ANNUAL STATEMENT.

| Revenue Accounts. | | | Loss Accounts. | | |
|---|---|---|---|---|---|
| Jan. 31 | Pig account, gain | $ 35.90 | Jan. 31 | Expense | $ 13.60 |
| | Tomato gain | 1,291.00 | | Loss on capital | 560.00 |
| | Total gains | $1,326.90 | | Total loss | $573.60 |
| | Results: | | | | |
| | Gains | $1,326.90 | | | |
| | Losses | 573.60 | | | |
| | Year's gain | $ 753.30 | | | |

# THE DAIRY.

## Why Pasteurize Dairy Products?

Editor "The Farmer's Advocate":

Mankind is continually assailed by unseen foes in the form of minute plants called bacteria, commonly known as germs. These gain access to the human body through openings of the skin, such as a scratch, a cut, or a bruise. These apparently trifling things should not be neglected, as the human skin is like a silken shield against foes invisible. "Blood poisoning," "lock-jaw" and similar causes of human destruction are frequently the result of not paying attention to a minor injury, and the weak system is unable to resist the attack of "germs." The strong person is able to overcome these attacks, hence thousands of scratches, cuts, etc., do little or no harm, but it is always safer to disinfect by some means—tobacco juice, if nothing else is available, as tobacco is a slow poison and germ killer.

The second means by which bacteria gain entrance to the system is by means of the food and drink. For instance, medical authorities tell us that typhoid infection can come about only through the mouth—if what we eat and drink be clean and free from typhoid germs we cannot "take" the disease. It is probable that other contagious diseases like tuberculosis, or what is commonly called "consumption," are spread by the food which people eat. The "breathing" theory of spreading disease is gradually being discarded. The probabilities are that the mouth is the great source of infection for contagious diseases.

While milk is undoubtedly the most valuable food for humans, especially in the early stages of our career, it is unfortunately also a good place for disease germs to grow and multiply. Hence the chief reason for the pasteurization of dairy products intended for human consumption lies in the fact that this is an easy and effective method of killing germs causing various ailments among humanity. Fortunately practically all these organisms causing sickness among members of the human race are killed at a comparatively low temperature from 140 degrees to 160 degrees F. While some recent investigations would indicate that probably electricity may be used for sterilising milk in the near future, thus doing away with the need of heating, and we may be able to electrocute bacteria in milk effectively, without the so-called injury to its food properties, caused by heat, up to the present we know of no such effective agent for purifying as heat. A strange thing about heat or fire is that man appears to be the only animal that understands fire—who can renew it if it goes out, who can control it, and make it serve his uses. No doubt the man who first discovered fire was persecuted, probably consumed by the agent which he had produced, but fire, heat is the greatest aid to man in making pure his foods.

The second advantage of dairy pasteurization is that it makes a clean seed-bed for pure cultures or pure seed of the desired type. This is specially advantageous in buttermaking, and in making sour milk drinks, such as the much advertised Bacillus Bulgaricus, which if taken often enough and in large enough quantities might enable a person to live forever, if one would believe all the articles which have been written concerning this rejuvenator of the human species.

A third advantage is that milk and cream properly pasteurized will keep sweet much longer than if not so treated. We have kept samples of pasteurized milk sweet at ordinary room temperature in summer for five or six days, whereas similar milk unpasteurized would sour in 12 to 24 hours. Nothing makes the house-wife so cross and out of temper as to find the milk and cream sour. Probably some is needed for baby, or a sick person, and on going to the pantry, cellar or refrigerator, for the needed supply, it is found to be sour. In all probability when the milkman next appears at that house he will hear something not at all pleasant about his milk being sour. The remedy is pasteurization. In winter time it is almost impossible to prevent more or less feed and stable flavors in milk. The air of the stable contains these odors, and as the stream of milk passes from teat to pail, it carries with it the flavor-laden air. (This danger is eliminated with the milking machine, and is one of its advantages.) Most of the feed flavors are due to volatile oils, which are driven off in the process of heating. Anyone who has stood near a pasteurizer while operating in winter cannot help but notice these flavors coming from milk and cream. In most cases it will pay to pasteurize in winter, in order to prevent undesirable flavors in the milk and cream, thus pleasing customers, which means increased trade.

The buttermaker should pasteurize milk or cream in order not only to improve the flavor of his butter, but chiefly to improve the keeping quality of butter exported, if this is done, and for summer butter placed in cold-storage for winter use. A considerable quantity of summer butter is stored for winter trade, and the merchants are usually willing to pay at least half a cent a pound more for pasteurized goods as compared with unpasteurized, because they know from practical experience that they can depend on the quality of butter made in creameries where pasteurization is properly carried out.

Up to the present pasteurization has not been practicable for the manufacture of Cheddar cheese, but we may yet strike some plan which will be feasible and result in a good quality of cheese. If we do, it will no doubt be as valuable for the cheese business as it has proved to be in the milk and cream trade, and for the manufacture of fine butter. Pasteurization is the chief factor in Danish butter, as this results in uniform quality, which gives confidence to the British buyer and consumer. It will do as much for Canadian butter-makers if properly carried out and consistently and persistently followed.

H. H. DEAN.

**A Profitable Trio.**

Three grade Shorthorn cows on the farm of John Warner.

## Does Winter Dairying Pay?

Editor "The Farmer's Advocate":

In your issue of July 9th appeared an excellent article entitled, "Eastern Ontario, the Home of the Dairy Cow." That article raises some questions and offers some suggestions of particular interest to dairymen of Eastern Ontario, who depend almost entirely on the dairy cow with her by-products for a living.

One thing, however, which may mean profit or loss in winter dairying, you neglected to emphasize very strongly, and that is individual cow-testing. Would winter dairying pay with the average Eastern Ontario dairy herd? Decidedly not, I think. With herds, such as Mr. McKay and Mr. Grant possess, and which you visited, there would, no doubt, be a good profit in winter milk production, but with the average herd giving 3,500 to 4,500 pounds milk per cow per year, the owner is wise to confine himself to summer milking. It seems to me that the cow-testing has considerable work to perform yet in weeding out unprofitable cows, before we venture too far into winter dairying.

This idea is based on my own experience, and in your article you intimate that you would like to hear from readers who sell milk exclusively to the cheese factories, and who keep herd records and cost of maintenance. As I can qualify in practically all of those respects I submit a few examples along these lines. In the first place, let me state that Mr. McKay is about right in in his estimation of the cost of production of his milk, viz., 75 cents per cwt., and the cost of a cow's feed for one year at $60.00 Add, however, to the cost of this feed the other items which enter into the cost of keeping a cow, such as upkeep of buildings, hired labor, bedding, interest on investment, insurance, service fees, etc., and we find that the cost of keeping a cow will run to nearly $80.00 or $90.00. A man would need to have a herd of 10,000-lb. cows to show much profit, and I think the above explains why winter dairying is as yet not very much practiced in districts remote from city markets, where the city milk trade gives larger returns for milk and cream.

My herd is as yet but an average one, having in it cows running from 6,000 lbs. to over 10,000 lbs., the majority of them being about 7,000 lbs. My experience is that many of these cows, if milking in winter, will give scarcely any profit over food consumed. This is due to the high price of concentrates containing protein, and also to the low prices received for milk at the factory. With regard to the former we have been trying for years to grow our own protein in the form of alfalfa, but have not yet met with very great success. We have not had good alfalfa or clover for years, consequently bran, oil cake or cotton-seed meal must be bought at fairly long prices if we are engaged in winter dairying. We are waiting for some cheaper Ontario-grown alfalfa seed, or for seed of the Don variety, which is said to be hardy and spreads from under-ground root stocks. With regard to the latter reason let me say that the price received for winter milk at the country factory is not very satisfactory. The first four months of the present year we received an average of about $1.02 per cwt. Not very encouraging figures for winter dairying are they?

On the other hand, where the farmer is convenient to a city, he receives in the winter considerably over $2.00 per cwt. These are the men who should go into winter dairying; they can at those prices afford to buy good cows, and buy good feed for them.

I will give a few figures from the record of a two-year-old heifer which last year produced 5,482 lbs. milk, freshening in the fall. In January she gave 606 lbs. milk; in February 601; March 543; April 523; total 2,273 lbs. milk at a food cost of $24.64. A three-year-old gave the first four months of last year 2,665 lbs. milk at a food cost of $25.77; yet in the year she gave 6,211 lbs. milk. These are not bad yields of milk for heifers, yet the above figures show why winter dairying is not practiced much down here.

You say in your article that you "cannot conscientiously recommend the manufacture of dairy butter, and firmly believe that milk should flow into the factory in almost every particular where an article can be produced that commands a higher price and is more appreciated." How does that statement tally with these facts? The first four months of this year all we could get for our creamery butter, and it was good, was from 26½ to 28 cents per lb., and the manufacturer, out of this, received three cents. At the same time good dairy butter was selling on Ottawa market at 30 to 35 cents. Of course you will say that one price was wholesale and the other retail, which is true, but ten cents a pound difference means a good deal to farmers who are not too busy in the winter time and like a trip to town occasionally. Is not cow testing the key to the whole problem, or else the old slogan to breed, weed and feed?

Carleton Co., Ont. JAS. F. FERGUSON.

## Three Good Cows.

Editor "The Farmer's Advocate":

I am enclosing a photo of three cows which I believe are worthy of a place as "Stars of the milky way," as they are grade Shorthorns, and have never been fed for records. During May they averaged 68 pounds per day, milking three times a day, during which time they were fed five pounds of grain. The cow in the center frequently gave 42 quarts per day, and compares very favorable with R. O. M. Holsteins in the herd.

Haldimand Co., Ont. JOHN WARNER.

In an "Editorial" paragraph in our last week's issue a typographical error occurred, the word "spring" being used in connection with the sowing of fall wheat. This word should have been left out.