

which also bears the number of the cow. At the end of eight days the milk is tested.

Every dairyman knows that cows require individual treatment. By watching your test, you will gain a better knowledge of the treatment required, and you will know for a certainty if your food machine, "the cow," is paying for her expense, and giving you a good dividend.

To your last question, "Are milk records a benefit to a man who is already taking as good care of his herd as he knows how?" I can only say that, without records, a dairyman is, to a great extent, working in the dark, and at hazard. He may be putting the same care and expense on an animal which is a dead loss, and which should be weeded out, as on the cow which perhaps brings him in a clear profit of anything from \$50 to \$100 per annum.

C. D'ETCHEGOYEN,
Agricultural Manager for C. P. R.
Prescott Co., Ont.

PAYS TO TEST.

Tests of my cows by the Pure Milk Supply Co., at the Soo, have satisfied me that it is very important to know your cows. I found the following advantages:

1. That it is an easy matter to be deceived in a cow.

2. That actual testing is the only way of proving and improving your herd.

I tested my cows because I heard and read so much on the subject, and I wanted to know by personal proof—actual testing—that I could not be misled. I tried it one whole season, and am satisfied that it pays any man to know his cows, and that he can only do so by actual testing. Of course, to breed, feed and weed is the only way to have good cows or a good herd. You must keep or use a good sire. I believe testing by keeping a record is good for any person, as it leads on to those things.

I would not be without "The Farmer's Advocate," if I took no other paper for my family, to say nothing of myself. WM. H. EVOY.
Algoma, Ont.

TIME WELL SPENT.

I have kept individual milk records four years now, and I would not think of getting along without them. As for the time it takes, I think about four minutes per day would cover all the time for ten cows when a person gets used to it. I think at one minute per cow it would be time well spent. And, as for the good they have done me, if I have a milk cow to sell, I can turn up her record for four years, and any month in the year. My cows averaged 5,000 pounds for seven months last year, but I hope to do a lot better yet. They are nearly all Holstein grades. When I am sure a cow is paying me well for her keep, I take more interest in her than I would with one I was guessing about. I think if a man keeps milk records, and reads "The Farmer's Advocate," and puts what he learns from it into practice, he will always have enough ahead for a cold day like this. D. A. KENNEDY.
Russell Co., Ont.

ESSENTIAL TO INTELLIGENT FEEDING.

Editor "The Farmer's Advocate":

I believe individual milk records are not only beneficial, but that they are essential to intelligent feeding. I have only been keeping these records for the past season, but am satisfied that I have been amply repaid for all the time taken up by such work. I have not timed myself at this work, but I believe that, by taking two pails to the farthest cows from the scales, and milking two cows, and carrying same to be weighed and recorded, that probably about 15 seconds per cow would be the average time required. Now, as to why I commenced this, I had purchased a purebred cow, and was anxious to know what she was going to do for me for the season. I have learned which cows are paying for their extra feed and which ones are not—that is, in feeding for milk at this season of the year.

Oxford Co., Ont.

T. G. PATERSON.

HALF A MINUTE PER COW.

I have been keeping daily records for the last four years. It takes about half a minute per cow to weigh the milk. Why I started the records, was to find out how many cows I had that were not giving their 5,000 pounds of milk per year. I have learned that about one-third of our herd were not doing so, and I am able to get rid of the non-paying cows. I think milk records are a benefit to any dairyman. Unless a man keeps a daily record of each individual cow, he does not know for certain at the end of the year what his cows have done for him. VAUDREUIL, Que.

A. BART.

O. A. C. DAIRY SCHOOL EXAMINATIONS.

The Dairy School term at the O. A. C., which closed March 22nd, was one of the most successful in the history of the Dairy School. There was a larger proportion of those registering who took the final examinations than has been the case in any one year heretofore. The results in proficiency list only are given for the factory, specialists in buttermaking and farm-dairy classes. Students are ranked according to general standing in both practical and written examinations. Those students having a star will be required to pass a supplemental examination in the subject or subjects indicated before they may receive their certificates.

FACTORY CLASS.

Rank.	Name.	P. O. Address.
1.	F. A. Armstrong	Sardis, B.C.
2.	Wm. Reid	Listowel, Ont.
3.	J. P. Baxter	St. Paul's, Ont.
4.	W. A. Freeman	Condersport, Pa., U.S.A.
5.	M. Noad	Crampton, Ont.
6.	W. N. Morley	Chesley, Ont.
7.	F. Baumgartner	Zurich, Switzerland.
8.	Wm. Weir	Kirkcudbright, Scotland.
9.	W. A. Boutwell	Barre, Vt., U.S.A.
10.	H. B. Lowe	Toronto, Ont.
11.	S. Reynolds	Harriston, Ont.
12.	M. Jack	Lewiston, N. Y., U.S.A.
13.	A. J. Muxworthy	Motherwell, Ont.
14.	*W. Rice	Villa Nova, Ont.
15.	**T. V. McEwan	Sebringville, Ont.
16.	Y. Yoneyama	Schizuoka, Japan.
17.	*(1) J. F. B. Weir	Ingersoll, Ont.

*Bacteriology. **Bacteriology and Chemistry.

*(1) Chemistry.

SPECIALISTS IN BUTTERMAKING.

1.	E. B. Parsons	Barnston, Que.
2.	J. A. Logie	Nassagaweya, Ont.
3.	F. E. Reesor	Locust Hill, Ont.
4.	E. T. Smith	Markham, Ont.
5.	S. A. Hunter	Nelson, Ont.
6.	R. Barron	Elsinore, Ont.
7.	H. F. Henderson	Cherrywood, Ont.
8.	A. H. Hurlburt	Constable, N.Y., U.S.A.
9.	*M. B. Latam	Red Deer, Alta.
10.	**E. W. Raby	Gooderham, Ont.

*Bacteriology. **Bacteriology and Chemistry.

FARM-DAIRY CLASS.

1.	W. G. Johnston	Toronto, Ont.
2.	P. W. Burton	Newtonbrook, Ont.
3.	C. Calverley	Roseville, Ont.
4.	*E. Erwin	Tyrrell, Ont.
5.	**R. F. Whaley	Java, N.Y., U.S.A.
6.	M. Alvarado	Saint Juan, Argentina.
7.	**S. J. George	Java, N.Y., U.S.A.

*Bacteriology. **Bacteriology and Chemistry.

THE OIL TEST OUT OF DATE.

We notice, among the creamery reports from New England, particularly those from the northern States, and also from some sections of Pennsylvania, that there is still an occasional creamery adhering to the oil test in determining the fat content of the cream received. While this method is approximately accurate, and was a material improvement over the old method of payment by the creamery-inch system, the introduction of the Babcock test has now almost completely replaced it, owing to its greater accuracy and convenience. In making determinations by the oil-test churn, the amount of churnable fat is taken as a basis for payment, and this is directly dependent on so many outside influences, such as temperature of cream, acidity, size of sample churned, etc., that material inaccuracies are bound to creep in where the method is practiced. We would strongly advise those still holding to this method to abandon it and take up the Babcock test. The oil test is a back number.—[New York Produce Review.]

THE WRONG KIND OF STABLES.

One of the things that holds many farmers back from putting in the King system of ventilation is that they do not exactly see how it is to be done with their stone-foundation stables. It was a bad mistake, in the first place, to make the stable walls of stone. They can be made cheaper and better of wood and paper. But the King system can be put in a stable of stone walls by cutting holes in the walls at frequent intervals and fitting these holes on the inside to foot-square board tubes, made double with building paper between the boards. These tubes or fresh-air ducts are long enough to discharge the air at the top every four or five cows. It is a simple matter, then, to build the large, outgoing air-shaft.—[Board's Dairyman.]

MILK FROM COW TO CONSUMER.

From a paper by Gilbert M. Gowell, Professor of Animal Industry at the University of Maine.

Of the elements which enter into the composition of milk—water, fat, casein, albumen, sugar and ash—casein is the most troublesome to preserve. It is easily affected by acids or by rennet, a little of the latter added causing it to coagulate. Albumen changes in taste if the milk is heated to 155 degrees, hence pasteurizing gives a flavor to which people object. The tendency of sugar is to change to lactic acid by the action of bacteria, causing the milk to sour, a condition that is healthy, and vastly different from putrefaction.

The sources of flavor in milk are from the food eaten, water drank, air breathed, change of food, indigestion, time of lactation and individualism. While there is an individualism in the work of the cow, which stamps her product as peculiarly her own, and she will overcome objectionable conditions as regards food, water and air, which for a time change the flavor of the milk, she is doing more profitable work when these conditions are normal.

If the food of a cow is suddenly changed, even if it be from poor to good food, it will interfere with the quality of the milk. There is no food product which gives such a delicate flavor as corn meal, yet, if the cow is unaccustomed to it, if not in sympathy with the food, it will cause a disturbance. So, when the cow is turned on the aftermath, the liberal quantity of clover gives an objectionable taste to the milk at first, which disappears as the cow becomes accustomed to the diet. Hence, whatever change is made in the food, should be made gradually. At the College they are able to feed three pecks of turnips at once without detriment to the milk, but they began with a quart and worked up. The bowels of the cow should be kept just right, that there may be no tendency to indigestion.

Some cows have the peculiarity of making good milk all the time of lactation; others, in six or eight months, will give that which is unfit for use. Cases have been known where the milk became unfit for use when the cow was making a pound of butter a day. In the wild cow the milk after a time becomes bitter, and the calf weans itself. By domestication the milking period has been prolonged and this period of change has been delayed. Stop milking ten or twelve weeks before calving time and the cow will store up surplus flesh and energy, which she will give down in great quantities of milk after her next calving. Stripper milk is unfit for use; it is lacking in delicacy of flavor, and, mixed with milk from the herd, depresses the quality of the whole. The cow, then, must have the purest of air and water, and the cleanest of food.

The flavor is affected, also, by odors absorbed, by dust in the air, dust from the cow's udder, dirty milkers and milking utensils. Not only is the milk contaminated by odors in the air, but it may be affected before being drawn by strong, rank odors in the stable. Dirt, from whatever source, once dissolved in the milk, cannot be gotten out. It is noticed in the butter, and even in cheese. The udder should be washed before milking, and it is a good plan to keep the under side of the cow clipped. The idea of the dirty milker touches a delicate point, but so much milk is taken uncooked that too much cannot be said upon this subject. The utmost care is exercised in the preparation of bread, which is cooked before being eaten; at the same time, the milk served with it, in a raw state, has been most carelessly handled.

Everyone ought to know how to wash utensils for handling milk. First use tepid water, then wash thoroughly in water with a little salt soda dissolved in it, and finish by thoroughly scalding with boiling water. At the College the utensils are steamed for fifteen minutes in a galvanized tank. Nothing will take the place of thorough washing; this must come first always. Straining is essential under existing conditions, but Prof. Gowell is hoping that the time will come when it will not be. The value of aerating is not fully understood. The volatile oils of the food give flavor to the milk. When it is aerated part of this flavor is lost, but enough is gained to make up for it, since air pumped in drives out obnoxious gases. As a test, a pail of milk was suspended over a pile of horse dressing for 24 hours, covered only by a cheese-cloth, and it was thoroughly permeated with the odor; after aerating eight minutes, no smell could be detected. Milk should be passed over the cooler to get rid more quickly of the animal heat that causes acidity. Milk can be dropped at once to 46 degrees. The value of aerating and cooling cannot be overestimated.

In making butter, pasteurizing the cream gives a product with no flavor, and this is especially desirable where cream is received from different sources. By planting in this neutral cream a flavor made from lactic acid, prepared by holding sweet milk, either whole or skimmed, at a temperature of 70 or 80 degrees for 24 hours, a butter of superior merit is made.