IMPROVEMENT OF DAIRY HERDS IMPORTANCE OF SPECIALTY WORK

Address by Mr. C. F. Whitley, before the District of Bedford Dairymen's Association Annual Convention held last winter

The following address delivered before the District of Bedford Dairymen's association in the Eastern Townships, by Mr. C. F. Whitley, is so full of information, and enthusiastic encouragement to dairymen, that it will be welcome to the many readers of the Watchman-Warder who are interested in dairying :

There is no question but that, rightly undertaken, dairying is a profitable business. It seems necessary in this section to go in for the handling of live stock, because this is not a fruit section or a grain raising section. It is a wise principle too, this dairy farming, because dairying not only improves the land, but it leaves the land in a good state of fertility. The man who is selling milk is taking off but very little of those substances of plant food which are necessary for the production of good crops. As a matter of fact, in 6,000 lbs. of milk he is only selling off about $6 worth of valuable matter from the soil, fertility in the shape of nitrogen, potash and phosphoric acid. He is therefore relieved from the necessity of replacing it by artificial fertilizers. Further, political economy teaches us that it is always the manufacturer and the middle man who make the profit rather than the producer of the raw material. Therefore, as the dairy farmer is combining these, as he is running a factory and using living machines to manufacture for him, and he acts as his own middleman, his own salesman, he should be making an extra good profit. With fields producing good crops for him under careful and intelligent cultivation, and the animals utilizing and making over for him that raw material, he is in a position to sell, at first-class prices, a manufactured article ; and that is where profit comes in.

Now I take it that with the hog business, there is some element of speculation. A man may feed his hogs for six months, and then it is a question, will the market price equal what he has put into them ? The same thing takes place in regard to feeding sheep or steers. Will the profit be equal to what has been the cost ? But feed the cow, and all you have to do is to step right round and draw your pay. There is there no speculation. The cow is there with her business end, which is in contradistinction to the business end of the wasp or the mule, which are both likely to be sudden, pointed and emphatic in their remarks. Given, then, a good cow and good care of her, you may have sure profit, and may derive good profit every year ; with steady income and good, sensible, quick returns.

But, unfortunately, there is another side to this question, and that is that it is a fact that many cows do not pay for their feed and the time spent in growing it. If that is true, it is also a fact that this ought not to be. There is no reason in the world for keeping cows that do not give profit. Why should we keep them if they do not return something ? The cow's function is to give milk ; that is her life work. A cow is valued according to her ability to give milk, and there is no use in wasting good feed on a poor milker.

One point of improvement of dairy herds that has already been discussed is that of record testing associations. There is not any need for me to go into that subject fully to-day, but I just wish to refer to one or two very striking records that have only just come across the water from that progressive agricultural country, Denmark. The figures take in one section only, and I give them just to show the possibilities of the work that you have started up in that district. And I wish to congratulate you again on having started this record testing association. Now, just to show you the possibilities of this work. Their average last year with over 30,000 cows—mind, those are not selected animals at all ; they are all the cows in that particular locality, and that includes all animals that were milking, whether with their first calf or with their twelfth. It includes heifers dry and farrow cows, and cows that aborted. The average production was over seven thousand pounds of milk—7,300, equal to about 281 pounds of butter fat. That is just about one hundred pounds more than we found in Cowansville district in 1904. If the cows in this district were producing to that extent, I think, Mr. Chairman, that perhaps the C.P.R. would need to spend a little money in lowering the grades on this section of the railway, they would be so busy hauling dairy produce.

Every farmer should be interested in this matter. No single man (and no married man) should have any indifference in regard to it, for no farmer can work intelligently or accurately without keeping records. Say a man is keeping ten cows. Say six of those gave him between 4,000 and 4,500 pounds of milk, one gives him 2,500 pounds, another gives 3,000 pounds, and two yield 3,500 pounds. On the six producing about 4,500, which is a fair average, he would have a margin of about $10 above the cost of the feed consumed by them, but on the remainder there would be a loss of $60, an amount sufficient to counterbalance that profit about six times. I submit that no system of bookkeeping whatever could possibly make a financial success of such management in any other line of business ; and the fact that some farmers do not make a worse failure than they do is a tribute to the generosity of nature and also shows the possibilities if all her bountiful provisions were properly utilized.

Denmark is not the only country that has these testing associations. Germany has sixty-seven, and Norway and Sweden over 200. I cannot give you all the figures for these, but I just want to show what they have done in Germany. Inside five years they have attained an average production of 7,600 pounds of milk for all animals, which is an increase inside five years, of 1,380 pounds of milk. That has been accomplished just through selection. You see, just through selection it is possible to obtain a profit of $14 more from each cow that is being handled. That is worth keeping in mind and working for.

In regard to these testing associations, there is abundant evidence on this point that wherever this work has been undertaken by farmers there has been a relief of the burden that falls on the instructor and the cheese or butter maker, because, for one thing, farmers take better care of the milk, which results in a better quality being delivered at the factory.

Now, may I call your attention to one or two other results which, it seems to me, will follow from carrying out this work. There will be the intense personal satisfaction that always results from the accomplishment of any praiseworthy endeavor. Then there is an increased public esteem. A neighborhood is always proud of a man that has a fine herd of cattle. We in Ottawa are proud of one or two men whose fine herds we are always glad to take visitors to see. We are proud of the men and proud of the cattle. There is also going to be increased profit in ready money, and that appeals to the majority. There is going to be a larger cheque monthly from the factory, and that is at once a direct, immediate benefite to the farmer himself. There is also going to be a direct immediate benefit to the manufacturer, because just as a decreased quantity of milk adds to the expense of manufacturing, so a larger quantity of milk per cow and per patron will decrease the cost of making. Again, it will help, it seems to me, to solve the problem of the poorly equipped factory and will hasten the day of licensing the sanitary buildings, and it will assist in avoiding the unnecessary multiplication of poor factories with a small output. There will also be a stimulation of interest all through the country. We are all dependent on the dairy business from early infancy up to manhood and old age. It is not only the farmers who are interested in this business, but every merchant and banker is glad to see a farmer coming in with a big load of milk, as ready money is going to flow. All classes in the community are interested and dependent on the successful dairyman. This development will also affect the dairyman himself, as it will bring into play several useful faculties, such as closeness of observation, sound judgment, business ability, in his dealing with the animals in his herd ; and it will broaden his view of life.

One of our tests last year was taken in St. Camille, Wolfe county, a district where oxen and spinning wheels are still visible, where we have a strange mixture of the old log house and metal shingle, where there is no race suicide, there being from seven to fifteen children in every house, and plenty of old people. Here is the point. That district, which is not very far from here, is a recruiting ground for the New England factories. Unfortunately there is an exodus, too much of an exodus, of our young people from these eastern township farms to the United States, and it is a fact, it is an astonishing and horrible fact, that in the United States, to-day there are 1,700,000 children under fifteen years of age employed in the factory, mine and workshop, too often in unsanitary, unhealthy, and immoral conditions. I say that kind of thing has got to stop. This cow testing work will counteract that influence. It will help to bring those young people back, and the interest in the work will keep the boys and girls on the farm. If it is rightly undertaken, there is nothing humdrum about it. Another point, it is of direct benefit to the factory and there is no harm done to the neighboring factory, as sometimes at present happens. This testing work will get the cows in rivalry with each other instead of the factories. It seems to me that there is sometimes too much attention paid to stealing patrons from the neighboring factories, instead of to increasing the supply of milk from the present patrons. Now I am convinced that by following this system of record testing we are at the threshold of a very great movement, at the dawn of a new era of prosperity for dairy farmers.

There are other methods which we might discuss profitably for a minute or two in connection with improving the farm stock : Let us take the better care and handling of those already on hand, leaving the question of dispensing with the poor ones. First of all, it stands to reason that the cow should be clean. Unfortunately, a great many do not pay enough attention to this matter. It is a matter of importance to use the clippers on the cows, and to see that no manure is hanging on their flanks. I submit that this is one very important principle and one which should be more carefully attended to. See that there is no manure on their flanks, or udders, especially at milking time, so that the milk may be clean. A further point is this, that you should use the curry comb freely on the cow. When your best girl wants to go for a drive you go and polish up the horse and make it appear at its best. Use the curry comb a little more on the cow ; it will stimulate the circulation, and that is going to pay, because it tends to the better health of the animal.

The cow should be kept comfortable at all times, in all weathers and under all conditions. I have heard —I dare say so have you—of frozen snow and ice being removed from the animals' backs in some stables. We do not want to see so many chinks and cracks in the stable, through which snow will come in on the animals. We are not breeding for buffalo robes, like one man who was looking out for a dual purpose animal. He would let the wind blow down one side of the cows one week, and the next week he would turn them round, so that they might get a development of good hair on both sides. We do not want that. We want the cow to be warm and comfortable always.

Another point is this, that they should have plenty of water. I believe in having water before the stock continuously. A cow will drink as often as ten or fifteen times a day if she gets the chance. Have water in front of her always, and you can trust her to drink it. If a hole is cut in the ice for the cow to drink she cannot get half enough in that way to keep her going. It is important to give the cow plenty of water ; the cow's body is half water, and milk contains 87 per cent. So she wants plenty of water at all times ; and it pays to warm up ice cold water a little, so that the cow will not have to warm it up with expensive feed.

In the matter of keeping cows warm, I came across an instance of a man who bought from a neighbor what the latter said was his poorest cow. He said she was not giving enough milk for him. The man who bought the cow took her home and gave her the best of care. The result was that, under the changed conditions, under better conditions, he got from her over $100 worth of product in a year. The cow could not produce enough milk before, simply because she had to shiver away the bulk of her feed in the effort to keep warm, but under improved conditions, when she could produce, she did. A cow will always respond to good treatment.

Another important matter in good ventilation. The cow wants an abundance of good, fresh air. By fresh air I do not mean simply cool air. In one stable that I visited, in which there were twenty or thirty cows, the windows were, you might say, hermetically sealed. A cow needs fresh air just as much as you or I. You cannot keep the animal in healthy condition if the air in the stable is vitiated. In the construction of dairy buildings, ventilation and light are both essential There should be a liberal use of whitewash in the stable, which should be kept perfectly clean. Will you dairymen remember that the health of thousands of individuals depends upon the cleanliness of your milk, and further, that the lives of children depend upon the purity of your milk ? Give your cow every chance to make good milk in a pure and wholesome atmosphere, by having your stables well ventilated and perfectly clean. Remember that anything that tends to the cow's comfort is going to bring improvement and profit as well. There is in use in this neighborhood, I know, that old fixed stanchion. Get rid of it, because the cow cannot be comfortable in it. Give her a chain tie, or the swinging stanchion, so that she may live and move and be comfortable.

Then a cow wants kindness, and kindness is a most profitable commodity. It is the same with regard to animals as with man. In the Island of Jersey the dairy animal is made a domestic pet, and is treated with the utmost kindness. It pays to be kind to her, especially at milking time. Let the lazy boy go to fetch the cows, for he is likely not to hurry them home. They should be allowed to come home peacefully and quietly. Do not let the dog run after them, either.

Now I would like to turn for a minute or two to the question of feeding. That is a big subject, and it is not possible to discuss it fully in a few minutes. The first function is to support life. Up to a certain point you do not get any return of milk, until the cow has enough inside of her to support her life and to repair the waste. A certain amount of feed is required to keep the natural functions going. Above that, she makes a return in the production of milk. So the first principle is to feed liberally. Many cows are not doing what they could, simply because they are not getting enough to eat. They are not giving milk in sufficient quantity, for the simple reason that they do not get enough feed from which to manufacture the milk. A question that is often asked is, 'What is a good rule for feeding grain ?' A simple one in use at the Experimental Farm is this, to feed one pound of grain for every five pounds of milk produced by the cow; or for every twenty-five pounds of milk that the cow produces, give her five pounds of grain a day, and so on.

I am almost inclined to touch for a minute or two on the question of feeding the soil, because it follows closely the question of feeding the cow. Do not let manure lie in a heap in the stables, as in vogue on some of the farms in this district. make the best use of it in fertilizing the land. Feed the soil, so that the soil may produce abundant crops to feed the cows.

Another principle of feeding is this, that the health of the animals will depend upon a mixed diet. As you know, the component parts of any ration are starch and fat—which are both necessary to supply heat—and protein or albuminoids. The most important solid components of the animal body are the albuminoids, which go to form the muscles, tendons and nerves, and all the working machinery. Carbohydrates, starch and fat, supply the heat and energy But it is those important albuminoids that we want to get. Their sole source is the albuminoids such as albumen, casein and fibrin, in the plant, and these all come from the nitrogen in the air. Therefore, it is absolutely essential that the supply of nitrogen should be made use of. We know that four-fifths of the air is nitrogen, and that the atmosphere has a pressure of 15 pounds to the square inch ; so there is about $280 worth of nitrogen per square foot to be had if a man will avail himself of it. The nitrogen may be obtained by growing leguminous plants, such as pease, beans, clovers, lentils, lucerne, vetches, etc., gather and fix it.

A further point in feeding is this that the cow will relish her rations just in proportion as they are varied and as they are digestible. Each food stuff has a definite feed value and should be proportioned accordingly.

Men should not be afraid to trust themselves for information and guidance to experts who have had training and experience in these matters. Cows thrive according to these principles ; therefore, why not study these feeding principles ? We should find out just what each particular cow needs, and in that way we can feed her economically and increase her production. It is very important to study each cow. Watch the feed and find out what the cow requires. Some races of men will thrive and do hard work on feed that will hardly keep others alive. If you take a trip east you will see the sweltering coolies loading ships at Singapore carrying loads that you or I would stagger under, and they carry them hour after hour, unflinchingly. Those men have hardly any clothing they wear only about a yard of calico. At meal time they will eat only a double handful of rice, and that is plenty for them, although it would hardly keep other men alive. The point is this, that some races will thrive and fatten on food that an Englishman, for instance, would not be content with. He wants his beef and his beer, and plenty of them. Further than that, some individuals of the same race, will fatten on the very rations that others will hardly gain an ounce on. There is the fat man and the lean man, as we call them in plain English. One will fatten no matter what the food is like, and you might feed the other all you like and he will never put on fat. He is of different temperament. So it is with cows. This power to assimilate a ration economically and produce milk is undoubtedly a variable quantity in dairy cows. If you have studied the figures—and I hope you have—in connection with the feeding of the dairy cows at St. Louis last year, you have been struck with the wonderful variation there is in different cows. A Jersey cow produced a pound of butter fat from 2.8 pounds of protein. There was a variation from that amount all the way up to 6.4 pounds of protein required by a Shorthorn to produce one pound of butter fat—6½ pounds, as against 2¾ pounds. With regard to dry matter, a Holstein took 17 pounds of dry matter, while a neighboring Shorthorn in the same barn took 35½ pounds to produce one pound of butter fat. There is great difference in animals, and therefore it pays to study the individuals so as to feed economically. How easy it is to waste good feed on a poor cow ! For instance, there is a startling difference in the cost of a pound of fat, or of a 100 pounds of milk, as produced by a good and a poor cow. Taking six fairly good typical cows, as reported on in the state of Illinois, we find that the cost of a pound of fat varied from 6½ to 13½ cents, the average being 10 cents but as produced by six poor cows, the cost varied from 14 to 52 cents, the average being 26 cents. Similarly the cost of a 100 pounds of milk ranged from 30 to 50 cents with the good cows, averaging 38 cents, while with the poor ones the cost was from 54 cents to $2, averaging 99 cents. No more striking proof could be given of how easy it is to lose money with poor cows.

Down in Nova Scotia last year, I was having a chat with one of our butter makers, who gave me some figures, some very startling figures. We often hear about the average production being low in Ontario, but just think of these staggering figures taken direct from his books. In that locality there was one man who was feeding seven cows. What do you suppose he was getting from them for the whole creamery season ? Just an average of $10.84 per cow—for the whole season, from the middle of June to the middle of October. Our butter maker talked to this man, and got him to look after his cows a good deal better. He got him to shift their pasture occasionally, and to give them plenty of green feed ; and in two years he had just doubled the production. From the same seven cows that had given him an average of $10.84 he got $21.53 per cow. There is the result of better care and attention.

That brings me to speak on another very important point, the length of the milking period. It has been laid down that a not abnormal shrinkage is 10 per cent of the record of the previous month as the yield for the present month. A shrinkage of 10 per cent. is not regarded as abnormal. Naturally, the shrinkage varies very much ; some cows will give a good flow for some time, while with others the yield of milk falls off very rapidly. I was rather surprised to find, out that herd in this district of Cowansville the shrinkage was as high as 15 per cent. That is too high altogether. The object of feeding is for the cow to produce milk through a reasonable period. To maintain the flow of milk is one of the secrets of good dairying. In maintaining the flow we should have a silo ; two tons of ensilage costing about $3, are equal to one ton of hay, which would cost from $6 to $8. In the summer let the cow have plenty of shade, and see that she is well protected from flies. I do not think there is anything that will cause greater shrinkage than those two things, exposure to the hot sun and letting the flies worry the animals. Provide protection from the flies in some way The cows should get plenty of water, and there should be no excitement because that tends to lessen the supply of milk. Give the cows access to salt. By these means, and by looking after her comfort in every way that we can, and milking regularly and clean, we may maintain the flow of milk.

The next item in this big subject of improvement is the use of pure bred sires. That is an exceedingly important matter, and I do not think that any dairyman should grudge $200 for a good bull—for this reason : Suppose a cow is giving 3,000 pounds of milk. If you breed her to a bull whose dame gave 10,000 pounds, you are likely to get a heifer that will produce 6,000 pounds. So, do not grudge the price for a good bull. I know an instance of a man who paid $300 for a bull—it does not matter what breed. He paid $300 for a bull. Inside of twelve years he has sold about seventy-five grade cows ; and he estimates that they have sold for at least $20 more on account of the good breeding there was in them. Seventy-five animals at $20 gave him an extra profit of $1,500. Then besides, he estimates that the increased production of milk from these animals, on account of the good blood in them, has brought him another $1,500. There is $3,000 which he has gained in twelve years on an investment of $300 in buying a pure-bred sire. Is that a good investment or not ? So don't grudge $200 for a good bull. Don't use the scrub bull at all, but use only the pure-bred sire. Make sure that he comes of a line of parents who have shown their dairy qualities and have established power of conveying dairy quality to their offspring. You have the right to demand from the owner of the bull the record of its dam and grand-dams. Do not buy a bull on his fancy exhibition and fashionable show-ring points. You want to get something better than color. You do not want a grade bull, or to breed 'skim-milk cows.' If the bull is 'half the herd,' it is certainly worth while getting one that has good dairy quality.

That brings me to the question of weeding out poor cows. In regard to that, I would say if you want to purchase, do not grudge $50 or $60 for a good, healthy cow. It is better to have fewer cows and get more profit from them. Some time ago I was speaking to a man, and he said: 'I bought a cow last week from a neighbor. He thinks a cow is a cow, just as a man is a man.' Perfectly true. A man is a man ; but there is a great difference between a brakeman and the president of the railway company. This man who was selling the cow thought he had to keep twenty cows, so, having too many, he sold one—any one. The other man was sharp enough, and bought the best cow. If you have to buy, buy a good one.

I want to go to another point which I have mentioned in this hall, but which I did not dwell on very long. I refer to the question of manipulation milking ; that is, the system of pressing or kneading the udder after milking, both sides, both ways. The object of this is to increase the yield of milk and fat. May I give you briefly the argument in favor of this practice ? The milk glands, just like any other organs of the body, are developed by being worked. That stands to reason. Further, if the entire secretion of milk is not removed and the glands are not thoroughly emptied, they are not stimulated into renewed activity. Nature provides in vain and gradually they will cease to manufacture milk producing materials if not stimulated. I want to say right here that this is the best possible stimulus to increase production, that is the complete emptying of the contents of the milk glands. That applies especially to heifers in their first milking season. I mention this because I have met men two or three times who told me that they do not believe in having a heifer milk longer than five or six months in her first milking season. The milk glands in the case of the young stock are still in the process of development of which they are capable. Now it is obvious that careless or ineffective milking will have the opposite effect. There is a well known law that 'like begets like,' and it stands to reason that cows whose milk producing capacities have been developed to their utmost limit will be more likely to transmit these qualities to their offspring, than cows whose faculties for transforming plant food into milk and butter fat have never been developed. A secondary, but very important advantage from systematic and clean milking, would be fewer diseased udders. This mischief is frequently the result of careless milking. When the milk is not thoroughly removed, an inflamed condition often ensues, resulting, if not properly attended to, in the drying up of the affected quarter. That means a double loss, the loss of product, and depreciation in the value of the cow. If you want to study the matter further, it is fully discussed in a good bulletin issued by the Pennsylvania Department of Agriculture. Here is the point. In dealing with a large number of cows, they found there that the average gain was one pound of milk per cow per day, or 1-10 of a pound of fat. That does not seem to be much, but I want to show you the possibility involved. They found in several cases that after the regular milking was finished, by this so-called manipulation milking, they obtained as high as 5½ pounds of milk extra, which is certainly worth getting. Five and one-half pounds of milk are equal to 6-10 of a pound of fat, which is considerably above the average total daily production of ordinary cows. The greater portion of the gain is from correcting the lack of care in regular milking, from those that are not milked quite clean. But even with good milkers, there have always been some cows that have given an increase of nearly one pound of milk. A thorough system of milking is the foundation requirement of successful dairying. In addition to directly increasing the production, exhaustive milking will be likely to maintain the maximum flow and will permanently develop the dairy qualities of both the dam and

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