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Filling Toledo's Pantry

It's a Big Jump From Home Churning to Modern Dairy Methods

Commercial Buttermilk Is Made Without Making Butter

By ALLEN SAUNDERS

THE difference between nome production and commercial production is nowhere more strongly brought out than in the case of dairy food manufacture.

Let your mind go back to churning day on the farm. Mother pours a jar of cream into the old dasher churn, ties a cloth around the lid, drops a cylinder made from a baking powder can around the handle (to prevent splashing) and one of the children starts jumping up and down, approximately in one spot, the worn dasher handle gripped in brown hands. There are frequent inspections of the handle, hopeful eyes seeking flecks of butter. A little water may be added to make the butter "gather." When the dasher spanks something solid and goes "chunk!" it is time to quit. Mother works the butter with a short paddle in a crock and the buttermilk, shot through with big chunks of yellow goodness, is poured off as a treat for Dad's dinner.

FIFTH IN A SERIES OF SIX ARTICLES

The making of ice cream calls for hours of work. Ice must be pounded in a burlap sack. The mixture of milk and sugar and flavoring is poured into the can and salted ice packed around it, with great care to keep the salt out of the cream. Then a half-hour of diligent turning before the mixture is "slushy." After which, it is set aside to harden—if the kids can be kept out of it that long.

Stock Gets Buttermilk

QUANTITY production, as seen at the Toledo plant of the Page Dairy Co. is very different.

The cream is brought in, from all over northwestern Ohio and southern Michigan. It is weighed. Samples are sent to the testing laboratory. An acid is added to each narrow-necked bottle and the flasks take a ride on a merry-go-round to separate the butter-fat. This is measured by calibrations and recorded.

The cream is pasteurized, cooled, put in vats to ripen for 24 hours. Then it goes into 300-gallon drums which revolve 45 times a minute at low temperatures to churn cream into butter.

The buttermilk used to go into the sewers. Now it is pumped to the roof, dried and sold as stock food.

Commercial buttermilk is specially manufactured. In 500-gallon, glass-lined tanks, skim-milk is pasteurized by hot-water coils, then, at 70 degrees, inoculated with sour milk bacteria, a Bulgarian process which is said to account for the number of husky centenarians in the Balkans.

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SKIM milk not turned into buttermilk is condensed for the use of bakers and confectioners. It is boiled at low temperatures under vacuum, then barreled. Or it may be dried. This is a most interesting process. The milk is dried on hot rollers and comes off in sheets. Milk by the square yard.

The butter comes out of the churns in granular form. It is washed, salted, worked and packaged. The cutting and packaging machine — made in Toledo—cuts, wraps and puts into cartons 60 pounds a minute, or 80 half-pounds in the same time.

The Page company delivers butter as far east as Altoona, Pa., fresh cream all along the eastern seaboard every day.

If a dipper of ice cream in a sherbet glass whets your appetite, how would you like to look at 500 gallons in one batch? Ice cream ingredients are mixed in vats of that quantity.

It is mixed today and frozen tomorrow. That "ripening period" gives the cream a chance to absorb the flavor. There might be a hint in that fact for those of you who turn out an occasional freezerful on the back porch.

Ice cream comes out of the huge freezers in a semi-soft stream. It flows into cans and is set away to harden in storage rooms kept at 7 below zero. Small packages and individual cups are filled by a special machine and sent to the hardening room.

Guillotined Cream

TO MAKE those chocolate covered cream-on-a-stick confections, a special freezer is used which freezes the stick into the cream before they are dipped, 24 at a time. Chocolate-covered bars are dipped by a circular machine with a wheel of uncannily skillful arms. These pick up the bar of cream, dip it, drain it and wrap it in one series of operations.

Brick ice cream is chopped up by a miniature guillotine. Those fancy centers are frozen separately, then put into molds and the semi-soft cream is run around them before they are set aside to harden.

Fancy individual molds may be had just about any shape and combination of colors. They cost more than ice cream dipped from a can, and you will understand why when you watch this process.

The iron molds—which range from a full-blown rose to a Santa with a pack of toys on his back—are in halves and open on a hinge. They are filled with the soft cream, using a pastry bag. This permits the use of cream of different colors to get the realistic effect. Then the mold is closed and put in a hardening room. When the cream is solid, the molds must be pried open with a knife, one at a time. It would be good training for an oyster-opener.

The story of milk is one of many chapters. If we had time, it would be interesting to follow the fluid from farm to consumer. Many of the dairies from which Henry Page trucks pick up fresh milk are models of up-to-date equipment. If you've never seen a milking machine in operation, it would be worth your time to drive out some evening and look one over.

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Bottles on Parade

BUT we will consider here only the story from collecting truck to delivery truck.

The milk is inspected and sampled as soon as it is unloaded. The cans are washed and sterilized. A butter-fat test is made. Chemical analysis and microscopic tests are made to detect any harmful bacteria. Then comes pasteurizing. The milk is held at 140 degrees Fahrenheit for 30 minutes, then cooled to 36 degrees. Then it is ready for bottling.

If you are a housewife who spends five or 10 minutes washing a milk bottle before you set it out on the porch, you'll be interested in one of the biggest pieces of equipment in the Page plant. This is the bottle washer. The bottles go into the machine, which is as big as a threshing machine separator, in long rows, like shabby soldiers on parade. They spend 20 minutes inside—being worked on with brushes, caustic soda, innumerable rinses of fresh water of varying temperatures, and chlorine solutions—to come out as sparkling as a battalion of crystal glass West Pointers.

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The plant makes all its own ice, 90 tons a day, and produces refrigeration, 31 different low temperatures in various rooms, from 40 above to 20 below.

The engine room uses seven carloads of coal a week. This is unloaded from cars by vacuum. It is actually sucked out of the cars, moved by vacuum 350 feet. By this method, a car is unloaded in three and one-half hours.

Salt also is bought by the carload, four or five cars a year.

The Toledo plant contains a cafeteria, where employes are fed under carefully supervised standards of cleanliness, and a complete laundry which runs constantly, in order that every employe may have a clean uniform every morning.

A far cry from a dasher churn in the kitchen and a hand-turned freezer on the back stoop.

21,000 an Hour

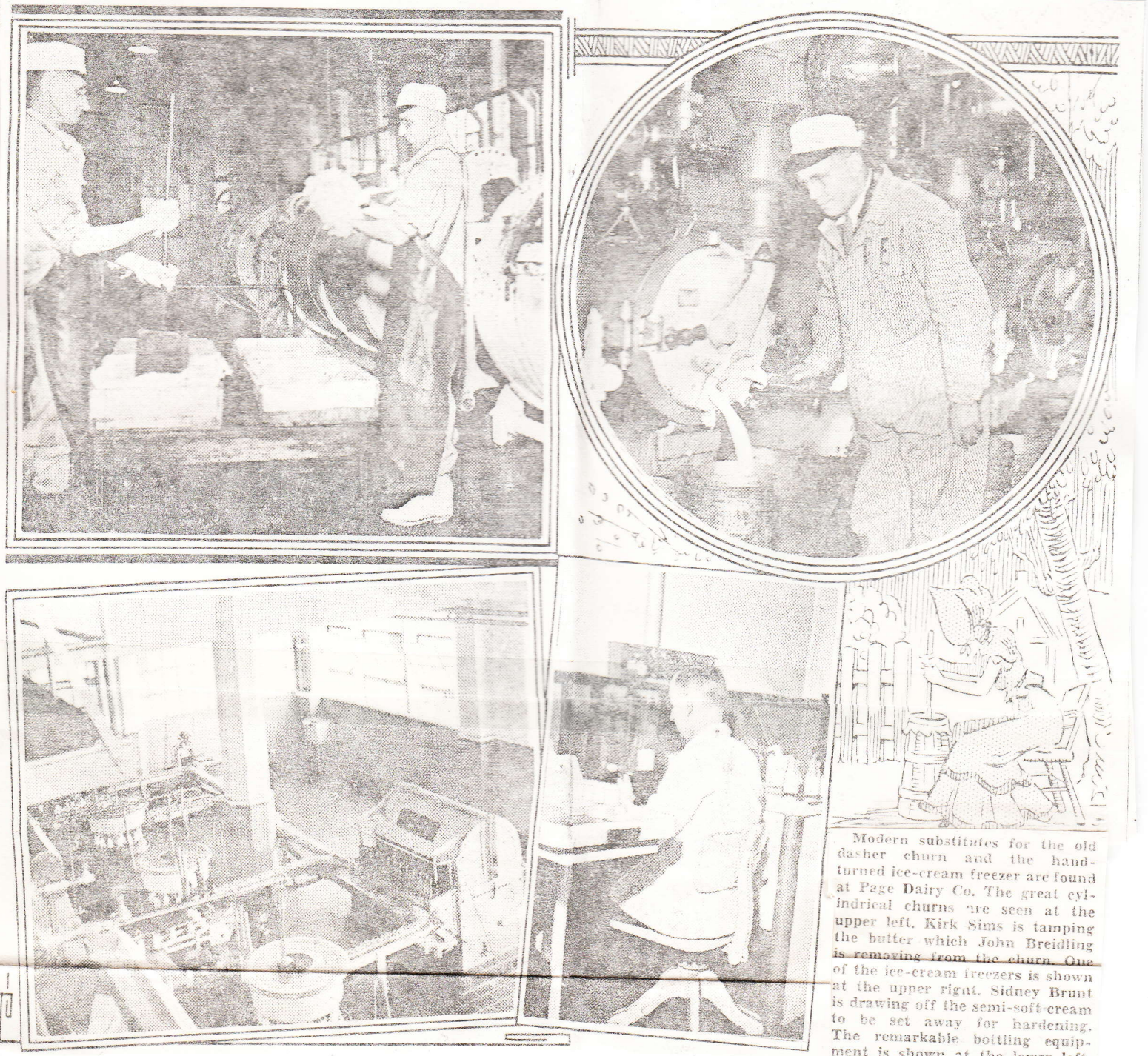
And, by the way, do you know what happens when you set out on your porch three bottles, all from different dairies, and a fourth dairy's deliveryman picks them up? They go to the bottle exchange, over on Spielbusch Avenue, where they are sorted, like checks in a clearing house, and returned to the proper plants.

Breakage, thefts and losses cause a high mortality among milk bottles. Page replenishes with 13 or 20 carloads of new bottles a year—more than a quarter of a million replacements every 12 months!

The freshly washed bottles are conveyed straight to the filling room, where a battery of intricate machines fill them, one shot of milk to a bottle, 21,000 an hour.

They are racked in freshly washed cases and away they ride to the refrigerator room on conveyor belts.

The Page Dairy also makes cottage cheese. Two years ago, they started the practice of putting it up in glass tumblers. In two years, they have used 1,500,000 Toledo-made tumblers.



Modern substitutes for the old dasher churn and the hand-turned ice-cream freezer are found at Page Dairy Co. The great cylindrical churns are seen at the upper left. Kirk Sims is tamping the butter which John Breidling is removing from the churn. One of the ice-cream freezers is shown at the upper right. Sidney Brunt is drawing off the semi-soft cream to be set away for hardening. The remarkable bottling equipment is shown at the lower left. Wilbur Schultz, chief chemist, is testing milk at the lower right.