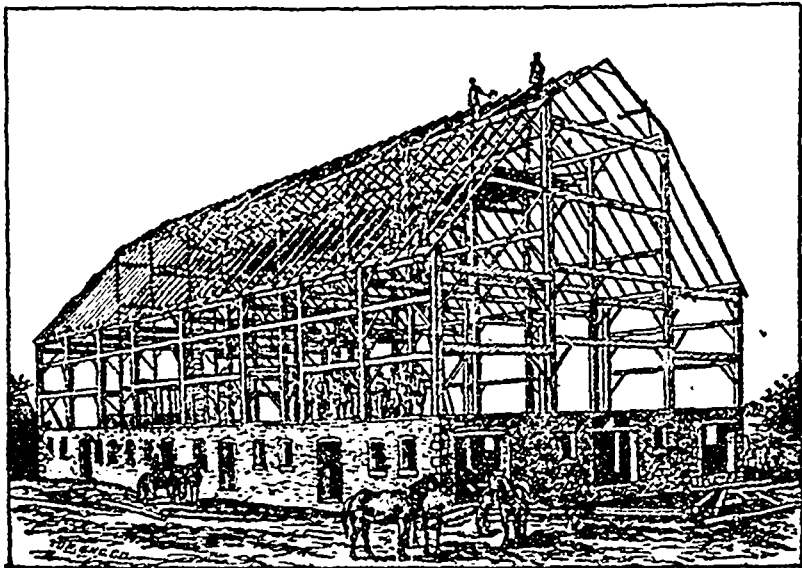


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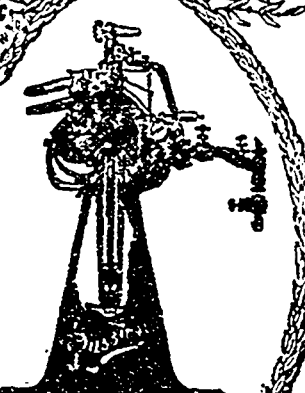


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OPERATIONS OF A FIRST-CLASS CANADIAN CHEESE FACTORY.

Cheesemaking, as conducted at first-class Canadian factories, is no longer a haphazard operation, but is conducted along scientific lines, which give the intelligent and experienced maker power to control his work in every stage. To this only sweet, good-flavored milk must be used, and a good maker will not accept that which is otherwise, if he can detect a faulty condition. Sometimes, however, milk a little off will slip in, especially if well cooled down, and will not develop the bad flavor till heat is applied. The Tavistock (Oxford Co., Ont.) factory, owned by Ballantyne & Bell, and operated under the supervision of Mr. A. T. Bell, has a reputation to be envied for the excellence of the product turned out. The cheesemaker for this and last season is Mr. Moses Knöchel, who appears thoroughly versed in every detail of the work entrusted to him and his three careful helpers. The factory has 140 patrons (many of whom send small quantities) who together sent on August 19th, the day of our visit, 17,900 pounds of milk, says the Farmer's Advocate of Ontario, Canada. This is an average day's weight, and is generally received in good condition. The troubles that have been most general this season, and for which milk has had to be returned, have been the presence of the "cowy" odor. This is only found in milk from careless patrons, and generally at such times as harvesting or other pressing work causes the proper care of the milk to be neglected. The best class of patrons never allow anything to prevent giving the milk the proper attention, which is to aerate it by dipping or pouring in a sweet atmosphere before it is cooled, directly after milking. Cooling without airing is bad practice, and serves to incorporate flavors that give trouble in the curds, and are indeed difficult to eradicate even by very careful special handling. Whenever tainted milk is returned a printed circular is sent along with it, pointing out the importance of having the milk in good condition in order to make good cheese, and also telling how to accomplish that end. The main points are: 1st, the proper washing and scalding the pails, dishes, cans, strainers, cans, etc., scouring them once a week with salt, and not wiping them after scalding. 2nd, cleanliness in milking, and 3rd, aeration and cooling of the milk, and the importance of keeping it out of cellars and other places where taints may exist. The great trouble with patrons who have their milk returned is not a lack of knowledge in caring for it, but usually they possess liberal views as to what is termed cleanliness, or indifferent to the welfare of the factory and its patrons, and the only way to deal with some of them is, to reject their milk.

HEATING AND SETTING THE MILK AND CUTTING THE CURD.

The milk is usually all in the vats by 9 o'clock in the morning. At this season four vats are used, these are each 15 feet long and 44 inches wide. They are each surrounded by a jacket for the reception of water, into which steam is turned. The milk is first slowly heated up to 86 deg. F., two pairs of agitating paddles running during the heating. The milk is tested for ripeness by the rennet test, and it is usually necessary to add a starter in order to have the vats ripen uniformly. When the rennet test shows coagulation in 17 1/2 seconds the vats are set. The starter is made by placing four pails of milk from the best flavored vat, if there is any difference, in a milk can. To this is added two pails of water and one and a half quarts of ripe or sour starter from the previous day's preparation. The quantity added to each vat is usually about one and a half pails, but this is guided by the rennet test.

The milk is set by adding four ounces of rennet, diluted to a good volume with water per 1,000 pounds of milk, and the agitators are allowed to run for three or four minutes. In case of overripe milk it is set at lower temperature, and as high as two ounces more rennet per 1,000 pounds of milk

is added, and the vat is heated up more quickly, so as to keep ahead of the acid. The curd is kept when it splits clean over the finger pushed beneath the surface and gently lifted. This is about thirty minutes after setting. The horizontal knife is first used lengthwise of the vat, and the perpendicular knife crosswise and lengthwise, which cuts the curd into cubes about half an inch through. Care is taken not to break or crush the curd. Four pairs of paddles in each vat are now started, the curd is loosened from the sides of the vat, and steam is turned on below to cook the curd. The temperature is raised from 86 to 98 degrees in from 48 to 45 minutes. The agitators are kept running till the curd shows acid on the hot iron, and the whey is run off when it shows from one-eighth to one-quarter inch. This is usually three hours after setting. In case of fast working curds from overripe milk the curd is cut finer. The whey is mostly run off very soon after cutting and the curd is kept moving with the rake. In cases of bad flavors at this stage Mr. Knöchel has found advantage from washing the curd in the vat, being careful in either case not to have too much moisture in the sink. After the whey is run off, the curds are placed in the sink till they mat, then cut in blocks and frequently turned till ready to mill, in from one and a half to two hours.

MILLING, SALTING AND PRESSING

The curd milk is used, which is run with the engine power. After milling the curds are frequently stirred from 40 to 60 minutes, when they are piled up and closely covered for 45 minutes to mellow down. This tends to help the texture and smoothness of the cheese. They are now broken up and given plenty of fresh air by frequent stirring till the curd shows butter fat and the temperature is down to about 82 degrees, when it is salted at the rate of two and three-quarters to three pounds of salt per 1,000 pounds of milk. Gas or off-flavored curds get more stirring and more time in the open air. A moist curd is salted three pounds per 1,000 pounds of milk to allow for the extra salt that runs away in the dripping. Mr. Knöchel considers piling the curd, followed by plenty of stirring in the fresh air, very important, as to neglect these a soft cheese with rag holes is liable to result. It is also well to have the particles of curd well separated before adding the salt, that the salting may be uniform. The curd is stirred over twice during the salting and two or three times more in the 15 or 20 minutes afterwards. It is then weighed and put into the hoops, 112 pounds in each, which make a finished cheese of about 82 pounds. They are then pressed in the gang press for 45 minutes and then bandaged carefully. The scrupulous cheese cloth bandage is used, which is neatly drawn up to prevent wrinkles. Double top and bottom clothes are put on, the outer ones being removed before the cheese goes into the curing room. The cheese are then returned to the press and turned at 8 a.m. the next day. At 11 o'clock they are taken out of the press and stamped with the number of the vat in which they are made, the date of making, and "Canada," and placed on the shelves of the curing room.

THE CURING ROOM

is a large airy building with fairly good light. As soon as one enters there is noticed a peculiarly pleasant, nutty flavor or odor, which is common to good cheese. This is also recognized in the factory, and is accounted for by the scrupulous cleanliness in which the factory is kept. The curing room is kept at a temperature of from 80 to 70 degrees Fahr. In extremely hot weather the ice box is used. This is six and a half feet high, three feet wide and three feet across. It stands on the floor and is filled with ice. It has an opening at the bottom from which the cool air circulates. The room is kept warm in cold weather by a coal furnace jacketed with asbestos so that the heat escapes only from the top near the ceiling. All the windows of the curing room are thrown open after sunset and closed

(Continued on Page 40)

D. G. H. W. S.

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