

Creamery Department

Butter Makers are invited to send contributions to this department, to ask questions on matters relating to the creamery and to suggest subjects for discussion. Address your letters to the Creamery Department.

Defects in Butter

The Dairy Division of Washington employs inspectors at large receiving centres to inspect butter and give advice to makers as to where improvements can be made. The work is giving satisfaction, and is proving of value to the trade. In a recent interview the inspector at New York city gave some information about the work that may be of value to Canadian butter makers. He said:

"I am seldom called to look at strictly fancy butter. The butter makers who nearly always make high quality and never get any kicks, don't have any need of my help, and consequently don't ask for it. Once in a while a single tub is marked in a shipment of these fine goods, and the buttermaker requests that I score the butter. This I am always willing to do, but my work is mainly to help the fellow who needs it. You will, therefore, readily see that I am called to examine mostly creameries that have some faults.

"The defects that are most common at present are sour and summery flavors and curdy character. The extreme heat that has prevailed in many sections has made it difficult to keep down the temperature of the cream, and considerable of the butter gives evidence of over-ripened cream. This is the cause of much of the trouble, and will be during most of the summer. If it was merely a question of controlling the temperatures in the creamery, many of the butter makers would stay by their cream vats, but a great deal of the cream is shipped in too ripe, and it is impossible to fully overcome that difficulty.

"A great many of the creameries are pasteurizing at too high a temperature, and this produces a spongy, light-bodied butter, as well as an off flavor, though I am inclined to think that the latter is mostly where the cream arrived quite sour. Occasionally I run across a creamery that is very heavily salted—so salty, in fact, that it tastes like brine when one bites into it. There is positively no excuse for this. If by accident too much salt got into the churn, it can be washed out and made usable, but in some cases it looks as if the excessive salt were put in deliberately."

Dairying Progressing in Australia

The dairying industry in Australia has made rapid progress in recent years. In 1890, the net exports of butter from that country only amounted to 1½ per cent of the production. In 1898 the exports had increased to 31½ million pounds of butter. In 1906, the total exports reached 59 million pounds.

This expansion does not tell the whole story. There has been a large increase in the local consumption of butter. Butter is now within the purchasing power of all classes. In 1890, local consumption was 16 lbs. of butter per head; in 1906, it was 24 lbs. per head of the population. Ten years ago six million out of the 20 million pounds produced were made on the farm. To-day only 4½ per

cent. out of the 49 million pounds produced, is so made. The co-operative creamery plan is being generally adopted, lessening the drudgery on the farm.

Some recent British regulations looking to the restriction of the importation of all butter carrying preservatives, may interfere with Australia's trade somewhat. The use of preservatives has been very limited in that country, but a small percentage has been allowed by law. It is doubtful if Australian butter could be shipped to England in a marketable state without the use of some preservative. Hence the proposed restriction on the part of the British market is causing some consternation in dairying circles there. It is conceded that the shutting out of all butter containing preservatives from the British market would be disastrous to the dairy business in Australia, at the present time, and people there are hoping that the threat will not be carried out.

The amount of butter used is about ¼ lb. to every 100 lbs. of butter. It is usually put in during the early stages of manufacture, and the borax is gradually worked out until, so it is claimed, not half of it remains. It is contended that such a small percentage could not harm the consumer. There are those who claim that the restriction would be beneficial in the long run, as it would lead to the production of a quality of butter that would carry to England without preservatives.

How Separators Separate

The force that is used to separate the milk is known as centrifugal force. This may be described as the pull that is felt when a weight is attached to a string is whirled about by hand. It is pulled outward and the faster the weight is whirled the stronger the pull becomes.

In the old system of creaming, the separation is caused by the action of gravity. The fat globules, being lighter than the other portions of the milk are forced to the top; that is gravity acts stronger, or pulls harder on the heavier portions than it does on the lighter, and the milk is gradually arranged in layers, the light portion at the top, and the heavier portion at the bottom.

The force acting in the separator has precisely the same action on the milk but acts outward from the centre of the bowl the same as gravity acts downward from the surface, only many thousand times stronger, accomplishing in a few moments, and far more completely, what it takes gravity several hours to do.

As the milk goes into the bowl it is at once thrown to the outermost parts and fills the bowl completely until an opening is reached where it will flow out again. The surface of the milk is on a line parallel with the centre, or axis of the bowl, and is exactly in line with the cream outlet. A cross section through the bowl from this surface to the outside presents much the same appearance as would a pan of milk after the cream had been raised by gravity.

The cream is on the surface, which might be called the top, and the heavier portions of the milk are at the farthest from the centre, which would represent the bottom.

With this understanding of the arrangement of the milk in the bowl there are a number of things to be observed which influence the separation. The difference in length of time it takes to separate cream by gravity and by centrifugal force shows plainly that the time varies with the amount of force applied. The shorter the time the greater the force must be. Skin-milk from the separator contains less fat than that secured by the gravity system, showing that

the greater force causes more perfect separation.

From the above statements the following conclusions regarding the use of the separator may be drawn:

1. If the amount of milk that passes through the separator in a given time is a fixed quantity, any increase in the speed of the machine will tend

to cause closer skimming because of the greater force exerted.
2. If the amount of milk that passes through in a given time is increased, the skimming will not be so perfect, for the centrifugal force is not exerted on the milk so long a time.

It is evident, therefore, that the closeness of skimming is the result of two factors—time and force. If either of these is decreased, the result will be poorer work. If either is increased, better work will result.

The hand separator is often the scapegoat upon which the inefficient butter maker unloads his own shortcomings.—E. H. Webster.

Prof. G. L. McKay, of Iowa Agricultural College, speaking of a proposal to fix the minimum standard for milk at 3.25 per cent. fat, said: "If this were to become a law hundreds of dairymen could be constantly prosecuted for adulteration of milk, over which they have no control. This is quite evident to every creamery man. Many of our fine Holstein cows that have made wonderful records as butter producers, would come under the ban of the law, and some of our grades and breeds that are not Holstein would at times be condemned. Three per cent. at the most should be high enough for a standard of this kind."

Cheese Department

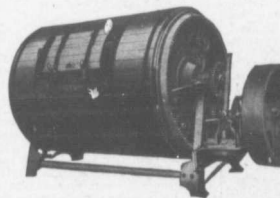
Makers are invited to send contributions to this department, to ask questions on matters relating to cheese making and to suggest subjects for discussion. Address your letters to the Cheese Maker's Department.

Looks Do Not Always Count

In a great many things, looks, or the appearance of a thing counts for a very great deal. The surrounding and outside appearance of a cheese factory or creamery count for much. An untidy and slovenly appearance gives a different impression from that produced by neatness and good taste. So in a great many things, looks count for much, and the cheese and butter maker should see to it that the factories present a neat and attractive appearance, both inside and out.

One of the things in which looks don't count is in the milk cans, cream cans, milk pails, etc. A milk pail rinsed out in water after milking may look clean, while it may be far from being in that condition. There may be minute particles of dirt left in the seams of that pail, where innumerable bacteria will propagate, and be ready to operate on the fresh milk at the next milking time. So with milk and cream cans. At many cheese factories the sour whey is returned to the patron in the milk cans. Upon the whey being emptied, the can may be merely washed out with cold or lukewarm water, and may present a clean appearance, so far as looks go. But it is far from clean, and cannot be considered as clean until it is thoroughly washed with boiling hot water, and placed in the sunlight to dry. So with the factory

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