THE HISTORY OF IOWA BUTTERMAKING
1890 - 1915

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CHAPTER I

INTRODUCTION OF THE PROBLEM

As in other areas of Iowa history, one finds, upon careful investigation of the libraries, a definite scarcity of information concerning the history of the Iowa butter industry. There simply are not very many secondary sources available for use in the study of this subject in depth.

This situation may have arisen because no scholar, up to this time, has considered the topic important enough to write about, or possibly, no one has been concerned enough to take the time to dig through the source materials which are required reading for this topic. Whatever the case, this thesis was written in an attempt to construct a short history of the Iowa butter industry from 1880 to 1915, by using, primarily, information gained through the study of source materials concerned with the dairy industry.

Though there are many phases of the dairy industry that could be investigated in its growth from early pioneer production of dairy products used only for home consumption, to its becoming one of the major industries in the state of Iowa, this paper is concerned only with the buttermaking aspects of this development.

The history of buttermaking in Iowa started with the first settlers who brought cows with them to provide butter
and milk for their families. This early butter was called "farm butter" as opposed to later creamery butter and was usually made by the farmers' wives. The first part of this investigation is concerned with the early buttermaking process and how this early production led to the development of the creamery system.

From there the investigation turns to the making of butter in the creamery and the problems of the creamery industry brought about by the creamery building boom of the 1890's and 1900's, and by mechanization.

Next the problems of creamery-farmer relationships are discussed with the subsequent development of the cooperative creamery as, among other things, a result of discontent by the farmers with their local creameries.

In the fourth chapter the author explores the effects of the introduction and subsequent widespread use of the hand separator and its relationship to the growth of the centralizers in Iowa.

With the introduction of centralizing there developed cutthroat competition between the centralizers and the local creameries for the cream produced by the farmers. The regulation of this competition plus a desire to insure a sanitary product from the creameries and a desire to encourage the buttermaking industry in Iowa, brought about the need for legislation in this area. A study of this legislation
beginning in 1880 along with the influence of the Iowa State Dairy Association is the subject of the fifth chapter.

This investigation was conducted through the use of the historical research method with the author relying heavily on materials from the period. These include among others: The reports of the Iowa State Dairy Commissioners; the records of the proceedings of the Iowa State Dairy Association's meetings; and articles and editorials from Wallace's Farmer, a weekly farmers' journal.
CHAPTER II

THE DEVELOPMENT OF THE CREAMERY SYSTEM IN IOWA

It would be very hard to determine when the first dairy products were manufactured in the state of Iowa, but they would probably date back to the 1830's when the territory was opened by pioneers bringing with them milk cows to provide milk and butter for their families.

These early farmers in their first years in the wilderness, rather than being interested in any type of settled economy, had to be concerned mainly with subsisting, with their first year devoted to land clearing and perhaps the growing of a small patch of vegetables.\(^1\) Such a meticulous, time consuming occupation as dairying was far from the thoughts of these pioneers.

When they finally got around to farming, these pioneers practiced a specialized type of farming consisting of raising a "money" crop, mainly wheat, just as their predecessors had done in settling lands east of the Mississippi. This type of specialization was called "cropping" and the raising of wheat was, as one historian puts it, "...the obvious frontier cash crop, involving, with

careless tillage and seeding on new land, the minimum of expenditure for a relatively sure and satisfactory return."\(^1\)

By 1840 the state population was 43,112 with most of these being farmers living by this "Agriculture of Survival." They produced enough for their families to live on but raised little more than that. The dairy products that were produced at that time were still used only for home consumption for there was no market for butter or milk within traveling distance of most farmers.

Farmers did not begin to think of dairying as any kind of a paying venture until men began settling in communities in Iowa and the farmers found a market for their dairy products at the local general store. Even when this started very few farmers took advantage of the market, and those that did only produced butter as a supplement to their incomes with the farmers' wives doing most of the work.

The store butter then would bear little resemblance to the fine butter one buys from his store today. Henry Wallace, writing of the history of buttermaking in Iowa, reports that this butter was "made with infinite toil and pains by farmers' wives and traded for truck at the village store, the vile and filthy selling for the same price as the

\(^1\)Ibid., p. 46.
clean and the precious."¹ In other words, in selling to the local grocers there was no inducement to make good butter. The dealer paid the same price for all.

The butter that was intended for marketing was shaped into rolls by the farmer's wife and wrapped in muslin. The grocers sold part of it to the people of the community and the rest went to butter packers who reworked it into a "somewhat" uniform product with the other various colors and flavors of butter they had received from other producers. This butter was called "ladle" and was usually of a poor quality.

One method used to improve this type of butter was called "renovating" or "processing" the butter. This was done by melting the butter and allowing the curd and salt to settle and then be removed. The molten fat that remained was then treated by blowing air through it and mixing in milk. This combination was then sprayed into ice water to cause it to solidify. Then sour milk was added and the mixture was churned like natural cream and made into butter.

In 1902 the Congress of the United States passed a law that required this type of butter to be identified as renovated,

not creamery butter.¹

The butter made by the wives of the early pioneers of Iowa was produced by the "raised" or "gathered" cream method. These names were applied to several different systems and combinations of systems throughout the early history of dairying in Iowa. In this system the farmer milked all of his cows and mixed their products together in flat pans or cans. Many times poor quality milk unsuitable for buttermaking was mixed with good butter-cow's milk and there resulted a poor product for the family buttermaker to work into butter. The poor milk was too oily and had no hardness or consistency. This made for very difficult churning because the butter was in many instances too soft. These early farmers were not aware, nor would they have been interested in, cow testing and recording methods and therefore bought and milked all the various types of cows available.

When the milk was brought to her, the farmer's wife placed the containers in either a spring house or in cool water or often in both. It was first thought that cool water was better than cold for separating the cream but soon someone thought to set deep cans in ice cold water and the cream seemed to "fairly jump out of the milk."² One system, as


²Editorial, The Iowa Dairyman, I (March, 1882), 69.
reported by a man who took the Iowa state butter premium at the fair in 1879, recommended placing the cans in a coolery and submerging the cans in 50 degrees running spring water.\textsuperscript{1} There was no exact time limit prescribed to allow the cream to separate. This was usually left up to the buttermaker judging by her observation and experience.\textsuperscript{2} The cold temperature of the water caused the skim milk to sink to the bottom of the can while the cream, with its butterfat content, would rise to the top to be scraped off and then churned into butter. Wallace points out that this method of skimming left as much as 3.75 per cent butterfat in the skimmed milk but this was the best system known at that time.\textsuperscript{3}

During the summer churning of the cream was usually done about twice a week depending on the temperature. The butter was churned to the point that it would "come hard" and begin to break and then a lump of ice or some very cold water was added. This would cause the butter to gather together into a "hard mass, so as to be taken out in lumps."\textsuperscript{4} After

\textsuperscript{1}A. F. Bingham, "Butter Statements," Iowa Agricultural Report, (Des Moines: The State Printer, 1883), p. 194. Hereafter cited as the Iowa Agricultural Report with the year given for which the report was made.


\textsuperscript{3}Henry Wallace, "Pseudo-Separators," Wallace's Farmer, XXIV (August 11, 1899), 665.

\textsuperscript{4}Ibid.
being taken out of the churn, the butter was worked with salt to add flavor and to remove the buttermilk. After sitting for three to five hours the butter was worked again, wrapped in cloth and allowed to sit until the buttermilk and water dried out. The farmer would then wrap his butter and take it to the store to be bartered for goods he needed. The skim milk remaining in the can would usually be fed to the farmer's calves and hogs. As will be pointed out later, there were many limitations and wastes to this gathered cream system, but it served the purposes of the early pioneer communities.

For the year ending June, 1856, it was officially reported to state officers that 6,075,739 pounds of butter were produced in Iowa. The population of Iowa at that time was 503,625, which means that about one-half the annual butter consumption per person or a little over twelve pounds per person was made in Iowa. In other words, in its early years the state of Iowa imported about one-half of the butter its citizens consumed.

Butter production in Iowa remained at this same low level of production throughout the fifties and the first part of the sixties awaiting the introduction of the creamey system. There was a premature stimulus to the dairy industry during the years of the Civil War which caused a doubling

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of butter output for the decade, but this premature stimulus was checked by the lack of dependable markets for milk products, the fact that dairying was so time consuming and confining for the farmer and the fact that other areas of farm production were prospering due to the increased demand for food during the Civil War.¹

Besides the fact that Iowa farmers were not interested in milking for profit during the fifties and sixties, another of the causes for this low production was probably due to the small number of cows owned by Iowa farmers at that time. In 1850 there were only 45,704 such animals in Iowa. By 1860 this figure had jumped to 189,802 and the problem began to disappear.² Still, Iowa farmers did not begin to take dairy farming seriously until the seventies and eighties.

In the late seventies Iowa farmers began to turn toward diversification. The cash grain system of farming was losing favor because the farmers could see happening in their own fields what had happened to the lands in the older prairie states. The energies in their soils were being used up by subjecting them to yearly grain crops, since they did not yet know of crop rotation. And, though the yields of the wheat fields were dropping off, the land values continued to rise, which meant there was not an unlimited source of soil available

¹Ross, op. cit., p. 58.
as there was in earlier years. These things, added to the fact that the wheat growers faced new competition on the markets from the newly settled plains states which, as with Iowa in earlier years, came an abundant yield from the virgin soils, caused the Iowa farmers to look for new endeavors in farming.

Farmers began to realize the potentials of stock raising and dairying in this state and there developed in the seventies and eighties a corn belt economy based on the adaptability of this region to corn growing and the use of corn to fatten cattle and hogs.1

The development of the dairy industry was an integral part of this trend toward diversification: the transition from the extensive agriculture of the pioneer period to the more intensive cultivation required by settlement and growth.

While stock raising in its various branches was the basis of the distinctive Corn Belt Economy that developed in the transition from the cropping system, there were areas that were naturally better suited to the more intensive labor application and careful supervision involved in dairying than they were to feeding as a main enterprise.2

And it was the growth of dairying in these areas that marked the beginning of the dairy industry in Iowa, for with their development came the need for creameries to process the product of the dairy farms. The commercial butter industry

1Ross, op. cit., p. 75.  
2Ibid., p. 78.
progressed with the establishment and improvement of the creamery system.

The first creamery in Iowa was started in 1872 by John Stewart, near Manchester, Delaware county. The next one was built in 1875 at Monticello by Henry D. Sherman who later established his chain of "Diamond Creameries." Prior to 1876, however, the widespread feeling was that choice butter could be made only in New York and in some parts of Pennsylvania. John Stewart had demonstrated, for Iowans at least, that butter could be made in the west and that the Iowa product could be a high grade, but the eastern markets were not yet prepared to accept the product of the Iowa butter-makers without proof of its high quality.

This proof was brought to the buyers of the east in a rather sudden and unexpected manner. "When the state commission for the Centennial Exposition at Philadelphia in 1876 refused to allow a portion of their appropriation to be used for a dairy display," Ross explains, "John Stewart financed his own exhibit." His butter not only won first place, it was especially commended by the judges for its "... clear, sweet flavor, firm texture, and superior excellence." This brought a gold medal to Iowa from the National Dairy Association. Stewart also received prizes at

1Ibid., p. 79.  
2Ibid., p. 80.  
3Ibid.
the Royal Exposition in London and prizes for his St. Louis and New York displays. These awards established the standing of Iowa butter and opened up the butter markets of Chicago, New York, and other eastern cities to Iowa producers.

If Iowa can be compared to the state of Wisconsin in the 1870's, the western creamery business had quite a bit going for it when it entered the competition on the butter market. As Eric Lampard, the Wisconsin dairy expert, pointed out in his definitive book about Wisconsin dairying, the Western butter producers had many advantages over the Eastern manufacturers. First, land in the mid-west was much cheaper than in the east. Second, feed costs were about 30% lower. Third, the price of milk cattle in the mid-west was 25% lower than it was in New York. Fourth, farm help was much cheaper out west and factory labor was 60% higher in the east. The one disadvantage the westerners had came in the cost they incurred in shipping their product east. 1

In 1880 in a paper given to the Improved Stock Breeders' Association's seventh annual meeting, Henry Wallace, writing about the growth of creameries, declared that Iowa was ripe for great creamery development. He called the creamery a "missing link" in the Iowa farm system. He said that

the creamery freed the farmer's wife from her past thirty years of toil and drudgery at the churn and released her from the bondage she had suffered as a dairy maid. He went on to sing the praises of the dairy cow and say that the growth of creameries in Iowa was good for many reasons. But he also added a point of caution that in retrospect seems almost prophetic. "This is all good," he said, "if she (the cow) is kept near the creamery."\(^1\) As will be seen later, one of the causes for the failure of many early creameries in Iowa was the lack of enough cows in the vicinity to support their operation.

In 1881 Iowa produced 76,536,537 pounds of butter which was worth about $20,000,000.\(^2\) This was almost a total increase of more than 70,500,000 pounds over what was produced in the year ending June, 1856. As this phenomenal growth indicates, Iowa was on its way to becoming a major butter producing state.

To get an idea just how rapidly the creamery business took hold in the state in its early developments one need only look at the ninth annual report of the State Dairy Commissioner. In answering the question, "when was your creamery built,"

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\(^2\) Iowa Secretary of Agriculture, "The Secretary's Report," *Iowa Agricultural Report*, 1881, p. 35.
the creamery managers and owners provided the following information to the commissioner: 1

<table>
<thead>
<tr>
<th>Years</th>
<th>Creameries built</th>
</tr>
</thead>
<tbody>
<tr>
<td>1870 to 1875</td>
<td>8</td>
</tr>
<tr>
<td>1875 to 1880</td>
<td>36</td>
</tr>
<tr>
<td>1880 to 1885</td>
<td>41</td>
</tr>
<tr>
<td>1885 to 1890</td>
<td>172</td>
</tr>
<tr>
<td>1890 to 1895</td>
<td>323</td>
</tr>
</tbody>
</table>

The following description, provided by a speaker at a meeting of the Improved Stock Breeders' Association is probably typical of the beginning of these first creameries:

As to the creamery, I will say: Two men came to our town and asked if we wanted a creamery; we met them in the court house and pledged 300 cows, and gave them a cash bonus by subscription, which was encouragement enough for them to start, and they are still running. The patrons are satisfied. We are raising good calves, and our cows are paying better than ever. 2

These first creameries merely collected the milk in pans and crocks from the farm houses and then used the gathered cream process at the plant. The following statement by A. F. Bingham, a buttermaker, who took eight premiums at the Iowa State Fair for the best creamery butter made in 1881, illustrates the methods of the butter manufacturers:

The following statement, required by the Society, of the time and mode of manufacture of the various lots of butter upon which the judges awarded me eight premiums, at the last fair, I have the honor to submit to you.

The basement of the building in which this butter was made, is a stone structure, ninety (90) feet long, one

1M. Mortenson, op. cit., p. 218.

end of which extends into a limestone ledge and thirty (30) feet of which is roofed with a stone arch. A stream of water runs through the length of the building to cool the butter, cream, and milk, and tempers and purifies the air. Here the milk of about one thousand cows is made into butter and cheese.

The package of best butter made in May, was churned on the 31st day of that month at a temperature of sixty-five degrees, in a box churn, by water power, furnished from the spring. The milk was cooled and held at fifty degrees twenty-four hours before skimming in deep setters or Cooley cans. The butter was washed while in the granulas with water and brine, and cooled down to about fifty-five degrees until September, when the butter was washed and salted, one ounce to the pound, with Higgins' salt, and after standing four hours worked in roller butter worker, and packed in forty pound ash tubs.¹

In an interview with The Iowa Dairyman, Mr. P. Morgan, a buyer on the New York butter market, pointed out that the creamery system was a great benefit to the Iowa farmers, especially to those who had just a small number of cows. He said the average price of the finished butter they brought to market was not two-thirds of what they later received for the cream they sold to the creameries.² Now the farmer could milk his cows and sell the milk to the creamery with much less trouble and effort than he had had when he sold the final product to the grocerYman. He could also buy back the skim milk from the creamery if he wanted to and feed it to his


²Editorial, The Iowa Dairyman, I (March, 1882), 70.
calves.\textsuperscript{1} The creamery system was the first of many revolu-
tions to come to the Iowa dairy industry.

Very soon, though, it became apparent that the farmer
was not very happy with this new market for his milk. In the
first place, he did not feel that he was making a fair profit.
Many farmers suspected that their milk was better than that
of other farmers, but they were all paid the same price at
the creamery regardless of the quality of their milk. Second-
ly, the farmer felt that he was spending too much time in
this phase of his farm operation. He had to milk twice a day
and in some areas, where he had to take the milk to the cream-
ery himself rather than have it collected, this meant that he
had to go to the creamery twice a day or his milk would sour.
Since most farmers were running multi-purpose farms this was
just too much time away from the farm. In the third place,
the cost of hauling his milk to the plant twice a day was
cutting his profit. And finally, the farmer could see that
the skim milk he was feeding his calves was not doing the job
it should. Sometimes the milk from the creamery would be
sweet, on other occasions sour, depending on how long it had
to sit before the farmer could get back to pick it up. Some-
times the milk was warm, sometimes it was cold. The farmer
knew that his calves needed a steady diet of good, sweet,
warm milk in order to grow unstunted.

\textsuperscript{1}Ross, \textit{op. cit.}, p. 79.
As a result of these complaints farmers began to look around for ways to process their milk themselves and sell just the cream rather than the whole milk to the creamery. One such method discovered was known as the Fairlamb system, named after a man who, in the 1880's, invented a milk can which was supposed to measure the butter potency of milk by a gauge on the side of the can. The depth of the cream in inches could be seen on this gauge and the farmer was paid so much for each "creamery inch," which was 114 cubic inches developed by the gravity method as determined by state law.\(^1\) In other words, for every inch that showed on the gauge there was 114 cubic inches of cream in the can. The farmer was paid by the inches of cream he could produce.

William M. Holmes, speaking to the Improved Stock Breeders' Association described the creamery role in this system:

Drivers are sent to the farms to take account of the number of inches and skim. An inch of cream, on the average, will make a pound of butter. The can is set in cold water, which should be changed two or three times in the hottest weather.\(^2\) The cold water caused the cream to rise because of its lower specific gravity.

\(^1\) Henry Wallace, "Romance of the Western Dairy," Wallace's Farmer, XXXII (October 4, 1907), 1108.

In another method used the farmer separated the cream from the milk on the farm, stored the gathered cream, which stored better than whole milk, in his water trough to keep it cool, and delivered it to the creamery once a day, or had it picked up by creamery "gatherers." This system was also called the "gathered cream" system and worked very nicely for a while. But, as in the first system, the creameryman paid so much per inch for the cream as measured in a pan or can. This method of measuring for payment was the best available at that time, but, as Wallace points out, it was a liar because it paid the same for poor and first class cream, one of the perennial complaints of the dairy farmers.¹

This problem arose out of the fact that the creamery inch varied so much under different conditions. In the first place the inch varied with the season. In June it contained more butterfat than it did in August: heat made it expand. Secondly, the type of feed the cow was given made the quality of the cream vary. Good feed not only increased the quantity of cream the cow produced, it also increased the quality of the cream, producing more butter per inch of cream. Thirdly, the creamery inch varied in quality depending on the freshness of the cow. A fourth variation in the creamery inch was

found with the variety of breeds of cows being milked. The Jersey cow was called the "creampot" of the dairy cows. The Holstein cow produced cream in which the globules were small and the buttermaker therefore, found her cream difficult to churn. The Short Horn's cream varied all the way from good to poor.

A fifth variation was seen with the manner of setting the cream. A difference of from twenty-five to fifty percent was found depending on how the cream was allowed to rise.

In open shallow setting the cream rises quickly and with little caseine adhering to the globules, and the water portion being evaporated, the result is decreased quantity and greatly increased butter quality. In deep submerged setting there is increased quantity, a large quantity of adhering caseine and decreased quantity of butter in proportion to quality of cream. Submerged cream is in great favor when it is sold by the gallon but not in favor with men who buy it for the cream that is in it. It does not take a close observer long to discover that it is the lowering of the temperature of the milk that makes the cream rise, the more rapidly the temperature is lowered the more rapidly it will rise and the more caseine it will carry up with it and the less evaporation of water. He soon learns that in six hours he can get more inches than there are pounds of butter, and by skimming at that time he can get all there is in it and more too, and still skim again and get more still.¹

This points out the fact that there were ways for the patron to cheat the creamery as well as for the creamery to cheat the patron. It is difficult to determine if there was wide-

spread cheating by the patrons during the time that this system was in operation because if there was, the creamery-men did not talk about it at the Iowa Dairy Association meetings or in any of the agricultural publications available to the author.

On the other hand, from the farmers' point of view, "the result was almost universal dissatisfaction with creamery management. Farmers who had good cows regarded the creamery man as a thief and a robber and accordingly ceased to patronize him."\(^1\) This question of testing and measuring is a matter of contest between the patron and the creameryman throughout the early history of the dairy industry in Iowa.

Between 1880 and 1890 the dairy industry in Iowa grew to major proportions. In addition to the establishment of a department at the state college and the increasing attention that was being given to dairy investigation by the new experiment station, laws were enacted to guard against butter adulteration and for regulation of standards of production. In 1886 provision was made for a dairy commissioner to enforce the dairy regulatory acts passed by the legislature and to promote the interests of the industry in general. By 1890 there were at least 693 creameries in the state.\(^2\)


In light of developments in other areas of agricultural production during the eighties and nineties it is difficult to explain the rapid growth of creameries during that period of Iowa dairying. At the beginning of the eighties there was a trend toward higher prices in agricultural products but this was soon followed by a downward trend that reached the panic stage in 1884. Subsequently the cycle of falling prices and full production led to full scale depression in the nineties.

All during this period, however, creameries were being built at a breakneck rate: between 1880 and 1885, 41 were built; between 1885 and 1890, 172 were built; and between 1890 and 1895, 323 were built. This does not, to say the least, seem to be characteristic of an industry involved in an economy that is suffering a depression.

One explanation is that perhaps farmers turned to dairy farming when other farm prices began to drop and the creameries were built as responses to the demand brought about by more producers. This would not necessarily mean that there was widespread conversion to the specialized type of dairy farming practiced by those in the northeastern part of the state. This would have taken time and money. It could be, however, that many who had not wanted to bother with the dairy phase of farming, as a commercial venture, now turned to it as a supplemental aid to their sagging incomes.
Other causes for this growth in creameries will be advanced later in this paper, but one indication that this may have been one of the causes is shown by the fact that during the farm prosperity of the 1900's plants began to close which might have been the result of farmers turning back to other types of farming when the demand for other products increased. There will also be other explanations offered later for these creamery failures but perhaps this was a contributing factor.

Regardless of what the causes were for building creameries in the eighties and nineties, by 1900 the creamery business in Iowa was here to stay. In that year the state could boast 994 creameries and more being built with each succeeding year. Using their primitive methods the pioneers of the thirties and forties had made cream and butter as a side-line to raising other farm products and they were used only for home consumption; by 1900 farmers in some sections of the state were specializing in dairy farming, using the latest scientific methods to produce cream to be sold to the local creamery for a good profit. Many of these farmers produced little else besides dairy products. In 1900 the creameries of the state produced 84,965,062 pounds of butter.1

This product had a value of $15,846,077. The butter industry had grown considerably with the advent of the creamery system.

CHAPTER III

THE RISE OF THE CO-OPERATIVE CREAMERIES

During the creamery building boom of the late 1890's and the early 1900's the rise of the co-operative movement in the Iowa dairy industry becomes noticeable. A record of the growth of the early co-operatives is not available because the dairy commissioners did not begin to collect their data until 1894. By that date there were, according to the Dairy Commissioner, 807 creameries, with 370 of them being co-operatives or stock companies.¹

The Iowa Dairy Commissioner, R. G. Clark, reported that the first co-operative creamery was built in 1877 at Spring Branch. The buttermaker for that creamery was Henry Brayton and he later confirmed the fact that this was the first co-operative creamery in Iowa.² Another co-operative was started earlier than this but it began as a cheese factory:

In June, 1875, articles of incorporation were filed for the "Long Grove Dairy Men's Association" at Maynard. Capital stock was $1,000, issued at $10 per share, each share to have one vote. The corporation was for the purpose of conducting a cheese business. This creamery was later rented to John Stewart who operated it as a cheese factory:

¹See Creamery Statistics table in Appendix, page 117.  
²M. Mortenson, op. cit., p. 218.
creamery for one year, but since he met with business reverses in 1877 the creamery was closed until April 15, 1878. It was then opened by the farmers as a co-operative creamery with Sam Shilling as buttermaker.¹

These early co-operatives were more children of necessity than of protest. One usually thinks of co-operation as a protest of farm prices or marketing conditions, as some of these may have been, but, for the most part, the early co-operatives were organized in areas where there were no other creameries available, by farmers who entered the business not necessarily to make money from the operation of the creamery, but to have a central place to market their wares. In these areas there was definite need for a creamery but no single entrepreneur willing to take the chance of setting up a creamery by himself. For this reason the farmers in the area had to combine if they wanted a creamery.

Creamery co-operatives were usually set up under the state corporation laws, and were generally, though not always, non-profit making.² They were more of the partnership character than of the corporation type.³ It should be noted here

¹Ibid.


that in referring to co-operative creameries in this paper
the author is including both stock companies and co-operatives.
As defined by the attorney general of Iowa in 1898, a co-
operative was an incorporated company that had a provision in
its charter that said that all the profits and losses of the
creamery were to be shared by all the patrons and that no
dividends on the investments were declared. In stock companies
the stock was held by a relatively large number of stockholders,
both patrons and non-patrons of the creamery.¹ Many of the
co-operatives in operation by 1898 were, in reality, stock
companies since most sold stock to non-patrons as well as
to patrons.² In 1915 the Iowa legislature passed a law that
authorized the incorporation of those mutual non-pecuniary
associations, which changed their general character from
partnerships to corporations.³

There were several different methods used in organizing
a co-operative creamery. One that was started in the vicinity
of Preston, Iowa, in 1899 was organized by "several prominent
farmers" who held a meeting and organized committees to ques-
tion the farmers in the area as to whether or not they would

²Ibid.
³Briggs, op. cit., p. 585.
join in the organization of a creamery association.¹

The capital stock for the creamery was $6,000, sold at $10 a share. In most of these co-ops a reasonable interest was paid on these shares but a provision was usually attached to restrict all stockholders to one vote only, regardless of how many shares they owned. This was included as an insurance against any one person gaining control of the organization.

At the Preston, Iowa company the shares paid a dividend of six per cent per annum per share. Generally, any profits above operation costs of the co-operative and the interest paid on these capital stocks, were distributed to the patrons in proportion to the amount of butterfat they had supplied. Profits were computed by taking the total amount received for the sale of butter for the month minus the expenses of operation and a small amount for a sinking fund. This amount was usually a given sum per pound of butterfat supplied, or in the case of Preston, two cents per hundred pounds of milk brought in. The fund was then used to cover such things as interest, insurance, taxes, replacement of machinery and the other expenses that came as infrequently as once a year and could not be charged against the income of any single month.²


In discussing another of the co-op creameries in 1898, Wallace included a copy of the Tripoli Creamery Company constitution. The first part of the constitution follows:

We, the undersigned farmers of ................. and vicinity, do hereby form a company to be known as ............. creamery company of ............... and agree to hire the sum of ............. for the purpose of buying land and building a creamery, and supplying the same with suitable machinery and fixtures, and for no other purpose.\(^1\)

The creamery building that they constructed is described as being 28 feet wide, 64 feet long and having a 12 foot ceiling. The rooms included a 12 foot coal room, a 16 foot boiler room, a 28 foot main room and the remainder was for refrigerator and storage room. The building was built of hollow brick with a cement floor. There was a refrigerator that had a capacity of two tons of ice and 250 tubs of butter.

The machinery for the creamery included one 20 horse boiler, a 15 horse Atlas engine, two Alpha separators with a capacity of 3000 pounds per hour each, one 500 gallon milk receiving vat, one 300 gallon Boyd cream ripener, one 24 bottle Babcock testor and all other necessary equipment for an "up-to-date creamery plant."\(^2\) Wallace said not a dollar was paid in advance by any patron for the erection of that

\(^1\) Henry Wallace, "Organizing a Co-operative Creamery," Wallace's Farmer, XXIII (January 28, 1898), 15.

\(^2\) Foster, op. cit., p. 667.
creamery. A bond was made out and the money to erect the creamery was borrowed. A sinking fund was created to pay this bond and about five cents per hundred pounds of milk was retained for the fund until it was paid. Even with this toll the co-operative creamery would generally pay as good a dividend as would the old private creamery.¹

In the years 1897 to 1900 there were 103 new creameries and skimming stations built, an average of over .34 a year.² Through the years 1894 to 1900 both creameries owned by individuals and by co-operative systems increased at a rapid rate. As mentioned before, the cause for this increase was probably due to the depression of other farm prices which caused the farmers to turn to dairying as a supplement to their incomes which, in turn, caused a demand for more dairies.

The building of the individually owned creameries dropped off in 1901 and continued to drop through 1905, but the growth of co-operative creameries continued until 1904-05.³ This continued growth in co-operatives may be attributed to at least three causes: the need in areas where there were no creameries; the work of the creamery promoters; and the discontent of farmers with the local creameries in their areas.

¹Henry Wallace, "Organizing" op. cit., XXIII, p. 15.
³Ibid.
First, many of the co-operatives built during the 1901-05 period were probably built as the earlier ones were, as a response to need in particular areas that had no creameries available to the farmers.

The second cause for the boom in co-operatives may be traced directly to the efforts of creamery promoters who operated not only in Iowa, but also in many other dairy states. In commenting about the dairy industry in 1903, the Iowa State Dairy Commissioner said that the reason so many plants were failing was due to the poor location and organization of the plants. He attributed this situation to the zeal of the promoters:

One of the most extraordinary things in the history of the creamery industry is the fact that so many creameries have been built in places where there was no demand for a creamery and in too many cases too little need for one, and that the prices paid have been in so many cases from 25 to 50 per cent more than the real value of the finished plants.¹

He said that the misplaced creameries were the result of the work of the creamery promoters in selling creameries for profit.

As early as 1893 the Dairy Commissioner reported that sellers of creamery supplies, especially the cream separators, were operating in and around Iowa. He said the reason the dairy industry had not spread from northeastern Iowa to other counties was because attempts to start creameries in those

areas had been unsuccessful. He attributed their failure to the fact that the supply companies sponsoring the organization of co-operatives or independent creameries were interested in only one thing: the sale of equipment.¹

The promoters would ride along the railroads, which would, by the way, often give them reduced rates on hauling materials and visit various towns along the routes. They would call on the merchants of the towns explaining how a creamery would build up trade in the area and give the farmers cash with which to buy their wares instead of the old barter system. They would tell of the great profits made in the dairy business, "... frequently giving accurate statistics as to the yield and profits in keeping cows, always, however, quoting the very best and not the average."² The shark, by offering, perhaps, a free $100 share or so to a reputable farmer in the area, was able to work through that farmer to persuade his friends to join a co-operative effort in building a creamery. They would then go about the job of organizing a company made up of businessmen, bankers and farmers. Many people at that time felt that they knew the dairy business well enough to get started, and they were taken in by the "smooth" talk of the creamery shark.

²Henry Wallace, "Romance of the Western Dairy," Wallace's Farmer, XXXII (October 4, 1907), 1108.
In answer to a farmer's question about putting his money into a co-op creamery in 1900, the editor of Wallace's Farmer pointed out that many experiences in co-operatives ended in failure. The editor advised the man not to invest his money unless there were available, "... cows educated to give milk, farmers educated to feed them for milk and raise their calves by hand, and creamerymen educated in the proper management of a creamery." Since many of the earlier co-ops had failed, the editor advised that co-operatives should only be started in areas where there were no creameries. The editor then went on to outline a plan for setting up a creamery for co-operation but not profit. This was a creamery managed by those who patronized it like a "school or church." By no means, he said, should any stock be issued so that outsiders could gain control of it. The cost, estimated at about $2,400, should be divided by the patrons according to the number of cows each intended to milk, with a slight extra charge for working capital.¹

In 1894 the Dairy Commissioner reported that 64 counties in Iowa had creameries, 670 being located in the northeast section of the state while only 136 were found in

¹Henry Wallace, "Co-operative Creameries - So-called," Wallace's Farmer, XXV (June 22, 1900), 651.
the southwest. In 1896 Wallace tried to analyze this problem of the lack of creameries in the west. He said that the conduct of a creamery in the west had "... every advantage over the east." He went on to point out these advantages:

The country is more level, land is cheaper which means cheaper garbage and grass, while the additional freight rates, high as they are, are not sufficient to cover the increased cost of production in the east.

He concluded by saying that the reason dairying in the west had failed was because of "... the inexperience of the operators, ... the fact that too many creameries had been built in a limited territory ..., and "... overcapitalization."

Overcapitalization must have been one of the major causes for so many creamery failures in Iowa from 1899 to 1905. It is apparent that the large increase in creamery construction in the nineties was "largely due to the activity of the creamery promoter, who was more interested in collecting money from the farmers than in rendering service to the industry." Many of the creameries that had been started were soon closed. Some of the promoted creameries did not

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3Ibid.
4Ibid.
5M. Mortenson, op. cit., p. 219.
even open for business because in many instances it was discovered after the creamery was built, that there was not enough milk available in the area to operate a creamery.¹

The creamery shark had some prosperous years in Iowa. Wallace, writing about the cost of building a creamery in 1901, points out that the creamery shark had been operating in Iowa for fifteen or more years, "... leaving a long list of wrecked creameries in his wake."² He goes on to say that even after all those experiences, people who want to build creameries still have not learned to stay away from the promoters.³ Even as late as March, 1905, creamery sharks were still operating in the midwest. Wallace concluded that their activities set the creamery business back ten years in areas where sharks promoted creameries.⁴

The third cause for the continuing development of co-operative creameries in the 1901-05 period is found in what Theodore Saloutos and John Hicks call "mounting discontent" of the farmers. This discontent, say the authors, arose over such things as, "... commission charges, dockage, grading,

¹Ibid.


³Ibid.

poor service, shortweights, lack of competition among dealers, low prices and generally high marketing costs."¹

In discussing reasons why one group of farmers around Alden, Iowa decided to organize a co-operative, Wallace points out that they had previously sold their cream to a private plant but became dissatisfied with the prices they received. He says the cause of these unsatisfactory prices was obvious:

The profit of the creameryman came out of the producer; the expense of conducting the small private plant was proportionately too heavy; and the grade of butter was not sufficiently high to command the fancy prices of the eastern market.²

Saloutos and Hicks mention that prices were a major cause for discontent among mid-western farmers and list some of the other ills of the creamery system at that time:

They [the creamery patrons] were often kept waiting a full month before they learned the quality of the milk they sold and almost an equally long time before they knew what prices they were to be paid. If they objected to the prices there was little they could do about it; if there was any inaccuracy, waste or dishonesty in handling their produce, all they could do was to complain, or go elsewhere and be treated worse. The cause for "nine-tenths" of the Iowa dairy farmer's dissatisfaction


was suspicion over testing his milk.¹

The "test" they were talking about was the method of determining the butterfat content of the farmer's cream by means of a simple operation invented by Dr. Steven M. Babcock of the Wisconsin Experiment Station, in 1890.² The test proved that the higher the butterfat content in the cream the more butter could be made from a can of the cream. In other words, the value of the cream, as far as the buttermaker was concerned, depended on its butterfat content. By using the simple Babcock test, the creameryman could tell exactly how much the patron's cream was worth to him.

The use of the Babcock test supposedly made it possible for the patron to get a fair price and the creameryman to get his money's worth. But even more important, the patron could be paid for the quality of his cream as well as for the quantity. Since it is known now that there are many variables in the art of getting a cow to produce milk with a high butterfat content, such as feed, temperature, conditions of milking, whether the cow is "contented" or not, and many others, it is easy to see that the farmer who took scientific precautions in dairying should have been rewarded for his quality produce.

¹Saloutos and Hicks, op. cit., p. 73.
²Ross, op. cit., p. 79.
Theoretically this was possible with the advent of the Babcock test.

That the farmers who did not understand or use the test were suspicious of it and of the creamerymen who operated it is illustrated by some of the questions asked the editors of *Wallace's Farmer* about the Babcock test and testing in general. One farmer wrote in 1896: "How can we organize a stock company? We have a number of creameries here but they are all regular swindlers."

Another wrote that he thought the dairy commissioner should have the right to enter any creamery unannounced and test milk to see if the creamery testers were "crooked." The editor answered that the commissioner already had that power and was using it.

Still another wrote in 1896:

> How can we get a thorough test of our cream that the cream-gatherers get from place to place? They give us a test bottle and test rule to go by, but we are inclined to disbelieve this way of testing the correct amount of butterfat there is in cream... is there any law they have to abide by?

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It is obvious that lack of knowledge about the test led to many of the farmers' grievances. Also, this lack of knowledge caused the farmer to believe that he should get the same test for his cream as his neighbor got for his since they both used the same kind of feed.

No other item appears more consistently in the dairy commissioner's reports from the third in 1889, to the twentieth in 1906, than the plea to all the creamerymen to try to educate their patrons in the new methods and developments of the dairy and creamery industry. It is difficult to understand why the farmers did not jump at the chance to learn the process of testing when one sees how simple it was to test the milk and considers the advantages of knowing just how much butterfat a cow was actually producing. The following is a summary of how milk was tested using the Babcock method:

The test consists of dissolving the curd in milk with sulphuric acid, then separating out the fat, which the acid does not affect, by centrifugal force. A small amount of milk is measured accurately into a bottle having a scale on the neck. A certain amount of acid is then added and mixed with the milk, leaving a hot brown solution. The bottle is placed in a machine known as a centrifuge, which is operated at high speed by hand, steam or electrical power. The centrifuge causes the fat, which is lighter than the solution, to come to the top, and the operator measures the quantity of fat by reading the length of the column on the neck of the bottle.

Cream is tested by the same general method, but special bottles with a different scale on the neck are needed. Cream samples for testing must be weighed out,
with delicate scales, since the errors resulting from measuring it are too great. With good equipment, including a power driven machine, a man can test 20 to 30 samples in an hour.

The apparatus needed includes a hand-or-steam power centrifuge or testing machine, test bottles, a pipette to measure the milk, an acid measure, ordinary commercial sulphuric acid and hot water.¹

With this test, the farmers found out that some of the cows in their dairy herds were just taking up space in the barn rather than being economical cream producers. It was learned for example that "Milk from an average herd of Holsteins, containing 3.5 pounds of fat, at fifty cents a pound, was worth $1.75 a hundred pounds for butter making." This was not too bad during that time, but was not so good when compared to average Jersey milk. The Jersey's milk averaged a test of five per cent, which, when used for butter making, made it worth $2.50 a hundred pounds.² Even with information such as this presented them time and time again, farmers still tended to disbelieve the tests. As late as 1905, it can be seen that some farmers were still dissatisfied with the tests they were getting for butterfat at the creamery.³

Saloutos further points out that the test was just one of many complaints of the dairy farmer. "Sometimes," he

says, "the farmer suffered from insufficient competition among dealers, sometimes from excessive competition."1 Also, the discontent was not leveled exclusively at the individually owned creameries. The Dairy Commissioner in 1892 reported that many times the patrons of co-operative creameries were victims of poor or unscrupulous managers who sold themselves to commission houses. The co-op manager would make a deal with the house to ship all his produce to that particular house. For this the manager would get a cut of the profits—perhaps a quarter of a cent per pound. As a result, says the Commissioner, the manager soon found that he was not his own master and was forced to "... accept just what the unscrupulous house saw fit to return him for his goods."2

Finally, other authorities on Iowa creameries believe that the co-operation movement was not only a protest against prevailing abuses, but also a response to the hope of farmers of that period that, "... as they establish themselves in business they might extend their economic influence and gain some measure of relief from a generally unsatisfactory situation."3

1Saloutos and Hicks, op. cit., p. 73.


Even with such problems as the building of too many creameries in the east, and too few in the west, creameries over the state failing at the rate of 50 to 75 a year, and creamery promoters bilking enterprizers out of thousands of dollars, by 1899 Iowa had developed into the greatest butter-producing state in the union. In that year Major Henry E. Alvord, the chief of the dairy division of the U.S.D.A., wrote that Iowa's creameries produced over 88,000,000 pounds of butter from 624,000 cows. This butter figure did not include the estimated 50,000,000 pounds produced in farm dairies. With these totals, Iowa contributed one-tenth of all the butter made in the United States.1

That the co-operatives played a major part in this total production is evident considering the fact that of the 967 creameries and skimming stations in the state, 465 of them were co-operatively owned and operated.

The co-operative creamery operated generally as a cohesive force in the Iowa industry. It filled the needs of many farmers in areas where there was a definite need for creameries and it generated confidence in dairying in areas where the farmers had become disgusted with the individually owned creameries.

1Ross, op. cit., p. 83.
The Dairy Commissioner writing about the co-operative in 1908 agreed that this system, even though it did not fit all communities as far as management was concerned, nor fit all the conditions as far as the manufacture of butter was concerned, was the system "... most approved by dairy farmers in largest numbers in every state east or west."¹

The patrons were so satisfied with the co-operative system of dairying, that co-operatives began to spring up in other fields of agriculture. Co-operative stores and co-operative elevators were two examples of this expansion of co-operation. It was even suggested by some that the principle should be taken one step farther in dairying by organizing creameries for the purpose of storing and marketing butter.²

¹H. R. Wright, "Iowa Creamery Industry," Wallace's Farmer, XXXIII (January 17, 1908), 77.

CHAPTER IV

THE FARM SEPARATOR AND CENTRALIZATION

The farm prosperity of 1897 to 1914 brought with it several revolutions in Iowa dairying. During this period demand stayed well ahead of supply and farm prices rocketed higher and higher. With increased farm prices along with a better than 50% increase in land values between 1900 and 1910, there developed an incentive among Iowa farmers to improve cultivation, husbandry and farm management in general. This was a period when "book farming" became popular. 1

One of the revolutions that occurred during this period came with the invention of the centrifugal cream separator by DeLaval in 1880 and subsequent development of the farm separator. The phenomenal growth in the use of the farm separator in Iowa can be seen by looking at the table in the appendix of this paper. In 1898 there were only 904 farm separators in Iowa. By 1905 this number was increased by over 40,000. This was truly a revolution in dairying. Before the separator the farmers either took their milk to the creamery and sold it, or "gathered" their own cream and transported

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1 Ross, op. cit., pp. 122-123.
it to the creamery. Whether performed at the creamery or on the farm, the gathered cream method was, as pointed out before, a slow and primitive process and resulted, in some cases, in up to 33% loss in butterfat. This was just not economical.

The power driven separator had been used in the creameries of Iowa since July, 1882, when the second such machine in America was brought in by Jeppe Slifsgaard who operated a creamery near Waterloo.\(^1\) Even after the introduction of the centrifugal separator some creameries continued to operate by the gravity method. Others converted to strictly separator creameries, and still others combined both systems.

With the invention of the farm separator a whole new system developed where the farmer could separate his milk quickly from the cream and feed it warm and fresh to his calves. He could then take his cream to the creamery to be sold for a good profit. The fact that the farmer had a good steady diet of warm skim milk to feed his calves was only one of the benefits of the farm separator system. Wallace points to the fact that with this system:

\[ \ldots \text{the farmer has nothing but the cream to look after, is saved the expense of hauling the milk to the creamery and the skim milk back, is saved the danger} \]

\(^1\)M. Mortenson, op. cit., p. 219.
of getting it out of condition, and can either churn
the cream or sell it to the neighboring creamery or
one of the large creameries that are being established
in all the large cities of the west.\(^1\)

In 1896 Wallace noted the expense of dairy farming was reduced
by 60 to 75 per cent by the use of the farm separator.\(^2\)

The introduction of the farm separator also had far-
reaching consequences for the creameries. By facilitating
the shipment of cream by rail, it gave rise to the central
creameries and hastened the consolidation of the creameries
that was already under way. The cost of making butter was
much cheaper in creameries that handled more butter than for
those that handled less. In his thirteenth annual report in
1899 the Dairy Commissioner emphasized the advantages enjoyed
by the larger creameries in the following manner:\(^3\)

<table>
<thead>
<tr>
<th>Amount of Butter Produced Per Year</th>
<th>Cost Per Pound</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creameries making more than 50,000 lbs.</td>
<td>3.05 cents</td>
</tr>
<tr>
<td>Creameries making between 50,000 &amp; 100,000 lbs.</td>
<td>2.06 cents</td>
</tr>
<tr>
<td>Creameries making between 100,000 &amp; 150,000 lbs.</td>
<td>1.86 cents</td>
</tr>
<tr>
<td>Creameries making between 150,000 &amp; 200,000 lbs.</td>
<td>1.79 cents</td>
</tr>
<tr>
<td>Creameries making between 200,000 &amp; 300,000 lbs.</td>
<td>1.50 cents</td>
</tr>
</tbody>
</table>

The larger factories manufactured their butter for about a
cent and a half a pound, while the factory making but 60,000
pounds could scarcely make up the butter for less than three

\(^1\)Henry Wallace, "The Farm Separator," Wallace's Farmer
XXVIII (April 3, 1903), 522.

\(^2\)Henry Wallace, "The Hand Separator," Wallace's Farmer

\(^3\)ISDC, 13th Annual Report, Ia. Docs., 1899, IV, p. 43.
cents. In addition, the larger factories were able to sell their butter directly to the retailer without having to pay the expense of a commission man and thereby get a larger net return than could the smaller creamery.\textsuperscript{1} Part of this savings could be passed on to the patron. Naturally the patron would take his cream to the creamery where he could get the best price for it, and so the centralizing cycle started. The more cream the creamery could get, the more it could pay its patrons. The higher the rate on cream from the central creamery, the more patrons wanted to trade with that central creamery.

To illustrate specifically the economy of large-scale operation, a report to the Iowa State Dairy Association in 1902, by C. H. Hubbard of Independence, Iowa, will do nicely. Mr. Hubbard, in describing the centralized creamery in Independence (which was evidently the Wapsie Valley Creamery, the only centralizer in that town), points to the advantages of the big operation:

One central creamery plant manufacturing a carload of butter per day will extinguish the fires under 40 boilers at 10 o'clock A.M. which would otherwise consume fuel several hours longer, if the butter is manufactured at the forty different points.\textsuperscript{2}

\textsuperscript{1}ISDC, 16th Annual Report, Ia. Dots., 1902, V. p. 34.

\textsuperscript{2}C. H. Hubbard, "Creamery Centralization," The Iowa Yearbook of Agriculture, 1902, pp. 508-09. In 1900 the name of the Iowa Agricultural Report was changed to The Iowa Yearbook of Agriculture.
The production of butter of a uniform quality as far as color, aroma, and salt were concerned also brought higher prices. Then add to these savings the reduced cost resulting from carload purchasing of tubs, salt, coal, and other materials, and one can see how the centralizers saved money and could afford to pay higher wages for employing the most expert buttermakers to make the highest quality butter possible with the raw materials available to them.¹ This in turn allowed them to pay the patrons, at least in the early periods of centralizing in Iowa, higher prices for their butterfat.

The centralizer business was first established in about 1889, in Kansas and Nebraska with their creameries located on the Missouri river or a short distance to the west.² Centralization began in this area because local creamery development was hindered by the lack of concentration of farmers and cows. Creameries could not be built in


areas where there were not plenty of cows because the creamery had to have butterfat in order to compete. The reason a centralizer was able to succeed where a local creamery could not, was, of course, due to the economics of the large operation. As mentioned before, the more butter made by a creamery in a year, the lower the cost per pound, up to a certain point. In Nebraska and Kansas the centralizers had to cover a large territory in order to obtain enough butterfat to make their operation economical. With the help of favorable rates from several railroads the centralizer business grew and prospered in these two states. It should be noted here that when the centralizers started making up to a million pounds of butter a year they found the law of diminishing returns began to operate soon after 200,000 pounds.

It is very difficult to make any hard, fast definition of a centralizer in the creamery business because when one tries to establish just exactly what is a local creamery and what is a centralized creamery it is found that the one shades into the other and it is hard to keep the two separate. The Interstate Commerce Commission, in ruling on a case concerning the local and the central creameries defined them this way: "The local . . . is defined as one to which the milk and

1Ibid., p. 111.
cream are brought by wagon . . . " and " . . . the centralizer obtains its supplies of cream by railroad."¹ Later in the same report, the Commission mentioned that the first definition did not hold without exception:

There are local creameries which receive a small portion of their cream by rail. There are centralizers to whose plants some portion of their supplies are brought by wagon. Some centralizers operate upon a small scale, bring in their supplies from a radius of 60 or 100 miles . . . others stretch out . . . as great as 600 miles.²

The Iowa Dairy Commissioner in 1909 reported that there were 41 creameries in the state he would classify as centralizers, though there were 117 creameries that received some cream by rail. "These creameries . . ." covered, he said, " . . . practically the whole state with their cream agents and advertisements for business, and made from 150,000 to 5,000,000 pounds of butter each year."³

The first centralizer in the state of Iowa was the Hanford Hazelwood Cream Company of Sioux City, which was established in 1900. It is very difficult to determine whether farmers were shipping cream to points outside the state before this time, but it seems very likely that they were. The Hazelwood Company contracted for all the sweet cream from many of the small plants around Sioux City and

thus began the centralizing movement in Iowa. After this system had been started, several other centralizing plants came into existence, but they differed from the first plant, "... in that they did not buy cream from the local creameries but preferred hand separator and gravity cream as produced on the individual farms." As early as 1901 the dairy commissioner, B. P. Norton, pointed out that there was a decided tendency toward consolidation in the Iowa creamery industry. From certain of the reports of the dairy commissioners from 1905 through 1909, the growth of the centralizers may be traced:

<table>
<thead>
<tr>
<th>Year</th>
<th>No. of Centralizers</th>
<th>Approximate lbs. of Butter</th>
</tr>
</thead>
<tbody>
<tr>
<td>1905</td>
<td>20</td>
<td>---------------------------</td>
</tr>
<tr>
<td>1906</td>
<td>19</td>
<td>24,149,774</td>
</tr>
<tr>
<td>1907</td>
<td>21</td>
<td>24,357,637</td>
</tr>
<tr>
<td>1908</td>
<td>34</td>
<td>32,000,000</td>
</tr>
<tr>
<td>1909</td>
<td>40</td>
<td>36,000,0002</td>
</tr>
</tbody>
</table>

By 1918, there were 51 centralizers and by 1923, the centralizers were producing 39 per cent of all the butter made in the state of Iowa.


Without a doubt the farm separator had a great deal to do with the centralizing trend. As the Dairy Commissioner observed in 1902:

The hand separator makes the farmer entirely independent of the local creamery for he can ship his cream as easily as he can ship any other perishable product and the express companies make very low rates to stimulate that kind of shipments. The hand separator enlarges the territory possible to be covered by a creamery and so increases the competition between neighboring creameries to the detriment of the smaller.¹

In every state dairy commissioner's report, from 1901 to 1906, there was mention that use of the farm separator and the consolidation of creameries in Iowa was causing the reduction in the number of creameries in the state since many found the competition too strong.²

Statistics from the twentieth annual report for 1906 illustrate the centralizing movement further:

... of the 90,000,000 pounds of butter made by creameries in the state for the year ending July, 1906, 24,149,774 pounds were made in nineteen creameries. Most of this was shipped by rail, contracted from smaller creameries, or purchased through agents. In three creameries in the state each makes more than half a million pounds of butter annually.³

¹ISDC, 16th Annual Report, Ia. Docs., 1902, V, p. 34.
That the farm separator was a major cause of the consolidation of Iowa creameries can be further demonstrated by comparing the figures for the increase of hand separators and the decrease of creameries. In 1900 there were 994 creameries in the state and 3,332 farm separators. In 1905 there were only 655 creameries and 49,130 hand separators.\(^1\) The rapid proliferation of farm separators was not, of course, the only reason for the decrease in creameries after 1901, for it has been shown how the creamery shark operations effected part of this demise, and as mentioned before, the fact that other farm prices were so good during this period may have caused farmers to turn to other types of farming and thus close creameries that relied on their produce. But still, the farm separator obviously played a major role in the reduction of the number of creameries during that period.

By 1910 there were several different types of centralized creameries operating in Iowa. These included the out-of-state metropolitan centralizers which had established creameries in Iowa or had contracted with farmers for cream to be shipped out of the state. Leading in these plants operating in, or shipping milk from Iowa were Swift and Company, with plants in Dubuque, Keokuk, Clarinda, Creston, and Ottumwa; Beatrice Company, with plants in Des Moines and Dubuque, and

\(^1\)See Creamery Statistics table in Appendix, page 119.
in other cities surrounding the state, notably, Omaha and Chicago; Fairmont Creamery Company, which received from Iowa at central locations in Fairmont and Omaha, Kansas City, and other surrounding cities; and the Blue Valley Company which had a plant in Sioux City, as well as in other places in the mid-west.1 These companies had millions invested in their businesses and operated on quite a large scale throughout the mid-western dairy states.

The vast majority of the centralizers in Iowa, however, were local in origin. These centralizers usually started out as either well-managed co-operatives or individual local creameries and expanded their operations to cover large distances over the state.2 This development was, as with the other type of centralizer possible with the "gathered cream" method of buying cream, with its use of the hand separator.

Within the operation of the two different types of centralizers there were also three different methods of buying cream from the patrons. As mentioned before with the Hanford Hazelwood operation in Sioux City, the cream was purchased from surrounding local creameries. As opposed to this system, there were those centralizers who purchased cream directly

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from the patrons. These may be divided into two groups. The first group which had the smaller number of adherents, operated by having the farmers ship the cream to the plant. The Blue Valley operation typifies this type of manufacturer. This company had factories in St. Joseph, Sioux City, and Chicago. "The Blue Valley Company . . .," says the Interstate Commerce Commission Report, " . . . employs to some extent soliciting agents whose business it is to travel about place to place for the purpose of persuading farmers to ship their cream to a Blue Valley creamery."¹ The farmers desiring to patronize this system had their cream tested when it arrived at the factory and were paid by the shipment, the week, or the month, however the farmer preferred. In this system the farmer paid the freight rates. That this operation was not very popular in Iowa can be illustrated by looking at an article in Wallace's Farmer:

One of the problems of sending the milk to the great central creameries is illustrated: The creameries insist that the cream be shipped to them at the central plant to be tested there and paid according to that test, instead of paying for the cream when it is delivered to them at the station. Our people need their money and should therefore be paid when the cream is brought to the station.²

The other system, more popular with the farmers, was by far the most used throughout the state. With this system

there was more personal contact with the patron. The creameries received the cream, "... not at their manufacturing plants, but at the railroad station to which it is brought by the farmer."¹ For this purpose receiving stations were established at which the cream was taken, tested, weighed and usually paid for. In this system, the company paid the freight rates.

There is no absolute proof, that the author could find, that the centralizers and they alone were responsible for the many creamery failures throughout the state. There was a decided difference of opinion among the dairy experts of the time as to whether the centralizers were responsible for the majority of these failures or not. Though it is a known fact that as the centralizers gained more and more ground in the Iowa creamery industry the number of creameries operating in the state dropped off, the author would rather think this a result of a number of circumstances as mentioned before, than the lone fault of the centralizers. Still, during the period of their most active work in establishing new plants and getting new customers in the state, in the years 1901 to 1910, they were severly criticized by many dairymen throughout the state. The dairy commissioners, as early as 1902 and

as late as 1914, say that the centralizers were operating to put the local creameries out of business.¹

In 1908, the period of probably the heaviest criticism of the central plants, J. G. More, speaking to the Iowa Dairy Association, said that the falling off of the number of creameries in Iowa from 1900 to 1908, from 994 to 552, was due largely to the work of centralizers in the state. He said that President Haskell, of the Beatrice Creamery Company, "... testified that when the company he represents started in Chicago, in order to obtain business, he shut up ten creameries around Elkader, Iowa."²

During these same years, however, dairy commissioners and other interested people pointed out that the efficient, well-managed, individual or co-operative creamery could compete with the centralizer and that many were doing just that at the time. In 1905, in an address to the Iowa State Dairy Association, the State Dairy Commissioner brought out the fact that the centralizers were paying three or four cents lower for butterfat than the New York quotations should have allowed. He said they could not afford to pay premium prices for butterfat. He went on to say that the belief that

¹ISDC, Annual Reports, Ia. Doc., 1902, V, pp. 7-8, and 1914, III, p. 11.
²J. G. More, "Do the Dairymen Need a Protective Association?," The Iowa Yearbook of Agriculture, 1908, p. 328.
the central plant could be operated cheaper than an equivalent number of small plants, production-wise, was true in earlier days, thus the closing of 300 creameries and skim stations in the preceding four years, but, he said, "... if we compare manufacturing expense in the million pound creamery with that in the creamery making 150,000 to 200,000 pounds of butter, the difference is not very great." He then quoted figures from the United States Census Bureau from 1900 and 1905, and noted there was an increase in Iowa of fifty per cent in expenses during the five years in making twelve per cent less butter. "The expense of running our creameries is half a million dollars more than it was before we had the central plants." He went on to say that the creamery that operated on a large scale and made over 200,000 pounds of butter per annum should have been able to compete with any centralizer in the area.¹ E. L. Webster, director of the Dairy Division of the United States Department of Agriculture, substantiated Wright's contention that the local creameries in our state could operate just as efficiently, if not more so, than the centralizers, if they did a large enough volume of business.²


²E. L. Webster, "What the Creamery Returns to the Farmer," The Iowa Yearbook of Agriculture, 1907, p. 295.
The big question for the local creameries was how could they get enough cream to compete with the centralizers? This is where the competition for the patron developed and where the great rivalry between the local creamery and the centralizer began. There were charges and counter-charges made, especially during the early years of the battle, mostly made by the local creameries that were feeling the pressure of increased competition. This then was sort of a verbal war between the two different interests.

One charge that the locals made was that the centralizers were using unfair tactics to eliminate competition in an area and establish a monopoly. After the monopoly was established, said the locals, the amount paid for butterfat by the centralizer dropped lower and lower. The locals accused them of using two methods to gain the monopolies. One by the illegal, incorrect reading of the Babcock test, and the other, by discrimination in prices paid for butterfat in different areas around the state, with the view of eliminating competition in a particular area.

The Babcock test, said the complainants, was read so as to contain a higher amount of butterfat in the cream than the cream really had. The patron was then led to believe that the local creamery had been cheating him all along and that the centralizer was giving him the true value of his butterfat. The centralizers did this, goes the argument,
to win the patrons away from the local creameries. This activity was presumably practiced throughout the state by the agents working for the centralizers between 1905 and 1912.1 In 1906, the Thirty-first General Assembly, after much agitation from the Iowa State Dairy Association and the Dairy Commissioner, passed a law against falsely manipulating, under-reading or over-reading the Babcock test. It provided for a fine of from $25 to $100 upon conviction.2 Though there were a few prosecutions under this law, it was evidently difficult to get convictions because the prosecution had to show that a willful intent to cheat the patron and destroy competition was the purpose of the incorrect reading.3 It can be seen that this law was not taken very seriously by offenders when, four years after it was passed, one dairy inspector said:

... complaints are so numerous (about over-reading) that I believe it possible for the state to employ a dozen inspectors, and they would all have been busy looking at the complaints of this kind during the last


three or four months. I believe this law is more generally violated all over the state than any other dairy law. 1

In 1908, the Iowa State Dairy Association passed a resolution advocating the licensing of Babcock testors. 2 In its next session, the thirty-fourth, the legislature of the state passed a law to authorize the licensing of operators of the Babcock test. The applicant for the license was required to pass an examination to show that he was competent and qualified to properly use the test. The law had a provision whereby the state dairy commissioner had the right to revoke any license issued under the law. 3 It is interesting to note that of the 2,400 applicants, the first year, 300 of them failed the test the first time. If these men had been operating it before, and they had not been doing it correctly, some of the complaints may have come from their patrons. This law and the enforcement thereof, evidently did much to curb, at least the complaints against, if not the practice of, reading the test incorrectly. In 1913, the dairy commissioner, W. B. Barney, had nothing but praise for the law and its results:

No law enacted has been a greater benefit to the creamery and honest cream buyer than this measure. Since this law was enacted and the commissioner was given

1J. J. Ross, op. cit., p. 406


authority to withhold or revoke licenses for either over or under reading the test we don't get one complaint where we used to receive ten. All of which goes to show that everyone is getting a square deal and that the creamery just starting is not subject to the unfair competition of former years. It is a matter of satisfaction to note that neighboring states have recently enacted laws that are duplicates of ours.1

Another benefit of the law came with the revenue it brought to the dairy commissioner's office. In 1912, for the year ending June 1, there were 2,669 licenses issued at $2.50 a head, for a total of $6,622.50.

A word might be said at this point in defense of the centralizers. Since their agents were working on a commission based on the amount of cream they were able to buy for the company, and since the same cream would test differently after it had sat for several days, and because the owners had to trust their agents, perhaps the centralizers were unduly criticized for the unethical activities of their agents. In 1910, J. J. Ross, an inspector for the dairy commissioner, told the Iowa Dairy Association that the complaints about improper reading of tests were more numerous from the centralizers who wanted their own agents checked on, than from the local plants. The loss had to be absorbed by the company when the agent read the tests too high.2


Another way the centralizers tried to kill competition, said the local operators, was through price discrimination. As early as 1901, Henry Wallace noted the move toward combination in Iowa creameries that "... reduced the cost of milk and butterfat to the minimum, leaving the farmer enough to keep him milking, but not to milk to any profit." J. G. More described this discrimination practice and how it worked in 1908:

The large concerns operating over a great territory, with here and there a competitor that they wished to put out of business, could in one locality raise the price paid above that possible to pay with profit, and in other places decrease the price so little as not to be apparent and more than offset the loss. They could destroy competition without self-injury.

To illustrate that centralizers paid different prices on the same day, dependent on whether there was local competition or not, Mr. More gave the following example, citing figures showing the prices paid for butterfat by the Fairmont Creamery Company of Nebraska, for cream shipped to Fairmont February 25, 1908:

<table>
<thead>
<tr>
<th>From</th>
<th>Price paid</th>
<th>Distance shipped</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gallatin, Mo.</td>
<td>34¢</td>
<td>230 mi.</td>
</tr>
<tr>
<td>Stewartsville, Mo.</td>
<td>30¢</td>
<td>180 mi.</td>
</tr>
<tr>
<td>Hamilton, Mo.</td>
<td>40¢</td>
<td>220 mi.</td>
</tr>
<tr>
<td>Albany, Mo.</td>
<td>29¢</td>
<td>210 mi.</td>
</tr>
</tbody>
</table>

More said that the above figures were included in testimony

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from the sworn statements of the centralizers themselves. To show what (he says) would happen if the centralizers ever won a monopoly in Iowa, he pointed to the figures of the Dairy Division, Washington D.C. showing that in 1907 the average price per annum paid for butterfat in Minnesota, Wisconsin, and Iowa was 27.99, 28.76, and 28.20 cents respectively, whereas in Nebraska where the centralizers, "... had all but completely taken over, 23.95 was the average per pound for 1907."¹

At this same meeting of the Iowa State Dairy Association to which More gave his speech criticizing the methods of the centralizers, Commissioner Wright revealed, in his address, his intent to ask the next biennial legislature for an anti-discrimination law, as a "... possible means of checking a growing tendency toward complete centralization of the creamery business into the hands of a few men or a few corporations."²

The law was passed by the next legislature and went into effect July 4, 1909. This law prohibited the creamery from paying more for butterfat in one area than it did in


another area when the rise in price was instituted in order to eliminate competition. This did not mean that the outside creamery could not pay different prices in different locations, but that it might come into an area and pay prices that would compete with local creamery prices.\(^1\) It is not difficult to see that this law was very hard for the county attorneys to enforce, for, just as with the Babcock test law, intent to destroy competition by the offender had to be shown. As late as 1914, the Dairy Commissioner was still getting complaints of price discrimination.\(^2\) It might be added that in its report concerning centralization in the Iowa creamery industry and railway rates, the Interstate Commerce Commission defended the centralizers in the paying of different prices in different locations by saying that this was an unfortunate result of competition.\(^3\)

The local creameries also held the centralizers responsible for the decline in the quality of Iowa butter which had become a matter of widespread concern after 1905. This censure came from every quarter of the creamery business: from the commission houses; from the United States Department of Agriculture; from the dairy experts at Ames; and from many

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\(^1\)Herbert R. Wright, "Discussion of the Anti-Discrimination Law," *The Iowa Yearbook of Agriculture*, 1909, p. 399.


\(^3\)Interstate Commerce Report, *op. cit.*, p. 122.
other interested people throughout this and other dairy states.

The criticism was directed at the whole state in general, but the local creameries diverted it to fall on the shoulders of the centralizers. Most all people concerned agreed that the main reason why the quality of butter went down was due to the fact that the raw material received by the buttermakers was characteristically in poor condition.¹ The local creameries claimed that the reason they had to accept cream in a deteriorated state was because the centralizers had been buying cream indiscriminately, paying as much for the bad as for the good, and that in order to compete for the farmers' cream, the local also had to buy degenerated cream.²

That the centralizers, as a whole, received a poor grade of cream is an established fact. In illustrating this the Dairy Commissioner in 1914 described the centralizers' technique of buying and handling cream:

The operator (at the receiving station) has a check book placed in his hands and he is instructed to pay a certain price for butterfat, and under no conditions to vary this price unless competition demands it. This cream (he buys) is placed in ten gallon cans and shipped, without refrigeration, from 50 to 500 miles distant. For these reasons we must maintain that the central plants


are largely responsible for the poor grade of cream delivered to Iowa creameries.\(^1\)

In 1913, this same Dairy Commissioner described the sight at railroad stations during the hot summer season. The cream could be seen, "... oozing over the tops of the cream cans, or doing what we commonly call 'boiling over.' This boiling over was caused by the subjecting of the cream to too high temperature." The high temperature allowed rapid gas producing bacterial production which caused the boiling.\(^2\)

That Iowa creameries as a whole were making a poor quality of butter was illustrated in a report to the Dairy Association by S. C. Thompson who, in 1911, was in charge of the Butter Manufacturing Investigations, Dairy Division, the United States Department of Agriculture. He reported that of the 836 shipments of Iowa butter inspected by his agents on the New York and Chicago markets, only five per cent of these shipments scored above 90 points or more, while ninety-five per cent scored below 90.\(^3\) Butter was scored on the market according to the following scale: special grade butter--total score 94 and over with a minimum score for flavor of 41; first grade butter--total score 92 and over with a minimum

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score for flavor of 39; second grade butter—total score 87 and over with a minimum in score for flavor of 37. This scoring was based on 100 possible points: flavor, 45; texture, 15; and ten points each for incorporation and moisture, color, salting, and packing.¹

The amount of butter inspected was approximately one per cent of the output for the state, and if the loss had been sustained on the entire product, it would have amounted to over six million dollars. In analyzing the cause of this poor showing Thompson said, "... 82% of all these shipments showed poor cream flavors." This was an indication that the poor quality of butter was caused by poor cream.²

Now, with the facts established that the centralizers received poor cream and that the creameries over the state as a whole produced poor quality butter, the question remains: Did the centralizers' practice of accepting poor cream cause the rest of the creameries to have to accept it?

It would be manifestly unfair to place the responsibility for these conditions on the centralizers alone. The fault, rather, should be shared by all segments of the industry. First, the farm separator caused thousands of more farmers to be able to sell cream to the creamery. These farmers had not

¹Eckles, op. cit., p. 1483.
²Thompson, op. cit., p. 373.
been schooled in the care and maintenance of cream or the farm separators and thus they delivered poor butterfat. Secondly, the creameries did not educate their patrons in the care of their cream either by rejecting poor cream or actually schooling them. Third, both the locals and the centralizers were forced to accept poor cream because of cutthroat competition. Advances in technology affected the industry in both production and marketing to the detriment of the quality butter produced.

A third area of criticism that the local creameries voiced against the centralizers was in the field of railroad transportation of cream and butter. In 1906, the Dairy Commissioner noted that a new feature of the centralization business had come to Iowa. This was the shipping of cream to Chicago from several hundred miles away. He said that the Chicago centralizers had entered northeast Iowa and by reason of "very favorable freight rates" could compete with the Iowa central creameries as well as with the smaller creameries of the state. He mentioned that this system was also set up in regard to shipments to St. Paul, St. Joseph, Leavenworth and Kansas City. The freight rates maintained by the railroads were the regular distance tariffs except when shipped to these cities.\(^1\) In these cases the rates were

much lower. Actually these creamery companies, among which were Fairmont, Beatrice, and Blue Valley, had been receiving favorable rates from the railroads for quite some time while shipping in Kansas and Nebraska.

When these centralizers began to expand their operations, they naturally petitioned the railroads for the same rates they had been receiving in the other states and got them with only a five-cent increase on a ten-gallon can being shipped three hundred miles.¹ This was fine for the Chicago companies, but it worked a hardship first, on the creameries that received cream by rail inside the state, since cream could be shipped outside, in some cases, cheaper than it could be shipped from certain locations inside the state. And second, it worked a hardship on the local creamery that had to compete for cream with these new centralizers. However, Dairy Commissioner Wright reported that the railroads had agreed to revoke these discriminatory rates:

The creameries that were actually affected by these favorable rates made complaints to the officials of these roads, to which complaints were added considerable correspondence by this department, and on October 19th, and November 1st, 1906 respectively the roads set aside their former tariffs to Chicago, and authorized the use of the distance tariff only. We are informed that this change of rates is to be permanent.²

¹Interstate Commerce Report, op. cit., p. 111.
²ISDC, Report, 1906, op. cit., p. 15.
Mr. Wright's optimism was soon to be shattered by the work of the centralizers.

The restoration of the former rate schedules meant that the centralizers would be subject to distance tariff rather than the cheaper rates they had enjoyed in Kansas and Nebraska. The centralizers then charged that they had been double-crossed. They had built their new creameries in Chicago and other cities on the assumption that the lower rates would remain in effect. This was a well-founded assumption, however, as attested to by the railroad representatives in their testimony before the Interstate Commerce Commission. The officials had said they would not raise these rates. The proposed increase would cost the centralizers an increase of 22 cents per 10 gallon-can of cream to be hauled 300 miles. This rise in rates brought the Beatrice Company suit before the Interstate Commerce Commission.1 Before the time set for the collection of these rates, the centralizers appealed to Judge Kohsaat of the United States Circuit Court for an injunction restraining the railroads from enforcing the new rates until such time as the Interstate Commerce Commission could hear the case; the injunction was granted.2

1Interstate Commerce Report, op. cit., p. 112.
With this action, Commissioner Wright obtained permission from the Executive Council of the state to protest the effects of the injunction which gave the centralizers the favorable rates, by appearing before the Central Freight Association in New York with his arguments against giving the centralizers the favorable rates. He believed that these large shippers already had a monopoly on the western markets for butter, since the little shipper could not afford to ship small quantities of butter where the less-than-carload rate was 30 per cent higher than the rate on carloads. He thought that the lower freight rates on cream would eventually give the centralizers a monopoly in Iowa.

In 1908, Wright went to testify as an "intervener," as he and other interested people from this and other dairy states were called by the Interstate Commerce report. Before he left he sent questionnaires to the creamerymen in the state in order to get their views on the subject. Two-hundred thirty-nine letters were returned, while 25 were not answered. The majority of the 239 answered as follows:

Have present shipping rates on cream been any advantage to your creamery business? No.

Does the shipping of cream to central plants result in the production of a better or poorer quality of cream than formerly? Poorer.

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Do the central creameries doing business in your vicinity pay the same price for cream as elsewhere or do they pay different prices in different localities? Different prices in different localities.

Do buyers for central plants in your vicinity grade the cream? Not at all except on the basis of test.

Do they reject cream on account of bad quality? No.

Are the present rates on cream in your vicinity favorable to the central plants at the expense of the local plants? Yes.

What in your opinion, will be the result of a continuation of these rates? General disaster to the local creameries.1

Needless to say, most if not all of these reporting creameries were locals, and the questions were obviously loaded so that the centralizers would come out looking very bad.

After intervening for the railroads, which was in effect intervening for the local creameries, as did dairy commissioners, dairy associations' representatives, some buttermakers, and even the head of the department of Dairying of the Department of Agriculture, and other interested people throughout the mid-west, the Iowa dairy commissioner awaited the Commission's decision.

After hearing all the testimony from the "interveners" the Commission, in its report, said that it did not attach as much import to what they had to say as they evidently did themselves. The Commission's findings were published in 1909:

The interveners regard the centralizers as a party whose operation should be controlled by a strong hand. The Department of Agriculture seems to some extent share this same feeling. Such is not the impression left by this record. The centralizer is engaged in a perfectly legitimate business enterprise by methods which may be and usually are legitimate. It seems plain that the duty of this Commission is to establish just and fair transportation charges in so far as that can be done and will allow rival methods to operate under those charges.

The Commission then proceeded to fix a graduated rate for all points in and out of the different states for the shipment of cream. These rates were still evidently very favorable to the centralizer.¹

Another dispute concerning the railroads came up in 1909. In that year there was agitation among the big butter producers to persuade the railroads to give a discount for shipping a whole carload of butter. They wanted a decrease of ten cents a hundred pounds from 65 to 55 cents. The railroads said that the centralizers had a good point, that they should be getting a better rate than the less-than-carload shipper, so they said that they would raise the less-than carload rate to 75 cents and leave the carload rate where it was.² In 1909, the Iowa State Dairy Association passed a resolution empowering its officers to take any action they

¹Interstate Commerce Report, op. cit., pp. 126-133.
might deem necessary to oppose this increase. The rate was instituted anyway, as was mentioned before in discussing Wright's arguments as an "intervener" in the previous centralizer case. In 1915, the big locals and centralizers were worried as to whether the better carload rate was also going to be given to the shippers east of Chicago.

It is difficult to understand why, in these controversies between the local creameries and the centralizers, the representatives of the centralizers were not more vocal in the defense of their system. Evidence has it that they possessed good arguments opposing the views of the locals, as the case they made before the Interstate Commerce Commission testifies, but they neglected to express these arguments in places where farmers could hear or read them. Neither did they seek to be represented in organizations like the Iowa State Dairy Association nor did they seek favorable publicity in publications like Wallace's Farmer. Of all the speeches given before the Iowa State Dairy Association that were studied by the author, which included the years 1900 through 1917, only two speakers had any praise for the cen-

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tralizers and their system. One was Mr. C. H. Hubbard, speaking in 1901 about a central plant that he probably had some interest in, and the other was J. J. Ross, a dairy inspector in 1910, who said that he found, after he got to know them, that the centralizers were pretty nice people. Some of these people should have at least admitted that the centralizing system opened up the dairy business to thousands of square miles of territory not only in southern Iowa, but in Nebraska and Kansas, where the local creameries could not possibly have succeeded.

It can be seen that the centralizers evidently wanted favorable publicity since they established the Iowa Creamery and Butter Manufacturers Association in 1917. Mr. Paul Crowley who was secretary of that organization from 1918 to 1945 told the author in an interview that that association was concerned with combating the local creameries and publicizing the cause of the centralizers.

Another question comes up in regard to the people who were most vocal against the centralizer. Few authorities in Iowa, other than the dairy commissioners, actually criticized the centralizers. Most of the talk came from the local creamery owners speaking through the mouths of the dairy commissioners. These were the people who were suffering from the competition and would, therefore, naturally be inclined to complain. Also, it would be an understatement to say that
the dairy commissioners were a bit prejudiced in their dealings with the centralizers. These commissioners were speaking for the local creamery owners because the Iowa State Dairy Association was made up primarily of small enterprisers who were trying to combat the large concerns.

In all fairness to the centralizers, it should be mentioned here that the author found a definite lack of information concerning their points of view during this period, and about these questions. This is probably due to the fact that they had no central organization like the locals' Iowa State Dairy Association until 1917, and then it was a promotion type of organization that advertised for the centralizers, and if it did publish, the materials were not available to the author of this paper.
CHAPTER V

IOWA CREAMERY LEGISLATION

As butter-making in Iowa grew from being a farmer produced home industry with the product being used for home consumption, to an income supplement for farmers, to a specialized and mechanized full scale industry, it suffered many of the growing pains that other industries had suffered as they became larger and more technologically advanced.

In the early days when butter was produced on the farm and sold or traded to the corner grocer there were no restrictions on how it was produced or what was contained in the final product. All that concerned the buttermaker was that she could make a type of butter that would be saleable to the local grocer. This continued to be the case until the introduction of commercial butter manufacturing and with it, competition.

Regulation, then, came with the tremendous increase in the quantity of butter manufactured in the state which was the result of the advent of the creamery system. By 1900 Iowa was one of the leading butter producing states in the nation and the state government found it necessary to place restrictions on this growing industry, both for the health of the states' citizens and for what it thought was the health of the industry. As a result, most of the legislation was
designed to insure the production of a clean, healthful product and to regulate competition. Competition had developed in two major areas: among the different types of creameries for sale of butter on the eastern markets and between the locals and centralizers for the butterfat produced by Iowa farmers.

The first dairy law passed in Iowa was aimed at a form of competition with the butter industry that started at about the same time the creamery system appeared in this state. It has been a thorn in the Industry's side throughout its history, even up to the present time. This was the manufacture and sale of oleomargarine. The law was passed by the Eighteenth General Assembly in 1880 and it stipulated that imitation butter had to be so named.¹

At the time the law was passed the major concern of the legislature was probably for the citizens of the state; trying to protect them from being deceived into buying margarine that was misrepresented as butter. But this law was just the first of many aimed at restricting oleo production. The major limitation of this first law was that it failed to place the responsibility of enforcement with any specific law enforcement

body. Since few law officials were qualified to identify imitation butter, the law was probably ineffective.

Meanwhile, a very powerful influence in the Iowa dairy industry in years to come was being born. Several Iowa dairymen had been encouraged by John Stewart's success in Philadelphia in 1876. These dairymen were interested in furthering the dairy possibilities of the state and decided to organize to work together toward this purpose. In 1877, sixty-six of them met at Manchester, Iowa to organize an association of dairymen.¹ The early organization was called the North Iowa Butter and Cheese Association, but the name was changed in 1882 to the Iowa Butter and Cheese Association and then later, in 1891, to the Iowa State Dairy Association.²

Whether this newly created organization played any part in the passage of the anti-oleomargarine law is uncertain, but from its very inception the Dairy Association was concerned with the advancement of the local creamery, its relationship to the market and to competition.³

It may have been through the influence of the Associa-

¹W. J. Petersen, "The Iowa Dairy Association," Palimpsest, XV (November, 1934), 359.

²Ibid., p. 360.

tion that the position of the Iowa State Dairy Commissioner was created in 1886. As has been shown in previous chapters of this paper, the commissioners were ardent supporters of the local creamery and in many cases were officials of the Dairy Association before their appointments to that office.

The law passed by the General Assembly in 1886 lists "... practical experience in the manufacture of dairy products ..." as the qualification for being appointed as dairy commissioner.¹ His duties included enforcement of the law providing for the prevention of deception in making and selling imitation butter and, in general, the promotion of the dairy industry in Iowa.²

The first "dairy standard" for the regulation of the industry in regards to health and cleanliness was passed in 1892 by the Twenty-fourth General Assembly. It made it a misdemeanor to sell or deliver:

... unclean, impure, unhealthy, adulterated, unwholesome or skimmed milk, or milk from which has been held back what is commonly known as strippings or milk taken from an animal having disease, sickness, ulcers, abscess or running sore ...³

This law was designed mainly to protect city consumers of whole milk, and it provided for the appointment of dairy

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²Ibid., p. 53.
agents in towns over 10,000 for the purpose of testing milk. But it was also interpreted to apply to farmers selling milk or cream to creameries, and it gave the Dairy Commissioner and his agents the power to enter any dairy manufacturing plant, open any cans or vessels and inspect the contents.¹ If they suspected the contents to be in violation of the law, they could take a sample to be tested. If the test showed that the sample was impure the case was turned over to the county attorney for the county in which the plant was located and it was his duty to prosecute. This inspection eventually led to creamery inspection and the Pure Food Law of 1906.

It is interesting to note that during the creamery building boom of 1892 through 1905 there were few dairy laws passed. During that period the Dairy Commissioner and his agents were preoccupied with another problem; the initiation and development of the centralizing system in Iowa and the resulting competition that developed between the centralizers and the locals.

As was mentioned before, the Dairy Commissioner and the Dairy Association were partisan to the locals in the controversies between them and the centralizers. The Association was made up primarily of buttermakers and creamerymen from local creameries around the state and the Dairy Commissioners were

¹Ibid., p. 76.
their representatives. They used all the powers of the Dairy Commissioners' office to try to discourage the development of centralizing in Iowa because they were convinced that that system would be the ruination of the creamery industry in Iowa. Their campaign against the centralizers led to the enactment of various laws, two of which deserve mention.

The first of these was instituted to try and stop what the locals called unfair competition for the butterfat produced by the farmers. The locals said that the centralizers read too much fat into the farmers' cream in certain areas so that they (the centralizers) could win the patrons away from the local creameries by paying them more for what they produced. The locals said that this was done in order to put the locals out of business. The modus operandi of this deed was the Babcock test which could very easily be manipulated so that the reading would come out in favor of the patron by appearing to have more butterfat in his cream than he really had.

The law, passed in 1906, stated that it was a misdemeanor punishable by a fine of from $25 to $100 to falsely manipulate the Babcock test. Though it was not included in the law, the courts interpreted this to mean that intent to purposely misread or manipulate the test to destroy competition had to be proven. As a result, there were few convictions under this law.

\[\text{1In. Code, 31st S.A., "Ch. 171," 1906, p. 121.}\]
All in all this law was a frail attempt by the Dairy Association and the locals to try and curb the influx of the centralizers to save their own businesses. The law was successful in stopping the overreading of the test, but it did not stop the overpayment for cream. The centralizers simply went to the practice of paying more for butterfat in areas where they encountered competition and less in areas where there was little or no competition. Therefore, the purpose of the law was defeated.

The second anti-centralizer law was passed in 1909 in an attempt to prevent price discrimination. The Anti-Discrimination law stated that any person buying cream or butterfat for the purpose of manufacture could not pay lower prices in one area than in another if these prices were paid so as to gain a monopoly or destroy the business of a competitor in the one area. The law did state, however, that a buyer could compete with the current prices being paid in an area and therefore pay more for cream to meet the competition.

The Anti-Discrimination law was ineffectual for the same reason that the Babcock law was, but it had different

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1Ia. Code, 33rd G.A., "Ch. 222," 1909, pp. 201-202. In the same year that this law was passed the Interstate Commerce Commission said in a ruling on railroad rates that this practice called discrimination was simply a form of legitimate competition. It would have been interesting to see who was correct had the law been tested in the courts.
results. As in the Babcock law, the intent to destroy competition had to be proven. In the case of the Babcock law the centralizers went to another form of competition, whereas they simply disregarded the Anti-Discrimination law and continued their previous practices.

Beginning in the year 1905 and for many years thereafter there appears in the Dairy Commissioners' reports and in other dairy publications much concern about the quality of butter being produced in Iowa. As was mentioned before, the locals tried to put the blame for this on the centralizers because they bought poor cream which led to the production of poor butter. That this was true has been proven: they did accept poor cream along with the good. However, this was also true of the locals who, along with their patrons, shared the responsibility for the production of poor cream and butter.

Many of the dairy experts of the time agreed that the poor quality of Iowa butter could be traced back to the patron and his attitude toward the product he brought or sent by rail to the creamery. It was generally agreed that the major cause of the patrons' poor cream was due to the great influx of the hand separator and the patrons' reluctance to care for
it properly.\textsuperscript{1} The Dairy Commissioner in 1906 blamed the farm separator salesman for the poor cream quality because he sold the separator under false pretentions. He gave the farmer the impression that "washing once a week was plenty good enough."\textsuperscript{2}

Other experts said that there were many things that could cause undesirable flavors and odor in cream:

Abnormal milk from diseased cows; cows fed moldy or partially decayed feeds; keeping animal in uncomfortable conditions, which cause her to be feverish or excited; milking a cow in a filthy stable; milking in filthy pails; running milk through unclean separator; running cream into a filthy can.\textsuperscript{3}

The dairy experts of the Midwest also agreed that the key to ending the problem of poor butter was education. They maintained that closer co-operation between producers and manufacturers was necessary. They felt there was a breakdown in communications concerning what the creamery wanted, and what the patrons were delivering.


\textsuperscript{3}Anon., "Grading Cream," \textit{Wallace's Farmer}, XXXI (June 22, 1906), 821.
From 1906 and continuing through the time for which this paper is concerned, attempts were made by the above mentioned dairy experts, the Iowa State Dairy Association and the State Dairy Commissioners, and the State Legislature to try and improve the quality of butter made in Iowa. These attempts were as follows: introduction of a method of grading cream; agitation for and passage of a sanitary law; and education of the patrons in the care and handling of cream.

One of the earliest attempts to improve butter was initiated by some of the centralizers. Whether this effort was a result of a true desire to increase the quality of Iowa butter or a reaction to the criticism being leveled at them at that time is up for speculation, but it should be remembered here that the centralizers, like all the butter manufacturers, desired a clean, fresh, sweet product from which to make their butter.

In 1906 the centralizers distributed a circular that stated the method they would supposedly use in buying cream from the patrons. The grades were as follows:

**Number 1 Grade.** Hand separator cream delivered at least twice a week in cold weather and three times a week in warm weather, free from all bad flavors and testing not less than 30 per cent.

**Number 2 Grade.** Hand separator cream testing less than 30 per cent and delivered less frequently than required for first grades.

**Number 3 Grade.** Includes all gravity cream and all hand separator cream which tests less than 20 per cent as well as all separator cream which tests above 20
per cent delivered in poor condition.\(^1\)

This system was abandoned shortly after it was begun because it was not adhered to by all the creameries. The centralizers could not afford to lose the customers whose cream did not conform to their standards to other creameries. One of the problems was that if the farmer could not get a good price for his cream one place, he shopped around until he found a creamery not using the grading system and sold his milk there. Also, this system was evidently ignored by many of the centralizers' own cream buyers.\(^2\) In many cases they were paid according to the amount of cream they were able to purchase and were therefore willing to accept just about anything in the form of butterfat. They could rationalize this practice by pointing to the fact that many times the sweet, fresh cream they bought sat on the docks for several hours waiting for trains to carry it to the plant and consequently became sour and spoiled, so what was the difference?

In 1908 the Dairy Commissioner mentioned that the only solution to the problem of poor butter was the education of the patrons. He said that if they could learn cheaper methods in production and manufacturing they could also learn how to care for their cream and keep it clean and fresh. He said creameries should reward cleanliness by entering into an agree-


ment with the farmer to have him keep clean cows, utensils, transportation and milk houses and to thoroughly cool the milk after each milking. ¹

It was not until 1914 that the creamery industry was successful in instituting a grading system. This system was suggested by the Dairy Commissioner and was generally accepted throughout the state:

Extra - Special grade cream is sweet cream, suitable for table use, and such as will not curdle in hot water, tea, or coffee.

First Grade - First grade cream shall consist of cream that is clean to the taste and smell, slightly sour, containing not to exceed 4/10 of 1% acid, and not less than 25% butterfat, and free from lumps, curd, dirt and all other foreign matter.

Second Grade - Second grade cream is cream that is too sour to grade as first grade or may have weedy or other undesirable flavors or odors.

All other cream shall be deemed illegal. ²

Along with the attempt at grading in 1906 by the centralizers, several dairy laws were passed by the legislature in an attempt to clean up the dairy industry in Iowa. The first of these, the so-called Pure Food Law, was, as far as it applied to the buttermaking industry, another anti-oleo law hitting mainly at the manufacture and sale of adulterated food. It differed from the other anti-oleo laws in that it

² ISDC, 28th Annual Report, op. cit., p. 15.
provided for a $2,000 a year chemist added to the Dairy Commissioner's staff, and an appropriation of $10,000 for enforcement of the law. ¹

This law was called the Pure Food law because it applied to foods other than just dairy produce. Section eight of the law hit at adulterated foods in general. They were considered adulterated if they were mixed and packed to reduce quality, strength or purity, if any valuable constituent was subtracted, if there was any substitute made for any component, or if they were misnamed. Also, any food was considered adulterated if it contained a poisonous ingredient, if it was branded to deceive, or if it came from a diseased, filthy, decomposed animal. ² Section one made the Dairy Commissioner the Food and Dairy Commissioner and thereby expanded his area of concern to include all establishments that handled or produced food for public consumption. ³

The force that made this law more effective than previous dairy laws as far as creamery sanitation was concerned, was found in the manner in which the Dairy Commissioner interpreted it. Soon after its passage he notified the creamery managers that there would be several minimum requirements in order for their establishments to meet the standards of the law. He said that his department would insist on the following:

²Ibid., p. 116.
³Ibid., pp. 115-116.
1. hand separators had to be washed each time they were used;
2. cream had to be cooled before mixing with cold cream;
3. cream had to be held at low temperature in cold water in both summer and winter; 
4. cans in which milk or cream was delivered were to be clean; 
5. cream had to be delivered every two days in the summer and every three days in the winter.

He concluded that any violation of these rules would be subject to prosecution and fine under the 1906 law. It can be seen that this ruling was a forerunner to the grading system the dairy commissioner’s office put into effect in 1914.

By far the most progressive dairy law passed as a sanitary measure in the two decades before the First World War was the Sanitation of Food Producing Establishments Act passed in 1913 by the Thirty-fifth General Assembly. This law gave the Dairy Commissioner and his agents the right to enter any place that produced food for the purpose of inspection. The law required a standard for cleanliness of the establishment not only in the machines and other apparatus used in the production of butter, but also in the building structure itself. It had to be properly lighted, ventilated, drained, and plumbed, with the protection provided for the food from flies, dust, dirt and any other foreign matter. The law also required food handling establishments to be

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licensed, and stipulated that the license could be revoked by
the Food and Dairy Commissioner.¹

Though there was a reference in this law to the "dairy," it
did not apply to the farm dairy, but it should be noted
that in his 1915 report, the Dairy Commissioner mentioned
that farm inspection was evidently the coming thing.² Also, this
law must have gone a long way toward the improvement of food
handling establishments because in 1914 the Commissioner esti­
mated that eighty to ninety per cent of those places were in
what he would call first class shape.

Evidently by 1909 the problem of poor cream being
brought to the creameries by the patrons was starting to be solved. In that year the Dairy Commissioner reported to the
Iowa State Dairy Association that in the preceeding twelve
months the scores of butter in 391 creameries his assistants
had inspected were above 90 in all except 39 of them. And in
all of these creameries his assistants could report that not
"... any really bad cream was received."³

By 1909 the Dairy Association had a membership of over

³H. R. Wright, "Address," Proceedings of the Iowa State
Dairy Association Annual Meeting, The Iowa Yearbook of Agri­
culture, 1909, p. 316.
600 buttermakers, farmers and dairymen. A good share of them at that time began to realize that one phase of dairying had been more or less neglected by the Association. This was what was called the "foundation of dairying" — the cow.

In order for the dairy industry in Iowa to continue to advance, one expert speaking to the Association in 1912 said, the legislature was petitioned for financial assistance to help pay for an educational program for the farmers and creamerymen concerning the ways of profitable cows and dairying.

Ever since the creamery system was introduced to the state, the dairy farmer had complained that he was not receiving enough renumeration for the amount of work put into the dairy part of his farming. The Dairy Commissioner as well as Wallace and others writing for Wallace's paper claimed that the solution to that problem could be found with the cows. For years the dairy farmer had been accepting any type cow to use as a dairy cow. Wallace and the commissioners pleaded with the farmers to change their attitudes. The solution, they said, to getting more profits was to keep a record of each cow as to the amount of milk she gave each year, test the milk for butterfat content, and weed out the poor producers. In 1910 the Dairy Commissioner said:

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1E. S. Estel, op. cit., p. 513.
2Ibid., p. 514.
The one hundred and fifty and two hundred pound cow must be replaced as soon as possible with those that will yield 250 to 350 pounds of butterfat. An increase of fifty pounds per cow would mean an increased income to Iowa of $18,750,000.1

In the early periods of dairying in Iowa it was thought that the cow produced according to her feed and breed. It was later learned that the quantity of milk was determined by the quality of feed, but that the percentage of fat in the milk was determined by the makeup of the cow herself, the particular idiosyncrasies of the cow, her personality. In other words, fat could not be fed into a cow. The cow was either a high butterfat cow or she was not. It was also learned that there was quite a bit of variation between cows of the same breed. That is, while some Jerseys could be expected to produce 350 to 400 pounds of butterfat a year, others would produce only 180 to 250 pounds annually. The Babcock test could be used to help the farmers weed out the cows that were nothing more than "manure factories" as far as dairying was concerned.

In order to get this information to the farmers in an impressive and meaningful way, the Iowa State Dairy Association maintained it needed funds for such a large scale project. They argued that the state of Iowa as a whole should help

encourage the dairy industry and thus their request for state monies.

The Dairy Association evidently put on quite a campaign to get their law passed. In an address to the Association in 1909, the year that the law was passed, E. R. Moore, a member of the Iowa House of Representatives, told the membership that the lobby working for the passage of the appropriation law was, "... one of the most effective lobbies that this state has seen in years." He said that that success was due largely to the work of the legislative committee of the Dairy Association and their pre-election campaign. Since this committee worked on candidates before the primary and then on nominees, he said, by the time the legislature convened, 70 out of the 108 House members were pledged to support the measure.¹

The major purpose of the law was to help further the interests of the dairy industry in Iowa. It stipulated that a membership of 100 must be maintained, and when that figure was reached the Association would be allocated $10,000 to, among other things, inspect dairy farms, cattle, barns, and provide dairy instruction in the form of institutes and by other means.²

H. G. Van Pelt was hired as the first dairy expert to direct the expenditure of the appropriation. There began immediately a very active campaign for the improvement of dairying throughout the state.

Meanwhile the Dairy Commissioner was trying to aid in the education of patrons. He began issuing special bulletins to the patrons about the latest in scientific methods of dairying and sent his assistants traveling around the state talking to different groups about improvements in dairying.¹

As a means of reaching the largest number of farmers in the shortest time, the Dairy Association began a new era in dairying by beginning the use of the "dairy train." The first dairy train ran over the Chicago, Burlington and Quincy railroad in southern Iowa.² This train contained an engine, baggage car, a Palace stock car, two lecture coaches, and a combination diner and sleeper. The Dairy Commissioner's report for 1910 mentioned that speakers lectured at each stop, with demonstrations and lessons about caring for dairy cows, selecting good cows, methods of milking, separating and many other subjects.³

This activity was carried on each year from 1910 to 1915. In 1912, Wallace said that 185 towns were reached by dairy trains and 130,000 people were talked to. Also, in that same year, the Dairy Association provided speakers for 255 local meetings who talked to over 150,000 farmers.\textsuperscript{1} In 1913, six special trains made a total of 496 stops and reached more than 200,000 interested people.\textsuperscript{2} Association speakers reached 37,480 people in 1914 and twelve dairy trains reached 595 towns. And in 1915, 672 towns were reached by thirteen dairy trains and 259 meetings with lectures provided by the Association were attended by 46,200 people.

Not only were the adult dairy farmers reached but also the future dairy farmers were approached through cow testing contests, lectures in schools, and dairy shows. In many schools the Babcock test was demonstrated to large numbers of pupils and there was considerable talk of having a regular course of milk testing taught as a part of the agriculture course in the rural schools.

That these attempts at educating the dairy farmers had success in at least one area of the state can be seen in a part of the 1915 Dairy Commissioner’s report:

\textsuperscript{1}ISDC, 26th Annual Report, \textit{Ia. Docs.}, 1912, III, p. 20.
\textsuperscript{2}Estel, \textit{op. cit.}, p. 514.
A careful study of results covering a period of ten years would indicate that Iowa has a great future as a dairy state. Figures obtained from 21 creameries in Fayette county indicate that the average butterfat production per cow has been increased 41 pounds within ten years, while 25 Bremer county creameries report figures showing an increase of 50 pounds per cow for the same period.\footnote{ISDC, \textit{29th Annual Report, Ia. Docs.}, 1915, III, pp. 6-7.}

If the whole state could approach the averaged improvement made in these two counties the efforts of the Iowa State Dairy Association and the Dairy Commissioner were not wasted.
CHAPTER VI

CONCLUSIONS

In 1915 a speaker before the Iowa State Dairy Association annual meeting summed up the hazards and uncertainties of the creamery business in the following manner:

Our reasoning is based entirely on the unknown. If we make a certain number of pounds of butter today and secure a certain percentage of overrun, we can pay a certain price for butter-fat if we can receive a certain price for our butter tomorrow.¹

In other words, the price that could be paid for the farmer's cream on any given day depended on these variables: first, the price the creamery might expect to get for butter made from the cream; second, whether the buttermaker could make a good saleable product from the cream the creamery owner bought; and third, whether or not the price would stand up on the next day's market.

Such was the complex system of buying cream and selling butter that had developed in the Iowa butter industry by 1915. By that date the creameries of the state reported 104,418 patrons bringing cream to be sold under the auspices of the above method.² This was quite a few people to be involved in


²See Creamery Statistics table in Appendix, page 121.
a process that depended upon the two or three cent fluctuations of the market from day to day.

From the cream of those patrons, 89,834,005 pounds of butter were made. The butter industry had come quite a long ways from the early days when the farmer produced butter for home consumption.

The first creamery in Iowa was not built until 1872, and the creamery system was slow to get started, but beginning in the late 1880's and during the 1890's a building boom was under way in Iowa creameries, and by the peak year of 1900, there were 994 creameries in the state. From that time, through 1915, the number of creameries declined, but by 1915, Iowa could still boast 443 such manufacturing establishments.

The phenomenal growth of the Iowa butter industry may be attributed to several major influences that had the effect of revolutions on the expansion and development of the creamery industry.

The first revolution came in the late 1870's when many of the farmers of Iowa gave up the cash grain system of farming and moved to the system that made up what was known as the "Corn Belt Economy;" this was the raising of corn and

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2 See Creamery Statistics table in Appendix, page 118.
feeding cattle and hogs for sale on the market. This change marked the beginning of commercial dairying because it was at this time that many farmers began milking for profit.

During this period some farmers, especially those operating in northeastern Iowa, turned to exclusive dairy farming since that area was well suited for it, but the major impetus to the industry came with the dairying that grew as a sort of residue from the corn-feeding, cattle-and-hog-raising system. As that system developed the farmers began to milk their cows and then separate the cream to be sold to the creamery or they sent their milk to the creamery to be separated and then they bought back the skim milk to be fed to their cattle and hogs. This dairy part of the operation of their farms was of secondary concern to them but it caused a demand for many more creameries to be built throughout the state.

The next major revolution affecting the growth of the industry came in the mid-eighties and lasted through the mid-nineties. During that period the economy of the nation suffered a depression that took the bottom out from under farm prices. During that time of depressed farm prices, as seemed to be the case from that time on, whenever other farm products were selling poorly, the farmers retreated to milking, not as a supplement to their incomes as before, but in many cases as a major aspect of their farming. During such periods, the milking and
separating became a much more important phase of farming. As the farmers produced more butterfat they needed a market for their product, thus the phenomenal growth in the number of creameries from 1885 to 1900.

When so many farmers were engaged in dairy operations as during the depression, it was very likely that some of them would become unhappy with the system of buying cream as practiced by the creameries at that time. The buying by "inch" left many farmers feeling that they had been cheated by the creamery, since the inch was so irregular and varied so much from one selling time to the next. It was up to the dairy experts to find another way for determining the true worth of the farmers' cream and when that system was finally found it added a third revolution to the creamery industry.

The Babcock test, even though some farmers disbelieved its accuracy, acted as sort of a stabilizing force on the industry as a whole since the farmer could, for the first time with its use, receive a fair test of his cream and then be paid accordingly. True, there were many shortcomings to the test, especially those brought on by poor operators, but as the system gained widespread acceptance, the effect was one of a much better relationship between patron and creameryman.

The next major revolution was a result of the invention of a method of separating cream from milk by the use of a
mechanical centrifugal separator. The separator was used in whole milk creameries for several years before the "gathered cream" system took hold with its use of the farm hand separator. The revolution came with the growth of the use of this farm separator because this system allowed a new type of manufacturing to come into the state--the centralizing system.

Centralization provided the opportunity for any farmer in the state who wanted to produce cream to sell to the creamery, to produce it. Before this system a farmer had to live in close proximity to a creamery in order to make the dairy farming operation economical. But, with centralization and the use of the railroad, all one had to be close to was a railroad station and there were enough of these spread out over the state so that no farmer had to travel very far to sell his cream.

Though the centralization system brought with it some ills which affected the quality of butter production over the state in general, these ills were eventually corrected through legislation and by the work of dairy experts and the Iowa State Dairy Association.

On the eve of United States involvement in World War I buttermaking in Iowa had assumed the position of a major industry. The creameries of the state were recognized by butter wholesalers as well as by butter manufacturers in both the
East and West as a primary source of butter for the Chicago and New York markets.

By 1915 the Iowa butter industry had come of age and had, despite many spurts in growth and despite many setbacks, adjusted to the needs of the modern industrial society. In that year, 104,413 patrons provided butterfat for 467 creameries in the state and several centralizers outside of Iowa. These Iowa creameries produced close to ninety million pounds of butter to be sold on the eastern markets. The Iowa butter industry was here to stay.
A. BOOKS


B. MANUSCRIPTS

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C. ENCYCLOPEDIA ARTICLES


D. GOVERNMENT PUBLICATIONS


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Company Et Al., No. 1292. Fairmont Creamery Company
Et Al. v. Illinois Central Railroad Company Et Al.,
No. 1541. Blue Valley Creamery Company Et Al. v.
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Resolutions Adopted by the Iowa State Dairy Association,
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E. PERIODICALS


The Iowa Dairyman, I (March, 1882), 69.


"Co-operative Creameries--So-called," *Wallace's Farmer*, XXV (June 22, 1900), 651.


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"Testing the Babcock Test," Wallace's Farmer, XXIII (February 11, 1898), 15.

"The Cost of Building a Creamery," Wallace's Farmer, XXVI (June 14, 1901), 787.


"The Dairy," Wallace's Farmer, XXXV (February 18, 1910), 297.


"The Dairy and Creamery Trusts," Wallace's Farmer, XXVI (May 17, 1901), 691.


Wright, H. R. "Iowa Creamery Industry," Wallace's Farmer, XXXIII (January 17, 1908), 77.
Note Concerning TABLE I

CREAMERY STATISTICS IN IOWA 1889 - 1915

By presenting this table the author hopes to give a quick and easy reference to use in following the trends in the development of the Iowa creameries from 1889 to 1915. The table was compiled from statistics given by the state Dairy Commissioners in their reports to their governors. Since the dairy commissioner's office was not established until 1886, there are no statistics available in the Iowa Documents for the years prior to this date. The reader will also notice that the supply of information before 1897 is indeed meager. This is due to the fact that the early commissioners did not collect many facts to record in their reports and in some cases the use of new inventions used by creameries or their patrons were not thought to be significant developments in the industry and were therefore not recorded. This last point is noticeable in the developments concerning the farm separator before 1899.

There are some other restrictions to the chart that should be noted. First, the State Dairy Commissioners attempted to solicit the help of creamery operators in gathering statistics, but many of the operators showed little desire to co-operate by not turning in a report, turning one in too late, or filing an incomplete report. Though this situation was
improved in the later periods by legislation requiring a prompt, accurate report from the operators, the early figures are thus distorted. Second, the Dairy Commissioners from time to time changed the date for ending the year and thereby distorted the facts. Third, in the early reports very few statistics were given by the Commissioners. And fourth, after 1909, the Dairy Commissioners discontinued the practice of distinguishing between different types of creameries and also stopped reporting the number of creameries that closed in the year.

Even though the table has these limitations, plus some others, the author believes it can be used to illustrate certain trends in the creamery industry for the years under consideration. Since these facts were accepted and used by the respective Dairy Commissioners as indicators, the reader should be able to use them for the same purpose.
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<td>---</td>
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<tr>
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