

THE DAIRY

PASTEURIZING AND CREAM FERMENTS

What Makes Danish Butter the Best in the World.

I found at Copenhagen two pieces of dairy apparatus which are not generally known to our American dairymen, and which I find in every well appointed dairy in Denmark. One is the Lawrence milk cooler, and the other is a contrivance for heating the milk or cream to a temperature which kills all or nearly all bacteria which it may contain. This process is here called "pasteurization," after the great French scientist, who first called attention to this practical method of killing injurious bacteria. The milk cooler is a hollow metal plate, with corrugated sides. It is about an inch thick and of any size, though usually about two feet square. It stands on edge, with the corrugation running horizontally.

A stream of ice water runs through the inside of the plate, back and forth in a zigzag course, while the cream or milk is poured into a little trough with many fine holes in a row along the bottom, which is placed on the upper edge of the cooler, and from which it spreads in thin sheets over both sides of the cooler, as it slowly moves to the bottom. It has the great advantage that it is easily cleaned, since the sides are not covered. There are other forms of coolers, but in those I have so far seen the principle is the same. This cooler is in general use when the cream is to be cooled rapidly to any desired temperature.

The principle of the "pasteurizing" apparatus is equally simple. Steam is let in between the double walls of a small barrel shaped tank or reservoir, which contains the cream or milk, and it is so arranged that the cream runs into the machine in a constant stream and out again at the same rate after having attained the desired temperature.

A thermometer in the discharge pipe tells how hot it is, and the heat is regulated by admitting more or less steam through the valve on the steam pipe. This, too, is found in every dairy worthy of the name, and it is considered well nigh indispensable when a fine grade of butter is aimed at. It is essential when an artificially prepared pure ferment is used for the cream, as it then becomes necessary to kill all other bacteria the cream may contain before it is added.

And this brings me to that point in their dairy practice which above all others places the Danes ahead of the rest of the world, and which is perhaps the leading secret of the uniformly good quality of their butter. Pure cultures of cream ferments are in common use in all good dairies. I shall not now attempt to describe in detail what a "pure culture" is further than to say that it consists of bacteria, which in causing the fermentation of the cream give the desired flavor and character to the butter, and which have been isolated and artificially cultivated.

These "pure cultures" are offered for sale by two or three laboratories, and they have met with the practical dairyman's approval, who, as stated, makes use of them in his daily practice. This pure culture is used as a starter in skim-milk at a given temperature, and when fermented this is again used as a starter for the cream.—Report of Professor C. C. Georgeson, United States Special Agent.

Salt and Salting.

We do not profess to know much about salt, but we do know it to be foolish economy to use a cheap, untried brand in order to save a few dollars. We have in the market two standard English brands which have stood 20 years' test and at least one American brand which has been used by good makers for the last seven years. While it is quite possible that there are other brands of American salts in the market which are just as good—indeed we are hearing good reports of two—yet the buttermakers who use unknown salts are experimenting more or less at their own risk.

It is well to remember what we once read in a Swedish treatise on salt. "It is not always the most chemically pure salt which is the best preservative." It is also well to remember that salt takes taint easily, and hence great care should be used in handling it, and dealers who use this care should be patronized. This care should especially be shown by the importers of English salts where it is exposed to the vicissitudes of a long journey.—Dairy Messenger.

Dairy and Creamery.

A co-operative creamery in Chester county, Pa., is so successful that the plant alone is worth \$35,000, employing six separators, a lactocrite and an ice-making machine. The shares have doubled in price, and the butter sells in the Philadelphia market for 30 cents a pound wholesale. The patrons are simply intelligent working farmers who use their brains and hustle. This shows what the co-operative butter factory can do when it is run right.

Signal's Lily Flagg, that gave over 1,000 pounds of butter in a year, is not to be at the Columbian exposition owing to an injury she received.

Two cows—Bisson's Belle and Signal's Lily Flagg—are on record as producing over half a ton of butter in a year. From this to the paltry 132 pounds which is the average of the common scrub beast is a long jump.

Two prize winners for dairy butter in Illinois are emphatic on the subject of the injury done to butter makers by oleomargarine. They say the dairy prospect even in the great and fertile state of Illinois is not rosy because of the hurt done honest butter producers by the wretched hog butter.

A man who has tried it says that if ensilage is packed highest and closest at the sides it is less liable to spoil than when it is made highest in the middle.

The best grade of oleomargarine sells for 25 cents a pound.

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ROSEBURG.

NOTICE FOR PUBLICATION.
Land Office at Oregon City, Oregon, April 2, 1893.—Notice is hereby given that the following named settler has filed notice of his intention to make final proof in support of his claim, and that said proof will be made before the Register and Receiver of this office at Oregon City, Oregon, on May 22, 1893, viz: William Winkler, Homestead Entry No. 5665, for the n w $\frac{1}{4}$ of n s $\frac{1}{4}$ section 11, n $\frac{1}{2}$ of n e $\frac{1}{4}$ and s w $\frac{1}{4}$ of n e $\frac{1}{4}$ section 10, tp 2 n r 10 w. He names the following witnesses to prove his continuous residence upon and cultivation of said land, viz: Daniel Cronin, Charles Seaman, Henry Tohl and Max Fischer, all of Nehalem, Tillamook Co., Oregon. G. W. Wallace, who had Pre. D. S. No. 724 is hereby specially notified to appear and show cause why Wm. Winkler's Hd. entry should not be allowed. J. T. Apperson, Register. 46-5

NOTICE FOR PUBLICATION.
Land Office at Oregon City, Oregon, April 2, 1893.—Notice is hereby given that the following named settler has filed notice of his intention to make final proof in support of his claim, and that said proof will be made before the Register and Receiver of this office at Oregon City, Oregon, on June 15, 1893, viz: Frank B. Herrington. Pre-emption D. S. No. 781, for the s e $\frac{1}{4}$ of sec 28, tp 2 n r 7 w. He names the following witnesses to prove his continuous residence upon and cultivation of said land, viz: Robert Hicks, Frank Daugherty, William Hines and Isaac Smith, all of Tillamook, Tillamook County, Oregon. J. T. Apperson, Register. 46-1

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41-29

NOTICE FOR PUBLICATION.
Land Office at Oregon City, Oregon, April 2, 1893.—Notice is hereby given that the following named settler has filed notice of his intention to make final proof in support of his claim, and that said proof will be made before the Register and Receiver of this office at Tillamook Co., at Tillamook, Ore., on June 1, 1893, viz: Anton Shulton. Pre-emption D. S. No. 734 for the lots 1, 2 and 3, section 18, tp 2 s, r 9 w. He names the following witnesses to prove his continuous residence upon and cultivation of said land, viz: G. W. Wallace, E. F. Lyster, Fred Bulrow and Otto Walther, all of Nestoscon, Tillamook Co., Oregon. J. T. Apperson, Register. 46-1

NOTICE FOR PUBLICATION.
Land Office at Oregon City, Oregon, April 5, 1893.—Notice is hereby given that the following named settler has filed notice of his intention to make final proof in support of his claim, and that said proof will be made before the County Clerk of Tillamook County, at Tillamook, Oregon, on May 22, 1893, viz: Walter B. Alderman. Homestead Entry No. 5925, for the n $\frac{1}{2}$ of s e $\frac{1}{4}$ and s w $\frac{1}{4}$ of n e $\frac{1}{4}$, section 25, tp 2 n r 7 w. He names the following witnesses to prove his continuous residence upon and cultivation of said land, viz: Benjamin Higgenbotham, William Heitmillers, Eben Carter and George Higgenbotham, all of Garibaldi, Tillamook Co., Oregon. J. T. Apperson, Register. 46-1

NOTICE FOR PUBLICATION.
Land Office at Oregon City, Oregon, April 5, 1893.—Notice is hereby given that the following named settler has filed notice of his intention to make final proof in support of his claim, and that said proof will be made before the County Clerk of Tillamook County, at Tillamook, Oregon, on May 22, 1893, viz: Charles P. Darling. Homestead Entry No. 1207, for the s w $\frac{1}{4}$ of n s $\frac{1}{4}$, n w $\frac{1}{4}$ of n s $\frac{1}{4}$, section 15, tp 5 r 10 w. He names the following witnesses to prove his continuous residence upon and cultivation of said land, viz: D. J. Dunn, J. L. Dunn, Thomas Foster and Frank Foster, all of Gresham, Tillamook Co., Oregon. J. T. Apperson, Register. 46-1

NOTICE FOR PUBLICATION.
Land Office at Oregon City, Oregon, April 2, 1893.—Notice is hereby given that the following named settler has filed notice of his intention to make final proof in support of his claim, and that said proof will be made before the Register and Receiver of this office at Oregon City, Oregon, on June 15, 1893, viz: Robert Hicks. Pre-emption D. S. No. 782, for the s e $\frac{1}{4}$ of sec 31, tp 2 n r 7 w. He names the following witnesses to prove his continuous residence upon and cultivation of said land, viz: Benjamin Higgenbotham, Frank Daugherty, William Hines and Isaac Smith, all of Tillamook, Tillamook County, Oregon. J. T. Apperson, Register. 46-1

Money loaned,
Notes bought,
Collections made,
GEO. W. KIGER,
Bay City.

41-34

TIMBER LAND, ACT JUNE 3, 1878.—NOTICE FOR PUBLICATION.
United States Land Office, Oregon City, Ore., Feb. 10, 1893.—Notice is hereby given that in compliance with the provisions of the act of Congress of June 3, 1878, entitled "An act for the sale of timber lands in the States of California, Oregon, Nevada and Washington Territory," Sarah Elizabeth Wilson, of Glenwood, County of Washington, State of Oregon, has this day filed in this office her sworn statement No. 262, for the purchase of the s w $\frac{1}{4}$ of section 28, tp 2 n, r 8 w, and will offer proof to show that the land sought is more valuable for its timber or stone than for agricultural purposes, and to establish her claim to said land before the Register and Receiver of this office at Oregon City, Ore., on Friday, the 26th day of May 1893. She names as witnesses: Jacob B. Wertz, of Glenwood, Oregon; A. R. Lorenson, of Forest Grove, Oregon; John Bliss, of Rockwood, Ore. and Robert Hicks, of Tillamook, Oregon. Any and all persons claiming adversely the above-described lands are requested to file their claims in this office on or before said 26th day of May, 1893. J. T. Apperson, Register. 46-20

TIMBER LAND, ACT JUNE 3, 1878.—NOTICE FOR PUBLICATION.
United States Land Office, Oregon City, Oregon, April 15, 1893.—Notice is hereby given that in compliance with the provisions of the act of Congress of June 3, 1878, entitled "An act for the sale of timber lands in the States of California, Oregon, Nevada and Washington Territory," George Barrett, of Reuben, County of Columbia, State of Oregon, has this day filed in this office his sworn statement No. 270, for the purchase of the s e $\frac{1}{4}$ of section 23, tp 2 n, r 7 w, and will offer proof to show that the land sought is more valuable for its timber or stone than for agricultural purposes, and to establish his claim to said land before the Register and Receiver of this office at Oregon City, Ore., on Wednesday the 17th day of July, 1893. He names as witnesses: Joel Bate, Fred Thompson, Robert Osborn and William Ryan, all of Portland, Multnomah County, Oregon. Any and all persons claiming adversely the above-described lands are requested to file their claims in this office on or before said 17th day of July, 1893. J. T. Apperson, Register. 46-6

TIMBER LAND, ACT JUNE 3, 1878.—NOTICE FOR PUBLICATION.
United States Land Office, Oregon City, Oregon, April 15, 1893.—Notice is hereby given that in compliance with the provisions of the act of Congress of June 3, 1878, entitled "An act for the sale of timber lands in the States of California, Oregon, Nevada and Washington Territory," George R. Walter, of Portland, County of Multnomah, State of Oregon, has this day filed in this office his sworn statement No. 274, for the purchase of the n w $\frac{1}{4}$ of section 23, tp 2 n, r 7 w, and will offer proof to show that the land sought is more valuable for its timber or stone than for agricultural purposes, and to establish his claim to said land before the Register and Receiver of this office at Oregon City, Oregon, on Thursday, the 6th day of July, 1893. He names as witnesses: Robert Osborn, Fred Thompson, John C. Peck, and Joel Bate, all of Portland, Ore. Any and all persons claiming adversely the above-described lands are requested to file their claims in this office on or before said 6th day of July, 1893. J. T. Apperson, Register. 46-5

TIMBER LAND, ACT JUNE 3, 1878.—NOTICE FOR PUBLICATION.
United States Land Office, Oregon City, Oregon, April 18, 1893.—Notice is hereby given that in compliance with the provisions of the act of Congress of June 3, 1878, entitled "An act for the sale of timber lands in the States of California, Oregon, Nevada and Washington Territory," Samuel Bowen, of Reuben, County of Columbia, State of Oregon, has this day filed in this office his sworn statement No. 272, for the purchase of the n e $\frac{1}{4}$ of section 25, tp 2 n, r 7 w, and will offer proof to show that the land sought is more valuable for its timber or stone than for agricultural purposes, and to establish his claim to said land before the Register and Receiver of this office at Oregon City, Oregon, on Tuesday, the 13th day of July, 1893. He names as witnesses: Fred Thompson, Joel Bate, Robert Osborn and William Ryan, all of Portland, Ore. Any and all persons claiming adversely the above-described lands are requested to file their claims in this office on or before said 13th day of July, 1893. J. T. Apperson, Register. 50-7

TIMBER LAND, ACT JUNE 3, 1878.—NOTICE FOR PUBLICATION.
United States Land Office, Oregon City, Oregon, April 18th, 1893.—Notice is hereby given that in compliance with the provisions of the act of Congress of June 3, 1878, entitled "An act for the sale of timber lands in the States of California, Oregon, Nevada and Washington Territory," James M. McNaughton, of Reuben, County of Columbia, State of Oregon, has this day filed in this office his sworn statement No. 278, for the purchase of the n w $\frac{1}{4}$ of section 27, tp 2 n, r 7 w, and will offer proof to show that the land sought is more valuable for its timber or stone than for agricultural purposes, and to establish his claim to said land before the Register and Receiver of this office at Oregon City, Oregon, on Thursday, the 13th day of July, 1893. He names as witnesses: Fred Thompson, Joel Bate, Robert Osborn and Wm. Ryan, all of Portland, Ore. Any and all persons claiming adversely the above-described lands are requested to file their claims in this office on or before said 13th day of July, 1893. J. T. Apperson, Register. 50-7

TIMBER LAND, ACT JUNE 3, 1878.—NOTICE FOR PUBLICATION.
United States Land Office, Oregon City, Oregon, April 18th, 1893.—Notice is hereby given that in compliance with the provisions of the act of Congress of June 3, 1878, entitled "An act for the sale of timber lands in the States of California, Oregon, Nevada and Washington Territory," William Wilson, of Reuben, County of Columbia, State of Oregon, has this day filed in this office his sworn statement No. 271, for the purchase of the n e $\frac{1}{4}$ of section 23, tp 2 n, r 7 w, and will offer proof to show that the land sought is more valuable for its timber or stone than for agricultural purposes, and to establish his claim to said land before the Register and Receiver of this office at Oregon City, Oregon, on Tuesday, the 13th day of July, 1893. He names as witnesses: Fred Thompson, Robert Osborn, Joel Bate and Wm. Ryan, all of Portland, Ore. Any and all persons claiming adversely the above-described lands are requested to file their claims in this office on or before said 13th day of July, 1893. J. T. Apperson, Register. 50-7

TIMBER LAND, ACT JUNE 3, 1878.—NOTICE FOR PUBLICATION.
United States Land Office, Oregon City, Oregon, April 21st, 1893.—Notice is hereby given that in compliance with the provisions of the act of Congress of June 3, 1878, entitled "An act for the sale of timber lands in the States of California, Oregon, Nevada and Washington Territory," Daniel Keogh, of Reuben, County of Columbia, State of Oregon, has this day filed in this office his sworn statement No. 275, for the purchase of the n e $\frac{1}{4}$ of section 25, tp 2 n, r 7 w, and will offer proof to show that the land sought is more valuable for its timber or stone than for agricultural purposes, and to establish his claim to said land before the Register and Receiver of this office at Oregon City, Oregon, on Thursday, the 13th day of July, 1893. He names as witnesses: Fred Thompson, Robert Osborn, Joel Bate and Wm. Ryan, all of Portland, Ore. Any and all persons claiming adversely the above-described lands are requested to file their claims in this office on or before said 13th day of July, 1893. J. T. Apperson, Register. 50-7

TIMBER LAND, ACT JUNE 3, 1878.—NOTICE FOR PUBLICATION.
United States Land Office, Oregon City, Oregon, April 21st, 1893.—Notice is hereby given that in compliance with the provisions of the act of Congress of June 3, 1878, entitled "An act for the sale of timber lands in the States of California, Oregon, Nevada and Washington Territory," Fred Thompson, of Portland, County of Multnomah, State of Oregon, has this day filed in this office his sworn statement No. 271, for the purchase of the n e $\frac{1}{4}$ of section 23, tp 2 n, r 7 w, and will offer proof to show that the land sought is more valuable for its timber or stone than for agricultural purposes, and to establish his claim to said land before the Register and Receiver of this office at Oregon City, Oregon, on Wednesday, the 13th day of July, 1893. He names as witnesses: Robert Osborn, Joel Bate, William Ryan and Robert Case, all of Portland, Ore. Any and all persons claiming adversely the above-described lands are requested to file their claims in this office on or before said 13th day of July, 1893. J. T. Apperson, Register. 50-7

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