

ascertaining the amount of butter fat in cream or milk has been in use for about twenty years. It was first invented by Doctor Babcock, of Wisconsin. The operation of the test is quite mechanical and is so simple that the average person with ordinary ability is able to get accurate results provided, of course, extreme care is taken in the various stages. The chief points to be observed are, first, getting a representative sample of the cream to be tested, then weighing into the test bottle the exact amount, then the proper manipulation of the test and finally reading off accurately the amount of fat recorded. I may say that where errors occur they are mostly due to the operator not getting or being able to get a fair representative sample of the cream rather than in the actual operation of testing. Very often, when you think you have taken the same care with your cream, your test is not the same as it was the week before and you are inclined to doubt the accuracy of the test on that account. You are inclined to think a mistake has been made.

CAUSES OF VARIATION.

What I would like to point out to you particularly is some of the causes for this variation in the richness of the cream. You all are well aware, of course, that the butter fat is in the shape of globules suspended in the milk. The object of the cream separator is to gather these globules out of the milk. Of course in the first place the richness of the cream is determined by the richness of the milk itself and also by the speed at which the milk is run through the separator. The speed of the separator and the temperature of the milk also will have a large effect on the richness of your cream. Now these alone, the speed of the separator and the temperature of the milk at the time of separation, will account for a large amount of the variation in the test of the cream. Then again there is another reason. After the cream has been separated it will remain at your place all the way, I suppose, from one or two to seven or eight days. The larger globules of the butter fat will come to the top. Then when the cream goes to the factory unless it is well stirred you are not apt to get a fair sample for testing. I am quite sure that the Babcock tester will give a fair test every time. The variation is due to the causes I have mentioned. Even if you have taken the same care that you usually do, even if the separator has been run at the same speed and the milk separated at the same temperature, still there is opportunity for variation on account of the cream not being in exactly the same condition each time. Cream kept in shallow pans, for instance, will be more lumpy than that kept in deeper ones and it is harder to get a good sample for testing from lumpy cream.

But before I leave the matter of test I wish to make it clear that there are various causes for a slight difference in the test and I do not think the buttermakers should be blamed or suspected in any way. There is no reason why a buttermaker should attempt to lower anybody's test. It makes no difference to him and I ask you when you are tempted to find fault with him to remember that there are many things that affect the test of your cream.

RIPENING OF CREAM.

Another point is that the buttermaker must have more control over the ripening of the cream. Mr. Wilson has told you that when you sell