

STATE OF IOWA

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1915

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REPORT OF THE

DAIRY AND FOOD DEPARTMENT

FOR THE

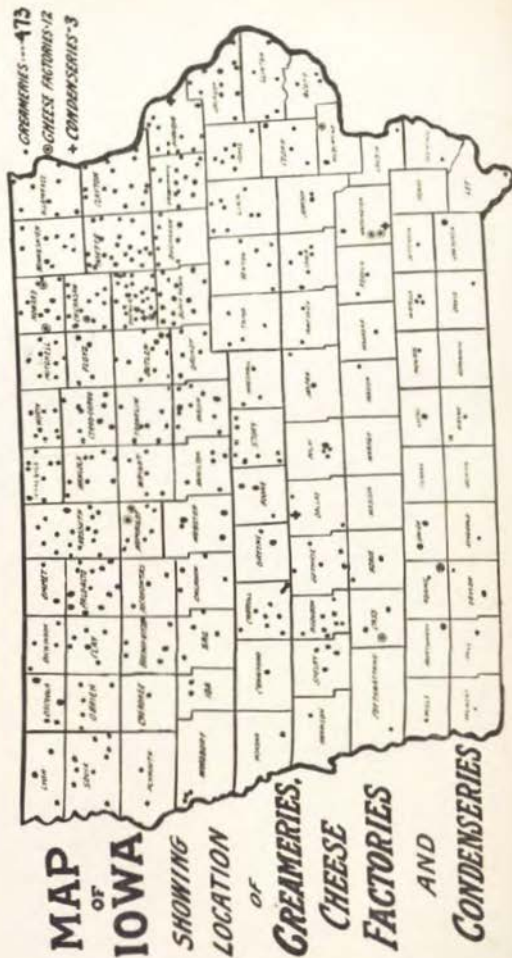
YEAR ENDED OCTOBER 31, 1915

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W. B. BARNEY  
STATE DAIRY AND FOOD COMMISSIONER

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1915



## LETTER OF TRANSMITTAL

*To His Excellency, G. W. CLARKE, Governor of Iowa:*

Sir: In compliance with the law, I have the honor to submit herewith the Twenty-ninth Annual Report of the Dairy and Food Commissioner.

W. B. BARNEY,  
*Dairy and Food Commissioner.*

Des Moines, November 15, 1915.



DAIRY AND FOOD COMMISSION.

Office	Name	Legal Residence	Birthplace	Compensation
Commissioner	Wm. B. Barney	Des Moines	Vermont	\$ 2.75
Deputy	B. C. Dill	Des Moines	Iowa	1.50
Chief Insp. Wts. & Meas.	Edward C. Lytton	Des Moines	Iowa	1.50
Insp. Wts. & Meas.	A. B. Briggs	Drumma	Missouri	1.50
Asst. Commissioner	E. J. Nolan	Des Moines	Iowa	1.50
Asst. Commissioner	Paul W. Crowley	Des Moines	Iowa	1.50
Asst. Commissioner	Guy M. Lambert	Newton	Iowa	1.50
Asst. Commissioner	H. W. Melroy	Red Oak	Iowa	1.50
Asst. Commissioner	J. J. Rose	Iowa Falls	Iowa	1.50
Asst. Commissioner	T. A. Clarke	West Bend	Iowa	1.50
Chief Chemist	E. L. Badham	Des Moines	Iowa	2.00
Asst. Chemist	Wm. H. Harrison	Des Moines	New York	1.50
Asst. Chemist	Geo. H. Chittick	Des Moines	Nebraska	1.50
Dairy Inspector	O. P. Thompson	Waterloo	Iowa	1.50
Dairy & Food Inspector	H. E. Furrer	Charles City	Iowa	1.50
Dairy & Food Inspector	L. E. Flickinger	Carroll	Iowa	1.50
Dairy & Food Inspector	L. P. Anderson	Spencer	Iowa	1.50
Dairy & Food Inspector	F. W. Stephenson	Cedar Rapids	Iowa	1.50
Food Inspector	Chris. Otisom	Iowa	Iowa	1.50
Food Inspector	M. E. Flynn	Burlington	Iowa	1.50
Food Inspector	S. O. Van De Bogart	Des Moines	Iowa	1.50
Food Inspector	J. W. Milne	Creston	Iowa	1.50
Food Inspector	J. S. Ritter	Cedar Rapids	Iowa	1.50
Food Inspector	C. S. Bogle	Des Moines	Iowa	1.50
Food Inspector	C. O. Franz	Des Moines	Iowa	1.50
Chief Clerk	A. W. Day	Des Moines	Iowa	1.50
City Milk Inspector & License Clerk	W. B. Barney, Jr.	Des Moines	Iowa	1.50
Stenographer	Olive A. Wason	Des Moines	Iowa	.50
Stenographer	Adelle McQuibben	Des Moines	Iowa	.50
Stenographer	Margie Garrity	Des Moines	Iowa	.50

## REPORT OF COMMISSIONER.

I shall deal as briefly as possible with part of the subjects taken up for, while this is primarily a report of the dairy work of the department, we think it well to take up a few other matters of general interest.

We are responsible for the enforcement of the following laws:

Dairy Law.

Pure Food Law.

Agricultural Seed Law.

Concentrated Feeding Stuffs Law.

Condimental Stock Food Law.

Paint and Linseed Oil Law.

Turpentine Law.

Weight and Measure Law.

Sanitary Law.

Cold Storage Law.

Commercial Fertilizer Law.

Calcium Carbide Law.

The sanitary law enacted by the 34th General Assembly might be termed part of our dairy law, as the regulations provided for in this act have helped materially to better the quality of our dairy products. Our last report showed that on account of the betterment in quality of our butter, several hundred thousand dollars more had been paid over to the producers last year, and we are showing a still further improvement this year. We have been doing more work among the producers and on the dairy farms than ever before and shall continue to give a good deal of attention to this line of work, as we believe it most important.

We are pleased to note the interest manifested in dairying in southern Iowa. By reference to a map shown on another page of this report you will notice that, out of the 473 creameries in the state less than one hundred are located in the southern third. There is no reason why they should not be as numerous in that section as in the northern part. In many ways southern Iowa has advantages over the northern section of the state. The winters

are several weeks shorter affording pasture earlier in the spring and later in the fall. Clover does as well and alfalfa is more easily grown, as the soil appears to be better adapted to this plant. Land values range from \$15 to \$50 per acre less than in the northern section. We have maintained that, in a measure, this is due to the fact that the dairy cow has been slow in coming into her own and the fertility has gone from the soil to a greater extent than it would have, had there been more cows and less grain farming. The rough, hilly sections of southern Iowa are better suited to dairying than to any other purpose.

It is said that the man who makes two blades of grass grow where but one grew before is a benefactor. Following out this line of reasoning, we believe that the man, who by the use of the pure bred dairy sire increases the production of the herd from 30 to 50 per cent, becomes as much of a benefactor as the producer of an increased crop of grain or grass.

To begin with, the success or failure in dairy work depends entirely on the old cow. She is the keystone to the entire superstructure. We know from statistics that the average cow that is milked upon the average farm of our country is not yielding a profit to the farmer. That is, if she were charged with her feed and labor and credited with her product she would show little, if any profit. Better cows and more intelligent feeding would change all this. The dairy work over a great share of our state is considered too much as a side line and does not receive the attention that it should for its proper development. It is our observation that sections of this state that have given the dairy business the attention it deserves have been rewarded in that the people have better homes, more home comforts, better barns, and other farm improvements, larger bank accounts, and general indications of prosperity are evident.

We know from statistics already at hand that during the last ten years there has been a better showing made in the number of dairy cows as compared with the total number of cattle upon the farms throughout the country and we believe this condition has been brought about and is a direct evidence of the work done and the enthusiasm developed by this department assisted by the Iowa State College at Ames and the State Dairy Association.

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 twenty-one 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.

When we consider that these averages cover an entire county and keep in mind that a great many farmers have made little or no effort at improvement, these figures indicate a wonderful development in certain communities. As an example of what is a possibility for Iowa, let us consider the output of butter in Bremer county, which amounts to 3,393,278 pounds annually, making an average of 7,854 pounds per square mile. If the entire state of Iowa produced butter at this rate, our annual yield would be 420,710,650 pounds, worth \$126,213,195.00 or more than four times our present output.

By the application of methods now in use by the best dairy-men it would be easy to add fifty pounds to the average production of each cow in Bremer county, and on that basis the state of Iowa would produce each year 532,601,636 pounds of butter worth at 30 cents a pound \$159,780,490.80. This situation is worthy of the attention of every farmer in Iowa, as it affords a means of producing wealth from land at such high values that other branches of agriculture cannot be carried on with profit, and this without reducing the fertility of the soil to any noticeable degree.

It has been demonstrated that success can be attained with grade cows using a pure bred dairy sire and grading up the herd, using the native cattle as a foundation. The scale and Babcock tester are of untold benefit to the farmer as a means of finding the good and poor producers and when once a poor producer is discovered, she should be sent to the block so that she may not reproduce her kind to be fed at a loss.

So much inquiry for grade cows of the dairy breeds has come to the department from the West and Southwest that we have offered our services as a sort of information bureau and now have a list of grades that are for sale in different parts of the state. One party has recently taken to New Mexico 75 or 100 head and will soon return for more, as one county alone expects to put in 400 to 500 head in the next six months. This affords a new source of revenue to our farmer, breeder and dairyman as it provides



a ready market for his surplus grades of the different dairy breeds at prices ranging from \$75 to \$125 per head for his cows, depending on their condition, breeding and quality.

We frequently find people who claim that the dairy business is going to be overdone, but there are several reasons why this may not happen. In the first place, there is just enough drudgery about it, so that many will not take it up on that account. We know that milk and dairy products are relatively cheaper than any other human food. (See another page in this report for "The Comparative Value of Milk as a Food.") The average citizen is not aware of this fact, and this department has been trying so far as possible to disseminate this knowledge. If the dairymen of this country had used one half of the money advertising their products that has been spent by the people putting cereal products on the market, the sale of dairy products would be increased 25 per cent. Dairying will never be overdone on the American farm.

Through the high class dairy cow, we have the best means of marketing the crops raised on high priced lands and at the same time, conserving the fertility of the soil, which is from now on going to be a most important factor especially in the older sections of our country. The following we clip from an address by Prof. C. Larsen, Brookings, S. D., before the 37th Annual Convention of the Iowa State Dairy Association:

The dairy cow as a worker is in a class by herself. She works day and night and year after year provided she is given the opportunity. Few of us stop to analyze the work of the dairy cow. When such is done her importance on the farm is perhaps more fully appreciated.

The average field crops such as hay, straw and grain, are bulky, heavy and expensive to market. Especially is this true for us who live in the central west and northwestern states a long distance from central markets, and for those whose farms are located a long distance from railroad stations. Many farmers are located from six to fifteen miles from a shipping point. Such farmers can not load and unload and make much more than one trip each day. To haul a load of hay to town will then cost the value of a day's wages of team and man. To haul one load of grain will cost about an equal sum.

When this grain is unloaded at the elevator it will cost about 1c per bushel or about \$1 per wagon load to get it into the railroad car.

When it is loaded, then there is the expense of transportation to the central market, which for this territory is usually Chicago. From Sioux City, Iowa, to Chicago it costs 17c per 100 pounds to market corn. The transportation charge on hay from Sioux City, Iowa, to Chicago is 20c per 100 pounds.

During the winter months a dairy cow will eat about three tons of hay and one ton of grain. To get this feed for one cow from the farm to Chicago market will then cost:

Hauling from farm to shipping point three loads of hay @ \$4. .... \$ 12.00  
Hauling from farm to shipping point one load of grain. .... 4.00

Transportation or freight on three tons of hay from shipping point to Chicago @ 20c per hundredweight .....	12.00
Transportation or freight on one ton of grain @ 17c per hundred-weight .....	2.40

Total cost of marketing feed for one cow per year.....\$ 21.40

This cost has been calculated on the basis of carload rate, and does not consider elevator charge, nor commission for handling and selling at central market place.

The work of the dairy cow is to reduce this marketing expense. A fairly good dairy cow should be able to change this feed into 200 pounds of butter. The cost of shipping 200 pounds of butter from Sioux City, Iowa, to Chicago is \$1.35. Adding \$2 for hauling it from farm to shipping point, the cost of marketing the 200 pounds of butter would therefore be about \$3.35. The cost of marketing the feed necessary to produce this butter as shown above is \$21.40. The dairy cow thus reduces the cost of marketing field crops from \$21.40 to \$3.35 or to about one-ninth as much.

In these days when there is so much discussion and even criticism of the high freight rates, farmers should permit the dairy cow to help solve this problem of high transportation.

## WORK OF THE LABORATORY.

Chemical analyses made in the laboratory of the department from November 1, 1914, to November 1, 1915:

Cream and milk .....	1152
Ice cream .....	236
Paints and linseed oils .....	44
Miscellaneous food products .....	265
Stock foods .....	58
Bacteriological analyses .....	217
Samples for Board of Control .....	33
Samples for Attorney General .....	67
Samples for Commission of Pharmacy .....	26
Samples for County Attorneys .....	15
Samples of milk analyzed in co-operation with U. S. Department of Chemistry .....	500
Total number of analyses .....	2713

## WORK FOR OTHER DEPARTMENTS.

The food law provides that the laboratory maintained in this department shall make such analyses for other departments as may be authorized by the Executive Council.

The Department of Justice, the Commission of Pharmacy, and Board of Control all avail themselves of this provision. Since the enactment of more drastic temperance legislation the work coming to us from the attorney general's office has increased so that with what we do for the other departments mentioned above, about one-third of the time of the chemists in this department is devoted to outside work and all of the expense of all kinds is borne

by this department. A conservative estimate makes this expense \$2,150 for outside work.

In addition to the above the dairy law provides for appointment by the commissioner of a milk inspector in all cities of 10,000 or more people. This requires an outlay of \$3,537.56, making a total of \$5,687.56, paid out of our appropriation for what may be termed work outside of the department.

The object of the legislature in putting the provision in the law requiring the laboratory in this department to do this outside work was to save expense of maintaining and equipping one or more additional state laboratories.

We call attention to this in order that it may be well understood.

#### WEIGHTS AND MEASURES.

Of the various laws enforced by this department, none has called for as much increased activity during the year as the weight and measure law.

As the public becomes better informed as to the provisions of this law there is an increasing demand for the scale inspection service rendered by the department.

When the weight and measure law first became effective many dealers reluctantly permitted the inspection of their scales. As the work has proceeded and the attention of the owners called to the inaccuracies of their scale equipment, the advantages of periodical inspection are readily seen. With the present keen competition in the sale of most staple commodities, scales or weights, which cause weighings to be inaccurate to the extent of three to five per cent, have an important bearing on the returns of a business.

Only recently the manager of a chain of cream buying stations strenuously objected to paying this scale inspection fee charged for the testing of a platform scale at one of these stations. Inspection and testing of the scale in question disclosed the fact that they over-weighed each can of cream he purchased about three-quarters of a pound. A correction of the scale resulted in the saving of seventy-five pounds of cream in each one hundred cans weighed. Upon being notified of the circumstances, this same manager requested the inspection of all of the scales at the various stations as soon as the inspectors were in the territory. He now considers the scale inspection fee cheap insurance against his losses.

Numerous other instances of like nature could be cited, but this

one will suffice to illustrate how periodical inspection of scales promotes fair dealing.

The accurate testing of scales necessitates trying out the instrument with loads of different weight. This requires the use of a large number of test weights for the purpose of determining whether or not the scale beams and levers respond with equal accuracy under a maximum and minimum load.

Many scale operators are inclined to believe that if a scale balances properly without a load and will weigh, say fifty or one hundred pounds accurately, that the scale needs no further attention. In general, nothing is farther from the truth, as is easily demonstrated every day by the inspectors. They frequently find scales which are accurate when loaded with one hundred pounds, but which may be from eighty to one hundred pounds "short" or "long" when a thousand pound load is weighed. The reasons for this are too technical to be included in this report, but practical demonstrations easily show why inspection by competent and experienced inspectors is necessary and why the inspectors are compelled to carry so many test weights to perform apparently simple inspections.

To handle the numerous heavy weights necessary to thoroughly test platform and wagon scales the department has purchased two automobile test cars. These cars which were especially constructed for the purpose are equipped to carry one thousand pounds of





test weights, which in addition to the weight of the ear gives sufficient range of weights to perform accurate testing of these large scales.

There has been such a demand for the service rendered by these ears during the past season that we are now considering the advisability of purchasing two more to meet the increased demand for this kind of work.

The fees charged for the inspection of scales have been given considerable attention by the department. Our recommendations to the last Legislature fairly adjust these fees so that scale owners bear a portion of the state's expense for the performance of this work. Fees charged for the inspection service are as follows:

"An inspection fee shall be charged the person owning or operating the scale so inspected in accordance with the following schedule, to-wit:

"Scales over 500 lbs. capacity up to and including 4,000 lbs. capacity, \$1.00 each.

"Scales over 4,000 lbs. capacity, up to and including 21,000 lbs. capacity, \$3.00 each.

"Scales over 21,000 lbs. capacity, not including railroad track scales, \$5.00 each.

"Railroad track scales, \$10.00 each.

"All hopper or automatic scales, \$2.00 each.

"No person shall be required to pay more than two inspection fees for any one scale in any one year. When such inspection shall be made upon the complaint of any person, other than the owner of the scale, and upon examination the scale is found by the inspector to be accurate for weighing, the inspection fee for such inspection shall be paid by the person making the complaint.

"When special request is made for an inspection of a scale the actual expenses of the same shall be paid by the owner of said scale, or the one making complaint as herein provided."

During the past year the department has tested and inspected over two thousand scales, for which service fees aggregating \$5,785.70 were collected.

No fee is charged for the testing and inspection of counter scales.

#### MARKET MILK INVESTIGATIONS.

During the summer season of this year, the department investigated the market milk supplies of our larger cities in a more comprehensive manner than we have been able to do heretofore.

The plans for this survey were formulated at a conference held early in the spring with the representatives of the United States Department of Agriculture. The Federal authorities being interested in shipments of milk to and from our state, installed temporary but complete chemical and bacteriological laboratories at Dubuque, Davenport, Keokuk and Omaha, Nebraska. The facilities of these laboratories were placed at our disposal enabling us to test the milk supply of these and neighboring cities both chemically and bacteriologically with practically no expense to the state.

The plan followed in the various cities varied to meet the local conditions, but in general the plans were substantially the same. The milk was sampled from the individual delivery wagons throughout a period of from three to five days; from two to five samples being taken each day from each dealer known or suspected to be selling milk of low quality.

Working in this manner, the average quality of the milk being sold by these dealers was soon known, making it possible to pass by those dealers whose product was well above the legal requirements and to devote our time and attention to those dealers whose product was of an inferior quality.

The quality of the milk from a sanitary standpoint was ascertained by determining the total number of bacteria and also the number of bacteria of the colon group present. As the name indicates, the colon bacteria are the organisms present in the colon, of man and other warm blooded animals. A determination of the number of these bacteria present indicates the degree of contamination with fecal matter and other forms of sewage. While the test for colon bacteria cannot be considered a test for bacteria causing typhoid fever, still at the same time the test is a valuable one as indicating the possible presence of the latter organism. Direct tests for typhoid bacteria were not made as at the present time it is not practicable to perform this test in the ordinary routine analysis of field work.

Sediment tests were made on all samples. This test shows the amount of insoluble dirt present in the milk, and, as the results of these tests can be demonstrated optically to the producers, the test is quite valuable in showing them the relative amount of foreign matter present in their milk.

In several instances it was found that the milk delivered by the producers to the milk plants or to retail milk dealers did not

comply with the legal requirements for butter fat and solids. In such cases the farms producing the sub-standard milk were visited by one of the inspectors shortly before the time of the morning or evening milking. Samples of the milk of each individual cow were taken separately and tested at the laboratory. A record of the production and butter fat tests of the individual cows was then turned over to the owner of the herd in order that the cows responsible for the low test milk could be eliminated. Such cows not only produce milk of low food value but frequently the value of their product does not equal the cost of the feed. In but one or two instances was it found that similar herd tests had been performed by the dairy themselves. However, the value of such tests was easily demonstrated to all, it being readily seen that by means of these herd tests the dairyman can tell which of his cows produce sub-standard milk, and by disposing of the cows whose milk is of low quality he can improve the quality of his output, at the same time lower the cost of production and increase the returns for his labor.

That there is a greater variation in the product of the individual cows in a community than is commonly supposed may be seen from the following data collected from the herd tests made at Dubuque and Davenport:

Limits of butter fat, solids and solids not fat found during herd tests at Dubuque and Davenport:

	% Fat		% Solids		% Solids Not Fat	
	Max.	Min.	Max.	Min.	Max.	Min.
Dubuque	8.8	1.9	17.8	10.7	10.06	7.23
Davenport	7.4	1.9	16.25	10.26	10.26	7.26

In addition to the examination of the samples each dairy farm selling milk was visited by a representative of this department, the farm and dairy equipment were scored and inspected to determine its sanitary condition. A record of these inspections together with a copy of these score-cards, is filed at our office and will be used for future reference in order to note improvements in equipment and methods at future inspections.

As soon as the work of inspection was completed the proprietors of the various dairies needing attention were invited to hearings held at the various cities. At these hearings the dairymen were

presented with the records of their herd tests and the tests made upon the samples of their milk supply, together with copy of the score card. The hearings were informal, affording the dairyman an opportunity to ask questions and to talk over his own problems with our representative and with those of the United States Department of Agriculture.

The department has also made a survey of the market milk supplies of Des Moines, Fort Dodge, Marshalltown, Ottumwa, Oskaloosa, Mason City, Waterloo and Grinnell, the samples from these cities being analyzed at our laboratory here. We expect to complete this survey by taking in the rest of our cities as soon as the season will again permit. To facilitate this work we have increased the equipment of our bacteriological laboratory and are now in a position to handle this work at our own laboratory.

While the purpose of these investigations was to determine the exact quality both as to food value and wholesomeness of the milk being sold and to assist the dairymen in improving the quality of their products, there were several cases of flagrant violations of the dairy law coming to our attention which necessitated prosecution. The department secured convictions in each case.

The summer's work is now being followed up to see that the recommendations made by the inspectors are being carried out. Recent reinspections made at Dubuque, Davenport and Keokuk show gratifying results. While it is true that not all the instructions have been carried out as we would have them, marked improvements were to be noticed.

The following table shows the average maximum and minimum bacterial counts obtained in the cities visited:

TABLE NO. 1—BACTERIA IN MILK.

Average Maximum and Minimum Bacterial Counts of Samples of milk obtained during the summer of 1915.

City	No. of Samples	Total Bacteria per Cubic Centimeter			Per cent with more than 10,000 colony bacteria per c. c.
		Maximum	Minimum	Average	
Dubuque	680	300,000,000	100,000*	600,000	16
Davenport	725	30,000,000	100,000*	400,000	0
Des Moines	647	36,000,000	72,000	4,000,000	49
Council Bluffs	107	6,150,000	5,000	1,000,000	27
Fort Dodge	14	1,000,000	1,000	170,000	0
Ottumwa	19	1,125,000	20,000	400,000	0
Oskaloosa	19	8,800,000	62,000	1,800,000	0
Grinnell	8	800,000	5,000	105,000	0
Mason City	12	4,000,000	11,000	1,000,000	16
Waterloo		20,500,000	7,000	2,750,000	8

\*Less than.



TABLE NO. 2—CITY MILK LICENSES.

Table showing the number of milk licenses issued to city milk dealers for each year from 1908 to 1915. In each case the year ends on July 4th.

Year	1908	1909	1910	1911	1912	1913	1914	1915
Number	1078	1149	1109	1210	1408	2008	2189	2280

City	Population	Inspectors
Boone	12,396	M. Healy, M. D.
Burlington	24,357	W. F. Schroeder
Cedar Rapids	40,590	Phil. Pray
Clinton	36,018	J. H. Spence, D. V. S.
Council Bluffs	31,308	G. G. Miller, D. V. S.
Des Moines	48,154	H. J. Hinch
Dew Moines	106,338	W. B. Barney, Jr.
Dubuque	41,904	P. J. Kennedy, D. V. S.
Fort Dodge	19,310	Francis Ludgate, M. D.
Keokuk	15,173	W. P. Sharlock, M. D.
Iowa City	12,942	C. S. Chase, M. D.
Mason City	13,867	C. A. Nourse, D. V. S.
Marshalltown	17,066	A. L. Wheeler, M. D.
Mountaine	15,629	C. J. Hackett, D. V. S.
Oskaloosa	36,411	A. L. Washburn, M. D.
Sioux City	26,492	H. W. Van der Veur
St. Charles	61,787	E. C. Page
Waterloo	32,968	W. W. Wyant

## COST OF MAINTAINING THE DEPARTMENT

It is rather hard to determine whether the legislature expects this department to be self supporting or not. The federal government appropriates many hundred thousands of dollars yearly for the enforcement of the dairy and food laws.

It has been our experience that the license feature or provision in many of the laws is most helpful in bettering conditions. This is especially true since the Commissioner has been given authority to withhold or revoke these licenses. With this feature in the law the person not complying is given notice or a letter of warning and very generally if his place is not sanitary he will clean up without further trouble. We believe if it were not for this feature in the sanitary law we would be obliged to make a third more prosecutions than we have and the same is substantially true of many of our other laws.

We have always been extremely careful and have only used this power where we felt it was absolutely unavoidable. It is certainly a "big stick" with which to line up the willful offender. It may easily be seen that the pecuniary gain coming to the state is not the only advantage to the people and the department on account of what may be termed, "the license clause" of the several laws we have for enforcement. Where we have been consulted as to the size of these fees or licenses we have always recommended a mod-

erate fee and the increased revenue coming to the department is partly due to the growth of the state but a greater share of the gain can be attributed to the rapid growth of the department in the last five years. Where we had the enforcement of five or six laws five years ago, we have twelve to look after at this time. None of these require so much attention as the weight and measure law. This additional work has required more help and necessarily greater expense. Therefore, we thought it wise to make a fee or license to cover at least part of this expense. Many appear to think the department should be made self supporting, yet we are some times criticized on account of this policy as many overlook the fact that this is the only way we have of deriving funds for maintenance of the Department. We wish it understood that the law requires that these fees be turned over to the State Treasury. The Department is supported by appropriations made by the Legislature.

As a servant of the commonwealth my desire is to submit this short summary of the matter for your consideration. It is my opinion that the policy we have been following out of assessing a moderate license fee and thereby relieving the tax payer of a portion of these burdens is sound and defensible even if it were not for the reasons set forth as to other advantages of this plan.

In 1909 the annual revenue for licenses, tax tags, etc., amounted to \$9,593.24; for 1910, the amount turned over to the state treasurer was \$17,435.30; for 1911, \$20,892.97; for 1912, \$22,049.02; for 1913, \$36,504.52; for 1914, \$43,842.40; and for the year ending Nov. 1, 1915, \$50,244.10.

As all fines under the various laws go into the county funds where cases are prosecuted, this should be added to the earnings. At a conservative estimate this amount would reach \$5,500.00, making a total of \$55,744.10.

From the above one is able to get something of an idea of the growth and increase in the work of the department in the last five years.

## THE BUTTER TRADEMARK.

During the last session of the legislature, the dairy law was amended so as to permit the use of a trade-mark for Iowa butter, the purpose of which was defined as "Insuring a higher standard of excellence and quality, a more uniform butter market, a higher market value for the butter manufactured in the state, and to



insure a more healthful product for consumption at home and abroad."

As a means of placing this trademark in effective operation, the law named an executive committee composed of the President of the Iowa State Dairy Association, the President of the Iowa State Buttermakers' Association, the Dean of the Division of Agriculture of the Iowa State College, the Professor of Dairying of the same institution, and the State Dairy and Food Commissioner. The function of the executive committee is to formulate rules and regulations for the use of the trade-mark.

Owing to the far reaching effect, which it is believed this trade-mark will have on Iowa butter, the Executive Committee has been compelled to proceed slowly and so far has devoted its time and attention to a study of the best methods of using the mark and to securing a copyright for the same from the United States Bureau of Patents.

Owing to the fact that many unforeseen technicalities have arisen in connection with the copyright of the mark, the Executive Committee has been unavoidably delayed. All difficulties now seem cleared away and the granting of the copyright is daily expected. As soon as it is received the committee can proceed with placing its use in operation.

There is an ever increasing demand for a uniform supply of first quality butter, produced under strict sanitary conditions. While there is probably more butter of this quality produced in Iowa than in any other state in the union, even the best grades of Iowa butter often sell at a price below its real value for the reason that the

products of the various creameries are not of uniform quality, and the purchaser has no means of readily differentiating between them. It is believed that the use of the trade-mark will adjust this difficulty for the reason that the packages bearing the mark will be distinctive and the mark significant of quality.

Much work will have to be done with the commission men to whom the butter is consigned as well as with the consumer. Their confidence in the product must be obtained; they must be educated to the fact that the product of the various creameries entitled to the use of the mark is of the same uniform good quality; that it is manufactured under rules and regulations necessitating a high standard for cleanliness, and that the creameries are periodically inspected by the state dairy inspectors. It is only by establishing such confidence in the trade-marked product that it will receive the increase in price which it will deserve.

A trade-mark common to a large number of creameries should be of inestimable value in advertising the product for the reason that any money expended for such purposes could be applied to the advertising of trade-marked butter as a whole and thereby secure for it an increased market value at a minimum cost to the individual creameries. Such advertising would be most effective when undertaken by a group of from seventy-five to one hundred or more creameries. It is this kind of advertising that has increased the sales of California oranges 71 per cent in ten years and has sold 130,000 tons of California raisins in one year.

While the trade-mark was designed primarily as a means of promoting the sale and increasing the market value of the whole-sale package, the same mark could be used for giving similar protection to prints packed for eastern shipment or designed for sale on the Iowa market.

For too long, the superior Iowa butter, the fine flavored, wholesome and healthful product of our best creameries has been compelled to compete in price with inferior products sold under fanciful but well advertised brands.

The Executive Committee in charge of the trade-mark whose work it is to complete the details for the plan must have the hearty co-operation and assistance of the creamerymen. It is only by this co-operation that the plan will meet with a full measure of success and the first quality Iowa product receive the recognition which it merits.



# FARM INSPECTION AND EDUCATIONAL WORK AMONG CREAM PRODUCERS.

The work of the dairy department of the Dairy and Food Commission was primarily to inspect and compel the operators of creameries, cheese factories, and dairies to maintain their premises in a sanitary condition.

Later on through the assistant commissioners, the buttermakers received information in regard to up-to-date methods of testing and handling of the cream for buttermaking. This idea led up to the policy of the department not only seeing to it that the sanitary regulations were complied with but that of rendering such assistance and advice to buttermakers and creamery managers, as would make for the building up of the dairy business and render, in that of the local institution more profitable.

This combination of police power and educational privilege has rendered the work of the department more effective and acceptable than would that of police power alone.

We believe that the conditions existing in the Iowa creamery today are very acceptable with the exception of a few old creameries which are rapidly being replaced with new and modern ones and, as a general rule, the buttermakers are experts in their line. But in spite of the fact that most of the creameries are in good condition and are operated by competent buttermakers, there is some butter in Iowa which is not what it should be.

Buttermakers, dairy instructors and officials are coming to realize that there is one step which has been sadly neglected in the system of dairy inspection and education. That step is farm inspection or that of giving personal attention to the producer of milk and cream. We do not know of a single instance where special attention has been given to going out among the patrons of a creamery, advising them as to the methods of handling milk and cream under their own particular farm conditions and various other phases of the production work, where this sort of work has not built up interest in dairying with the result that dairy herds have been improved and the owners have practiced more economical methods of feeding. We are convinced that this sort of work will do more than any other one thing towards building up dairy communities on a permanent basis.

We have, up to this time, been handicapped in doing this kind of work by the fact that territories covered by the assistant com-

missioners have been too large. Now, with the extra men recently put on the force, the territories have been sufficiently reduced so that part of their time can be devoted to farm inspection.

Each inspector will select a creamery or two in his territory at which to do this special work. In selecting the creamery the idea uppermost will be that of rendering service to the creamery in greatest need and so situated that large localities can observe the benefit to be derived by proper methods.

Before starting out to help develop a locality, we expect the inspector to secure the cooperation of the board of directors and the men directly in charge of the creamery and desire to have it understood that in rendering these services, he wants to work with the management and not for it.

Furthermore, any creamery securing this help will be expected to send butter regularly to the educational scoring contests held within the state. We believe that this is not unreasonable as the butter is paid for and in this way those in charge will have an unprejudiced opinion as to the quality of the butter and the progress that is being made at the creamery can be determined.

We wish to make it plain that although the assistant commissioners expect to be doing special work in a few localities their services are still available to any creamery which may desire to have farm inspection work done among their patrons.

## DAIRYING IN SOUTHERN IOWA.

The extent to which dairying is practiced in southeastern Iowa is, at times a question that calls forth more or less discussion. The attention of a traveler is usually attracted by the scarcity of dairy barns, the small number of special dairy cattle and the small number of cows in the herd. To a casual observer this seems sufficient evidence that dairying is carried on in a minor way in this tract of country, but closer observation reveals the fact that almost every community has one or two special dairymen who are alive to the advantages of a herd on expensive farm land and are pushing ahead in this particular line, even if community dairying is rare.

If a straight line were drawn across Iowa from the Mississippi river to the Missouri river, passing through Des Moines, it would be found that about 8,473,200 pounds of creamery butter are produced in southern Iowa in one year. Approximately ten per cent of all dairying is done south of this line.



This shows the marked contrast between northern and southern production. With the relatively small number of special dairymen found in the latter, one would naturally expect fewer creameries also. This scarcity of creameries is very marked, for the majority of those which exist are what are known as central plants, receiving the bulk of their raw material by rail. Technically speaking, very few local creameries exist. Ever so many are scattered over this territory but they have been abandoned. There is little doubt but that these abandoned creameries and what they represent form one of the greatest drawbacks to dairying in this section. Their general history is all very similar.

Several years ago these cooperative creameries were organized by professional and unscrupulous creamery promoters. Very often the building was located in a community that did not have enough cows to supply the necessary cream to run them. Dairying received an unhealthy impetus, for hundreds of farmers, awakened to the interests of dairying and better farming, lost money when the creameries were closed. They lost more than money and so did the State of Iowa, as each new creamery closed its doors.

There are several states in the Union now that have communities of Iowa farmers who left Iowa at that time, left heart sick and discouraged to try their luck in new land. More than one state inspector in Wyoming, Nebraska, Oklahoma has met his Waterloo in these Iowa communities in sister states when he tried to revive the interest in dairying. The memory of their losses stays with them and years of work will be needed to convince many of these men that dairying pays and that their land, dairying and success can be made compatible.

This department has always maintained a rigid policy in regard to the establishment of local plants. It has always held that it is imperative that the entire product of at least 600 to 800 good cows be pledged before a creamery should be built. We firmly believe that a local creamery is the greatest incentive for more and better dairying and is a strong influence for permanent agriculture. We are continually and persistently encouraging the milking of more cows in southern Iowa.

Through the local plants, local clubs, public schools, inspection, public meetings and the press we are ever encouraging more dairying. During the past two or three years the results were a little slow, but a growing and an enthusiastic confidence has been est-

ablished. At the present time there is every indication that a general awakening for real dairying is now on foot. We predict that southern Iowa has a brighter future for dairying than any other section in the middle west. Inspired by faith in the dairy cow and impressed by the increase of soil fertility and greater profits to be gained through her, the progressive farmer is looking for more cows. Southern Iowa is behind her aspirations with considerable enthusiasm and while pursuing a slower course, she gives promise of surer, saner creamery and dairy progress. This department is willing and anxious at all times to furnish whatever assistance it can to encourage dairying in this section. We are also prepared to furnish information in regard to local conditions and local markets.

As far as we can find out there is not a single drawback to dairying in southern Iowa. Good land at moderate prices, an abundance of all kinds of grain and forage crops, pasture and good water, all combined with excellent market facilities form a combination for ideal dairying that is seldom duplicated.

There seems to be a growing tendency on the part of some creameries to pay extremely high prices for butterfat. During the past summer these creameries have been paying not less than 1 cent per pound butterfat above Elgin quotations, plus the express. The express amounts to from one-half cent to two cents per pound butterfat. By the time the expense of manufacture is added the cost of the finished butter should be almost prohibitive considering the price received for the butter.

The quality of cream that is purchased under this method is usually from two to six days old before it reaches the creamery. By that time it is decidedly second grade and it is not reasonable to believe that first grade butter can be manufactured from it. Of course, certain amounts of this butter are put up in prints and sold to advantage, but competition and poor quality tend to keep the selling price at or below normal.

Creameries that follow the practice of paying the extreme for second grade cream and selling their butter at market prices generally fail in a short time, but if the creameries continue to flourish under their conditions it is evident that a loss has been sustained by someone else.

## ICE CREAM.

The weather conditions during the past year have been decidedly unfavorable for the ice cream manufacturers of the state. The up-to-date manufacturer in any line is continually striving to conduct his business in such a manner that on and off seasons will not effect materially his output. To be able to stimulate the demand for ice cream during cold weather to such an extent that the factory will not have to be operated at a loss has been the dream of the ice cream manufacturers since the manufacture of ice cream by the factory system began.

We are glad to state that this year it seems that the ice cream manufacturers have nearly accomplished this. Our reports from eighty-five per cent of the 420 factories show that during the past year 2,421,387 gallons of ice cream were manufactured. This is about 80,000 gallons less than last year of those reporting and goes to show that the ice cream in this state is manufactured by a class of men who are able to meet any and all adverse conditions. This year having been the coldest within the memory of the oldest residents of the state we believe the showing made in the ice cream output is very good.

From our reports we find that over 25 of the manufacturers keep no account and have no idea whatever of the amount of ice cream they manufacture and we must say that this is very poor policy. Any manufacturer who does not keep track of his output is very apt to be slack in his other accounts and methods. We wish to take this opportunity of urging every ice cream manufacturer to keep strict account of his output and costs of production, for by so doing we believe that a number of ice cream men can put their business on a more profitable basis. We have been continually urging upon the ice cream men the importance of the butterfat basis in buying their sweet cream. We have spoken of this so often that we hesitate to mention it again and yet this matter is of sufficient importance that it should only become an obsolete topic in Iowa when every dealer in cream and milk for manufacturing or distribution purposes buys these products on a butter fat basis. When we started to urge the buying of cream for ice cream making purposes on the butter fat basis, some considered the producers of sweet cream too independent to consent to having their cream bought by this method. Our first reports indicated about sixty to seventy per cent of the manufacturers

purchased their cream by the gallon. Last year about fifty per cent used this method, while this year we find that only forty per cent of those reporting are still buying their sweet cream on the gallon basis. Of those reporting as not knowing the amount of ice cream manufactured the past year, sixty-six per cent were buying by the gallon. To our minds this goes to corroborate the statement made in the second paragraph of our report that those who do not keep proper accounts of their business, are apt to be slack in their other methods. To illustrate, the saving to the man buying his cream on the butter fat basis, the average price paid for butter fat was 32.3c up to 5.8c over the New York market. In some instances where cream was bought by the gallon, the cream could still have complied with the state standard and the buyer have been paying from 91c to \$1.05 per pound and in any number of individual cases manufacturers paid 43c and 46c per pound for butter fat. We hope that in time to come the system of buying cream by the gallon will be a thing of the past for we are thoroughly convinced that paying for it on the butter fat basis is the only fair method both for the producer and consumer. It eliminates more controversy between buyer and seller thus making for a greater satisfaction to all concerned.

We are pleased to note that there has been fewer prosecutions for violations of the ice cream standard than there was the year preceding. We attribute this to several reasons, the principal one being that we believe the ice cream makers are coming to realize that the standard and complying with the same works to their own advantage. There has also been an abundance of sweet cream during the past year (very few reporting any difficulty in securing their supply) and with the demand for ice cream not up to the preceding year, there has been less temptation to make up their product with a deficiency of butter fat and again the knowledge of the fact that there is a standard for ice cream in this state which has been upheld by the supreme court of Iowa has carried more reverence for it by deliberate violators.

We believe it is a credit to the department to be able to report that from nearly every ice cream manufacturer reports come that the condition of the returned empty containers is much improved and that the securing of this has been done without the necessity of a single prosecution. We also believe that the same is true of the conditions in the ice cream factory.



## THE INDEPENDENT BUYER.

During the past year the system of buying cream through agents has changed somewhat. Formerly these agents were simply commission agents or salaried buyers, but at present a large portion of the cream that is being bought in stations is purchased outright by the agent. He has become what is known as an independent buyer. The cream is sold to the highest bidder. In other words these cream agents are now cream speculators. There is no doubt but these speculators are partly responsible for the extremely high prices being offered for cream.

Perhaps such a plan has its advantage to the creameries but the manner in which it is being conducted certainly is detrimental to the creamery industry as a whole. A great amount of dissatisfaction is aroused because one creamery will be compelled to send out several different quotations for butterfat. The direct shipper, the commission buyer, the salaried buyer and the independent buyer each receive a different price quotation. When these differences become generally known dissatisfaction exists and distrust is a natural result.

Our attention was called a short time ago to two letters that were sent out to a certain community each letter bearing the same date and signed by the same man. One letter was to the commission buyer advising him that the butter market was weak and that he must get his price down at once. The other letter was sent direct to a farmer (who happened to be a patron of the station buyer). The farmer was advised that the butter market was stronger and that he could receive the benefit of the highest price if he would ship his cream direct. When these two letters were compared, suspicion of the creamery methods were aroused. The station closed its doors and the farmer is now churning butter. The dairy industry has received a set back in this particular section.

This department has been called upon many times to make investigations of this matter. Any number of cans of cream have been weighed and sampled, and the samples tested by our chemists. Now there has usually been more or less difference between our results and those of the paying creamery.

It has always been argued that in testing cream a reasonable variation must be allowed and that two testers working in different places under different conditions and using different equipment

will seldom check out exactly. This little chance for a difference has been talked about for so long a time that it is now generally accepted as a fact. If this variation exists, and we question that it should, it seems unreasonable to us that the difference should always be in favor of the buyer.

In checking over our records we fail to find a case of where the difference ever favored the seller. This department has always been willing to recognize a reasonable tolerance in all cases, but on several occasions prosecutions have been made against testers for reading the tests too low. Only a few weeks ago 15 cans of cream were weighed and sampled by one of our inspectors. The samples were tested and the results were compared with those returned by the creamery. Our results showed 319 pounds of butterfat while the creamery paid for only 296 pounds. The loss sustained by the shipper was 23 pounds of butterfat which at 28.5 cents amounted to \$6.56.

This department feels that the policy of paying extremely high prices for butterfat encourages the under reading of tests and should be discouraged. We mention this fact at this time with the idea of discouraging the practice, because it is a detriment to the dairy industry. We are ready to assist any shipper who is experiencing similar difficulties.

In checking up the different cream stations we have observed that the greatest loss in butterfat is found in the independent buyer stations. Frankly we do not understand why this should be so.

This department is interested in doing all that it can to encourage dairying and is not prejudiced in any way toward any one system. But when one system is being practiced in a way that does not appear to be legitimate, we will surely use our influence to have the system changed.

## MILK AS A FOOD.

The value of milk as a food is not appreciated as it should be. Many adults consider it a beverage rather than an easily digestible and highly nutritious article of food. They do not realize that a glass of milk contains approximately the same amount of nutritive material as a good slice of beef, a quarter of a loaf of bread, or two large eggs.

It has been truthfully stated that we live not upon what we eat, but upon what we digest. Milk is more completely digested



and utilized than any other article of food. Far more easily digested than such animal foods as meat, fish, etc., in place of which milk and milk products find their logical place in the diet.

Not only is milk more readily and completely digested, but the same amount of nutritive material can be obtained for less money in milk than in other animal foods.

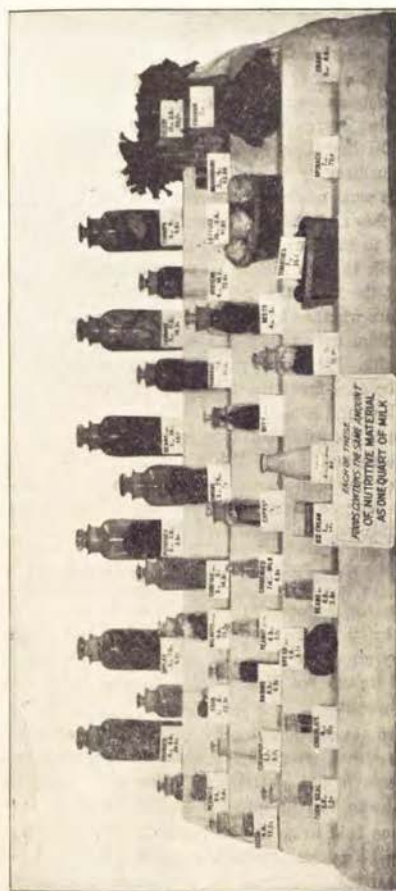
The table below shows the relative values of a number of common foods as compared with milk. In the quantities stated in first column each contains the same amount of nutritive material as one quart of milk.

TABLE NO. 3—RELATIVE VALUE FOODS.

	Weight		Approximate Weight Gms.	Cost per pound, cents	Total cost cents
	lbs.	oz.			
Milk, whole	1	2.36	975	---	8.
Cheese, full cream	---	5.6	160	22	7.7
Condensed milk, sweetened	1	4.53	210	12.3	12.1
Eggs	1	.92	470	35 (doz.)	22.3
Beef, round	1	11.85	225	20	14.2
Codfish, salt	2	.48	920	7	14.2
Orbits	3	4.8	1500	---	---
Oysters	4	14.21	2217	15	15.2
Corrmeal	---	6.43	180	3	1.2
Bread, white	---	8.8	220	7.5	4.1
Beans, dry	---	6.9	195	6.5	2.30
Beans, canned, baked	1	2	600	10	11.9
Beans, string	3	14	1700	9	25
Potatoes	2	3.79	1010	14	3.40
Beets	4	2	1870	---	---
Cabbage	5	11.8	2000	2.5	15.3
Celery	10	2.4	4000	5	50.7
Lettuce	10	2.4	4000	10	101.
Spinach	7	---	3175	10	70.
Squash	7	---	3175	---	---
Tomatoes	7	---	3175	5	25.
Turnips	6	8	2495	1	2.5
Onions	3	7.3	1575	2	7.
Mushrooms	3	8.1	1650	75	300.
Raisins	---	8.3	225	12	6.3
Oranges	4	6.4	1995	6	26.4
Bananas	2	8.6	1150	6	15.
Apples	3	7.5	1575	3.5	5.2
Walnuts, "English"	---	8.45	240	25	13.5
Peanuts, whole	---	5.95	179	15	5.6
Peanut butter	---	4.50	130	18	5.1
Cocoanut, prepared	---	2.7	105	25	5.7
Chocolate	---	4	115	40	16.
Cocoa	---	4.9	140	40	12.2

The above table is based on 1 quart of milk of (2.167 lbs.) equals 600 calories.

The cereal products are, in the raw state, the cheapest food stuffs we can buy, but many of the products manufactured from these cereals would not be so generally used were their cost compared with milk. Consider, for example, the widely advertised prepared breakfast foods. It takes from six to nine large helpings (approximately one package) of many of these prepared foods



to contain as much nourishment as one quart of milk or three quarters of a pint of cream with which they are served at the breakfast table. The quart of milk costs the housewife about eight cents, whereas the breakfast food requires the expenditure of from ten to twenty cents for a package. While the raw cereal products such as cornmeal, flour, etc., are indeed cheap foods for furnishing energy they do not contain appreciable amounts of protein. On the other hand, more than twenty-five per cent of the food constituents of whole milk consists of this necessary material in its most useful form—casein. Protein the most costly of food materials and the one generally lacking in inexpensive foods is required to build up our body structure.

Skim milk is even richer in protein than whole milk for the reason that the fat is the only food material removed by the skimming of milk whether by means of the separator or by the gravity method. Skim milk possesses about one-half the total food value of whole milk. More of it should be used in the home.

It will be seen from the foregoing table that cheese at twenty-two cents a pound is as cheap a food as milk at eight cents a quart. The public is becoming better acquainted as to the economy of the use of cheese and cheese dishes and as a result, the per capita consumption has been increased to about three and one-half to four pounds a year; a figure still too low in comparison with the amounts of meat consumed.

#### USE OF HYPOCHLORITE OF LIME.

The value of hypochlorites of various forms has long been appreciated by the practitioners of medicine and surgery and also by sanitary engineers, but it is only during the past two or three years that its use has been applied for the purpose of sterilizing dairy equipment.

While we cannot consider hypochlorites as efficient or as economical as steam, we realize there are often conditions where the use of steam is not practicable. For such conditions solutions of hypochlorite will be found a good substitute.

A solution said to be hypochlorite of soda prepared electrolytically, may be purchased on the market. The packages of this product bear full directions for its dilution and use. A product of high antiseptic properties may, however, be prepared at a much lower cost from chloride of lime which is obtainable from any

druggist. This solution is made by dissolving a heaping teaspoonful of fresh chloride of lime, more properly chlorinated lime, to one gallon of water. The water should be cold, or not hotter than the hand can bear.

Chloride of lime may be purchased in sealed cans (do not purchase in bulk) for ten cents a pound. A one pound can will make about 125 gallons of the solution. Chloride of lime should contain so much chlorine that it cannot be held near the face without irritating the eyes. It should be fresh and should the entire contents of the package not be dissolved at one time, the remainder should be transferred to a tight fruit jar and kept there until used, as it becomes valueless if kept in a moist place or in the open air. For this reason, chloride of lime should be purchased in small (one-half pound) cans.

On the dairy farm the solution, prepared as above, should be placed in a tank in which the utensils should be rinsed, after having first been rinsed with cold water, and then washed with a brush in hot alkaline solution (Wyandotte or Sal-Soda). After the utensils have been rinsed in chloride of lime solution, they should be inverted to drain, they must not be wiped. Where strainer cloths are used they may be washed after milking and then kept in a chloride of lime solution until again required.

Chloride of lime solution is also useful for wetting the cloth with which the hind quarters, tail, flanks and udders are wiped before milking and for spraying the barn floors and walls.

If milk and cream cans are rinsed with chloride of lime solution immediately before filling, the results will be surprising. Experiments have been conducted which show that the chloride of lime solution has little or no action upon the cans. Cans in which the solution has stood five days showed no evidence of any corrosion or discoloration.

Chloride of lime solution may be used freely on the farm and in the creamery as a general antiseptic and disinfectant for the disinfection of closets, manure pits, sinks, grease traps, barrels, buckets, tanks, etc. It is highly efficient as a germicide agent.

Chloride of lime in dilute solution is harmless. It is used in most of our cities for the purification of the water supply.

#### IOWA CHEESE FACTORIES.

Iowa cheese factories during the year ending June 30, 1915, furnished a market for 6,747,344 lbs. of milk, the figures being received from eleven plants. From this milk was made 704,463 lbs. of



cheese having a wholesale value of \$77,097.73. This shows quite a perceptible increase in the amount made over the previous year, but the total amount produced is only a small per cent of that consumed within the state. We find about half of the factories are located in the south half of the state, and in our opinion it would be easier to develop the cheese industry in the southern counties than farther north where the manufacture of butter has already received attention on such a large scale. In our work in the southern part of the state, we may be able to assist in the location of cheese factories in communities where a sufficient amount of butter fat could not be obtained to make the operation of a creamery profitable.

#### CONDENSED MILK FACTORIES.

The manufacture of condensed milk has never claimed the attention of Iowa dairymen in anything like a general way, but we find within the borders of the state three factories that are producing evaporated milk. The three plants received, for the year ending June 30, 1915, 16,886,400 lbs. of milk which, if entirely consumed within the state would supply only a small percentage of the local demand. The state of Iowa should not only supply the home market with condensed milk, but should market annually many millions of pounds of evaporated milk in other states. As land advances in value, we expect to see many condenseries established, but we do not believe the time is at hand when this work can be begun.

#### CONDITION OF BUTTER MARKET.

The table of butter prices given in connection herewith shows that the average price for creamery butter for the year ending October 1, 1915, is somewhat higher than for the previous year, although the market for the past three months has shown a decided falling off as compared with the same months of 1914. This is accounted for to some degree by the unusual production of butter throughout the summer which has tended to overstock the markets. Excessive rainfall, while a serious damage to grain crops, produced an abundance of fine pasture during the months of July, August and September at which season dry weather usually reduces the output of butter to quite a degree. The increase referred to does not show in the present report for the reason that the figures received from the creameries cover the year ending June 30th, while a market quotation is given for a year ending three months

later. A study of the New York quotations for extra butter shows that the lowest price quoted was 25 cents while the top price was 36½ cents showing quite a range of prices for the same grade. With the abundance of coarse feed produced the past season the dairymen of the state are well prepared to winter dairy cows in good condition and indications are that the market will be well supplied with butter for several months to come. Lower prices always tend toward an increase in consumption and this fact will insure a reasonable compensation for every pound of butter that can be produced which is good enough to be sold as table butter.

The variation in prices quoted for the best butter and under-grades is quite pronounced and only emphasizes the necessity for producers waking up to the fact that there is little demand for butter of poor quality. The number of creameries that are buying raw material on grade is on the increase. The Iowa creameries report having manufactured 89,834,005 lbs. of butter for the year ending June 30, 1915, for which they received \$25,559,714.60. This amount is somewhat lower than that produced in the twelve months previous which is partially accounted for by the extremely dry weather prevailing in the last half of the year 1914.

TABLE NO. 4—PRICE OF BUTTER.

SHOWING AVERAGE MONTHLY PRICE, IN CENTS AND FRACTIONS THEREOF, OF EXTRA CREAMERY BUTTER IN NEW YORK MARKET, THE PAST TWELVE YEARS, EACH YEAR ENDING WITH OCTOBER 1.

Month	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915
October	21.00	23.50	21.84	26.11	29.15	26.73	29.64	29.96	30.44	31.29	31.46	31.69
November	22.17	24.81	23.50	27.42	27.25	29.27	30.95	31.17	33.90	31.46	32.82	31.79
December	23.22	26.86	22.10	21.64	28.87	31.21	34.90	29.60	36.79	27.27	30.12	33.96
January	22.50	29.10	26.50	30.80	30.69	31.52	33.44	30.24	36.10	25.18	32.40	32.50
February	25.17	32.18	27.00	32.54	32.35	30.66	29.64	36.11	31.14	30.20	29.51	32.31
March	24.28	28.47	27.00	30.61	28.49	29.52	32.62	32.31	30.60	26.77	27.74	29.76
April	22.54	30.36	21.86	30.62	28.55	27.08	31.15	21.11	32.35	34.09	25.40	30.77
May	20.12	23.71	30.17	25.01	32.62	30.58	28.42	31.37	30.42	28.61	30.16	28.68
June	18.02	20.49	30.22	23.60	32.99	27.81	27.97	24.60	27.31	27.81	27.25	28.73
July	17.07	20.56	30.02	24.81	32.43	29.23	28.31	25.19	27.12	27.02	27.90	27.02
August	17.58	21.11	32.57	24.68	32.62	27.15	29.28	30.31	36.63	27.96	30.43	25.92
September	19.47	20.68	34.05	27.81	32.86	30.15	30.80	30.55	30.70	31.97	31.45	29.63
Av. Value per lb. per year	21.45	24.80	23.40	27.55	27.02	28.48	30.60	30.60	31.21	31.41	29.97	30.29



TABLE NO. 5—CREAMERY BUSINESS.

SHOWING POUNDS OF MILK AND CREAM RECEIVED, POUNDS OF BUTTER MADE AND DISPOSITION OF SAME, SO FAR AS REPORTED.

Counties	Number reporting	Pounds of milk received	Pounds of cream received	Pounds of butter manufactured	Pounds sold to patrons	Pounds sold in Iowa	Pounds sold outside the state
Adair	1	502,180	1,001,000	628,914	28,696	21,448	596,736
Adams	1	308,114	108,197	6,128	23,221	25,748	7,548
Allamakee	1	7,195,684	1,974,043	47,975	127,471	1,706,502	
Appanoose	1	76,455	2,701,198	1,066,121	30,852	30,852	565,114
Ashtaboo	1	74,792	1,500,811	455,038	9,654	102,512	561,741
Benton	1	32,602,606	4,528,060	2,000,235	143,000	896,321	1,302,329
Black Hawk	13	302,000	943,820	304,619	11,729	118,750	174,390
Bloom	3	50,454,162	958,896	2,877,333	23,379	2,472,691	
Bremer	1	18,701,201	2,571,447	1,400,705	112,787	116,493	1,177,706
Buchanan	1	60,133	1,804,021	659,285	20,000	10,150	301,271
Buena Vista	1	8,372,378	3,591,128	1,011,603	121,057	1,109,662	
Butler	4	12,129	1,380,154	23,191	49,086	37,175	12,911
Calhoun	4	511,490	1,051,119	680,000	27,023	102,229	501,552
Carroll	1	1,704,927	577,650	750	21,043	680,388	
Cass	1	1,914,617	649,828	22,879	256,590	271,290	
Cedar	1	1,597,308	8,229,501	1,740,033	60,320	1,000,201	
Cerro Gordo	10	73,000	25,480	593	10,000	18,500	
Cherokee	1	15,921,100	6,928,611	2,347,644	188,074	118,495	2,941,286
Chickasaw	1	136,000	1,928,022	586,290	49,723	45,295	486,321
Clarke	1	1,771,706	8,816,074	3,256,330	130,731	136,706	3,092,152
Clay	1	1,731,004	2,370,529	894,379	91,858	866,362	
Clayton	6	18,948	235,424	121,044	56,202	48,282	48,282
Crawford	1	376,149	605,528	180,302	39,847	18,495	121,808
Dallas	1	10,030,391	6,924,798	2,827,962	180,002	519,359	2,104,788
Davis	1	550,867	2,380,730	813,300	18,303	156,118	627,813
Decatur	1	2,131,459	6,706,574	2,457,367	52,039	422,394	1,021,814
DeKalb	1	467,000	1,042,013	325,011	30,112	214,291	
Dubuque	21	1,040,898	4,387,941	3,641,702	598,698	315,432	3,027,279
Emmet	1	16,710	2,600,174	722,300	72,617	100,512	469,356
Fayette	1	10,379	3,623,319	1,041,217	54,437	115,015	874,772
Floyd	1	102,847	466,430	151,309	6,450	70,851	70,850
Franklin	1	797,306	2,500,282	719,625	49,709	10,144	881,672
Fremont	5	57,073	1,736,150	527,501	56,095	83,317	435,540
Grundy	1	1,436,741	621,382	250,419	21,056	36,683	29,580
Guthrie	1	1,436,741	621,382	250,419	21,056	36,683	29,580
Hamilton	1	382,790	4,844,730	1,491,810	95,393	87,273	1,106,308
Hancock	11	174,340	6,100,455	1,774,364	35,794	79,802	1,660,758
Hardin	1	49,100	2,000,455	722,500	44,129	41,027	626,740
Harrison	1	424,072	1,077,743	320,000	45,000	87,762	87,762
Henry	1	1,510,623	434,440	38,547	57,912	306,000	
Howard	1	417,602	1,480,160	1,302,864	30,611	76,742	1,430,521
Humboldt	1	305,784	98,567	8,570	30,074	35,027	
Ida	1	14,600	682,728	196,622	11,845	57,000	136,787
Iowa	17	1,508,308	7,149,287	2,140,778	117,912	142,640	1,877,338
Jackson	1	797,462	2,500,282	719,625	49,709	10,144	881,672
Jasper	1	606,659	5,507,303	1,607,529	171,425	128,408	1,275,611
Jefferson	1	2,030,100	7,087,740	2,780,815	73,022	308,361	2,470,412
Johnson	1	879,607	9,707,580	2,780,815	73,022	308,361	2,470,412
Keokuk	1	118,792	29,968	25,968	35	13,271	14,587
Kossuth	1	1,947,515	672,302	4,148	27,384	511,739	
Lee	1	771,856	213,028	81,853	853	81,853	81,853
Linn	1	115,348	225,955	81,853	81,853	81,853	81,853
Louis	1	118,792	29,968	25,968	35	13,271	14,587
Luna	1	1,947,515	672,302	4,148	27,384	511,739	
Lyons	1	771,856	213,028	81,853	81,853	81,853	81,853
Madison	1	115,348	225,955	81,853	81,853	81,853	81,853
Mahaska	1	118,792	29,968	25,968	35	13,271	14,587
Marion	1	115,348	225,955	81,853	81,853	81,853	81,853

TABLE NO. 11—Continued.

Counties	Number reporting	Pounds of milk received	Pounds of cream received	Pounds of butter manufactured	Pounds sold to patrons	Pounds sold in Iowa	Pounds sold outside the state
Marshall	1	10,025	1,908,571	650,567	30,003	223,622	406,972
Mason	1	700,330	250,334	1,294,625	1,440	28,972	17,172
McDonald	1	77,549	30,585	96,506	14,968	1,140,084	1,140,084
Meeker	1	312,000	190,000	3,000	70,000	18,000	20,000
Montgomery	1	284,264	71,096		17,759	53,297	
Muscatine	1	1,708,725	653,803	65,806	88,025	140,021	
O'Brien	1	198,433	767,144	197,229	8,550	22,000	190,102
Osceola	1	1,909,115	461,909	100,991	45,022	419,027	
Pager	1	2,440,000	4,008,012	1,372,107	114,117	1,007,000	
Palo Alto	11	171,730	464,530	146,940	4,021	51,919	91,897
Pemscotat	1	9,448	648,155	239,856	5,000	42,400	161,021
Polk	1	387,800	1,694,039	4,801,409	1,900,433	2,888,050	
Pottawattamie	1	2,111,482	520,455	306,448	605,047		
Poweshiek	1	61,441	672,070	240,588	6,672	176,073	57,548
Ringgold	1	31,004	1,200,000	41,241	550	12,728	28,430
Sac	1	31,517	1,200,015	321,712	13,861	79,308	228,435
Scott	1	4,800	2,333,728	722,314	300	180,665	541,549
Shellsburg	1	749,132	284,151	18,529	11,801	280,791	
Sioux	1	219,514	4,321,602	1,260,940	47,940	99,280	1,447,800
Story	1	150,239	2,131,527	702,377	83,647	121,402	477,323
Tama	1	1,222,098	344,732	1,544	212,300	280,817	
Taylor	1	2,694,568	681,522	15,000	47,000	409,302	
Union	1	317,795	2,348,896	647,619	4,300	87,600	500,027
Van Buren	1	184,888	66,096	775	400	64,704	
Wapello	1	397,344	5,985,613	1,692,184	628	335,170	1,347,170
Warren	1	2,366,501	784,904	4,103	94,454	666,377	
Washington	1	1,820,313	418,263	2,940	389,714	10,030	
Wayne	1	2,783,380	4,065,161	1,500,580	122,101	88,581	1,829,843
Webster	1	8,082,432	2,333,233	38,108	131,027	2,163,978	
Winnebago	1	77,371,837	10,394,086	2,000	735,484	1,791,502	
Woodbury	1	4,613,759	1,281,286	80,301	76,077	1,122,470	
Worth	1	65,407	1,732,444	405,350	28,354	80,714	280,172
Total	479	108,149,017	271,813,782	80,834,065	3,780,286	12,009,833	73,901,886

TABLE NO. 6—HAND SEPARATORS.

SHOWING NUMBER OF CREAMERIES REPORTING USE OF HAND SEPARATORS,  
NUMBER SO REPORTED, NUMBER OF CREAMERY PATRONS AND NUMBER  
OF COWS.

Counties	Received cream by rail	No. of cream- eries reporting hand separators	Hand separators reported	No. of patrons reported	No. of cows reported
Adair	1	2	652	559	2,360
Adams	1	1	122	136	921
Albany	1	1	1,370	1,590	15,980
Appanoose	1	8	1,180	1,380	7,400
Audubon	1	6	980	737	2,400
Benton	1	11	1,029	1,840	14,710
Black Hawk	1	3	481	554	2,000
Boone	1	7	925	1,718	17,540
Bremer	1	1	1,031	1,608	11,270
Buchanan	1	6	1,051	1,060	6,110
Buena Vista	1	11	1,854	1,421	10,540
Butler	1	1	651	661	3,400
Calhoun	1	7	909	909	3,300
Carroll	1	2	717	722	3,430
Cass	1	4	759	826	4,500
Cedar	2	9	973	2,108	12,370
Cerro Gordo	1	1	109	100	880
Cherokee	1	10	1,312	1,943	16,870
Chickasaw	1	5	790	790	3,980
Clarke	1	13	4,416	2,782	26,270
Clay	1	5	1,022	1,078	5,190
Clayton	1	1	130	135	830
Crawford	1	2	526	569	1,530
Dallas	1	1	1	1	1
Davis	1	13	1,864	2,613	14,370
De Witt	1	4	900	922	3,370
Delaware	1	15	2,835	3,121	17,610
Des Moines	1	2	142	142	1,000
Dickinson	1	14	1,839	2,916	22,710
Dubuque	1	4	680	840	4,320
Emmet	1	8	1,157	1,160	6,120
Fayette	1	2	311	316	1,530
Floyd	1	5	601	628	3,120
Franklin	1	3	479	534	2,990
Fremont	1	8	1,302	1,271	9,070
Greene	1	10	1,737	1,736	9,860
Grundy	1	9	1,643	1,765	12,590
Guthrie	1	6	893	842	5,590
Hamilton	1	1	150	150	900
Hancock	1	0	615	612	3,670
Hardin	1	10	1,758	1,817	11,710
Harrison	1	2	175	175	1,350
Henry	1	1	300	300	1,440
Howard	1	1	10	10	10
Humboldt	1	7	1,500	1,709	14,070
Ia	1	2	405	400	2,530
Iowa	1	17	1,703	2,377	13,000
Jackson	1	1	1,650	1,199	5,600
Jasper	1	8	3,323	3,507	20,000
Jefferson	1	1	35	35	10
Johnson	1	3	673	700	4,000
Jones	1	1	30	30	1,000
Knox	1	1	181	213	950
Kossuth	1	3	870	907	5,100
Lee	1	1	1	1	1
Linn	1	1	1	1	1
Lodges	1	1	1	1	1
Louis	1	1	1	1	1
Lyon	1	1	1	1	1
Madison	1	1	1	1	1
Mahaska	1	1	1	1	1
Marion	1	1	1	1	1
Marshall	1	1	1	1	1

TABLE NO. III—Continued.

Counties	Received cream by rail	No. of cream- eries reporting hand separators	Hand separators reported	No. of patrons reported	No. of cows reported
Miller	1	1	90	96	420
Mitchell	1	1	1,360	1,361	10,017
Monroe	1	1	34	34	200
Montgomery	1	1	100	100	1,580
Morgan	1	1	90	90	685
Muscatine	1	1	139	139	1,120
O'Brien	1	1	822	822	5,125
Oceola	1	1	131	143	1,720
Parr	1	1	1,000	1,100	6,900
Palo Alto	1	11	1,251	1,367	9,020
Pemphig	1	1	130	130	700
Pontiac	1	1	365	310	1,870
Polk	1	4	6,350	6,670	50,770
Pottawattamie	1	1	1,300	1,230	7,780
Poweshiek	1	1	841	841	3,650
Rapids	1	1	87	88	420
Raw	1	1	841	550	3,125
Reed	1	3	928	970	3,025
Shelby	1	4	897	902	5,780
Sioux	1	9	2,139	2,148	11,115
Story	1	7	716	801	6,408
Tama	1	3	880	200	2,210
Taylor	1	2	1,515	1,515	10,000
Union	1	1	948	955	4,720
Van Buren	1	1	140	140	900
Wapello	1	3	2,170	2,330	12,500
Warren	1	1	1	1	1
Washington	1	1	860	1,070	6,300
Wayne	1	3	329	605	3,370
Webster	1	8	1,217	1,446	10,020
Winnebago	1	9	1,052	2,102	10,880
Winthrop	1	3	2,353	14,062	82,140
Worth	1	2	1,009	1,011	7,017
Wright	1	5	678	688	6,410
Total	53	429	83,008	104,418	679,941

## DEPARTMENT FINANCES.

Fees Earned Year Ending Nov. 1, 1915.

Babeck Test Licenses.....	\$ 5,217.50
Milk Licenses.....	2,832.00
Scale Tag Fees.....	1,945.00
Scale Inspection Fees.....	5,785.70
Sanitary Law Licenses.....	13,451.00
Stock Food Licenses.....	2,409.00
Seed Analyses.....	53.50
Feeding Stuffs Analyses.....	19.00
Fertilizer Licenses.....	346.00
Cold Storage Licenses.....	475.00
Inspection Fee Tags.....	14,924.40
Total.....	\$60,244.10

Fines for violation of the Dairy and Food Laws are paid into the school fund of the county where prosecution is brought and do not appear in the above statement. At a conservative estimate, the amount of fines would reach \$5,500.00 annually.

Expenses Year Ending Nov. 1, 1915.

	Salary.	Expense.	Total.
W. B. Barney.....	\$ 2,700.00	\$ 267.79	\$ 2,967.79
B. C. Huff.....	1,800.00	51.51	1,851.51
*E. L. Redfern.....	2,047.30	18.82	2,066.12
*J. R. Chittick.....	400.00	10.00	410.00
J. J. Ross.....	1,400.00	947.89	2,347.89
T. A. Clarke.....	1,400.00	912.34	2,312.34
*G. H. Tellier.....	495.21	243.25	738.46
P. W. Crowley.....	1,600.00	890.33	2,490.33
*G. M. Lambert.....	1,039.98	694.56	1,734.54
*F. W. Stephenson.....	700.00	397.95	1,097.95
*H. W. McElroy.....	700.00	556.27	1,256.27
H. E. Forrester.....	1,600.00	1,028.64	2,628.64
L. L. Flickinger.....	1,600.00	961.16	2,561.16
L. P. Anderson.....	1,600.00	865.78	2,465.78
O. P. Thompson.....	1,600.00	1,297.91	2,897.91
E. W. Van Dusen.....	1,800.00	898.20	2,698.20
M. E. Flynn.....	1,600.00	799.95	2,399.95
J. W. Milnes.....	1,600.00	795.57	2,395.57
S. O. Van De Bogart.....	1,600.00	334.71	1,934.71
C. Ottosen.....	1,600.00	982.09	2,582.09
J. S. Bittner.....	1,600.00	773.30	2,373.30
C. S. Bogle.....	1,600.00	941.95	2,541.95
C. O. Frazer.....	1,600.00	995.58	2,595.58
*E. J. Nolan.....	822.20	936.59	1,758.79
*A. B. Briggs.....	750.00	542.12	1,292.12
*Wm. H. Harrison.....	1,166.62	332.55	1,499.17
G. H. Chittick.....	1,400.00	173.33	1,573.33
*W. S. Friable.....	250.00	9.63	259.63
*W. B. Barney, Jr.....	259.21	63.23	322.44
A. W. Day.....	1,170.00	.....	1,170.00
*Ethel Whittle.....	562.50	.....	562.50
Olive Wasson.....	900.00	.....	900.00
*Addie McQuiston.....	800.82	.....	800.82

## DEPARTMENT FINANCES—Continued.

	Salary.	Expense.	Total.
*Margie Garrity.....	342.50	.....	342.50
J. W. Lytton.....	780.00	.....	780.00
H. W. Dahl (Extra Help).....	26.62	.....	26.62
Mrs. H. W. McElroy (Extra Help).....	79.86	.....	79.86
Mary Belle Talcott (Extra Help).....	.....	11.48	11.48
Tags.....	.....	1,036.90	1,036.90
Laboratory Expense.....	.....	1,009.09	1,009.09
Weight and Measure.....	.....	3,307.58	3,307.58
Milk Agents' Fees.....	.....	3,435.97	3,435.97
Milk Agents' Expense.....	.....	101.59	101.59
Office Expense, Miscellaneous.....	.....	741.58	741.58
Telephone.....	.....	84.17	84.17
Telegraph.....	.....	27.98	27.98
Drayage.....	.....	89.16	89.16
Express.....	.....	136.22	136.22
Total.....	\$43,052.82	\$27,704.72	\$70,757.54

\*Employed less than a year.





## CREAMERY LIST—Continued.

Number	Name of Creamery	Located at or Near	Name of Proprietor, Secretary or Manager	P. O. Address of Proprietor, Secretary or Manager	Name of Buttermaker	P. O. Address of Buttermaker
<b>Black Hawk County—</b>						
25	Benson Dairy Co.	Benson	J. R. Dumond	Cedar Falls, R2	J. F. Lorenzen	Cedar Falls
26	Cedar Falls City Co.	Cedar Falls	C. A. Reed	Cedar Falls	L. H. Olson	Cedar Falls
27	Orange Dairy Assn.	Waterloo (5 mi. s.)	C. Beckelmeier	Waterloo, R1	K. W. Chadwick	Waterloo, R 1
28	Gilbertville Dairy Assn.	Gilbertville	J. B. Kascht	Waterloo	N. Nelson	Gilbertville
29	Co-op. Cr. Co. of Jubilee	Jesup (7 mi. sw)	F. J. Orth	Jesup	A. J. Widdell	Jesup
30	Mt. Vernon City Co.	Boone (1 1/2 mi. w)	Geo. L. Mueller	Denver	I. B. Moon	Cedar Falls
31	Hudson Co-op. Dairy Assn.	Hudson	A. H. Brandhorst	Hudson	Wm. Metcalfe	Hudson
32	Union City Co.	Pinchford	G. A. Evenson	Winslow	Wm. Ditley	Janesville, R 2
33	East Lester City Co.	Fairbank (9 mi. sw)	Ira Finch	Fairbank	W. P. Hughes	Fairbank
34	Fair, City Co.	Dunkerton	G. S. Kieckhefer	Dunkerton	G. G. Alexander	Dunkerton
35	Crain Creek City Co.	Denver (6 mi. se)	Wm. Meier	Denver, R1	Wm. Meier	Denver, R 1
36	La Porte City City Co.	LaPorte City	L. A. Benson	LaPorte City	O. A. Miller	LaPorte City
37	Swift & Co.	Waterloo	F. S. Hayward	Union Stock yard, Chicago	W. D. Wenth	Waterloo
<b>Boone County—</b>						
38	Flynn Dairy Co. Cr.	Madrid	Guy S. Brewer	Des Moines	Nels Hansen	Madrid
39	Boone City Co.	Boone	F. J. Saverd	Stout City	L. C. Peterson	Stout City
40	Rosendale Co-op. Cr. Co.	Boone (2 mi. w)	L. C. Peterson	Stout City	L. C. Peterson	Stout City
<b>Bremner County—</b>						
41	Knitted Cr. Co.	Readlyn (2 1/2 mi. nw)	J. L. Strottmann	Readlyn, R1	P. H. Wohling	Readlyn, R 1
42	Premont City Co.	Tripp (3 1/2 mi. se)	J. P. Snelling	Tripp	G. C. Koemka	Tripp
43	Gilt Edge Cr. Co.	Plainfield	H. C. Ladage	Plainfield	H. O. Ladage	Plainfield
44	Dayton City Co.	Sumner (4 mi. s)	J. H. Kasender	Sumner	C. W. Zell	Sumner
45	Janesville Cr. Assn.	Janesville	H. W. Sime	Cedar Falls	B. O. Squires	Janesville
46	Readlyn Co-op. Cr. Co.	Readlyn	H. A. Grise	Readlyn	H. A. Grise	Readlyn
47	Spring Fountain City Co.	Sumner (3 mi. sw)	Wm. Zell	Sumner	F. W. Bremer	Sumner, R 6
48	Denver City Co.	Denver	C. C. Froehman	Waverly	A. W. Mooney	Denver
49	Grove Hill City Co.	Fairbank	Frank Kane	Fairbank	O. J. Meier	Fairbank
50	Seigel Cr. Co.	Tripp (6 mi. nw)	Aug. Winzenberg	Waverly	P. H. Harma	Waverly
51	Washington City Co.	Waverly (3 mi. e)	J. D. Monaghan	Waverly, R5	Fred Wills	Waverly
52	Lafayette City Co.	Waverly (4 mi. n)	Ed. Abrecht	Waverly	J. G. Nicols	Waverly
53	Artesian Cr. Co.	Denver (4 mi. n)	C. C. Trautso	Waverly	J. Wohling	Waverly
54	Tripp Cr. Co.	Tripp	B. H. Baum	Tripp	J. M. Anderson	Tripp
55	Pottersiding Cr. Co.	Tripp	Wm. Hildebrandt	Waverly, R3	E. M. Guiney	Tripp, R 1
56	Sumner City Co.	Sumner	S. A. Munger	Sumner	E. B. Oals	Sumner
57	Excelsior City Co.	Sumner (6 mi. nw)	Geo. Rockstedt	Sumner	Robt. Wagner	Sumner
<b>Butler County—</b>						
58	Climax Cr. Co.	Sumner (6 mi. sw)	H. W. Schmidt	Sumner, R6	L. L. Zierink	Sumner, R 6
59	Klinger Cr. Co.	Readlyn (3 mi. s)	C. H. Robinson	Fairbank, R2	E. H. Robinson	Fairbank, R 3
60	Frederika Cr. Assn.	Frederika	J. H. McDonald	Frederika	John Ambrose	Frederika
61	First Maxwell Cr. Co.	Denver (2 mi. e)	H. C. Grise	Denver, R7	Henry Piegors	Denver, R 7
62	Little Valley Cr. Co.	Sumner (6 mi. s)	Chas. Kruger	Sumner, R7	G. O. Miller	Sumner, R 7
63	Western Douglas Cr. Co.	Waverly	Chas. Oberhen	Plainfield, R1	Ernest Hass	Waverly, R 1
64	Bremner Creamery Co.	Bremner	F. W. Nolte	Waverly, R2	J. W. Wedemeyer	Waverly, R 2
<b>Buchanan County—</b>						
65	Wagelo Valley City Co.	Independence	C. V. Rosenberger	Independence	Watson Shick	Independence
66	Aurora Cr. Co.	Aurora	E. H. Flickinger	Aurora	Geo. L. Weeks	Aurora
67	Lamont Cr. Assn.	Lamont	O. C. Gladwin	Lamont	E. A. Cole	Lamont
68	Jesup Cr. Co.	Jesup	C. L. Bright	Jesup	E. M. McMurray	Jesup
69	Hazleton Cr. Co-op. Cr. Co.	Hazleton	J. W. Dashiell	Hazleton	Matt McDowall	Hazleton
70	Fairbank Pars. City Co.	Fairbank	A. J. Langley	Fairbank	C. E. Brant	Fairbank
71	Stanley City Co.	Stanley	W. W. Halsted	Stanley	W. W. Halsted	Stanley
72	Winthrop Cr. Co.	Winthrop	E. C. Copper	Winthrop	E. C. Copper	Winthrop
<b>Bureau Vista County—</b>						
73	Pars. Co-op. Cr. Co.	Alta	Arliegh M. Acker	Alta	A. M. Acker	Alta
74	Linn Grove City Co.	Linn Grove	Peterson & Jensen	Linn Grove	Peter Peterson	Linn Grove
75	Pars. Cr. & Prod. Co.	Newell	J. C. Aros	Newell	S. C. Olson	Newell
76	Sioux Rapids Cr. Co.	Sioux Rapids	P. R. Ballantyne	Sioux Rapids	Rosh Williams	Sioux Rapids
77	Pars. Creamery Co.	Albert City	J. E. Lauridsen	Albert City	J. E. Lauridsen	Albert City
78	Plain View Creamery Co.	Storm Lake	McCreery & Hussey	Storm Lake	L. W. McCreery	Storm Lake
<b>Butler County—</b>						
79	Eleanor Cr. Co.	Eleanor	O. J. Rohde	Aplington	O. J. Rohde	Aplington
80	Clarksville Cr. Co.	Clarksville	M. J. Johnson	Clarksville	M. A. Jones	Clarksville
81	New Hartford Pars. Mut Co-op. Cr. Co.	New Hartford	R. L. Farnsworth	New Hartford	P. W. Peterson	New Hartford
82	Albion Co-op. Cr. Co.	Parkersburg	Fred L. Brown	Parkersburg	J. F. Sharp	Parkersburg
83	Courbat Cr. Co.	Shell Rock	O. P. Courbat	Shell Rock	G. P. Courbat	Shell Rock
84	Shell Rock Cr. Assn.	Shell Rock	D. A. Austin	Shell Rock	P. D. Daniels	Shell Rock
85	Beaver Co-op. Cr. Assn.	New Hartford (2 mi. sw)	J. J. Bergman	New Hartford	W. H. Chapman	New Hartford
86	Pars. Co-op. Cr. Co.	Allison	Geo. A. Rasty	Allison	R. D. Sweet	Allison
87	Pars. Co-op. Cr. Co.	Greene	A. S. Shook	Greene	J. Jacobsen	Greene
88	White Rose Cr. Co.	Austinville	S. L. Patterson	Austinville	Paul P. Anderson	Austinville
89	Dumont Cr. Co.	Dumont	J. A. McAdams	Dumont	J. A. McAdams	Dumont
<b>Calhoun County—</b>						
90	Cedar Creek City Co.	Somers	S. P. Peterson	Somers	S. P. Peterson	Somers
91	Pomeroy Cr. Co.	Pomeroy	H. A. Abrecht	Pomeroy	Geo. F. Allard	Pomeroy
92	Moon Bros. Cr. Co.	Manson	Chas. G. Moon	Chas. G. Moon	Chas. G. Moon	Manson
93	A. Baird & Co.	Lohrville	Hugh Baird	Lohrville	John J. Stames	Lohrville



CREAMERY LIST—Continued.

Number	Name of Creamery	Located at or Near	Name of Proprietor, Secretary or Manager	P. O. Address of Proprietor or Secretary or Manager	Name of Buttermaker	P. O. Address of Buttermaker
105	Carroll County—					
106	Wiley Cr. Co.	Wiley	H. Lauriden	Carroll, Mo.	Carl Petersen	Carroll, R. 3
107	Carroll Cr. Co.	Carroll	H. Lauriden	Carroll, Mo.	Carl Petersen	Carroll, R. 3
108	Rose Valley Cr. Co.	Templeton	Henry Laugel	Templeton	C. O. Koberst	Templeton
109	Manning Cr. Co.	Roselle	C. Koberst	Carroll, Mo.	C. O. Koberst	Carroll, R. 4
110	Manning Cr. Co.	Manning	H. A. Swager	Manning	H. A. Swager	Manning
111	Schaefer Farm Prod. Co.	Carroll	John Schaefer	Carroll	Harry Brooklin	Carroll
112	The Jensen Cr. Co.	Carroll	Jens Jensen	Carroll	Julius Suler	Carroll
113	Carroll County—					
114	Atlantic Prod. Co.	Atlantic	G. G. Jack	Atlantic	Wm. Henke	Atlantic
115	Farm, Cr. Co.	Cumberland	E. Eulen	Cumberland	Albert Heyn	Cumberland
116	Golden Star Cr. Co.	Bennett	M. Kroeger	Bennett	W. H. Kroeger	Bennett
117	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
118	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
119	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
120	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
121	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
122	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
123	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
124	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
125	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
126	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
127	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
128	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
129	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
130	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
131	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
132	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
133	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
134	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
135	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
136	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
137	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
138	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
139	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
140	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
141	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
142	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
143	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
144	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
145	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
146	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
147	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
148	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
149	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
150	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
151	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
152	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
153	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
154	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
155	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
156	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
157	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
158	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
159	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
160	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
161	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
162	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
163	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
164	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
165	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
166	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
167	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
168	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
169	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
170	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
171	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
172	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
173	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
174	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
175	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
176	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
177	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
178	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
179	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
180	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
181	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
182	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
183	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
184	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
185	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
186	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
187	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
188	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
189	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
190	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
191	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
192	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
193	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
194	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
195	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
196	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
197	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
198	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
199	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson
200	Tipson Cr. Co.	Tipson	A. J. Barth	Tipson	G. O. McVee	Tipson

## CREAMERY LIST—Continued.

Number	Name of Creamery	Located at or Near	Name of Proprietor, Secretary or Manager	P. O. Address Secretary or Manager	Name of Buttermaker	P. O. Address of Buttermaker
149	Delaware County—					
150	Manchester Co-op. Ctry. Co.	Manchester	M. S. VanLaken	Manchester	J. Bond	Manchester
151	Hard Green Ctry. Co.	Kyan (6 mi. e.)	Daniel King	Manchester	G. Stensmo	Manchester
152	Silver Spring Ctry. Co.	Delhi	E. B. Porter	Delhi	A. Graham	Delhi
153	Dairy City Ctry. Co.	Delhi	G. L. Sidel	Delhi	H. P. Baerwolf	Delhi
154	Delaware Ctry. Co.	Delaware	A. E. Larsen	Delaware	R. R. Stewart	Delaware
155	Bear Grove Ctry. Co.	Dyersville	John W. Gooden	Dyersville	J. T. Dawson	Dyersville
156	Delaware Ctry. Co.	Colebrook	Robert A. Gull	Colebrook	J. P. Killam	Colebrook
157	Greedy Ctry. Co.	Greedy	J. E. Tracy	Greedy	A. L. Crabb	Greedy
158	Band Springs Ctry. Co.	Band Springs	R. J. Barth	Band Springs	W. L. Batteider	Band Springs
159	Eastville Ctry. Co.	Eastville	I. S. Hutson	Eastville	A. L. Blinnig	Eastville
160	Delaware County—					
161	Lake Park Co-op. Ctry. Co.	Lake Park	J. G. Chrysler	Lake Park	E. E. Starr	Lake Park
162	Millford Ctry. Co.	Millford	Fred W. Born	Millford	Fred W. Born	Millford
163	Western Pudding Co.	Spirit Lake	H. N. Miller	Spirit Lake	Victor Welser	Spirit Lake
164	Delaware County—					
165	Hagen Ctry. Co.	N. Buena Vista	Thos. J. Maiera	N. Buena Vista	Jas. McGood	N. Buena Vista
166	Sherrill Mt. Co-op. Ctry. Assn.	Sherrill	H. S. Hargis	Sherrill	H. S. Hargis	Sherrill
167	Worthington Ctry. Co.	Worthington	J. C. Boley	Worthington	Fred Koehler	Worthington
168	Globe Ctry. Co.	Lucasburg	H. P. Smith	Lucasburg	C. Baehner	Lucasburg
169	Farley Ctry. Co.	Farley	Geo. Friedmann	N. Buena Vista	A. P. Matson	N. Buena Vista
170	Lucasburg Ctry. Co.	Lucasburg	Q. W. Crupp	Lucasburg	P. E. Landis	Lucasburg
171	Lucasburg Ctry. Co.	Lucasburg	Andrew Finckel	Lucasburg	H. F. Williams	Lucasburg
172	Lucasburg Ctry. Co.	Lucasburg	Albert J. Keri	Dyersville	Wm. Cornell	Dyersville
173	Lucasburg Ctry. Co.	Lucasburg	Henry W. Tash	Lucasburg	Alfred C. Zenger	Lucasburg
174	Lucasburg Ctry. Co.	Lucasburg	Henry W. Tash	Lucasburg	Leta C. Baker	Lucasburg
175	Lucasburg Ctry. Co.	Lucasburg	Henry W. Tash	Lucasburg	A. C. Baker	Lucasburg
176	Lucasburg Ctry. Co.	Lucasburg	Henry W. Tash	Lucasburg	A. C. Baker	Lucasburg
177	Lucasburg Ctry. Co.	Lucasburg	Henry W. Tash	Lucasburg	A. C. Baker	Lucasburg
178	Lucasburg Ctry. Co.	Lucasburg	Henry W. Tash	Lucasburg	A. C. Baker	Lucasburg
179	Lucasburg Ctry. Co.	Lucasburg	Henry W. Tash	Lucasburg	A. C. Baker	Lucasburg
180	Lucasburg Ctry. Co.	Lucasburg	Henry W. Tash	Lucasburg	A. C. Baker	Lucasburg
181	Lucasburg Ctry. Co.	Lucasburg	Henry W. Tash	Lucasburg	A. C. Baker	Lucasburg
182	Lucasburg Ctry. Co.	Lucasburg	Henry W. Tash	Lucasburg	A. C. Baker	Lucasburg
183	Lucasburg Ctry. Co.	Lucasburg	Henry W. Tash	Lucasburg	A. C. Baker	Lucasburg
184	Lucasburg Ctry. Co.	Lucasburg	Henry W. Tash	Lucasburg	A. C. Baker	Lucasburg
185	Lucasburg Ctry. Co.	Lucasburg	Henry W. Tash	Lucasburg	A. C. Baker	Lucasburg
186	Lucasburg Ctry. Co.	Lucasburg	Henry W. Tash	Lucasburg	A. C. Baker	Lucasburg
187	Lucasburg Ctry. Co.	Lucasburg	Henry W. Tash	Lucasburg	A. C. Baker	Lucasburg
188	Lucasburg Ctry. Co.	Lucasburg	Henry W. Tash	Lucasburg	A. C. Baker	Lucasburg
189	Lucasburg Ctry. Co.	Lucasburg	Henry W. Tash	Lucasburg	A. C. Baker	Lucasburg
190	Lucasburg Ctry. Co.	Lucasburg	Henry W. Tash	Lucasburg	A. C. Baker	Lucasburg
191	Lucasburg Ctry. Co.	Lucasburg	Henry W. Tash	Lucasburg	A. C. Baker	Lucasburg
192	Lucasburg Ctry. Co.	Lucasburg	Henry W. Tash	Lucasburg	A. C. Baker	Lucasburg
193	Lucasburg Ctry. Co.	Lucasburg	Henry W. Tash	Lucasburg	A. C. Baker	Lucasburg
194	Lucasburg Ctry. Co.	Lucasburg	Henry W. Tash	Lucasburg	A. C. Baker	Lucasburg
195	Lucasburg Ctry. Co.	Lucasburg	Henry W. Tash	Lucasburg	A. C. Baker	Lucasburg
196	Lucasburg Ctry. Co.	Lucasburg	Henry W. Tash	Lucasburg	A. C. Baker	Lucasburg
197	Lucasburg Ctry. Co.	Lucasburg	Henry W. Tash	Lucasburg	A. C. Baker	Lucasburg
198	Lucasburg Ctry. Co.	Lucasburg	Henry W. Tash	Lucasburg	A. C. Baker	Lucasburg
199	Lucasburg Ctry. Co.	Lucasburg	Henry W. Tash	Lucasburg	A. C. Baker	Lucasburg
200	Lucasburg Ctry. Co.	Lucasburg	Henry W. Tash	Lucasburg	A. C. Baker	Lucasburg
201	Lucasburg Ctry. Co.	Lucasburg	Henry W. Tash	Lucasburg	A. C. Baker	Lucasburg
202	Lucasburg Ctry. Co.	Lucasburg	Henry W. Tash	Lucasburg	A. C. Baker	Lucasburg
203	Lucasburg Ctry. Co.	Lucasburg	Henry W. Tash	Lucasburg	A. C. Baker	Lucasburg
204	Lucasburg Ctry. Co.	Lucasburg	Henry W. Tash	Lucasburg	A. C. Baker	Lucasburg
205	Lucasburg Ctry. Co.	Lucasburg	Henry W. Tash	Lucasburg	A. C. Baker	Lucasburg
206	Lucasburg Ctry. Co.	Lucasburg	Henry W. Tash	Lucasburg	A. C. Baker	Lucasburg
207	Lucasburg Ctry. Co.	Lucasburg	Henry W. Tash	Lucasburg	A. C. Baker	Lucasburg
208	Lucasburg Ctry. Co.	Lucasburg	Henry W. Tash	Lucasburg	A. C. Baker	Lucasburg
209	Lucasburg Ctry. Co.	Lucasburg	Henry W. Tash	Lucasburg	A. C. Baker	Lucasburg
210	Lucasburg Ctry. Co.	Lucasburg	Henry W. Tash	Lucasburg	A. C. Baker	Lucasburg
211	Lucasburg Ctry. Co.	Lucasburg	Henry W. Tash	Lucasburg	A. C. Baker	Lucasburg
212	Lucasburg Ctry. Co.	Lucasburg	Henry W. Tash	Lucasburg	A. C. Baker	Lucasburg
213	Lucasburg Ctry. Co.	Lucasburg	Henry W. Tash	Lucasburg	A. C. Baker	Lucasburg
214	Lucasburg Ctry. Co.	Lucasburg	Henry W. Tash	Lucasburg	A. C. Baker	Lucasburg
215	Lucasburg Ctry. Co.	Lucasburg	Henry W. Tash	Lucasburg	A. C. Baker	Lucasburg
216	Lucasburg Ctry. Co.	Lucasburg	Henry W. Tash	Lucasburg	A. C. Baker	Lucasburg
217	Lucasburg Ctry. Co.	Lucasburg	Henry W. Tash	Lucasburg	A. C. Baker	Lucasburg
218	Lucasburg Ctry. Co.	Lucasburg	Henry W. Tash	Lucasburg	A. C. Baker	Lucasburg
219	Lucasburg Ctry. Co.	Lucasburg	Henry W. Tash	Lucasburg	A. C. Baker	Lucasburg
220	Lucasburg Ctry. Co.	Lucasburg	Henry W. Tash	Lucasburg	A. C. Baker	Lucasburg
221	Lucasburg Ctry. Co.	Lucasburg	Henry W. Tash	Lucasburg	A. C. Baker	Lucasburg
222	Lucasburg Ctry. Co.	Lucasburg	Henry W. Tash	Lucasburg	A. C. Baker	Lucasburg



CREAMERY LIST—Continued.

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TWENTYNINTH ANNUAL REPORT OF THE

DAIRY AND FOOD DEPARTMENT

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Number	Name of Creamery	Located at or Near	Name of Proprietor, Secretary or Manager	P. O. Address of Proprietor, Secretary or Manager	Name of Buttermaker	P. O. Address of Buttermaker
224	Greene County—					
225	G. W. Nicholson Co.	Grand Junction	W. W. Wertz	Grand Junction	C. W. Larson	Grand Junction
	Jefferson Creamery Co.	Jefferson	C. E. Mills	Jefferson	Karl Anderson	Jefferson
	Grundy County—					
226	Buck Grove Cry. Co.	Parkersburg	T. M. Bergman	Aplington	H. P. Chapman	Aplington
227	Frederick Co-op. Cry. Co.	Dike (4 mi. ne)	N. C. Syndergaard	Cedar Falls, Ia.	Hartman Anderson	Cedar Falls, Ia.
228	Beaver Center Cry. Co.	Stout (2 mi. sw)	Andrew J. Meyer	Stout	T. E. Dilger	Stout
229	Pera Cry. Co.	Parkersburg	W. H. Henning	Parkersburg	B. T. Sales	Stout
230	German Township Cry. Co.	Acker (6 mi. se)	Frank J. Martin	Ackley	Henry Schuler	Ackley
	Guthrie County—					
231	Panora Co-op. Cry. Co.	Panora	A. R. Telf	Panora	Alex Johnson	Panora
232	Menlo Cry. Co.	Menlo	P. L. P. Hitehook	Menlo	H. H. Colbert	Menlo
233	Guthrie Center Co-op. Cry. Co.	Guthrie Center	J. A. McLaughlin	Guthrie Center	Casey	Guthrie Center
234	Casey Creamery Co.	Casey	Harlin E. Smith	Casey	Joe F. (Mly)	Casey
235	Bayard Co-op. Cry. Co.	Bayard	Hugh Crothers	Bayard	F. P. Wilcox	Bayard
	Hamilton County					
236	Jewell Butter & Ice Cr. Pac.	Jewell	M. J. Manager	Jewell	M. J. Manager	Jewell
237	Pars. Co-op. Cry. Co.	Stratford	Ed. Peterson	Stratford	John Kleron	Stratford
238	Ellsworth Co-op. Cry.	Ellsworth	S. Stenberg	Ellsworth	O. B. Stenberg	Ellsworth
239	Randall Pars. Cry. Co.	Randall	M. G. Olson	Randall	M. G. Olson	Randall
240	Ellington-Mathre & Co.	Webster City	Ellington Mathre Co.	Webster City	C. L. Best	Webster City
	Hanock County—					
241	Kanawha Pars. Mut. Co-op. Cry. Co.	Kanawha	Geo. McNeish	Kanawha	B. O. Brownlee	Kanawha
242	Co.	Adolf Orthel	Adolf Orthel	Woden	John Pensten	Woden
243	Woden Pars. Cry. Co.	Woden	Albert Penger	Garnar	Albert Penger	Garnar
244	Goodall Cry. Co.	Garnar	J. Kessel	Garnar	C. R. Conway	Garnar
245	Pars. Co-op. Cry. Co.	Goodell	E. P. Conway	Goodell	E. P. Conway	Goodell
246	Goodall Cry. Co.	Goodell	H. P. Stahr	Crystal Lake	Hans P. Engen	Crystal Lake
247	Crystal Cry. Co.	Crystal Lake	H. A. Schapers	Britt	Geo. G. Kolthoff	Britt
248	Britt Co-op. Cry. Co.	Britt	N. L. Palmer	Kennema	A. D. Gilmer	Kennema
249	Kennema Co-op. Cry. Co.	Kennema				
	Hardin County—					
249	Pars. Co-op. Cry. Co.	Buckeye	H. M. Sechoff	Buckeye	M. F. Williams	Buckeye
250	Allen Co-op. Cry. Co.	Allen	E. C. Edwards	Allen	Floyd Kidd	Allen
251	Eldora Cry. Co.	Eldora	Peter Jensen	Eldora	D. T. Aylsworth	Eldora
252	Hubbard Co-op. Cry. Co.	Hubbard	H. E. Granger	Hubbard	Fred Herzog	Hubbard
253	Iowa Falls Cry. Co.	Iowa Falls	W. E. Mitzelstaidt	Iowa Falls	W. E. Mitzelstaidt	Iowa Falls
254	Goodard & Neill Cry. Co.	Radcliffe	Leroy Anderson	Radcliffe	D. H. Roth	Radcliffe
255	Owasa Cry. Co.	Owasa	W. A. McLellan	Owasa	G. J. Gudknecht	Owasa
256	Swift & Co.	Iowa Falls	F. B. Hayward	Swift & Co.	J. D. Fiete	Iowa Falls
257	Cleves Cry. Co.	Cleves	A. J. Stenberg	Cleves	A. J. Stenberg	Cleves
258	Ackley Cry. Co.	Ackley	B. R. Hadley	Ackley	C. B. Ball	Ackley
	Harrison County—					
259	Community Cry. Co.	Woodbine	Floyd Elston	Woodbine	E. A. Maxwell	Woodbine
	Howard County—					
260	Maple Leaf Cry. Co.	Elma	D. Laue	Elma, Ia.	N. W. Graf	Elma, Ia.
261	Pars. Co-op. Cry. Co.	Protivin	L. A. Bostall	Protivin	J. A. Bostall	Protivin
262	Saratoga Co-op. Cry. Co. Assn.	Saratoga	Henry Foss	Saratoga	Henry Foss	Saratoga
263	Elma Co-op. Cry. Co.	Elma	J. P. Whelan	Elma	J. P. Whelan	Elma
264	Cresco Cry. Co.	Cresco	Palmer & Nelson	Cresco	O. A. Palmer	Cresco
265	Schley Cry. Co.	Cresco (10 mi. sw)	C. A. Foss	Cresco	O. A. Foss	Cresco
266	Pars. Co-op. Cry. Assn.	Chesler	I. A. Eggertich	Chesler	O. C. Pinner	Chesler
267	Pars. Cry. Co.	Line Springs	D. H. Thomas	Line Springs	E. Z. Carr	Line Springs
268	Cresco Milk Co.	Cresco	F. B. Hulls	Cresco	F. B. Hulls	Cresco
	Humboldt County—					
269	Thor Cry. Co.	Thor	J. E. Lonning	Thor	B. E. Lonning	Thor
270	Rutland Cry. Assn.	Rutland	Michael Gregersen	Rutland	Joe Boeh	Rutland
271	Waconia Cry. Assn.	Ottosen	A. O. Clave	Ottosen	I. J. Bremson	Ottosen
272	Humboldt Cry. Co.	Humboldt	B. R. Gray	Humboldt	A. H. Bertelson	Humboldt
273	Bode Cry. Assn.	Bode	H. C. Olson	Bode	P. W. Johnson	Bode
274	Bradgate Cry. Co.	Bradgate	K. H. Avery	Bradgate	D. A. O'Snell	Bradgate
	Lima County—					
275	Holstein Co-op. Cry. Co.	Holstein	Gus Weble	Holstein	John D. Suter	Holstein
276	Pars. Cry. Co.	Galva	Wm. Zwenke	Galva	R. D. Ewing	Galva
	Iowa County—					
277	Schuler Cry. Co.	Conroy	Thos. Thomsen	Conroy	Thos. Thomsen	Conroy
278	Genoa Bluff Cry. Co.	Ladora (3 mi. se)	Adam Keil	Marengo	R. O. Rae	Genoa Bluff
279	Marengo Pars. Mut. Co-op. Cry. Co.	Marengo	Dennis Sullivan	Marengo	W. H. Sampson	Marengo
280	Victor Co-op. Cry. Co.	Victor	I. E. Brown	Williamsburg	Wm. Boys	Williamsburg
281	Troy Cry. Co.	Williamsburg	Geo. C. House	Williamsburg	W. R. Edwards	Williamsburg
282	York Cry. Co.	Williamsburg	H. W. Hudepohl	S. Amara, Ill.	G. E. Steinke	Williamsburg
	Jackson County—					
283	Monmouth Cry. Co.	Monmouth	P. G. Irons	Monmouth	F. G. Irons	Monmouth
284	Maquoketa Prod. Co.	Maquoketa	E. D. Hansen	Maquoketa	G. S. Wing	Maquoketa





CREAMERY LIST—Continued.

Number	Name of Creamery	Located at or Near	Name of Proprietor, Secretary or Manager	P. O. Address of Proprietor Secretary or Manager	Name of Buttermaker	P. O. Address of Buttermaker
342	Mills County— Glenwood Ctry. Co.	Glenwood	J. G. MacKellar	Glenwood	J. G. MacKellar	Glenwood
343	Mitchell County— New Haven Ctry. Co.	New Haven	Julius Brunner	Osage, Ia.	Julius Brunner	Osage, R. 4
344	Little Cedar Ctry. Co.	Little Cedar	G. L. Heitler	Little Cedar	G. L. Heitler	Little Cedar
345	Osage Co-op. Ctry. Assn.	Osage	C. L. Hanson	Osage	G. Burdett	Osage
346	St. Ansgar Ctry. Co.	St. Ansgar	M. A. Tolleson	St. Ansgar	H. R. Bullis	St. Ansgar
347	Fars. Co-op. Ctry. Co.	Orchard	E. O. Clappert	Orchard	Albert Toman	Orchard
348	Rock Creek Co-op. Ctry. Assn.	Osage (10 mi. sw.)	H. L. Johnson	Hudd	J. E. McCaffrey	Osage, R. 2
349	Stacyville Ctry. Co.	Stacyville	Jos. Heus	Stacyville	Wm. Heus	Stacyville
350	Riceville Ctry. Co.	Riceville	Hause & Christensen	Riceville	John Christensen	Riceville
351	Monona County— Moorhead Ctry. Co.	Moorhead	P. D. Nelson	Moorhead	Nels Nelson	Moorhead
352	Monroe County— Albia Ctry. Co.	Albia	Sam Jones	Albia	Earl Burlingame	Albia
353	Montgomery County— Tyler Bros. Ctry. Co.	Villisca	Royal F. Tyler	Villisca	H. F. Tyler	Villisca
354	Muscatine County— West Liberty Co-op. Ctry. Co.	West Liberty	C. A. Mountain	West Liberty	O. J. Gustin	West Liberty
355	O'Brien County— The Hartley Ctry. Co.	Hartley	J. C. Joslin	Hartley	C. W. Green	Hartley
356	Sutherland Ctry. Co.	Sutherland	Adolph Christensen	Sutherland	Adolph Christensen	Sutherland
357	Sheldon Ctry. Co.	Sheldon	D. A. Miller	Sheldon	D. A. Miller	Sheldon
358	Caladonia Ctry. Co.	Paulina	J. O. Savage	Paulina	Wm. Gehris	Paulina
359	Archer Ctry. Co.	Archer	B. G. Bensink	Archer	F. Weller	Archer
360	Oceola County— Ashton Ctry. Co.	Ashton	J. A. Kramer	Ashton	J. A. Kramer	Ashton
361	Sibley Ctry. Co.	Sibley	H. C. Koford	Sibley	H. C. Koford	Sibley
362	Melvin Ctry. Co.	Melvin	F. W. Year	Melvin	J. C. Turner	Melvin
363	Page County— Swift & Co.	Clarinda	F. S. Hayward	Chicago, Ill.	G. S. Hulse	Clarinda
364	Palo Alto County— Depue Ctry. Co.	Cylinder	P. C. Duer	Emmettsburg	Henry Hansen	Cylinder
365	West Bend Co-op. Ctry. Co.	West Bend	A. L. Frye	West Bend	O. W. Dobbs	West Bend
366	Fars. Co-op. Ctry. Co.	Ruthven	G. A. Appelmann	Ruthven	Paul E. Hough	Ruthven
367	Malhard Butter & Cheese Assn.	Malhard	T. C. Truog	Malhard	T. R. Wilson	Malhard
368	Lost Island Ctry. Co.	Graettinger	A. O. Christiansen	Graettinger	M. P. Junker	Graettinger
369	Emmettsburg Ctry. Co.	Emmettsburg	L. Stuehmer	Emmettsburg	M. Andersen	Emmettsburg
370	Irish Lake Ctry. Co.	Curlew	D. Z. Martin	Curlew	C. W. Nelson	Curlew
371	Silver Lake Ctry. Co.	Ayrshire	F. W. Shelman	Ayrshire	F. W. Shelman	Ayrshire
372	Fairville Ctry. Co.	Cylinder	O. H. Blackwenn	Cylinder	Robt. Bess	Cylinder
373	Fars. Co-op. Ctry. Co.	Graettinger	Jorgen Andersen	Graettinger	Wm. Matters	Graettinger
374	Rodman Ctry. Co.	Rodman	Elmer Gustafson	Rodman	Elmer Gustafson	Rodman
375	Plymouth County— LeMars Ctry. Co.	LeMars	W. R. Hutchinsan	Sioux City	P. E. Horner	Le Mars
376	Farmer Ctry. Co.	Brunsville	J. Kennedy	Brunsville	J. Kennedy	Brunsville
377	Pocahontas County— Pocahontas Ctry. Co.	Pocahontas	J. A. Crowther	Pocahontas	Gust Wehler	Pocahontas
378	Laurens Ctry. Co.	Laurens	J. G. Hinn	Laurens	P. W. Johnson	Laurens
379	Palmer Ctry. Co.	Palmer	J. I. Johnson	Palmer	Ed. V. Johnson	Palmer
380	Polk County— Des Moines Creamery Co.	Des Moines	J. P. Dawson	Des Moines	A. L. Larson	Des Moines, 4100 Kingman Bldg.
381	Swift & Co.	Des Moines	F. S. Hayward	Chicago, Ill.	G. M. Beck	Des Moines, E. 1st and Maple
382	Fars. Co-op. Prod. Co.	Des Moines	L. O. Loizeaux	Des Moines	N. Danielson	Des Moines
383	Beatrice Ctry. Co.	Des Moines	H. R. Wright	Des Moines	S. R. Pemberton	Des Moines
384	Pottawattamie County— Bloomer Cold Storage Co.	Council Bluffs	Fred E. Hurd	Council Bluffs	John O. Dutton	Council Bluffs
385	Poweshiek County— Grinnell Ctry., Ice & Cold Storage Plant	Grinnell	J. W. Fowler	Grinnell	Milton Powers	Grinnell
386	Brooklyn Ctry. Co.	Brooklyn	G. H. Guthrie	Brooklyn	G. H. Guthrie	Brooklyn
387	Ringgold County— Mt. Airy Ctry. Co.	Mt. Airy	L. O. Bement	Mt. Airy	Louis Pohle	Mt. Airy

## CHEESE LIST—Continued.

Number	Name of Creamery	Located at or Near	Name of Proprietor, Secretary or Manager	P. O. Address of Proprietor, Secretary or Manager	Name of Buttermaker	P. O. Address of Buttermaker
285	Sauk County— Hills, Co-op. Cr. Co.	Lytton	I. Hillman	Lytton	Geo. Hillman	Lytton
286	Park, Co-op. Cr. Co.	Early	K. K. Kennedy	Early	K. K. Kennedy	Early
287	Lake View Cr. Co.	Lake View	E. C. Rogers	Lake View	E. C. Rogers	Lake View
288	Sauk City Cr. Co.	Sauk City	A. C. Schell	Sauk City	M. L. Phillips	Sauk City
289	Scott County— Long Grove, Co-op. Cr. Co.	Long Grove	J. H. Marriot	Long Grove	Guy Mathias	Long Grove
290	Davenport Cr. Co.	Davenport	J. H. Marriot	Davenport	Jay Bradrick	Davenport
291	Walnut (8 mi. N.)	Walnut	John H. Vincling	Walnut, R. 2	Thorwald Peterson	Walnut, R. 2
292	Kirkman	Kirkman	Fred. Koenig	Kirkman	Chris Anderson	Kirkman
293	Harlan	Harlan	M. Akers-Jensen	Harlan	M. Akers-Jensen	Harlan
294	Hill	Hill	J. W. Snell	Hill	Aug. M. Hein	Hill
295	Hawarden	Hawarden	W. H. Zorr	Hawarden	W. H. Zorr	Hawarden
296	Hopert	Hopert	Sloyer & Boderman	Hopert	W. H. Gehris	Hopert
297	Alton	Alton	W. J. Mueller	Alton	H. S. Collins	Alton
298	Borlen	Borlen	John Bentler	Borlen	Henry J. Wergas	Borlen
299	Stout Center	Stout Center	J. E. Vermeer	Stout Center	Ever Denlinger	Stout Center
300	Rock Valley	Rock Valley	P. J. Vander Schuer	Rock Valley	Ed. Vander Schuer	Rock Valley
301	Granville	Granville	P. J. Vander Schuer	Granville	P. J. Vander Schuer	Granville
302	Gilbert	Gilbert	C. P. Lake	Gilbert	C. P. Lake	Gilbert
303	Husker	Husker	Sam. Maland	Husker	G. J. Olson	Husker
304	Rehoboth	Rehoboth	E. M. Rod	Rehoboth	Geo. Wick	Rehoboth
305	Stout City	Stout City	Chas. Skerretman	Stout City	Chas. Skerretman	Stout City
306	Stout	Stout	C. F. Swan	Stout	P. D. Shifflet	Stout
307	Zearing	Zearing	G. J. Valen	Zearing	P. D. Shifflet	Zearing
308	McCallburg	McCallburg	G. J. Valen	McCallburg	C. T. Knutson	McCallburg
309	Taylor County— The Bedford Cr. Co.	Bedford	Frank Dending	Bedford	Leslie Klopp	Bedford
310	Franklin Cr. Co.	Franklin	A. H. Franck	Franklin	A. H. Franck	Franklin
311	Union County— Farr, Co-op. Cr. Co.	Alton	V. O. Williams	Alton	V. O. Williams	Alton
312	Stitt & Co.	Creston	F. S. Hayward	Creston	Leonard Brothman	Creston
313	Van Buren County— Blue Grass Cr. Co.	Stockport	W. P. Dow	Stockport	J. B. Garrett	Stockport
314	Wapello County— Stitt & Co.	Ottumwa	F. S. Hayward	Ottumwa	L. E. Fischer	Ottumwa
315	Yockline Cr. Co.	Ottumwa	R. N. Mervel	Ottumwa	S. F. Harvey	Ottumwa
316	Washington County— Wellman Cr. Co.	Wellman	Knott Produce Co.	Oskaloosa	P. S. Kellner	Oskaloosa
317	Warren County— Old Colony Cr. Co.	Humston	J. L. Humphrey, Jr.	Humston	M. W. Bishop	Humston
318	Corydon Cr. Co.	Corydon	J. R. Green	Corydon	E. P. Davis	Corydon
319	Gold Bar Cr. Co.	Fl. Dodge	S. U. Dencker	Fl. Dodge	Rolland Dencker	Fl. Dodge
320	Dayton Cr. Co.	Dayton	A. A. Chang	Dayton	Bernhard Jensen	Dayton
321	Geary Cr. Co.	Geary	J. E. P. Johnson	Geary	E. E. McGuire	Geary
322	Winnebago County— Lake Mills Cr. Co.	Forest City	John Carsten	Forest City	C. G. Jensen	Forest City
323	Lincoln Cr. Co.	Lake Mills	Ole T. Gros	Lake Mills	C. G. Jensen	Lake Mills
324	Scaville Cr. Co.	Scaville	P. S. Peterson	Scaville	L. K. Blocker	Scaville
325	Thompson Cr. Co.	Thompson	Ole K. Hermanson	Thompson	Scaville	Thompson
326	Buffalo Center Cr. Co.	Buffalo Center	M. M. Tanager	Buffalo Center	A. M. Hagen	Thompson
327	Leland Cr. Co.	Leland	B. E. Hook	Leland	W. A. Fritz	Thompson
328	Severus Cr. Co.	Severus	O. M. Peterson	Severus	Severus	Thompson

CREAMERY LIST—CONTINUED.

Number	Name of Creamery	Located at or Near	Name of Proprietor, Secretary or Manager	P. O. Address of Proprietor, Secretary or Manager	Name of Buttermaker	P. O. Address of Buttermaker
443	Winnebago County—					
444	Edgewood Crt. Co.	Edgewood	L. T. Puse	Edgewood	G. G. Powers	Edgewood
445	Lincoln Crt. Co.	Edgewood	H. G. Nicholson	Edgewood	J. H. Dallen	Edgewood
446	Northwood Crt. Co.	Northwood	J. N. Bragstad	Edgewood	Victor V. Johnson	Edgewood
447	Highland Crt. Co.	St. Louis, Minn. (9 mi.)				
448	Pedra Crt. Co.	Pedra	H. J. Schupack	Highlandville	P. J. Bidan	Highlandville
449	Calmar Crt. Co.	Calmar	A. H. Olson	Calmar	Mike Bauer	Calmar, R. 1
450	Silver Creek Crt. Co.	Burr Oak	W. H. Emmerson	Burr Oak	Iver Barlow	Burr Oak
451	Decorah Park, Inc. Crt. Co.	Decorah	S. O. Bondeson	Decorah	John O. Johnson	Decorah
452	Woodbury County—					
453	Burr Valley Crt. Co.	Sioux City	C. J. Walker	Chicago, Ill.	C. J. Smith	Sioux City
454	Decorah Park, Inc. Crt. Co.	Sioux City	C. J. Walker	Sioux City	H. T. Smith	Sioux City
455	North County—					
456	Joel Crt. Co.	Joel	M. O. Evans	Joel	J. H. Hagen	Joel
457	Farm Co-op. Crt. Co.	Kennett (10 mi. nw.)	O. R. Storm	Kennett	A. O. Dahlen	Northwood
458	Harland Crt. Co.	Northwood (9 mi. nw.)	S. G. Biddle	Emmons, Minn.	Andrew Dahlen	Northwood
459	Decorah Park, Inc. Crt. Co.	Decorah	M. D. Johnson	Decorah	F. D. Warner	Northwood
460	Farm Co-op. Crt. Co.	Kennett	M. D. Johnson	Northwood, Ia.	Nils Oystek	Kennett
461	Fertile Co-op. Dairy Co.	Kennett	J. A. Johnson	Kennett	E. A. Gullvagen	Fertile
462	Hannington Crt. Co.	Hannington	J. A. Johnson	Hannington	E. A. Gullvagen	Hannington
463	Wright County—					
464	Goldfield Co-op. Crt. Co.	Goldfield	G. M. Glauson	Goldfield	Nels J. Nelson	Goldfield
465	Farm Co-op. Crt. Co.	Emmons	W. E. Mader	Emmons	A. J. Kittling	Emmons
466	Chadron Crt. Co.	Chadron	G. P. Elder	Chadron	C. H. Jennings	Chadron
467	Surrey Co-op. Crt. Co.	Belmond (9 mi. w.)	Walter Johnson	Belmond	J. W. Chagler	Belmond
468			O. L. Linn	Belmond	L. R. Rosierke	Belmond

## IOWA STATE DAIRY ASSOCIATION.

Report of the work of this association during the year 1915:

The Iowa State Dairy Association which has been conducting educational work for the promotion of the industry during the past six years, again received its appropriation from the legislature covering the years 1915 and 1916.

A special effort has been made to overcome the difficulty of reaching the non-believer in progressive dairying. This has been done by introducing some attractive and exceedingly practical features into each program. The results indicate that this method has been a great help to arouse interest among those who would not otherwise have given dairying a trial.

The work has been conducted as nearly as possible in those sections where dairying is least developed and where its introduction will be of greatest benefit in improving the agricultural conditions. The southern half of Iowa is in need of more dairying because of the condition of the soil and the relatively low income obtained with the present methods of farming used on high priced land. The mild climate, the abundance of grass, the adaptability of the soil for the growing of milk producing feeds make the natural conditions ideal for the economical production of milk. There are but few creameries in this portion and therefore, the market for dairy products is not as well developed as in the northern portions. In order to be of the greatest assistance, a large part of the recent work has been devoted to the southern half of the state.

Up to the winter of 1914-15, the department had operated thirteen dairy trains. These covered every railroad line in the state and furnished the lecturers an opportunity to reach 672 towns, 61 of which were given two or more meetings due to the crossing of the various lines. These special trains were conducted in a manner to create an interest in dairying and prepared the way for more detailed information in the localities visited.

During the year ending November 1, 1915, representatives of the association met 259 audiences in 71 counties. The records of attendance show that 46,200 people were reached. Of the 259 audiences, 37 were in attendance at farmers' institutes, 58 at dairy



and creamery meetings, and the remaining 164 at meetings conducted by the dairy association directly.

Two special dairy trains were operated during the months of January and February, 1915. Each trip was three and one-half weeks in length. The lines of the Chicago Great Western, the Chicago, Milwaukee & St. Paul and the Waterloo, Cedar Falls & Northern were covered. In each case the railroad companies furnished the equipment absolutely free of charge to the Association.

Half day and full day meetings were held at each town. In addition to the regular lecture work, community dairy shows, boys' and girls' judging contests, milk record, contests, etc., were conducted. More extensive exhibit cars were carried on these trains than on any previous campaigns.

#### THE COMMUNITY DAIRY SHOW.

Community dairy shows were held in conjunction with fifty-eight meetings. These were more successful than had been anticipated and brought out an average of eighteen cows and bulls at each place. The business men at each town co-operated in making the show a success and offered attractive cash and merchandise prizes for the best animals exhibited. The dairymen and leading farmers in the communities also gave considerable of their time in encouraging their neighbors to exhibit cattle. All breeds of cattle used for milk production, whether grades or pure breeds, were entered, which gave an excellent opportunity for comparison of the various types.

The shows were held in a lumber yard or livery stable which afforded the best place obtainable to stable the animals and furnish shelter for the audiences as well. The programs were opened by leading the best cows into the ring and using them to demonstrate the essential characteristics of good productive dairy type. Questions were then called for and discussions held in which all were invited to participate.

After the cow demonstration was completed, the ring was made larger or when the weather would permit all of the animals were led into the streets, and the judging of the various classes begun. The animals were then placed by the judge in regard to their dairy qualities after which each was gone over carefully and its desirable and undesirable points explained.

The community Dairy Shows made it possible to reach the man milking a few cows and point out to him by the use of a member

of his own herd the difference between the profitable and the unprofitable dairy cow. It was explained to him on his own basis, and he was encouraged to determine further the real value of his herd by weighing and testing the milk. Considerable friendly rivalry was created among the exhibitors which will undoubtedly lead in many instances to better feed and care in the average herd of milch cows.

#### INTERESTING THE CHILDREN.

In addition to the Farmers' meetings, an effort was made to reach the younger generation. The majority of the county superintendents were glad to comply with the request that the rural schools close for a day and the children be allowed to attend the meetings. It was not an uncommon sight to see a country school teacher bring all of her pupils to town in a sleigh or wagon. The students from the country and town were assembled in the high school where lectures were given on the importance of agricultural training with special reference to dairying.

At the completion of the lectures at the high school, the students accompanied by the instructors, were taken to the barn where the cattle for the community dairy shows were kept, and instruction given in judging. The cow demonstration was given first to explain the characteristics of the correct type of dairy cow. Then the boys and girls were supplied with directions and all required to compare the class of animals brought before them. After inspecting the animals for twenty minutes, the students wrote their placing together with the reasons for same, on the directions sheet and these were handed to the lecturer in charge. Discussions were then held and all questions answered.

The business men at the various towns gave prizes for the boys and girls who judged. The students generally were very much interested in the work and expressed a desire to study their agricultural work in school in a similar way. During the winter of 1914-15 nearly 3,000 boys and girls were reached in this manner.

#### WEIGHING AND TESTING THE MILK.

To be capable of judging and comparing dairy cows is important, but the only definite way to determine the value of a cow is to weigh and test her milk. It was a question as to how this could be introduced to best advantage on the average farm. The work was carried on along the Chicago, Burlington & Quincy line in

southern Iowa, where the small number of dairy cattle would not permit the organization of cow testing associations. It was simply a matter of getting some one in as many families as possible started to weighing and testing the milk of the herd.

It was decided that this could be most efficiently done by inaugurating a milk record contest among the boys and girls between the ages of twelve and twenty years. These age limits were made to insure fair competition to all who entered and also to interest those who were in a position to derive the greatest benefit from the work. It was found easier and more helpful to mould the future of the boy and girl than to change the fixed habits of the father and mother.

Any boy and girl between the specified age limits who could weigh and test the milk of three or more cows for three consecutive months, was eligible to enter the contest. The contest proper closed in three months, but the contestants were all encouraged to continue the work for at least one year in order to get the entire lactation period of each cow.

A supply of monthly record sheets, feed standards, and pamphlets containing all of the necessary directions for carrying on the work, were furnished to each contestant. They were required to furnish themselves with scales and wherever possible, with Babcock testers. In case the tester could not be secured, the contestant was required to have the creamery or station man test the samples for butter-fat not less than twice each month. At the end of each month, the records were transferred to a summary sheet and the complete data mailed to the office of the association.

The manner of grading the reports was based upon the efforts put forth by the contestants, and not on the production of the cows. In addition to the reports, an essay of not to exceed 500 words describing the manner in which the work was carried on and the benefit derived therefrom was required from each contestant. Any changes which improved the rations or made the production of milk more economical, were recognized, but it was realized that the contestant had no opportunity to select the cows with which he must work.

The following score was used in grading reports:

Accuracy, 25; number of cows, 15; neatness, 20; completeness of details, 20; essay, 20; perfect score, 100.

The breeders of dairy cattle, the publishers of dairy magazines, and the manufacturers of dairy appliances assisted very materially in making the contest a success by offering valuable and practical prizes for furthering the dairy industry.

The results of the contest are gratifying. There were 157 boys and girls who completed the work. Many of these tested more than the required number of cows, while some tested as high as fourteen during the entire contest. The reports show that 623 cows produced an average of 404 pounds of milk and 19.6 pounds of butter-fat per month or 13.5 pounds of milk and .65 pounds of fat per day. The average milking period as tabulated on the reports, is eight and one-half months, which makes an average of 3,434 pounds of milk and 166.6 pounds of butterfat per year. The average cost of feed per month was \$4.50 per cow. This included dry feed two months and pasture one month. The cost of producing 100 pounds of milk averaged \$1.11, and of producing one pound of butter-fat twenty-three cents.

The average price received for butter-fat which was sold for the manufacture of butter was 23.5 cents per pound. This shows a profit of only one-half cent per pound for the butter-fat if the skim-milk and manure are allowed to balance the cost of labor, interest and depreciation. The average price received for butter-fat used in ice cream making, was thirty-eight cents which shows the advantage in selling sweet cream for this purpose.

The relatively low price of butter-fat, as shown by the reports of the contestants, is due mainly to the lack of local markets. During the same months, the price received for butter-fat in the northern half of the state, was twenty-eight cents per pound. The high cost of production is accounted for by the unbalanced rations fed. Of the 157 herds in the contest, thirty-two were receiving silage, twenty-nine alfalfa hay, and only eighteen a combination of these two feeds. The amount of cottonseed meal, oil meal and bran fed was small and limited to only a few herds. The principal ration used consisted of corn and oats, mixed hay, and corn fodder.

The results of the milk record contest show the conditions as found in the average small herd of milch cows in southern Iowa. They emphasize the importance of getting the farmer, who milks a few cows, interested in his herd. They also indicate the part these herds play in lowering the production of the Iowa cow.



## OTHER WORK.

The calls from the farmers' institutes for speakers were more numerous this year than heretofore. A large number of requests could not be accepted, because of the other work which was being carried on at the same time.

Several dairy short courses were also conducted. These were in the older dairy communities where detailed information was required. These were three days in length and instruction in breeding, feeding, testing, dairy cattle judging, etc., was given. Although the special dairy short course was new, the attendance was very good at each of these conducted.

Due to the exceedingly unfavorable weather during the past summer a smaller number of creamery picnics were held than usual. Such gatherings are an excellent means of bringing the patrons together in a social way as well as to hear the practical discussion of subjects essential to the improvement of conditions on the farm.

During the spring and fall months when the work is urgent on the farm and it is therefore difficult to hold meetings, bulletins are sent to the local newspapers. These contain timely suggestions which assist the farmer in solving the problems which confront him with reference to his dairy herd. They are written with the idea of assisting the creameries in improving the quantity and quality of raw product. The newspapers are lending their assistance by giving the information a prominent place in their columns.

One of the important features of the work has been the establishment of a Dairy Cattle Congress in conjunction with the annual convention. This year the show was unsurpassed by any similar event. It brings dairy cattle breeders with their choice animals from every part of the United States and offers the farmers of not only Iowa, but the Mississippi Valley, an opportunity to become acquainted with the various breeds. Premiums are offered for butter, cheese, and milk, which in addition to the display of dairy appliances and farm implements, bring thousands of prosperous farmers. The convention proper is held in a building on the grounds, and subjects of interest to the buttermakers, creamerymen and dairymen are discussed by authorities of national reputation.

The Iowa State Dairy Association in all of its work has been assisted in a large measure by the other dairy interests of the State.

Chief among these is the Dairy and Food Department which had a number of speakers on the trains throughout the tours and also co-operated in all the other work. The individual dairymen have also sacrificed portions of their time to educating their brother farmers in better methods and giving them the benefit of valuable experience. The Dairy Department of Iowa State College and the State Veterinary Department have also given a great deal of assistance from time to time.



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# REPORT OF THE Dairy and Food Department

FOR THE

YEAR ENDED OCTOBER 31, 1916

W. B. BARNEY

STATE FOOD AND DAIRY COMMISSIONER

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