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## Maine Learns to Love Dairying

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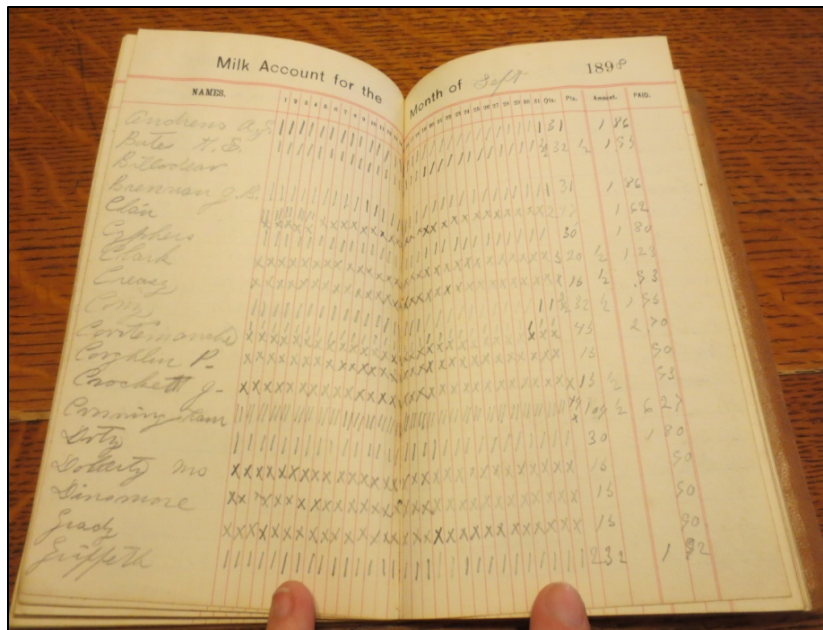
# Maine Learns to Love Dairying

Erin Love

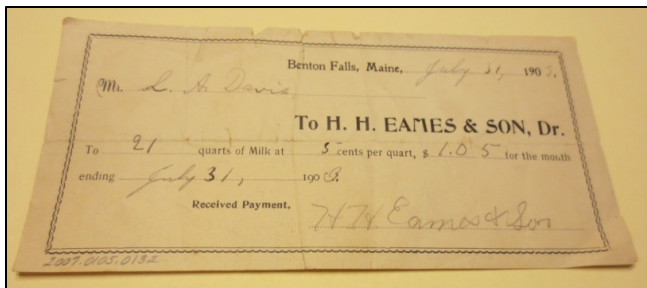
*The transition from subsistence to commercial farming is a defining trend in Maine dairying that continues today. Technological advances that often caused large landscape scale changes were catalysts in the division between small and large farmers. The industry developed in a relatively short time period—the last thirty years of the 19<sup>th</sup> century—but the characteristic divide between large and small farmers has continued to be exacerbated.*

## Subsistence Dairying as a Side Effect of Clearing Maine’s Forests

Maine farmers kept the earliest cattle not for their milk, but for their meat and muscle. Oxen were used to haul trees during the 19<sup>th</sup> century forest clearing era.<sup>1</sup> Most dairy production at this time was an incident of having cows on the farm for other purposes. The animals were kept in tiny primitive stables and ate cheap, poor quality grass and hay. They produced small quantities of milk in the summer and none in the winter. Farmers made enough butter and cheese in the warm months to last through the winter.<sup>2</sup> Then, if there was a surplus, they bartered with the dairy goods or sold them to neighbors.<sup>3</sup> These interactions caused the development of a dairy salesman niche in many communities.<sup>4</sup> Dairy trading became so popular that general stores began to seek out butter and cheese for their shelves.<sup>3</sup> The transition of dairy goods from being bartering chips to high-demand commodities led many farmers to focus on their production.<sup>3</sup>



**Account book of a Kennebec County milk salesman, Dr. A Chesley (1898-1899).** Photo courtesy of Kennebec Historical Society.



**Receipt for milk, one of many pre-printed for H.H. Eames & Son, a milk distribution company (1903).** Photo courtesy of Kennebec Historical Society.



**Dairy Boy Ad (1862).** A farmer wished to sell mating privileges with his prize dairy bull to other farmers who wanted to improve their stock. Photo courtesy of Maine Historical Society.

## The Jersey Cow Leads the Way

One of the single most important events that led to the rise of dairying in Maine was the introduction of the Jersey cow into the state. Although farmers began to pay more attention to animal husbandry in the 1820s, they did not focus on cows specifically until the 1850s,<sup>3</sup> when sheep farming became less profitable. The cattle breeding frenzy then kicked into high gear as farmers scrambled to fill the void left by sheep farming.<sup>5</sup> Records of agricultural fairs in the late 1840s and 1850s show a dramatic increase in the number of breed categories in livestock competitions, demonstrating the increasing care given to cattle husbandry.<sup>6</sup> From 1850 to 1860, the number of cows in the state of Maine increased by 13,000.<sup>7</sup> In 1855 Ezekiel Holmes, often referred to as the “father of Maine agriculture,” introduced the first Jersey cow into Kennebec County, which became a leading dairy county.<sup>3</sup> People who were accustomed to viewing cows as meat were skeptical of the scrawny Jerseys at first.<sup>8</sup> But the animals’ high production and superior milk quality won the doubters over, and the once-underdog became the first widely known dairy breed in the state.<sup>3</sup> Prior to the mid-19<sup>th</sup> century, most of the cows in Maine were descended from the beef lines introduced by the first English settlers of North America.<sup>2</sup> However, cows became more productive as they were selectively bred, and Maine farmers grew more attached to the notion of focusing on dairy production.<sup>3</sup>

## Associated Dairying and the Cheese Craze

Associated dairying became popular when farmers who had dedicated themselves to dairying realized they could pool their resources to increase production and decrease costs. Many of the first dairy associations focused on cheese because of its popularity. Although the Maine cheese craze of the 1870s was short-lived, cheese remains important to the history of Maine dairying. It was the first traditionally home-manufactured dairy product that was widely produced in factories. Dairy association cheeseries initiated the trend of co-operatives and factories purchasing milk from farmers to make value-added products in a centralized plant. These large buildings blotted the landscape and were a visible reminder of Maine’s new favorite farming endeavor.<sup>3</sup>

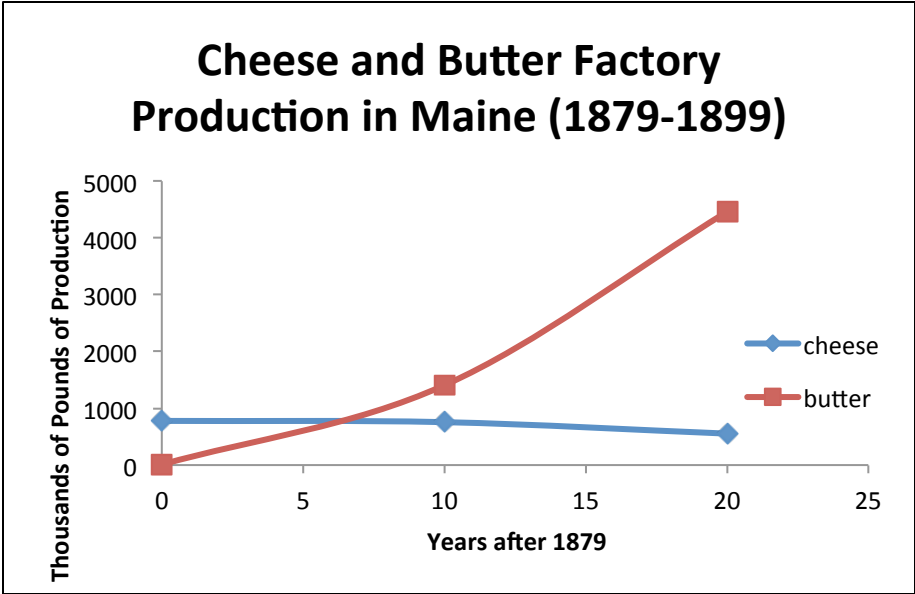
# The Rise of the Commercial Creamery

## An Economical Switch: Butter Overtakes Cheese

Changing trends, attitudes, and economic realities led commercial creameries—or butter factories—to enjoy increasing success throughout the late 19<sup>th</sup> century. However, the creameries’ success came at the cost of their cheesery counterparts. An inconsistent supply of milk, the inefficient transfer of milk into cheese, and the high overhead cost of commercial cheese-making equipment caused a decline in the cheese-making industry. Many dairying associations turned to making butter instead.

One factor that caused the switch to butter was the pattern of milk production throughout the year. Cows produce less in the winter, and because cheese requires a large amount of milk, most cheeseries shut down then. However, butter does not require as much milk as cheese does. So while there was not enough milk to continue making cheese, there was enough milk to make butter year-round, albeit less in the winter.

Price fluctuations also contributed to the popularity of butter production. The price received for butter increased notably in the 1880s. Because dairying was quickly becoming the primary source of income for many farmers in the state, the relative prices of various dairy products influenced which kinds of factories and co-operatives in which they invested their money, milk, and time.<sup>3</sup>



Dairy Factory Production in Maine from 1879 to 1899. Figure courtesy of Erin Love.<sup>3</sup>

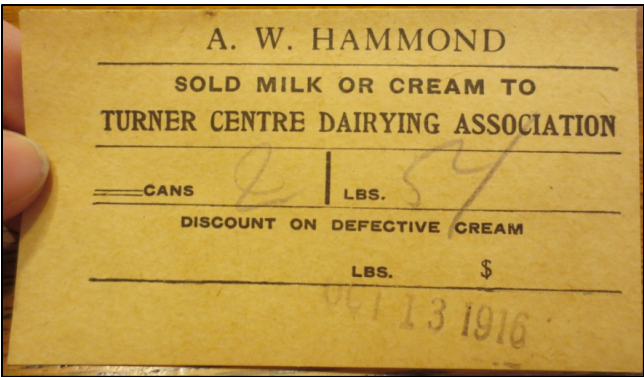
## The Creamery System

Creameries soon became ingrained in Maine farming culture. Once farmers began growing their herds in order to have more milk to sell to creameries, there was no way for them to individually process all the milk their cows produced. Consequently, it became difficult not to participate in the creamery system without being wasteful. In addition, creameries produced a better tasting and more uniform product than individual farmers could. Therefore, business relationships developed between farmers and the creameries to which they frequently sold milk.

The most productive creameries attracted many dairy farmers, who sought a reliable source of income. In the year 1887, Turner Center Dairy had the highest production of any dairy factory in the state of Maine. Pictured below is a receipt from the dairy to a farmer A.W. Hammond, who sold milk to the dairy in 1916. The milk would have been turned into sweet cream or butter and sold. Pre-printed cards indicate that this farmer regularly contributed milk to the Turner Center Dairy. Many other farmers did the same.

The first Maine creamery was established in 1878. By 1887, there were 17 in the state. Butter replaced cheese as the most produced dairy item in the 1880s and 1890s. Creameries required large facilities and many people to run the machinery. The construction of creamery buildings reflected the larger national trend of increasing industrialization and anthropogenic structural additions. In some cases, whole communities were built around the creamery business.

The realization that cheese was not an efficient way of using milk, along with high butter prices and the logistics of milk production, caused the shift toward butter production. Creameries were the most efficient way of producing large amounts of butter, so farmers began to rely on these establishments to make their milk into butter and sell it.<sup>3</sup> The dependence of many farmers on one facility tied together the people and their widespread land in a way they had not experienced before.



Receipt of milk from Turner Center Dairy to A.W. Hammond (1913). Photo courtesy of Kennebec Historical Society.



Shaker Dairy (1915). This creamery was operated by the religious community of the Alfred Shakers. Photo courtesy of Kennebec Historical Society.



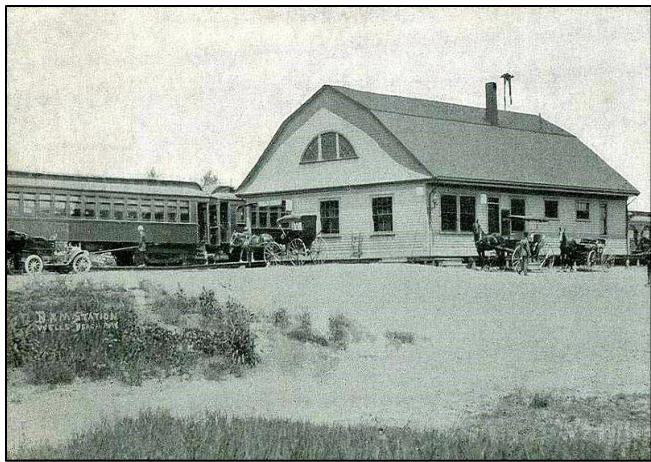
# Railroads Increase Market Access

## The Sweet Link to the Boston Milkshed

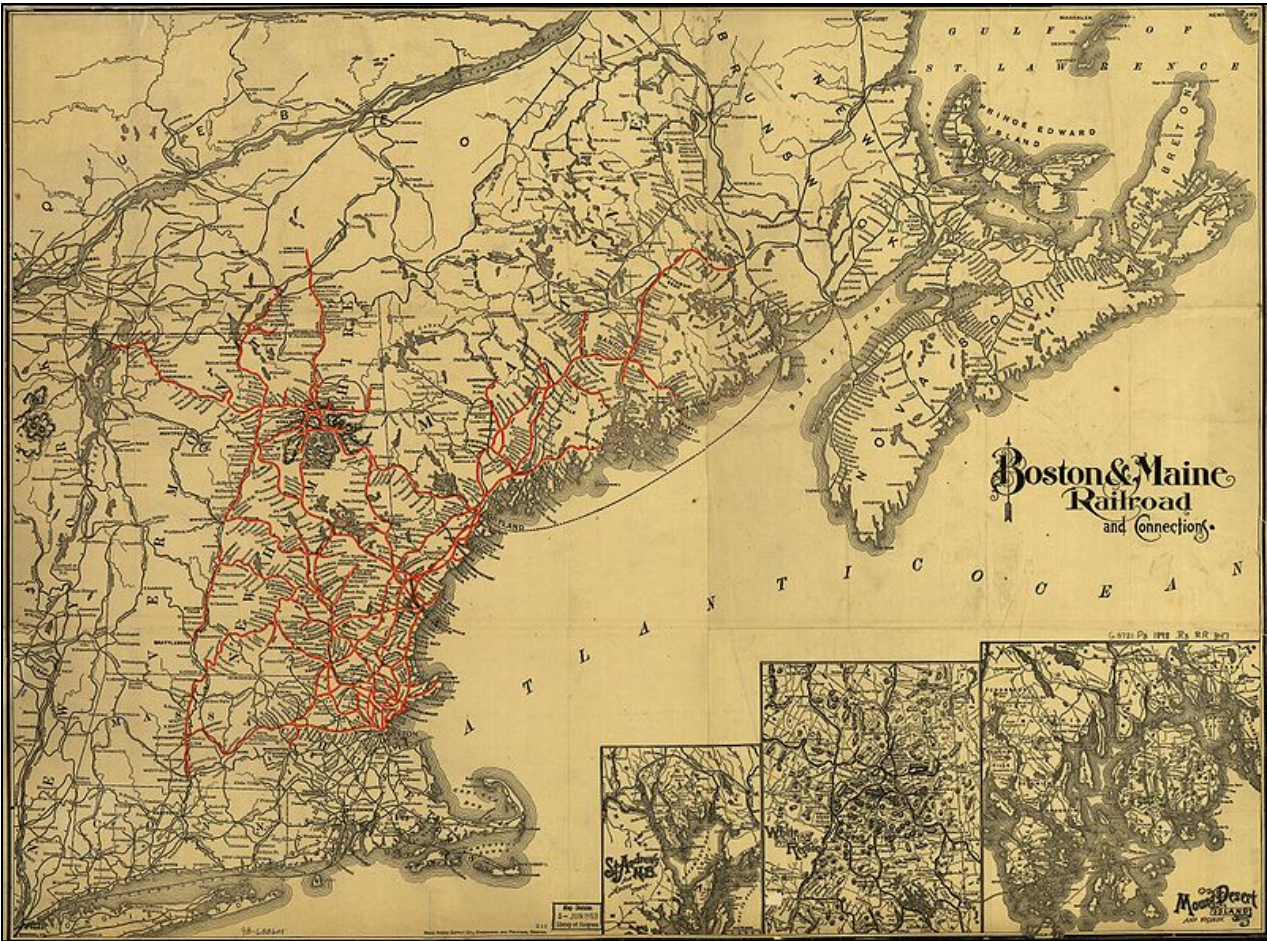
In June of 1881, the first trains with refrigerated cars ran from Bangor and Portland to Boston on the Boston-Maine Railroad.<sup>3</sup> Prior to that Maine farms had been isolated by the long stretch of mountainous terrain that led to Southern New England.<sup>9</sup> This technological advance allowed the transportation of dairy goods and other perishable products to the monstrous Boston markets and elsewhere in New England. Due to the speedy transportation provided by the railroad, creameries began producing and selling more sweet cream. Sweet cream was not a widely used commodity when most Maine creameries were first established. However, once creameries began experimenting with cream separation and people became accustomed to having this delicacy on hand, they craved more and more of it.<sup>3</sup> The greater Boston populace's seemingly insatiable desire for fresh dairy strengthened the railroad-facilitated relationship between two geographically distinct locations.

## Outcompeting the Outsiders

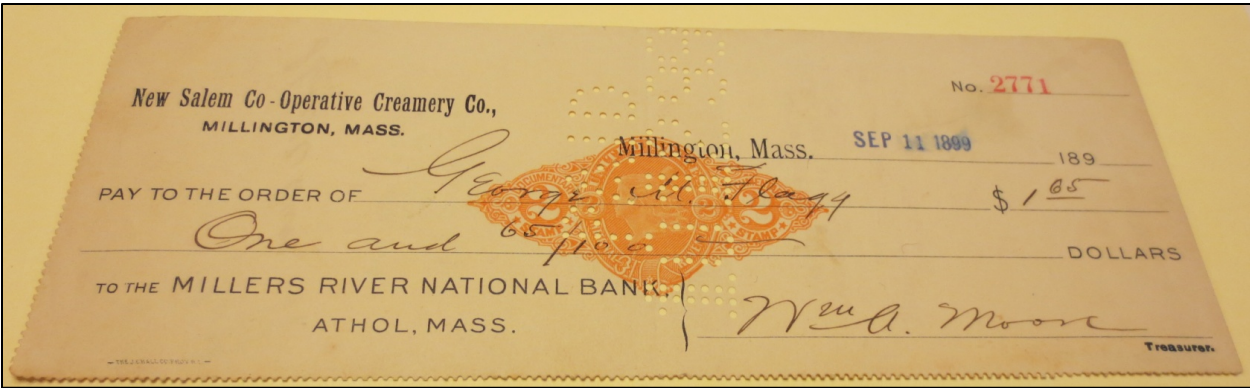
A push from outside New England, along with two characteristics of dairy goods, sealed the Maine dairy deal. The first characteristic was that the least processed products brought the highest market prices. So, for example, fluid milk was more expensive than cream, which was more expensive than cheese. In addition, the less a good was processed, the more difficult it was to transport.<sup>3</sup> These two qualities gave Mainers an advantage over Midwestern farmers in the lucrative sweet cream and fluid milk business because of their close proximity to the huge Boston market.<sup>5</sup> They capitalized on their location and reclaimed their native New England market from the Midwestern dairy giants.<sup>3</sup>



**Train station in Wells, Maine along the Boston Maine Railroad route (1910).** Reproduced from an original postcard by an unknown publisher available online: [http://en.wikipedia.org/wiki/File:Railroad\\_Station,\\_Wells\\_Beach,\\_ME.jpg](http://en.wikipedia.org/wiki/File:Railroad_Station,_Wells_Beach,_ME.jpg). (Public domain image).



**Map of the Boston Maine Railroad (1898).** The railroad stretched from Bangor to Boston and connected the once remote Maine farms to large urban markets. Increasing demand for raw dairy products propelled the state's dairy industry forward. Reproduced from unknown source available online at: [http://en.wikipedia.org/wiki/File:1898\\_Boston\\_and\\_Maine\\_Railroad.jpg](http://en.wikipedia.org/wiki/File:1898_Boston_and_Maine_Railroad.jpg). (Public domain image.)



**Milk check from the New Salem Co-Operative Creamery Company (located in Millington, MA) to Mainer George M. Flagg for \$1.65 (1899).** Many farmers came to rely on monthly checks from creameries or dairy co-operatives as their primary source of income. Photo courtesy of Kennebec Historical Society.



# The Landscape Mirrors Farming Trends

## Grasslands Aplenty

Maine, similar to much of New England, has naturally fertile grasslands that farmers have historically relied upon to feed their cattle.<sup>carman</sup> Even so, cultivating hay often required altering the landscape. A large subculture developed around various hay harvesting techniques in the 19<sup>th</sup> century. Farmers often cleared hay fields of large rocks or trees, drained the pastures, or altered their vegetation patterns through weeding. Grass and hay were the most prominent types of cattle fodder in the early days of dairying, but farmers soon found a promising alternative.<sup>6</sup>

## The Silo as a Status Symbol

As dairying became an increasingly profitable occupation, farmers experimented with different techniques. One such technique was to store grain, hay, and corn as cattle feed year-round in tall cylindrical structures called silos. Farmers discovered that cows eating silage produced larger quantities of higher quality milk than cows eating traditional hay throughout the year. Farmers attributed this difference to the cows' much higher preference for silage over hay. Cows that relished their food ate more of it and produced more milk.

Once silos became widely associated with increased dairy production, farmers were faced with the decision of whether or not to install one. The catch was that these large structures were an expensive investment that only serious commercial dairy farmers could afford to make. Thus, the silo became one of the first landscape-scale symbols of dairy farmer status. By the late 20<sup>th</sup> century, commercial farmers usually had at least one silo, while subsistence farmers continued to rely on more traditional and less conspicuous hay bales.

The silo was the first in a long line of technological innovations that separated subsistence dairy farmers from commercial dairy farmers. As milk and cream were transported longer distances than ever before, measuring and storage methods became standardized. Farmers felt pressure to buy new equipment that was up to industry snuff. The cost of commercial dairy farming became so high that farmers had to increase their herd size in order to pay their bills.

Doing so led to even more landscape changes as dairy farmers had to convert large areas of land into grazing pastures and fields for growing grain, corn, and hay in order to feed their livestock. Expanded grazing lands forced farmers to specialize in dairying to an even greater extent because they could not devote as much land to other crops. In the late 19<sup>th</sup> and early 20<sup>th</sup> centuries, large swathes of pastures and fields punctuated by a silo or two were the sign of a successful commercial dairy farm.<sup>3</sup>



*Advertising card promoting specialty farm products (date unknown). Photo courtesy of Maine Historical Society.*



*Harvesting Hay in Scarborough (1900). Photo courtesy of Maine Historical Society.*



*Cutting Corn for Silage in Fairfield, Maine (1916). Photo courtesy of Maine Historical Society.*



*Silos in Kittery, Maine (2012). Photo reproduced from Mcdermott, Deborah. 2012. Amish men visit Kittery to dismantle farm's silos.*

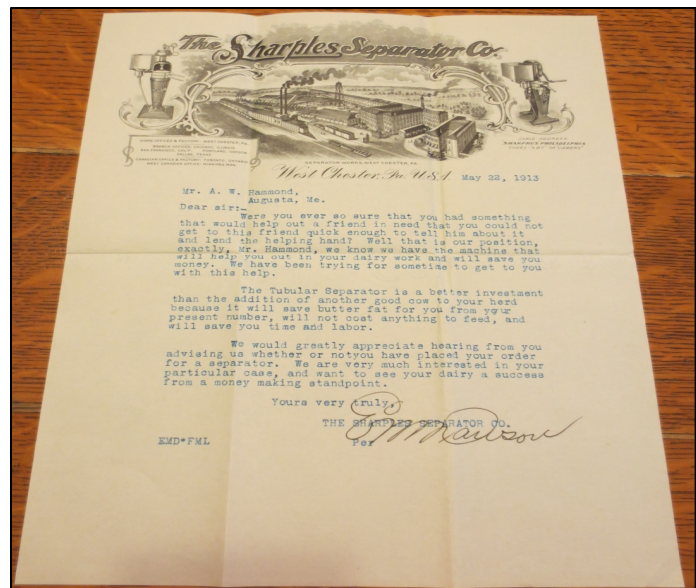


# Consolidating the Dairy Farm

## The Economics of Dairy Farming

As milk became a more easily accessible commodity, it became cheaper, and creameries gave a smaller portion of their profits to each individual farmer in order to keep more of the earnings for their own employees. Farmers took on more cows and produced more milk as a survival mechanism. More animals necessitated larger structures to house the feed, milking equipment, and animals themselves. Huge dairy barns were erected on the few large farms and dwarfed the many small barns that were scattered across the rural Maine landscape.<sup>3</sup>

Bigger dairy farms bought smaller ones as they needed more milk to maintain a profit and small farmers were faced with paying high overhead costs to enter the commercial dairy industry.<sup>11</sup> Simultaneously, in the early 20<sup>th</sup> century many small farmers moved to cities to take high-paying jobs in factories.<sup>5</sup> Buying a neighbor’s farm was considered a courtesy if the seller wished to retire or change occupations. One advantage of having a large farm was decreased vulnerability to price volatility. Constantly fluctuating prices made planning when to buy new equipment extremely difficult. While price volatility remains a problem today, farmers with many cows are better able to cope because of the capital base they have built up. The trend of farms becoming larger and fewer has continued steadily since it began in the early 20<sup>th</sup> century and has had visible impacts on the landscape in the form of more expansive structures and fields.<sup>11</sup>



*Letter from the Sharples Separator Company to A.W. Hammond of Augusta, Maine (1913). The company requests the recipient considers purchasing a milk separator. Photo courtesy of Kennebec Historical Society.*

## Modern Dairy Technology

New technologies, such as milk separators and the Babcock butterfat tester, were used increasingly by dairy farmers and, on an industrial scale, creameries. As transportation and storage methods modernized, tools and procedures became standardized. Dairy farmers had to stay abreast of the new technologies and procedures if they wanted to be successful. The money and time required to do this exacerbated the growing separation between the large commercial dairy farmers and the small subsistence farmers, which in turn has changed the landscape as described above.<sup>3</sup>

## Oakhurst: A Modern Dairy

Oakhurst Dairy, founded in 1921, is a major regional dairy that is based in Portland, Maine. It processes 120,000 gallons of milk per day in its 3-acre plant and sources that milk from 72 independent dairies within a 120-mile radius of Portland. The dairy processes and sells milk, unlike its early counterparts, which sold a combination of milk, cream, butter, and cheese.

The dairy is nestled in the heart of downtown Portland, which reflects a large landscape pattern that was caused by changes in agriculture. As farming became industrialized, processing centers for raw agricultural products began to spring up in cities, where there were many people to run the machinery needed to process food. Cities became importers of raw food and exporters of processed food. In the case of Oakhurst, Portland acts as the central point from which dairies radiate out. The modern concentration of people and commerce in cities has led to farm land being clustered close to urban areas for easy access. Dairying can be credited in part for the production of this pattern.

The company’s trucks, each with a capacity of 6200-6500 gallons, carry milk from farms to the dairy in Portland and from the dairy to retailers across New England. As this case shows, roads have become the modern railways in the sense that they dominate transportation of goods. They have allowed increased market access and have made possible the current system of dairy production. In this system, large, widespread dairy farms sell large quantities of milk to dairies that have enormous centralized processing facilities. The dairies then process, market, and distribute the final products. Consumers are considerably more removed from the source of the product now than they were in the days of small dairy farmers and the neighborhood milk man. The market system and technological advances have pushed the industry to become phenomenally more efficient than it was in its early days.<sup>12</sup> The anthropogenic landscape geography has also changed. Dairy activity is now concentrated in a few high-intensity pockets that are widely spread across the Maine landscape.



*Oakhurst Dairy storage room (2012). Reproduced from Garfield, Henry. 2012. Private tour—Oakhurst Dairy. Maine Ahead Magazine.*

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