
Oregon Agricultural College Experiment Station

Bureau of Organization and Markets

Survey of Typical Oregon Farmers' Creameries

By

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Prepared in cooperation with the Bureau of Markets,
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Survey of Typical Oregon Farmers' Creameries*

INTRODUCTION

Object of Investigation. It is thought by many that the farmers' creameries in Oregon have in general been unsuccessful, and it is true that during the last few years several of them have suffered bankruptcy. It is the purpose of this investigation to determine whether or not the farmers' creameries have been unsuccessful, and to determine as far as possible the causes that contributed to success or failure. Effort has been made to throw light on the whole question by historical and statistical investigation of as many cases as possible.

Method of Procedure. Individual study has been made of each of the 17 creameries investigated on the following points:

1. Name of creamery.
2. When organized.
3. Plan of organization.
4. Influence that led to promotion.
5. By whom organized.
6. Number of members when organized and at present.
7. Original and present capitalization and capital paid in.
8. Amount of business.
 - (a) Number of cows pledged when organized.
 - (b) Amount of butter-fat and products handled a year.
9. Where products are marketed; locally or in cities and by whom.
10. Value of assets at present.
11. Is the creamery local in character or does it cover several communities?
12. Causes of success or failure.

In each investigation the main sources of information have been the following:

1. Articles of incorporation, by-laws, minutes, and creamery records and reports.
2. Personal conferences with creamery managers and officials, farmers, promoters, county agents, the State Dairy and Food Commissioner, and dairy experts of the Dairy department of the Oregon Agricultural College.

There are 91 creameries in Oregon of which 24 are farmers' creameries.† The 17 creameries investigated are farmers' creameries located in the Willamette Valley and the Coast Region and cover the principal butter sections of the State. Separate data were compiled for each creamery studied and from these data the following summary has been made.

Twelve of the seventeen creameries investigated are organized under the Oregon Corporation Law and only five under the Cooperative Law. It may be asserted that the twelve creameries are not cooperative in the technical sense. Such a claim is based on technicality, however, rather than on the spirit of the enterprise. In this investigation a creamery is classed as cooperative regardless of which law it is organized under if a great majority of the stock is held by farmers, and if it is operated with a view to paying the producer the full value less expense and not

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†Twelfth Biennial Report of the Oregon Dairy and Food Commissioner, 1919.

with a view to paying dividends on stock above a normal rate of interest. It seems fair to assume that a creamery is in reality cooperative regardless of technicalities, when all surplus earnings go to the farmer in the form of better prices for butter-fat, or when all surplus earnings are prorated to the farmers on the basis of business transacted.

Definition of "Successful Creamery." In order to determine with a reasonable degree of accuracy what factors contribute to success or failure of farmers' creameries in Oregon, it is necessary to have a standard by which to differentiate between success and failure. It seems logical to assume that creameries that have paid the market price or more for butter-fat, have made a profit of at least six percent on the investment* and are in a solvent condition† have been successful, while those that have fallen below this standard are failures. The degree of success or failure, therefore, depends on where a creamery stands above or below this standard.

How Average Market Quotations Were Obtained. In order to obtain a standard by which to compare the prices paid for butter-fat by the various Oregon creameries, an average has been obtained of the Portland market quotations for the last four years (1915, 1916, 1917, 1918) as published in the Morning Oregonian. Each price quotation has been multiplied by the number of days it has been in effect and the results have been added and divided by the number of days in the month to obtain the monthly average. The monthly averages have been added and divided by twelve to obtain the yearly average. The average for the year is not an absolutely correct representation of the actual price, because a larger amount of butter-fat has been sold during the summer months than during the winter, but this seemed to be the best way to obtain the yearly average since the number of pounds marketed each month could not be determined. The yearly averages for the creameries have been obtained in the same

TABLE I. AVERAGE PORTLAND BUTTER-FAT PRICES
(Calculated from quotations in the Morning Oregonian)

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1915...	29.2	29.3	29.9	25.2	24.4	26.0	28.2	28.0	30.1	31.4	31.0	30.7	28.617
1916...	30.6	31.7	33.0	32.7	27.1	27.0	26.1	29.1	31.0	35.3	38.4	38.8	31.733
1917...	38.8	42.9	40.0	42.4	37.2	38.5	40.0	44.1	48.6	51.4	53.5	57.0	44.533
1918...	57.0	55.1	53.7	43.6	43.0	44.4	50.3	55.5	61.0	67.1	67.0	67.0	55.391

TABLE II. PRICES OF BUTTER-FAT, PRINTS, AND CUBES ON THE PORTLAND MARKET, IN CENTS A POUND AND IN PERCENT OF THE BUTTER-FAT PRICE

	Prices of cubes and prints compared with price of butter-fat							
	1915	1916	1917	1918	1915	1916	1917	1918
Butter-fat	c	c	c	c	%	%	%	%
Butter in prints	28.617	31.733	44.533	55.391	100.0	100.0	100.0	100.0
Butter in prints	29.416	32.325	42.853	53.191	102.7	101.2	96.1	96.1
Butter in cubes	26.950	29.150	39.658	48.950	94.1	91.8	89.5	88.3

*The term "profit" is used here instead of interest on the investment, because in some cases money has been set aside as a surplus instead of having been paid out as dividends. Although the Oregon Cooperative Law allows a maximum of eight percent on paid-up capital stock, a number of the most successful creameries are paying only six percent.

†i. e., assets greater than liabilities.

way and the figures are therefore more comparable than if they had been obtained by different methods. The averages of the Portland market quotations serve not only as a standard by which to measure the success or failure of a creamery but also as a basis on which to compare the creameries with each other.

Table II and Fig. 2 illustrate the fact that there has been a greater increase in the price of butter-fat than in the price of butter during the years 1915, 1916, 1917, and 1918.

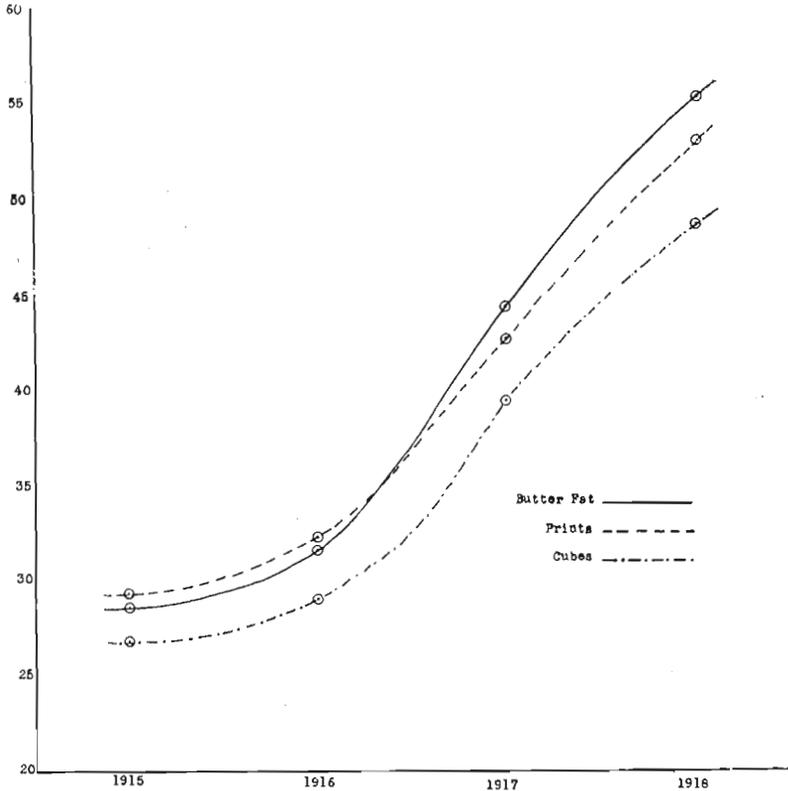


Fig. 2. PRICES OF BUTTER-FAT, CUBES, AND PRINTS, PORTLAND MARKET

ORGANIZATION AND HISTORY

Motives That Led to Organization. The principal motive leading to the organization of the farmers' creameries in Oregon has been the desire to create a better market for dairy products and to save for the producers the money which they felt was going to the centralizers as profit. The prices paid for butter-fat were in some cases lower than the prices paid for butter (Table II and Fig. 2) and it was held that the big creameries controlled the price of both butter and butter-fat. The farmers believed that the best way to compete with the centralizers

would be to organize cooperative creameries. Producers have frequently asserted that the big creameries were paying low prices and giving low tests and inaccurate weights, and as a consequence the farmers felt that the cooperative creamery would be the best remedy.

During the last few years there has been a greater increase in the price of butter-fat than in the price of butter in prints or in cubes. This is shown graphically in Fig. 2 and in Table II, based on averages of Portland market quotations. In 1915 prints were quoted on the Portland market at a price higher than that of butter-fat. Only two of the seven-teen creameries investigated were organized before 1913, and several have been in operation only five years or less (see Tables IV, V, VI, and VII), but it is difficult to determine to what extent the farmers' creameries have been responsible for the rise in the price of butter-fat over that of butter. Nevertheless, the fact is that this increase in the value of butter-fat took place during a period when more farmers' creameries were in operation than during previous years.

The widening of the difference between the price of butter-fat and butter has, on the other hand, made it more difficult for the small farmers' creameries to continue in business, because both the cost of operation and the difference between the price of butter-fat and of butter had to be paid by the overrun. It gave the smaller creameries a relatively smaller operating margin. This point is discussed further under "Marketing the Products" in this bulletin.

In a few cases creameries have been organized by interested parties not so much for the benefit of the farmers as for the purpose of getting rid of the plant of some bankrupt creamery, or to sell machinery. In one community a privately owned creamery failed and the local bank which had loaned money to it failed also. Those who held shares in the bank were anxious to dispose of the old creamery plant for as high a price as possible, and consequently agitation was started for a farmers' creamery. The creamery was organized without the essential preliminary steps, and after two years and a half of operation the enterprise failed with a loss of over \$2500.00 to members and patrons. (Creamery No. 9 in Table VIII.)

The demand for a creamery should come from those who unite to form the association, rather than from those who are more interested in dividends than in price of the products. With few exceptions the creameries investigated were organized by farmers, and in all of them most of the stock is held by the producers.

Preliminary Survey. The desire to organize for mutual benefit has in many cases not been carried out in a business-like manner. Enthusiasm has not always been tempered by sound business judgment, and as a result creameries have been organized where conditions did not justify them, resulting in loss instead of gain to the farmers. The most important preliminary step to organization is to determine the amount of business available, by canvassing the community and getting the farmers to pledge to the creamery the cream from a given number of cows.*

*The Dairy department of the Oregon Agricultural College recommends 500 cows as the minimum on which a creamery can begin operation with reasonable assurance of success.

This principle was followed in only nine of the seventeen creameries investigated. Eight creameries were organized without first finding out how many cows could be depended on for butter-fat. In several cases the organizers went ahead, apparently trusting to luck, thinking that they would get enough business to make the creamery a success. In some cases an estimate was made of the number of dairy cows in the community, but the farmers were not pledged to sell their cream to the farmers' creamery. Consequently when the creamery opened its doors it had less business than had been anticipated.

TABLE III. AUTHORIZED CAPITALIZATION, CAPITAL STOCK PAID IN, PAR VALUE OF SHARES BY CLASSES, AND PERCENT CREAMERIES IN EACH CLASS

Authorized capitalization	Percent
\$10,000	23.
6,000 to \$7,500	12.
5,000	41.
3,000 to 4,000	12.
1,000 to 1,500	12.
	<u>100.0</u>
<hr/>	
Capital stock sold and paid in	
\$10,000	6.
6,000 to \$7,500	24.0
4,000 to 6,000	17.5
3,000 to 4,000	17.5
2,000 to 3,000	17.5
Below \$2,000	17.5
	<u>100.0</u>
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Par value of shares	
\$50.00	11.8
25.00	53.0
10.00	23.4
5.00	11.8
	<u>100.0</u>

The average authorized capitalization of the creameries investigated is \$5,764.70, and the average par value of a share is \$21.76.

This table shows principally that \$5000 is the usual amount of authorized capital stock and that \$25.00 is the par value of a share in the majority of creameries.

Capitalization. The creameries investigated have raised their capital through the sale of stock and in a few cases assessments have subsequently been made on shares sold. Several creameries have increased their operating capital by setting aside a certain percentage of the net earnings each month for reserve fund.

The general opinion among creamery men is that it is advantageous to have the par value of shares at \$25.00 or even less (see Table III.) Some have started out with shares at \$100 but have later reduced the par value to \$25.00 because they have found it difficult to sell the \$100 shares. Many small producers are willing to buy one or two \$25.00 shares but do not feel able to invest \$100. It has been found possible, therefore, to get a larger membership and to sell more stock with shares at \$25.00 than at a higher figure.

TABLE IV. BUSINESS TRANSACTED BY TEN CREAMERIES DURING 1915

Creamery	Butter-fat	Overrun	Number of patrons	Average price of butter-fat	Below (—) or above (+) Portland f.o.b. price	Difference	Express on cream paid by	Charge to patrons for collecting cream	Years in operation	Miles to Portland
	lbs.	%		c						
1	556,491	23.7	767	29.000	+0.383	+\$2,181.36	Creamery	1c a lb.	20	80.1
2	508,032	24.2	X	31.420	+2.803	+14,240.13	Creamery	None	14	22.
3	340,703	25.8	338	30.533	+1.966	— 6,698.22	Creamery	None	3	100.
4	179,973	23.8	X	29.416	+0.799	— 1,437.98	Patrons	Patr'ns deliver	3	110.4
5	196,171	24.0*	375	28.180	—0.437	— 857.26	Patrons	Patr'ns deliver	1½	123.7
6	109,562	22.6	X	27.100	—1.517	— 676.00	None ship'd	None	3	30.
7	124,278	29.1	X	27.229	—1.388	— 1,724.97	None ship'd	2c a lb.	3	42.
8	56,323	24.2	85	28.250	—0.367	— 206.70	None ship'd	40c per 100 lbs.	2	33.
9	33,799	X	125	27.958	—0.659	— 552.24	Patrons	Patr'ns deliver	2½	97.7
10	39,937	20.7	X	26.691	—1.926	— 576.58	None ship'd	Patr'ns deliver	1½	155.

*Approximate.
X Figures not available.

For various reasons some creameries have bought up a considerable amount of their own stock and are now carrying it as "treasury stock." One of the creameries (No. 1 in Table VIII) purchased stock to the amount of \$1550, which is 7.4 percent of the total capital stock sold and 15.5 percent of the authorized capitalization. During the darker periods in the history of this creamery, a number of members became discouraged and offered to sell their shares considerably below par. The directors and the more optimistic members felt that it would increase the unity of the association to take in the stock of the discontented members, and some shares have also been bought of members who have moved out of the community.

Membership. Considerable effort is made by the creameries to keep the stock in the hands of producers of butter-fat. In most cases, shares are transferable only on the books of the creamery, upon surrender of the old certificates and after having first offered them for sale to the board of directors. When an old certificate is surrendered to the directors and offered for sale to them, they can purchase it and hold it as "treasury stock" or issue a new certificate in lieu of the old one to a new member. In a few cases the sale of stock is confined to producers of butter-fat. Table VIII shows the par value of a share and the total membership of ten representative creameries at the close of 1918.

Tables IV, V, VI, VII, and VIII are self explanatory. Each creamery is referred to by number to facilitate comparison of data given in one table with data in another.

BUSINESS METHODS

Methods of Determining the Price of Butter-fat. Three different methods of determining the price to be paid for butter-fat are used by the farmers' creameries in Oregon, and each method has its advantages and disadvantages.

First, a number of creameries pay the market price each day and pay the patrons by check at the beginning of the month. The advantage of this method lies in the fact that the creamery is able to quote the daily price to the patrons. But the disadvantage lies in the fact that it involves extra work to determine the price of each can of cream on the basis of the market quotations for that day, and the smaller creameries find it difficult to foretell where they will come out at the end of the month.

Second, a few creameries follow the daily market quotations but pay the patrons twice a month. The advantage of this method is that it generally suits the farmers better to get the cream check twice a month. Its greatest disadvantage lies in the amount of extra work necessary to total the cream accounts and issue checks every fifteen days. What remains over and above running expenses, depreciation, taxes, etc., is divided among the patrons on the basis of the amount of butter-fat sold to the creamery, at a ratio of two to one in favor of the members.

Third, the majority of the creameries investigated, including the largest and most successful ones, determine the price of butter at the end of the month on the basis of earnings. This really means that the

TABLE V. BUSINESS TRANACTED BY TEN CREAMERIES DURING 1916

Creamery	Butter-fat	Overrun	Number of patrons	Average price of butter-fat	Below (—) or above (+) Portland f.o.b. price	Difference*	Express on cream paid by	Charge to patrons for collecting cream	Years in operation	Miles to Portland
	lbs.	%		c						
1	522,602	23.8	591	31.733	+0.350	+\$1,934.11	Creamery	1c a lb.	21	80.1
2	537,017	21.4	825	33.500	+1.767	+10,372.59	Creamery	None	15	22.0
3	446,304	22.3	498	33.583	+1.850	+ 8,256.62	Creamery	None	4	100.0
4	144,271	23.9	120*	31.708	+0.025	+ 360.67	Patrons	Patr'ns deliver	4	110.4
5	238,313	24.0*	565	30.805	-0.928	- 2,211.54	Patrons	Patr'ns deliver	2½	123.7
6	116,518	29.6	150	29.300	-2.433	- 2,834.88	None ship'd	None	4	30.0
7	170,069	25.4	228	31.937	+0.204	+ 346.94	None ship'd	2c a lb.	4	42.0
8	55,628	24.5	89	32.200	+0.467	+ 259.73	None ship'd	40c per 100 lbs.	3	33.0
9	81,534	X	118	31.250	-0.483	- 394.05	Patrons	Patr'ns deliver	3½	97.7
10	39,943	20.3	80-125	29.591	-2.142	- 855.58	None ship'd	Patr'ns deliver	2½	155.0

*Approximate. X No record.

TABLE VI. BUSINESS TRANACTED BY TEN CREAMERIES DURING 1917

Creamery	Butter-fat	Overrun	Number of patrons	Average price of butter-fat	Below (—) or above (+) Portland f.o.b. price	Difference	Express on cream paid by	Charge to patrons for collecting cream	Years in operation	Miles to Portland
	lbs.	%		c						
1	408,054	23.3	731	44.660	-0.127	-\$ 518.23	Creamery	1c a lb.	22	80.1
2	441,234	22.6	X	45.500	-0.967	- 4,266.73	Creamery	None	16	22.0
3	445,508	26.4	485	45.883	-1.300	- 5,791.60	Creamery	None	5	100.0
4	138,547	25.6	X	45.208	-0.675	- 935.19	Patrons	Patr'ns deliver	5	110.4
5	264,324	24.0*	700	42.803	-1.730	- 4,572.80	Patrons	Patr'ns deliver	3½	123.7
11	180,235	26.4	X	44.762	-0.219	- 394.72	Creamery	None	1½	72.0
6	114,619	25.4	X	42.600	-1.933	- 2,215.58	None ship'd	Patr'ns deliver	5	30.0
7	183,762	27.6	X	45.104	-0.571	- 1,049.28	None ship'd	2c a lb.	5	42.0
8	68,891	23.7	108	44.200	-0.333	- 229.41	None ship'd	40c per 100 lbs.	4	33.0
10	37,654	22.2	X	42.885	-1.648	- 620.54	None ship'd	Patr'ns deliver	3½	155.0

*Approximate. X No record.

TABLE VII. BUSINESS TRANSACTED BY NINE CREAMERIES DURING 1918

Creamery	Butter-fat	Overrun	Number of patrons	Average price of butter-fat	Below (—) or above (+) Portland f.o.b. price	Difference	Express on cream paid by	Charge to patrons for collecting cream	Years in operation	Miles to Portland
	lbs.	%								
1	380,447	23.0	628	55.250	—0.141	—\$ 536.47	Creamery	1c a lb.	23	80.1
2	320,422	24.7	700*	56.700	—1.109	— 3,553.48	Creamery	No charge	17	22.0
4	94,753	24.0	90	54.683	—1.308	— 1,339.37	Patrons	None col'd.	6	110.4
5	220,968	24.0*	710	53.477	—1.914	— 4,229.32	Creamery	None col'd.	4½	123.7
6	110,626	26.7	150	52.606	—2.791	— 3,087.57	Patrons	None col'd.	6	30.6
7	168,961	27.1	X	54.759	—0.632	— 1,067.83	None ship'd	2c a lb.	6	42.0
8	76,188	23.9	129	55.060	—0.391	— 297.89	None ship'd	No charge	5	33.0
10	49,262	17.9	166*	53,991	—1.406	— 689.67	None ship'd	Pat'ns deliver	4½	155.0
11	196,288	25.4	201	55,158	—0.233	— 457.35	None ship'd	No charge	2½	72.0

*Approximate. X Figures not available.

TABLE VIII. CAPITALIZATION, VALUE OF PROPERTY, AND SURPLUS OF ELEVEN CREAMERIES AT THE CLOSE OF 1918.

Creamery	Authorized capital	Par value of shares	Capital stock sold	Interest on capital	Value of real estate, plant equipment	Surplus X	No. of members	Voting by share or by member	Miles to Portland
1	\$16,000	\$50.00	\$5,656	6	\$13,073.23	\$6,573.91	76	Member	80.1
2	1,500	16.00	1,500	10	11,564.39	13,476.33	96	Share	22.0
3	10,000	25.00	10,000	10	16,413.12	26,677.21	360	Member	100.0
4	5,000	25.00	4,225	8	16,150.00	4,580.60	126	Share	110.4
5	6,000	25.00	6,000	8	3,000.00*	1,148.76	123	Share	137.7
6	10,000	10.00	6,195	6	8,412.52	2,387.53	65	Member	30.6
7	5,000	16.00	2,656	8	3,800.00	3,931.18	106	Member	42.0
8	5,000	25.00	3,160	8	7,830.00	745.00	68	Share	33.0
9	5,000	25.00	3,475	None	2,500.00	—2,540.41**	70	Member	97.7
10	5,000	25.00	1,500	None	5,000.00	— 906.60**	86	Share	155.0
11	7,500	16.00	7,500	8	10,496.00	2,553.78	..	Member	72.0

*Machinery and fixtures only. The plant is rented at \$60.00 a month. **Deficit. X Includes the excess of assets over liabilities.

creamery receives the butter-fat, manufactures and sells the butter, deducts the cost of manufacture and selling, and returns the rest to the farmers in price for butter-fat. The greatest advantage of this method lies in its simplicity. The disadvantage lies in the fact that the manager is not able to quote at any time to prospective patrons exactly what will be the price of butter-fat during the month, while many farmers are anxious to know at the time exactly what they will receive for their products. In the case of creameries that have on the average paid more than the market price the disadvantage has been offset by the fact that they have been able to assure prospective patrons at least the market price and as much more as the business for the month would allow.

Methods of Gathering Cream. Five methods of gathering cream are used by the farmers' creameries. They are as follows:

1. Collected by the creamery, with charge to patrons. The disadvantage of this method is that it is relatively easy for a competing creamery that collects cream without charge to the farmer to get the farmer's patronage.

2. Collected by the creamery with no charge to patrons. The second method has an advantage over the first in competition, but adds considerably to the total cost of manufacturing a pound of butter. Of course this extra expense must be prorated over the entire output. The following table shows the cost of collecting cream, compared with other items of expense, of one of the larger Willamette Valley creameries. (Creamery No. 2 in Table VII.)

TABLE IX. ITEMIZED COST OF PRODUCING A POUND OF BUTTER

Items of cost	1916	1917	1918
Cream hauling	\$.01599	\$0.01968	\$0.02613
Office and plant employes	.00649	.00996	.01143
Salesman (includes hauling to Portland)	.00702	.00889	.01125
Supplies	.00426	.00612	.00308
Miscellaneous	.00284	.00175	.00224
Total	\$.03660	\$0.04640	\$0.05913

3. Delivered by the patrons. It is possible to use this method only when the creamery has a small and compact territory. If each farmer has to make a special trip to the creamery, the cost of delivering cream will be higher than if one wagon hauls the cream from several farms.

4. Shipped by express, the farmers' creamery paying the charges. This method contains the same element of unfairness as the second. In a cooperative creamery this means that the cream from a farm many miles away is shipped partly at the expense of those who live near at hand. But the largest farmers' creameries use this method and feel that they can well afford to count the cost of shipping cream as part of the general expense, because by gathering cream from outlying districts they are able to increase the volume of business considerably and benefit by the overrun, and thereby reduce the overhead expenses to a degree which amply justifies the hauling charge.

5. Shipped by express, the patrons paying the charges either directly or by deductions from the cream check. This has the disadvantage mentioned under the first method, because generally it does not require much

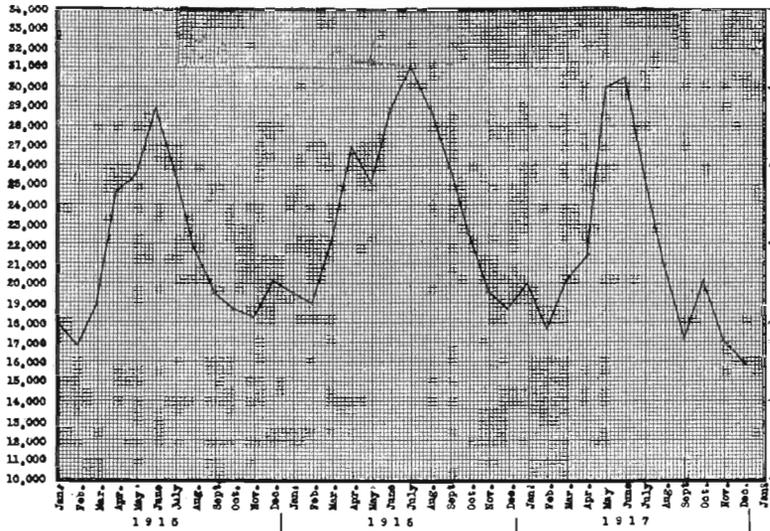


Fig. 3. AVERAGE MONTHLY BUSINESS OF FOUR WILLAMETTE VALLEY AND COAST REGION CREAMERIES, IN POUNDS OF BUTTER-FAT (Creameries 2, 3, 4, and 10 in Table VIII)

It will be noted in Fig. 3 that there is a wide difference between the amount of butter-fat handled during the summer and during the winter months. This is indicative of the seasonal variation in production.

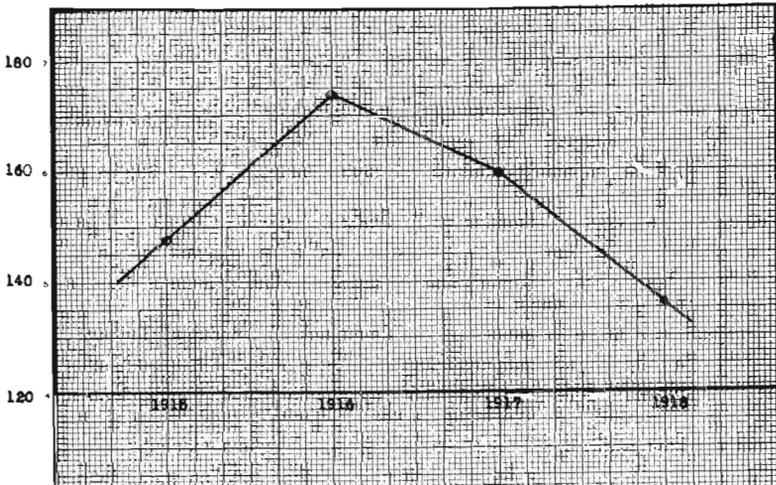


Fig. 4. POUNDS OF BUTTER-FAT HANDLED YEARLY, IN THOUSANDS

Average of seven representative creameries

Fig. 4 shows a general decline in the amount of butter-fat handled during the last two years. The chief reason for this decline, as given by creamery men and dairy experts, is that war feed prices have caused many dairymen to decrease their herds and others to go out of business altogether.

persuasion to get a farmer who is paying express on his cream to ship to a creamery where he does not have to pay it, especially when there is little difference in the price as is sometimes true when comparing large and small creameries.

Importance of Large Volume of Business. The volume of business is the most important factor in the success of a creamery. The most successful farmers' creameries in the State are those with the largest volume of business. They are able to run more economically than the smaller creameries, and can market their products to better advantage. Not all of the creameries have their records in such shape that one can determine accurately how much butter-fat they have handled over a period of years; but Tables IV to VIII inclusive show for the most important creameries the amount of butter-fat handled, butter made, overrun, prices paid, etc., for the years indicated. It will be noted in these tables that with relatively few exceptions the prices paid increase with the volume of business. Table X shows that the larger creameries have less capital invested per 1000 pounds of butter-fat than the smaller creameries, and have at the same time accumulated a larger surplus.

Competition is so severe in some localities that the small farmers' creameries find it difficult to survive. In one locality four country creameries, three of which are farmers' organizations, and one centralizer station are competing in the same territory. The smallest of the three farmers' creameries is certain to fail, for the expenditures have been greater than the gains for several months. Figure 1 shows that the creameries in the Willamette Valley are so numerous and so close together that severe competition is inevitable. In several cases the routes of one creamery overlap the routes of others, and increased cost of hauling cream is the result. The cost of hauling cream, based upon one pound of butter manufactured, in one of the larger Willamette Valley creameries (Creamery 2 in the tables) is as follows:

	1916	1917	1918
Pounds of butter manufactured	713,771	540,938	399,757
Cost of hauling cream per pound of butter	\$0.01599	\$0.01968	\$0.02713

The volume of business decreased 44 percent during this period while the cost of gathering cream increased 38 percent. The cost of hauling cream in 1918 was 44.5 percent of the total cost of manufacturing one pound of butter, as against 22.8 percent in 1916. This increased cost is not only due to a smaller volume of business but also to other factors such as higher wages, etc. The chief reason for the increase, however, is the fact that less cream was gathered from the routes in 1918 while the distance of hauling and the number of trips a week remained the same.

During the last three years there has been a decline in the volume of butter-fat handled by the various farmers' creameries. This is due principally to the generally recognized fact that the production of butter-fat has decreased on account of war feed prices. But it also appears to be due to competition.

With comparatively few exceptions the farmers' creameries have not made systematic efforts to increase the volume of business. The bigger creameries have sent field agents out among the farmers to solicit trade, while the smaller country creameries have made little effort along this

TABLE X. VOLUME OF BUSINESS IN POUNDS OF BUTTER-FAT AND COST OF MANUFACTURING ONE POUND OF BUTTER*

	Creamery No. 2		No. 1		No. 5**		No. 6		No. 11	
	Operating cost per		Operating cost per		Operating cost per		Operating cost per		Operating cost per	
	Butter-fat bought	pound of butter made								
	lbs.	c								
1915	508,032	3.42	179,973	2.7	196,171	4.4	109,562	4.5		
1916	587,017	3.66	178,708	2.9	238,313	3.8	116,518	4.7	62,190x	4.47
1917	441,234	4.64	133,547	3.9	264,324	3.9	114,619	5.1	180,235	4.61
1918	320,422	5.913	94,753	4.8	220,968	7.2	110,626	6.2	196,288	5.12

*See tables for further data.

**The costs given for creamery No. 5 are not absolutely accurate because the creamery handled a small amount of ice-cream and cheese along with its butter trade, and the costs have not been segregated.

†Began business in August, 1916.

*Only five creameries had figures on the cost of operation.

line. It is of course difficult for the smaller creameries to maintain field agents on account of the increased overhead expense which it would involve, but it appears that more work could be done along this line than has been done in the past without increasing the expense out of proportion to the advantage to be gained.

Table X shows that the cost of manufacturing one pound of butter in one creamery differs considerably from the cost in another. This is due partly to the fact that some creameries pay express charges and the cost of gathering cream while others do not. For additional facts regarding creameries 2, 4, 5, 6, and 11 attention is called to Tables IV, V, VI, VII.

In comparing the creameries in these tables the distance of each one from Portland should be considered. Since all comparisons of prices have been made on the basis of Portland f. o. b. quotations, the creameries that are located far from Portland have to pay higher express charges on butter than those that are near the central market. Had it not been for the country creameries it would have cost the farmers a good deal to ship their cream to Portland.

TABLE XI. RELATION OF VOLUME OF BUSINESS IN POUNDS OF BUTTER-FAT TO VALUE OF PLANT, STOCK SOLD, AND SURPLUS FOR YEAR 1918

Creamery	Butter-fat lbs.	Value of plant		Stock sold	Surplus (i)		Years in operation
		Value of plant*	per 1000 lbs. of butter-fat handled	per 1000 lbs. handled	per 1000 lbs.	per 1000 lbs.	
1	380,477	\$13,073	\$34.36	\$12.22	\$17.25	23.0	
2	320,422	11,564	36.09	4.68	42.06	17.0	
3	446,304††	9,171	20.54	22.42	59.77	4.0	
5	220,968	3,000**	13.58**	27.11	52.00	4.5	
7	168,961	3,800	22.49	15.68	23.27	6.0	
4	94,753	10,150	107.18	44.61	48.36	6.0	
6	110,626	8,412	76.05	56.01	21.58	6.0	
9	81,584	2,500‡	30.67	42.63	— 31.10‡	3.5	
8	76,188	7,830	102.88	40.73	9.79	5.0	
10	49,262	5,000	101.62	30.48	— 18.29‡	4.5	
Average	177,231	\$ 6,772	\$ 49.58	\$26.95	\$20.51	7.4	

*This includes value of plant, real estate, and equipment.

**This creamery owns the machinery, office fixtures, etc., but rents the building for \$60.00 a month.

†This creamery failed in 1917, and the figure represents what the directors ask for the plant.

‡Deficit.

††1916.

(i) Includes excess of assets over liabilities.

The principal point brought out in Table XI is that the larger creameries are able to operate on a smaller investment in proportion to the volume of business handled than the smaller creameries. It also shows that on the whole the larger creameries have a greater excess of assets over liabilities in proportion to the business transacted.

Marketing the Products. Aside from supplying the local trade, the butter manufactured by the farmers' creameries in Oregon is sold, principally in Portland. Portland market quotations are therefore the standard with which the creameries compare their prices. A considerable portion of the butter, however, is sold as cubes in Seattle and Tacoma. One of the largest Willamette Valley creameries (No. 1 in Table VII)

sells about two thirds of its total output to retail dealers as prints locally and in Portland, and one third in cubes in Seattle. It is difficult for the smaller creameries to sell their butter as prints. This is particularly true of creameries that are located far from Portland, because they cannot afford to maintain an efficient agent to look after their interests on the market. One would here naturally ask why the smaller creameries do not unite and put their own sales agent in Portland. Obviously this would be the natural solution of the selling problem. Attempts have been made to accomplish this much-to-be-desired result. Two of them at least should have been successful. Lack of loyalty on the part of the cooperating creameries, especially at seasons when the local market was good; sectional jealousies; lack of uniformity of the output of the member creameries; and inefficient management are some of the causes why attempts at cooperative selling have failed. There is no doubt that the very existence of many of the smaller farmers' creameries depends on the working out of a successful cooperative selling scheme. This is one of the problems for the future to solve. In the meantime, the only alternative left for the small creameries is to sell their butter as cubes to brokers, commission men, and wholesale dealers. Since the price paid to country creameries for cube butter is considerably lower than the price of butter-fat (see Fig. 2 and Table II) it is extremely difficult for the small creameries to compete with the centralizers and the larger independent creameries that have been able to develop their print trade with retail dealers.

The most successful farmers' creameries in the State have made particular effort to develop their print trade. The reason for this is obvious when we compare the price of cube and print butter on the Portland market for the last four years. (Attention is called to Table XII and Fig. 2.)

TABLE XII. AVERAGE PRICE OF A POUND OF BUTTER IN CUBES AND IN PRINTS*

	1915	1916	1917	1918
	c	c	c	c
Cubes	26.9	29.1	39.6	48.9
Prints	29.4	32.3	42.8	53.2
Difference in favor of prints	2.5	3.2	3.2	4.3

*Compiled from market quotations of the Morning Oregonian.

The large farmers' creameries have a decided advantage on the market over the smaller creameries. A large volume of business makes it possible for them to maintain salesmen and collectors, while other creameries are unable to do this on account of the overhead expense. A few small creameries located near Portland are able to sell their butter directly to retail dealers, but those that are located some distance from this market find it necessary to sell to wholesale men or through commission houses. Efforts have been made to overcome this disadvantage by cooperative selling. These efforts, however, have proved unsuccessful, and at the present time there is no central sales agency for Oregon farmers' creameries. But the difficulties encountered by the small farmers' creameries indicate the need of a central sales agency.

The chief point brought out in Figure 5 is that there is a greater difference between summer and winter production in the Coast Region than in the Willamette Valley. This is due to the fact that in the butter-producing coastal sections a large proportion of the dairymen practice summer dairying. They breed their cows to come fresh in March, thus taking advantage of the luxuriant summer pasture which insures a low cost of production in the moist coastal valleys.

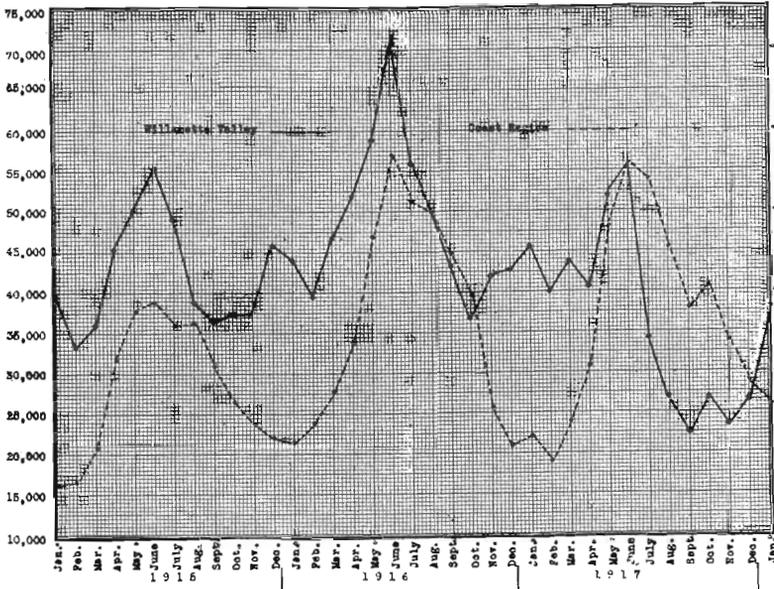


Fig. 5. VARIATION IN VOLUME OF BUSINESS IN POUNDS OF BUTTER-FAT
One creamery in the Willamette Valley and one in the Coast Region

IMPORTANCE OF MANAGEMENT IN THE SUCCESS OF FARMERS' CREAMERIES

Next to volume of business, efficient management is undoubtedly the most important factor in the success of farmers' creameries. It may be asserted that a large volume of business is the result of good management. This is true to some extent, but in several cases creameries have been organized where the amount of cream available was very limited, and consequently the creamery could not afford to hire an experienced manager.

An Efficient Manager Must Be Paid Well. Some farmers' organizations are "penny wise" and therefore endeavor to hire their managers for as low a salary as possible. They are sometimes unable to see that an experienced manager who has demonstrated his ability is worth more at a good salary than the inexperienced and poorly trained man at a low salary. A case in point is that of one of the smaller creameries investigated (No. 6 in tables). It was heavily in debt four years ago when a new manager and buttermaker took charge at a salary of

\$125.00 a month. During the last four years all debts have been paid and a substantial surplus accumulated, and the manager's salary has been raised to \$175.00. Notwithstanding this success, many members of the creamery association feel that the buttermaker-manager is getting too high a salary, and some of them would be quite willing to replace the man who has made the creamery a success by another manager at a lower salary. Fortunately for the creamery the number of "penny wise" farmers is not great enough to control the enterprise.

Leadership in Management. A successful manager of a farmers' creamery must have business ability, tact, and firmness. He must be able to manage the business and oftentimes the members as well. In a farmers' cooperative enterprise, factions are very apt to develop, and it requires tactful leadership to solve the difficulties.

Management of a Small Creamery. The experience of the farmers' creameries in Oregon would indicate that the small creamery should as far as possible be a one-man plant. That is, the buttermaker should also be manager. When the volume of business is small it is not practicable for the creamery to maintain a buttermaker at a good salary and also pay a manager. In the case of a small creamery where one of the stockholders is elected manager and, expected to do the work for little or no compensation, it seems unfair to him and to the business as well, for he cannot possibly devote sufficient time and energy to the work to make the enterprise successful. Creameries 4, 6, 7, and 8 in Table VII are operated by buttermakers who also perform the managerial duties. Economy requires that one man be both buttermaker and manager in a small plant. It is quite as necessary for a small creamery as for a large one to have a good buttermaker. Otherwise the quality of the butter will not be up to standard, and considerable loss is likely to be incurred on account of a low overrun. A good buttermaker will demand about the same salary whether he works in a small creamery or in a large one, and a small creamery can afford to pay him a good salary if he is also capable of managing the business. Where churning is done only three or four times a week, a buttermaker receiving \$150 or \$175 a month does not devote all of his time to work that requires such expensive labor, unless he is also manager. In several of the creameries investigated the buttermakers spend a large share of their time in such work as wrapping butter, splitting wood, nailing up boxes, etc., which could be done by cheaper labor. At the same time the business has been neglected, both among the farmers on the cream routes and on the market. Effort should be made to keep well-paid men in work that requires high-priced training and experience.

Importance of Overrun as a Factor in the Success of a Creamery. The importance of overrun* is often overlooked by poorly trained buttermakers and managers. In one small creamery neither the buttermaker nor the manager knew how to test the butter for moisture, and consequently the average monthly overrun ranged only from 8.9 to 19.5 percent while it should have been from 23 to 24 percent. Experts in the Dairy department of the Oregon Agricultural College state that it is possible to obtain an overrun of 24 percent and still keep the moisture content within the 16 percent limit prescribed by law.

*The "overrun" is the difference between the amount of butter-fat paid for and the butter manufactured.

TABLE XIII. LOSS INCURRED BY ONE CREAMERY FROM LOW OVERRUN

Year	Butter-fat bought	Butter manufactured	Overrun	Butter lost*	Average Portland cube price less 1c**	Net loss
	lbs.	lbs.	%	lbs.	c	
1915	39,937	48,227	20.7	988	25.9	\$255.89
1916	39,943	48,077	20.3	1478	28.1	415.32
1917	37,654	46,065	22.2	677	38.6	261.32
1918	49,262	58,056	17.9	3005	47.9	1439.39*

*This loss could have been avoided by keeping the overrun at 24 percent.

**One cent has been about the average cost of shipping one pound of cube butter from this creamery to Portland.

The creamery referred to in Table XIII had a deficit of \$900 at the beginning of 1919, and the loss due to a low overrun for the last four years amounts to \$2371.92. In other words had this loss been avoided the creamery would have had a surplus of \$1471.92, not considering interest. This possible surplus equals \$0.0088 per pound of butter-fat handled during the last four years.

Another creamery with an average monthly business of about 2700 pounds of butter-fat had lost \$1263 by the end of the fifth month of operation. The buttermaker in this creamery had manufactured cheese for several years, but was not thoroughly familiar with the manufacture of butter. Tables IV, V, VI, and VII show the average yearly overrun of several creameries investigated.

Importance of Good Bookkeeping. Inadequate bookkeeping is one of the most common weaknesses among the farmers' creameries in Oregon. In some cases it has been impossible to find out how much butter-fat has been handled for a period of one year or more, and few managers are able to tell by their books what has been the cost of operation. Of the seventeen creameries investigated, only five have systems of bookkeeping that meet the needs of the business.

Poor bookkeeping was to no small degree responsible for the total failure of three of the creameries investigated. In one creamery the members and the patrons lost over \$7164 and in another \$2550. Had the books been in such shape that the status of the business could have been determined at any time, this large loss might have been avoided. Those who were in charge of these creameries knew for some time before they were forced out of business that they were running behind, but they knew neither how much they were losing nor what factors were responsible for the loss. In some cases the board of directors took the manager's word for the status of the business, believing that it was running satisfactorily, until they suddenly found themselves bankrupt.

The books of a creamery should not only show total receipts and disbursements, but should also show the loss and gain of each department of the business. If the creamery is handling butter, eggs, and ice-cream, the books should show the loss and gain of each department. The records should also contain statistical data showing itemized cost of manufacturing, butter-fat handled, overrun, number of patrons, average prices paid, average prices received, etc. Such data are of great value in comparing the business of one month or year with that of a

corresponding period earlier in the history of the creamery. Very few creameries have such data available. Such information would lend itself well to publicity among the farmers, as far as the management finds it advisable to publish matters pertaining to the business of the creamery.

IMPORTANCE OF THE COOPERATIVE SPIRIT

One of the most noticeable points within the creamery associations investigated is the apparent unwillingness on the part of many farmers, including some members of the creameries, to stand by the association at the risk of a temporary loss to themselves. In several cases farmers have abandoned their own enterprise and have sold cream to the big creameries because the latter for the time being paid a little more a pound for butter-fat. One of the most notable creameries in the State (No. 1 in Table VII) went through a very difficult period early in its history. Competing creameries offered a higher price for a time and a number of the members became discouraged and offered to sell their stock. The majority of the members, however, stood by the creamery, and as a result it is today on a sound financial basis and is one of the largest and most successful farmers' creameries in Oregon.

Influence of Nationalities. In some cases the creameries have been seriously handicapped because of a division among the farmers along lines of nationality. Those of one nationality have felt that others have been trying to run the creamery for their own benefit, and the result has been that the creamery has lost a large number of patrons. One creamery in particular (No. 4 in Table VII) lost about one-third of its patrons during 1918 largely because of differences between nationalities.

Advantages of Compact Community. It appears to be less difficult to maintain unity among the farmers where the community is continuous and fairly compact than where the territory is divided into several communities scattered over a wide area. No. 8 in Table VII is the most successful of the small farmers' creameries in the State. The territory covered by this creamery is compact and the farmers cooperate perhaps more harmoniously than in any other small creamery in Oregon. In the summer of 1918 this creamery had the misfortune to lose its plant by fire, and it was necessary to send the cream to another creamery for a period of fifteen days. Efforts were made during that time by several creameries to obtain the patronage of the farmers in the locality, but without success, because the farmers had faith in the ultimate success of the creamery.

Example of Effective Effort to Promote the Cooperative Spirit. The association just referred to (No. 8 in Table VII) makes the annual meeting in January an occasion for a general gathering of all farmers in the community for the purpose of stimulating interest in the cooperative enterprise, and to facilitate good-will between farmers and business men. A banquet is prepared by the business men of the town, and stockholders, patrons, and other farmers are invited to attend. The State Dairy and Food Commissioner and a dairy expert from the Oregon Agricultural College are invited to address the gathering. The annual event brings the farmers closer together and closer to the business men in a spirit of cooperation and is contributing in no small measure to the success of the creamery.

SUMMARY AND CONCLUSIONS

Historical and statistical study has been made of seventeen farmers' creameries in Oregon to find out what the factors are that contribute to success or failure. Each creamery has been studied with regard to its relation to the conditions existing in the community in which it is located, and from the data thus obtained this bulletin has been prepared to cover the whole investigation. These creameries are located in the Willamette Valley and in the Coast Region, and cover the principal butter-producing sections of the State.

Reasons for Organizing. The principal motives that led to the organization of these creameries were a desire on the part of the farmers to create a better market for their products, and the belief that through organization they could compete successfully with the centralizers who they felt were controlling the price of both butter and butter-fat. It is difficult to determine to what extent farmers' creameries have been responsible for the high prices paid for butter-fat at present as compared with a few years ago, but it is reasonable to assume that the prices are now a good deal higher than they would have been had it not been for the farmers' creameries.

Misplaced Creameries. The majority of the creameries have been promoted without adequate preliminary steps, and as a result plants have been put up where the value of available business was not sufficient to justify the organization of a creamery. In a few cases this mistake has been largely responsible for failure.

Volume of Business. The investigation shows that volume of business is a most important factor in the success of a creamery. The average of ten creameries for the year 1918 was 177,231 pounds of butter-fat. Competition, lack of loyalty among the farmers to their own creamery, inefficient management, and decrease in production during the last few years appear to be the chief reasons for the small volume of business of several plants.

Importance of Overrun. The importance of the overrun has not been sufficiently emphasized by several of the creameries and considerable loss has been incurred on account of not keeping the overrun up to an average of 24 percent. (See Table XIII.)

Importance of Print Trade. The butter manufactured by Oregon farmers' creameries is marketed principally in Portland. The most successful creameries have made special effort to develop the print trade, for the price of prints is considerably higher than the price of cubes. (See Table II and Fig. 2.)

Sales Problem of the Small Creamery. The small creameries are at a great disadvantage on the market because their limited volume of business makes it impracticable for them to maintain a salesman to look after their interests. Though cooperative sales agencies have been tried and have failed, they will be tried again, in all probability, until the problem of cooperative selling has been solved.

The Manager. Next to volume of business, management appears to be the most important factor in the success of a creamery. From the nature of the business, the small farmers' creamery must be a one-man plant. That is, the buttermaker must also act as business manager.

He must be a "mixer" to attract and hold patronage, and must have a business training as well. It is not economical, therefore, to have a high-salaried buttermaker spend a good share of his time in work that could be done by cheaper labor while the managerial duties are neglected. A little extra help at the rough work around the plant would in most cases be sound economy.

Bookkeeping. Poor bookkeeping is one of the most common faults of the creameries. Of the seventeen creameries investigated only five have records that meet the needs of the business. In many cases the records are so inadequate that it has been impossible to determine the exact status of the business.

Cooperation and Leadership. It appears to be difficult for the farmers to stand together for a common purpose unless they can clearly see that they will reap immediate gain from it. In many cases farmers have discontinued patronizing their own creamery for the sake of one cent or a fraction of a cent more for a pound of butter-fat paid at the time by some large, privately owned creamery. Efforts have been made with considerable success to keep the farmers together and to foster interest in the creamery by holding a general gathering of all farmers in the community at the time of the stockholders' annual meeting. Good local leadership is highly important in keeping the farmers together. Division among the farmers along lines of nationality has in some cases been a serious handicap.

Causes of Failure. Several farmers' creameries in Oregon have failed; the following appear to be the factors that have contributed to the failure, arranged in the order of their importance. The converse of these are the factors that have contributed to success.

1. Small volume of business.
2. Inefficient management.
3. Severe competition.
4. Poor system of accounting.
5. Lack of loyalty among the farmers.
6. Insufficient capital.
7. Extension of too much credit.

Farmers' Creameries Have in General Been Successful. Although it is true that several country creameries in Oregon have failed during the last few years, investigation does not show that farmers' creameries have generally been unsuccessful. On the contrary, the experience of the seventeen cases studied would indicate that cooperative creameries have in the majority of instances been successful.

Importance of a Preliminary Survey. Cooperative creameries have been successful particularly in localities where careful preliminary surveys were made to determine the amount of business available and the attitude of the people toward cooperation. Such a survey made it possible to go ahead with organization with reasonable assurance that the creamery could successfully meet a real need in the community.