable or animal oils or blends of both, is steadily increasing, and the competition they offer to genuine butter can only be met on a quality basis. The creamery which sets its standard high, which insists on the delivery of only clean, well preserved cream, which pasteurizes all cream and which maintains plant and equipment in sanitary condition, need have no worries over the growing array of butter substitutes.—N. Y. Produce Review.



The Barn Can be Replaced —but Not the Farmer

AN ordinary barn is worth say about \$2,000. To his family the average farmer who is able to produce \$1,000 annually from his farm, is worth in mere money value alone, at age forty, fully ten times the value of a barn.

Unprotected against fire, the farmer seldom fails to insure the barn, which may never burn.

Helpless against the certainty of death, sooner or later—he too often fails to insure his life which he is sure to lose.

The farmer shows his practical wisdom by insuring his property against destruction by fire, for it is usually the case that there are few facilities for fighting fire in country places. Nothing could be more necessary than adequate fire protection.

For the sake of their precious loved ones who otherwise would be left helpless on the unreplaceable loss of the breadwinner, nearly 60,000 persons are joined together for mutual protection in the Mutual Life of Canada.

When so great a number of persons are banded together for mutual benefit, the result is that policyholders in the Mutual Life of Canada enjoy the lowest rates for protection, while

maintaining the maximum of strength and security.

The Mutual Life of Canada is under the severest government supervision, and in this does not differ from any other legal reserve life company. The premiums cannot be increased but are often greatly decreased on account of the generous dividends which are paid exclusively to policyholders.

The Mutual has paid in dividends to its participating policyholders \$4,249,554.26.

Every farmer should have this splendid protection in the Mutual. In the event of his death, money will be needed to meet the mortgage, to replace his thought and labor with hired help—and to provide protection.

Without the slightest obligation on your part we will send full information about our participating policies. Write for booklet entitled "Ideal Policies."

The Mutual Life

Assurance Company of Canada
Waterloo, Ontario

ANNUAL BREEDERS' MEETINGS.

Eastern Farm and Dairy... Herewith associated list of meetings arranged for the first week in February...

Feb. 4, 3 p.m.—Canadian Thoroughbred Horse Society, Directors' Meeting... Feb. 4, 3 p.m.—Canadian Swine Breeders' Association, Directors' Meeting...

Feb. 4, 3 p.m.—Canadian Jersey Cattle Club, Directors' Meeting... Feb. 4, 3 p.m.—Canadian Swine Breeders' Association, Annual Meeting...

Feb. 4, 3 p.m.—Ontario Swine Breeders' Association, Directors' Meeting... Feb. 4, 3 p.m.—Ontario Swine Breeders' Association, Annual Meeting...

Feb. 4, 3 p.m.—Canadian Kennel Club, Directors' Meeting... Feb. 4, 3 p.m.—Canadian Horse Association of Canada, Directors' Meeting...

Feb. 7, 10 a.m.—Canadian Hereford Association, Directors' Meeting... Feb. 7, 10 a.m.—Canadian Hereford Association, Annual Meeting...

Feb. 7, 7.30 p.m.—Ontario Horse Breeders, Directors' Meeting... Feb. 7, 8 p.m.—Ontario Horse Breeders, Annual Meeting...

Feb. 8, 9 a.m.—Provincy, Dominion Cattle Breeders' Association, Directors' Meeting... Feb. 8, 10 a.m.—Dominion Cattle Breeders' Association, Annual Meeting...

GRENVILLE C. G. HOLSTEIN CLUB SALE.

THE first annual sale of the Grenville C. G. Holstein Breeders' Club, held at Kemptonville, on Dec. 26, was well up to the average of sales in other parts of Ontario...

The highest priced animal was Jas. King's Sunshine of March, a cow with a R.O.P. of 19,442 lbs. milk and 742 lbs. butter...

The following is a list of the animals selling for over \$100 and buyers: Roscoe Witzky, R. H. White, Ottawa, \$140; Rosa Hengerveld Cora De Kol, J. Heeger...

Feb. 5, 9 a.m.—Ontario Sheep Breeders' Association, Directors' Meeting... Feb. 5, 10 a.m.—Ontario Sheep Breeders' Association, Annual Meeting...

Feb. 5, 2 p.m.—Canadian Kennel Club, Directors' Meeting... Feb. 5, 2 p.m.—Canadian Horse Association of Canada, Directors' Meeting...

LLENROC STOCK FARM On the Banks of the Beautiful Niagara River A few well-bred, young Holstein Bulls for sale. Also a Belgian Stallion, weight about a ton. Address, W. C. HOUCK R. R. No. 1 CHIPPAWA, ONT.

HOLSTEINS We have the only two sons in Canada, of the 46-lb. bull Ormsby Jane King... R. M. HOLTBY, R. R. No. 4, PORT PERRY, ONT.

REGISTERED HOLSTEIN FEMALES by such sires as Canary Butter Baron, No. 4564, and Dutchland Colantha DeKol, No. 1064...

Another Excellent Young Sire The bull advertised last week is sold. I am now offering another splendid young fellow, sired by KING SEGIS WALKER...

PEDIGREW HOLSTIENS Will sell some pedigree Holstein cows and heifers, freshening from Xmas to the middle of June...

Backed by the Blood of Champions We offer our entire crop of 1917 calves, 8 males, 10 heifers, a splendid lot, sired by a son of what Harold McAllister states as the world's greatest...

DUTCHLAND COLANTHA SIR MONA Is the sire of Lakeview Dutchland Hengerveld 2nd, the bull that won Senior Champion and Grand Champion at both Toronto and London, 1916...

HIGHLAND LAKE FARMS Herd sire, AVONDALE PONTIAC ECHO (under lease), a son of MAY sds. We have young bulls for sale, whose two nearest dams (both Canadian champions) average as high as 25.62 lbs. butter in seven days...

CHOICE YORKSHIRE HOGS AT RIGHT PRICES Hours and sows, all ages from best prize-winning strains. Several litters of suckers, the best lot we ever raised; good growling fellows of good type and breeding...

REGISTERED BROOD SOWS Improved ENGLISH YORKSHIRE and CHESTER WHITE. I have at present for sale a few choice young sows of various age. Some ready to breed. These are all good healthy animals of excellent type and breeding...

Keep That Cow Healthy

The heavy feed given dairy cows to increase milk production is often the cause of indigestion and loss of appetite. Under these conditions



Pratts' COW REMEDY

is urgently needed to assist Nature to restore health and carry off waste and poison from the system. PRATTS Cow Remedy contains no filler, fillings or other cereals. It is safe medicine. Induces perfect digestion. It enables the cow to get all the good out of her feed. Acts on the liver and kidneys, regulating the bowels and fortifying the system against disease.

Money Back If Not Satisfied

Write NOW for Pratts New Booklet, "More Milk Money and How to Get It." Sent FREE to any address in Canada on request.

PRATT FOOD CO. OF CANADA, Limited, 43M Claremont St. Toronto.

Pratts' COW REMEDY is urgently needed to assist Nature to restore health and carry off waste and poison from the system. PRATTS Cow Remedy contains no filler, fillings or other cereals. It is safe medicine. Induces perfect digestion. It enables the cow to get all the good out of her feed. Acts on the liver and kidneys, regulating the bowels and fortifying the system against disease. At your Dealer's in 1-lb, 4 1/2-lb, 12-lb. and 25-lb. tins.

PRATT FOOD CO. OF CANADA, Limited, 43M Claremont St. Toronto. 6-1

The Farmer's Friends and His Foes

Friendly Bacteria (magnified 1,000 diameters) which fix nitrogen in the soil for the use of plants. They make millions of dollars for farmers.

The Farmer's Friends---and His Foes

Bacteria, though the smallest of these are most important of all. Upon their activities depend the farmer's livelihood, his profits, in fact life itself. Some bacteria are true friends, but others are bitter foes. It means dollars in every man's pocket to understand the action of these tiny organisms.

Bacteria are really plants—but so small as to be seen only with a microscope. There are many different kinds but the great majority are beneficial. Among these are the soil bacteria. Some, however, are harmful as those causing decay of foods and most of the infectious diseases of man, animals, and plants. It is the part of wisdom to encourage the development of beneficial bacteria and to prevent the growth of the harmful kinds so far as is possible.

Bacteria and the Soil. An ounce of cultivated soil contains millions of living bacteria. It is their function to prepare plant food that is in the soil for the use of growing plants. Without their action the plants growing in the soil could not develop into profitable crops.

Nitrogen in the form of nitrates is a necessary part of plant food and the nitrates are among the most expensive of fertilizers. Certain species of bacteria provide this important plant food by fixing the nitrogen present in the air which later is transformed to nitrates. Therefore their activities should be encouraged. This is done, first, by keeping the soil well drained, so that it will be dry, porous and thoroughly aerated; second, by keeping the soil free from any acid by the addition of lime. The nitrogen-fixing bacteria will not grow where acidity is present and they require a thoroughly aired soil.

Legume Bacteria. One species of nitre, *N-fixing* bacteria works only in combination with a green plant, causing the production of nodules on the roots of clovers, peas, beans, vetches, etc., in which nitrogen is stored. Thus a good crop is raised and valuable fertilizer is thrown in free for good measure. If the necessary kinds of bacteria are not in the soil they should be put there by legume seed inoculation. Bacterial cultures for treating legume seed may be obtained from the Bacteriological Laboratory of the Ontario Agricultural College, at 25c each. Each culture is enough for one bushel of seed.

Bacteria and the Water Supply. Some species of bacteria are normally present in natural waters and their presence is not injurious to those drinking the water. Other species, however, are liable to be present as a result of the contamination of the water from surface drainage and seepage. These contaminating organisms are liable to lead to serious results, as typhoid fever, in those drinking the water. Care should thus be taken to prevent all surface or seepage contamination of the drinking water supply. Farmers' well water will be tested on application to the Bacteriological Laboratory of the Ontario Agricultural College, if the water is proven to be impure, simple directions will be given for the cheap improvement of wells.

Apparently Healthy—
But Really Diseased

Bacteria and Milk. All the changes that normally take place in milk after it is drawn are due to the action of the bacteria that get into the milk during the milking operations and subsequent handling.

The bacteria get into the milk from poorly-washed and imperfectly scalded milk vessels, dirty hands, bits of dust, hay, straw, hair, manure, flies and such like materials that drop into the milk pails. Some of these are removed by the strainer—but straining does not remove bacteria. These bacteria are responsible for the milk souring and putrefying.

The greatest care should be taken to thoroughly wash and scald the milk pails and other vessels and to keep out of the milk all particles of contaminating material such as those above mentioned. Full directions will be supplied free upon request.

Bacteria Cause Infectious Diseases. Tuberculosis, anthrax, symptomatic anthrax, infectious abortion and hog cholera are some of the worst diseases affecting animals. Each one is caused by a different species of bacteria. Many of the worst diseases of plants are also caused by bacteria. Together these diseases cause an enormous loss annually to the farmers of Ontario, which by foresight and proper methods might be quite largely prevented.

Consider two of those most serious bacterial diseases, for example: The Dreaded "White Plague," Tuberculosis is a slowly developing disease affecting man, animals and poultry. Estimates tend to show that it causes more loss than any other disease. It is present in many herds of cattle where it impoverishes the health, reduces the milk flow and longevity of the cattle, and amongst many flocks of poultry where it diminishes the egg production and causes many deaths after reducing the birds frequently to skin and bone.

It is very desirable that every farmer who has a herd of cattle should have each member of the herd tested for tuberculosis with the Tuberculin Test. This will enable him to weed out from his herd those animals that are affected with the disease and so prevent the disease from spreading to the healthy stock. So long as the disease is present in the herd it means a steady drain on the tuberculosis in the herd. It costs more to keep a diseased member of the herd than to eliminate it. Tuberculin testing followed by the isolation or slaughter of reacting animals is the only satisfactory way to control the spread of the disease. When the disease is found present in a number of birds in a mother flock the best thing to do is to kill off the flock. Distinct the premises and start anew with healthy stock. Sick and dead birds are examined free at the Bacteriological Department, Ontario Agricultural College.

Ontario Department of Agriculture

Parliament Buildings Toronto
Sir WM. H. HEARST, DR. G. C. CREELMAN,
Minister of Agriculture Com. of Agriculture.



ONTARIO

Tuberculosis can be proven by the test only. It costs more to keep this disease in the herd than to get rid of it.

Even in this weak and thin condition the cow was a heavy milker—but she contaminated others.

Tuberculosis Bacteria (magnified 7,000 diameters) which cause one of our worst diseases. They are responsible for huge losses to farmers.

Infectious Abortion of Cattle. This is a widespread disease resulting in heavy losses to the cattle breeder. It is caused by *Bacillus Abortus*, which gets established in the uterus of pregnant cows and there causes an inflammation which results in the expulsion of a dead foetus, or in premature birth. Frequently, in such cases, the foetal membranes or afterbirth fail to come away normally, thus necessitating their artificial removal or death from blood poisoning will ensue. There are usually no marked symptoms of the trouble until abortion takes place, the general health of the animal not being affected. The abortion bacillus is present in large numbers in the placental fluids and in the discharges from the vulva after abortion. Consequently, the foetus, foetal membranes and fluids should be buried deeply in quicklime and an immediate thorough disinfection of everything with which they come in contact is necessary. The cow after abortion should be kept isolated from the rest of the herd until all discharges from the vulva have ceased. The external genitals, thighs and udder should be washed with a disinfectant daily, and care should be taken that the hands and clothes of its attendant should not get contaminated with the discharge without a thorough disinfection following. Attempts are being made to produce a serum or vaccine that shall prevent abortion following its use on pregnant animals.

PREVENTION BETTER THAN CURE.

It pays to be forehanded in this regard. It is cheaper to prevent a disease than to cure it. The natural enemies of all these destructive bacteria are cleanliness, dry, fresh air and sunlight. Bright, dry, clean stables are the best medicine for preventing disease. Artificial disinfectants, as any of the cool tar products, are very valuable also.

Similarly it pays to provide the best possible environment for those bacteria which are beneficial—which work without pay in the farmer's interest.

It Does Not Require a course in bacteriology to do this. By following a few simple directions, supplied by a convenient bacteriologist to meet the special requirements of the case in point, any farmer can aid his bacterial friends and combat his bacterial foes. Such information will be supplied in detail free of charge to any Ontario farmer requesting it. A bulletin will soon be available for Ontario farmers, giving general information upon the subject.

In seeking assistance regarding your special problems kindly give full particulars. If your crop yields are satisfactory the best thing to do is to thrive, kindly send full details regarding your methods, stands, etc. Write the Office of the Commissioner, Ontario Department of Agriculture, Parliament Buildings, Toronto.

An Advanced Case of Tuberculosis.

