

SIXTEENTH ANNUAL REPORT
OF THE
STATE DAIRY COMMISSIONER

TO THE
GOVERNOR OF THE STATE OF IOWA
FOR THE YEAR 1902.

H. R. WRIGHT,
State Dairy Commissioner.

PRINTED BY ORDER OF THE GENERAL ASSEMBLY.

DES MOINES:
BERNARD MURPHY, STATE PRINTER,
1902.

LETTER OF TRANSMITTAL.

To his Excellency, Albert B. Cummins, Governor of Iowa:

SIR—In compliance with the law, I have the honor to submit herewith the Sixteenth Annual Report of the Dairy Commissioner.

Very respectfully,

H. R. WRIGHT,

Dairy Commissioner.

Des Moines, November 1, 1902.

EXPENSE OF OFFICE OF DAIRY COMMISSIONER FOR THE YEAR
ENDING NOVEMBER 1, 1902.

Dairy commissioner's salary.....	\$1,500.00	
Dairy commissioner's expense	497.09	
Total		\$1,997.09
Deputy dairy commissioner's salary.....	\$1,000.00	
Deputy dairy commissioner's expense	144.02	
Total		1,144.02
Assistant dairy commissioner's salary..	\$1,000.00	
Assistant dairy commissioner's expense—ten months	726.21	
Total		1,726.21

EXPENSE OF MILK INSPECTION IN FOURTEEN CITIES—

Milk agents' fees.....	\$2,064.00	
Milk agents' expense.....	128.35	
Milk agents' special work	66.75	
Total.....		2,259.10

OFFICE EXPENSES—

Printing dairy law	\$ 86.50	
Legal Expenses.....	80.00	
Analyses	50.25	
Milk testing machines	56.00	
Miscellaneous	14.12—	281.87
Office help		95.00
Express and freight.....		79.83
Telegraph and telephone.....		6.25
Total		\$ 7,594.37
Less salaries.....		3,500.00
Total expenditures from appropriations.....		\$ 4,094.37
Average monthly expenses		341.19

NOTE—Salaries are not paid from the specific appropriation. The amount appropriated for the biennial period beginning April 1, 1902, was \$9,000.00, of which has been expended in seven months, to November 1st, \$2,493.75.

DAIRY COMMISSIONER'S REPORT.

The creamery statistics herein contained are for the year ending May 1, 1902. The amounts of butter made and sold are strictly for that period, but the items showing number of cows, patrons, hand separators and other details of creamery management are naturally given according to the circumstances existing at the time the report was made.

The falling off in the make of butter, and the number of patrons and cows was to be expected, as was the increase in number of creameries closed. Every year a number of creameries, which is too large a percentage of the whole number, are closed in Iowa, some of them permanently, others of them to be reopened at later date and again added to the list of creameries of the state. A creamery cannot be successfully operated unless it has at least 500 cows and can make above 60,000 pounds of butter. The average make of butter for the creameries of the state is 104,152 and a great many creameries, of course, make a good deal less than this amount. It is evident that a creamery may be able to run when it can make 60,000 pounds and not be able to run when it can get the material to make but 50,000, for the expense in either case will be almost the same, and in the latter case will be above the maximum possible for the successful operation of the creamery. The concentration of the industry at large churning plants like the one at Sioux City, the introduction of the hand separator and the shipping of the cream instead of sending it to the local factory, or any local dissatisfaction with the creamery, is enough to close up a plant that is making close to the minimum amount of butter, for any of these causes may reduce the amount of its product below the line of possible profit. The larger factories manufacture the butter for about a cent a pound while the factory making but 60,000 pounds can scarcely make up the butter for less than three cents. Then the larger factory will be able to sell its butter without commission and hence get a larger net return than the smaller one. The hand separator makes the

farmer entirely independent of the local creamery for he can ship his cream as easily as he can ship any other perishable product, and the express companies make very low rates to stimulate that kind of shipments. The hand separator enlarges the territory possible to be covered by a creamery and so increases the competition between neighboring creameries to the detriment of the smaller. Naturally, when a small factory is closed up by competition of the sort suggested, not all of its patrons are in a position to obtain a market for their milk or cream, and so the total make for the locality is decreased. These reasons account, in part, for the decrease in the number of creameries and the decrease in the amount of butter made.

Another reason for the falling off in our product has been the disastrous season for the months beginning with the drouth of the summer of 1901, and the exceedingly high price of feeds last winter which made dairying exceedingly unprofitable, even under the best conditions then prevailing. So that the falling off in butter made and in the number of creameries in operation is not at all unexpected or lacking explanation, and does not indicate any permanent lack of interest in dairying in the state. The number of new plants erected was in excess of the number erected the previous year, and, no doubt, another summer will add greatly to the list of active and successful creameries.

Too much of the time of this department is taken up in collecting statistics from the creameries. It seems to be impossible to get returns with anything like promptness from a number of the creameries of the state. It is the intention of the commissioner to send out the blanks for reports next year on July 1st instead of May 1st, and then to insist that the reports be made promptly, and, if necessary, to take advantage of the law which provides a penalty for not reporting promptly.

For a number of years we have taken great pride in the fact that the state has more creameries than any other state, and have neglected to notice that the product per cow is only 135 pounds of butter. We have been proud of the fact that every year sees a large number of new creameries started, and have forgotten that almost or quite as many have been closed. The increase in butter making in this state could profitably come from an increase in the number of cows per patron and in the increased product of the cows we now milk. The butter made in Iowa could easily be doubled without increasing the number of patrons, and almost without increasing the total number of cows

tributary to the creameries. The average creamery patrons have seven cows and they make 945 pounds of butter, and the average ought to be twice as many cows and the butter produced at least three times as much as it is. Efforts to increase should be made along these lines rather than along the lines of increasing the number of creameries or developing new territory. The operators of the smaller creameries ought to see this point very clearly, for an increase of patronage is a much greater proportionate increase in profits, for the reason that the expense is not much different whether his creamery makes 50,000 pounds or 100,000, and if it is making the large amount, he can stand a considerable decrease if it cannot be avoided, while if he makes the smaller amount, any decrease will put him out of business and make his investment of little value. This same principle should appeal to the managers of larger creameries, since the more butter made the less expense per pound to manufacture it. The dissatisfied patron is the one who is not making any money out of his cows, and the wise creamery man will serve his own interests best if he will assist the farmer to increase his profit and so make him an earnest adherent of the creamery.

A few creameries of the state are pursuing the plan of sending out to all patrons at the end of each month a circular letter showing in detail the business of the concern, especially giving the test of each patron's milk and the total yield of butter and prices paid for same. There is no danger that the patrons will know too much about the running of the creamery if the manager is doing a square business. Such a letter can easily be prepared and sent out without expense and the result cannot but be beneficial to the creamery.

The dairy commissioner hopes to attend a large number of the Farmers' Institutes of the state this winter and assist in developing dairy sentiment among the farmers, but the butter maker and manager of the creamery can do this sort of work much more effectually than any one else, and ought to be interested in it much more than any one else. The most successful creameries in the state are managed on the theory of not only making the patron satisfied, but also to help him make more money from his dairy. There certainly is no better theory on which to operate a successful creamery.

A number of County and District Butter Makers' Associations have been organized during the last season and others will be

organized as soon as possible. The officials of the State Dairy Association have been especially active in perfecting these organizations, and have been assisted by others interested in the advancement of the interests of the butter makers. These associations are run for mutual improvement and for the purpose of having butter scored and criticised by an expert, and the remedies for its faults pointed out. Butter makers having the opportunity ought to take advantage of it to have their butter criticised at these meetings and the state fair, and at every other opportunity, so that they may constantly know the faults of their butter and the proper methods of remedying them. Then at the national and state conventions they will not be found with scores in the neighborhood of eighty points.

Prof. McKay intends to conduct an all year's scoring contest at the college at Ames beginning in January, which will be done at slight expense to the buttermaker. The assistant commissioner will be present at these scorings, and will then put in his time at the creameries from which the poorest butter comes, assisting in removing the causes of the faults. It is hoped that a very large number of butter makers of the state will send butter to the college according to the plans of Prof. McKay, which will be more fully published in the dairy press.

Discussions of other matters of interest will be found elsewhere in this report in connection with the various statistical tables.

PROSECUTIONS.

The number of prosecutions conducted by this department is relatively small. The amount of oleomargarine sold in the state, however, is little, and hence, there is no opportunity for a large number of oleomargarine prosecutions. Seven prosecutions have been conducted in the city of Ottumwa against railway contractors, who had in their possession for the purpose of feeding their men yellow oleomargarine, contrary to the laws of the state, and of these prosecutions six resulted in the payment of fines, and the seventh defendant is now under bonds to appear before the grand jury.

A number of complaints are made to this office every year alleging that the retail milk dealers of the various cities are selling milk in which a preservative has been placed. Late in

September one of the prominent milk dealers in the city of Ottumwa was arrested for this sort of an offense and was fined \$25.00 and costs by Justice J. A. Ballard. The presence of preservatives in milk is easily detected by a competent chemist. It is the desire of this department to prevent, as nearly as possible, the retail sale of milk in which a preservative is present, and city milk dealers should take notice that detection of these preservatives is easy and that the dairy commissioner will be obliged to prosecute any dealer in whose milk a preservative is discovered. The commissioner is of the opinion, however, that very little preserved milk is sold in any of the cities in which milk inspection is carried on by this office.

WORK OF ASSISTANT DAIRY COMMISSIONER.

During the last eleven months the assistant dairy commissioner has visited 175 creameries, skim stations and cheese factories of this state. The work of the assistant commissioner has been mainly along the line of inspecting the milk as it comes to the creamery and notifying the owners of milk that is not up to standard, with the hope of inducing them to furnish a better product in cans that are uniformly clean. He has inspected and reported upon the cleanliness of the creamery and its appurtenances and has insisted, in a number of cases, that immediate steps be taken to remedy certain defects which he had discovered and pointed out to the management. A large number of the creameries of the state are old creameries, the buildings having been erected at a time when creamery building was not so well understood as now, and the result is that these older plants are wearing out and are not easy to keep clean. A good many of them were built upon the lowest ground in the community and, hence, drainage is extremely difficult, and in some cases impossible. The creamery drain is in too many cases the source of foul smells which saturate the creamery and are absorbed by the milk and cream and butter. The drain should have in it near the creamery a trap which will prevent the odors from arising from the drain, and in case this is impracticable, the liberal use of some of the odorless disinfectants now upon the market is recommended and urged. The law requires the operator of a creamery, or cheese, or condensed milk factory to

maintain his premises in a clean and hygienic condition. Because this is difficult to do, is no excuse for not doing it; and notice is hereby given that from the time of the publication of this report, this department will devote a portion of its time and efforts toward prosecuting the management of those creameries which are not in the best condition possible, under the circumstances as found in the several creameries. The very large majority of Iowa's creameries are maintained in a clean and hygienic condition, as required by law, but a few operators of creameries seemingly have no regard either for the statutory law or the unwritten law of cleanliness.

Creameries that are about to rebuild can obtain useful information by addressing this office.

The assistant commissioner reports that a large number of butter makers are using starters "sometimes," or "a part of the time;" also that a number use "skimmed milk" or "butter-milk" starters. The butter maker should do one of two things: He should either use a starter all the time or not at all. The successful use of a starter requires a kind of skill on the part of the butter maker which is acquired only by constant practice in the use of a certain kind of starter. The butter maker will not discover anything new by experimenting with various kinds of starters under various conditions. By writing to Prof. McKay at Ames he will be able to find out, at the cost of a postage stamp, all that he can possibly learn by any experiments he may conduct. The principles of the use of starters are well understood by such experts as Prof. McKay, and the butter maker should use his knowledge. The use of skimmed milk or buttermilk starter is not recommended by dairy experts, although good results may be obtained therefrom by some butter makers. The commercial starters are uniform and if properly handled in accordance with the directions of their manufacturers will almost invariably produce the desired results, while the use of a skim or buttermilk starter may or may not produce the desired results, depending upon the kind of bacteria that were in the milk to begin with, if butter makers have the skill to select a proper skimmed or buttermilk starter.

The only desirable cream vat is one that will quickly reduce the temperature of the cream and certainly hold it at the proper temperature after that has been secured. The proper ripening of cream depends largely upon the butter maker's ability to control the temperature and to change the temperature of the

cream in a relatively short time. A very great improvement would be made in a number of creameries if the vats now in use could be replaced with vats of modern construction which can and will control accurately the temperature of the cream.

The assistant dairy commissioner will be sent to any creamery desiring the services of an expert, without expense to the creamery. A considerable number of requests for a visit from the assistant commissioner have been received and so far as possible the desired aid has been given. It is very much regretted that the law authorizes the appointment of but one assistant commissioner, and it is evident that the number of creamery visits possible to be made by him is very far short of what ought to be done among the creameries of Iowa, and what might be done if this department had the proper number of men.

OLEOMARGARINE.

If the sale of oleomargarine in other states was no more in proportion than its sale in Iowa, bogus butter would not occupy a great deal of the time or attention of dairy officials or dairymen. It is true that every year small quantities of oleomargarine are discovered in this state, and that there have been for a number of years some slight attempts to dispose of oleomargarine in Iowa, but the conditions are such that but little of it has ever been sold. While this is true, it is no cause for congratulating ourselves, for the reason that the oleomargarine sold in Illinois and other states competes for the market with the large quantities of butter that this state ships, and hence, has the same effect upon our dairy interests as it would if larger quantities of oleomargarine were sold in this state. We are, therefore, just as vitally interested in controlling the sale of oleomargarine in other states, as we are in preventing its sale within our own state. Since the passage of our present state law relating to the sale of "substitute for butter," there have been scarcely any licenses issued to Iowa grocers for the sale of oleomargarine, and nearly all that has been sold or used in the state has been purchased by managers of railway boarding houses, or similar institutions, direct from the manufacturers in Kansas City, Chicago or Omaha. The United States law, which went into effect July 1, 1902, provides that a retailer of colored oleomargarine shall pay

\$48.00 a year license fee, and that the dealer in oleomargarine "free from artificial coloration that causes it to look like butter of any shade of yellow" shall pay a license fee of only \$6.00 a year. This reduction of the license fee in the case of dealers in oleomargarine in uncolored oleomargarine will evidently cause a number of dealers to attempt the sale of the uncolored article in this and other states. There are at this writing, November 1st, nine licensed dealers in Iowa, but it is not known how much success they are having in disposing of the uncolored article. Doubtless other licenses will be issued later, and a vigorous attempt will be made to encourage the sale of uncolored oleomargarine, both by the manufacturers and wholesalers, and by the retailers who may be induced to take out the licenses.

On the 26th of May, 1902, the following letter was received by the dairy commissioner:

KANSAS CITY, U. S. A., May 26, 1902.

B. P. Norton, Dairy Commissioner, Des Moines, Iowa:

DEAR SIR:—You are doubtless more or less familiar with the oleomargarine law, which becomes effective July 1st. We have not been pushing the sale of butterine in your state for several years, yet it is our intention after July 1st to offer uncolored butterine through our various agencies. Retail dealers handling the uncolored goods will be furnished with coloring in capsules. This coloring to be delivered to the purchaser with each package, and the butterine can be colored at home. Of course, we understand that the bill prohibits hotels, restaurants, and boarding houses from buying uncolored and coloring it. Therefore the above will apply to family trade only. It is our desire to comply with all the regulations of the Iowa law applicable to uncolored; hence, we take this opportunity of advising you of our intention. Yours very truly,

ARMOUR PACKING CO.

The proposed plan of the Armour Packing Company was not found by them or other oleomargarine dealers to be practicable, and no extended effort has been made to sell oleomargarine to be accompanied by a capsule of coloring matter. Attention is called to the fact that the new oleomargarine law contains the following provisions: "Any persons that sells, vends, or furnishes oleomargarine for the use and consumption of others, who shall add to or mix with such oleomargarine any artificial coloration that causes it to look like butter of any shade of yellow, shall be held to be a manufacturer of oleomargarine within the meaning of this act, and subject to the provisions thereof, except when he furnishes it for the use of his own family table without compensation." So that it is illegal for a boarding

house keeper to obtain uncolored oleomargarine and then color it before serving it to his guests. The state law also prohibits the coloring of oleomargarine brought into the state. Under date of July 21st, Swift & Co., of Kansas City, sent to this office the following letter:

KANSAS CITY, KAN., July 21, 1902.

Mr. H. R. Wright, Dairy Commissioner, Des Moines, Iowa.

BUTTERINE SAMPLES.

DEAR SIR:—We wrote you under date of July 9th, advising that we were shipping you by express some butterine samples.

Same went forward by the United States Express July 10th.

We have not as yet heard from you in answer to our letter of the above date, and would thank you to give us an early reply thereto, advising whether or not the samples of Butterine submitted you comply with your interpretation of the Iowa Butterine Law.

Yours respectfully,

SWIFT AND COMPANY.

To which the following answer was made:

DES MOINES, IOWA, July 22, 1902.

Swift and Company, Kansas City, Mo.

GENTLEMEN:—Your letter of the 21st inst. is at hand.

I am sending you herewith a copy of our law and call your attention to the latter part of section 2517, with which you are probably already familiar.

I also call your attention to the phrase "*not having a yellow color*" found in the first part of the same section. There has never been a judicial determination of the exact meaning and force of that phrase in any Iowa court with which I am familiar, and lacking such determination, I must decline to affirm that the sample sent us does not have a yellow color, or that its sale would be in accordance with the statute of this state. I think I might as well state here that it is the desire and purpose of this office to prevent the sale of oleo of any shade of yellow and it is the intention of this office to begin cases against any sellers of a product such as you send in.

Respectfully,

H. R. WRIGHT,
Dairy Commissioner.

Since the passage of the new law, the manufacturers have been making every effort to discover some ingredient which might be used in the manufacture of their product and which would give it a shade of yellow. They have succeeded by using more cotton seed oil than before, and by using oleo oil with its natural color, in producing an article which has a very slight shade of yellow. Then by wrapping the same in a parchment paper having a still deeper shade of yellow than the oleomargarine, they succeed in making the products in the package

appear of a considerable shade of yellow. The Iowa law, however, reads as follows: "A substitute for butter and cheese, *not having a yellow color*, nor colored in imitation of butter and cheese, may be manufactured, sold, etc." The dairy commissioner is, therefore, of the opinion that the sale of oleomargarine having even a slight shade of yellow is illegal under the new law, and he expects to begin prosecutions against dealers selling any oleomargarine in this state if the oleomargarine sold by them has any shade of yellow whatever, or if the other provisions of the law are not strictly complied with.

The new oleomargarine law has very greatly decreased the sale of oleomargarine, for the reason that yellow oleomargarine was so universally sold to its ultimate consumer as and for butter. The persistent efforts of oleomargarine manufacturers to find some oil which may be used as an ingredient of oleomargarine and which will give to it a yellow color, is indicative of the fact that only by making their product in a yellow color can they expect to continue the business. They are discovering that colorless oleomargarine is not saleable to any large extent. Their efforts in the future, no doubt, will take two directions, both for the same end. One line of effort will be to discover a means of making oleomargarine that is yellow without adding to it any "artificial coloration;" and the other line of effort will be toward repealing or emasculating by amendments the present law. There is considerable danger that they may succeed in repealing some of the more stringent provisions of the law. At any rate, they may be expected to make desperate efforts to this end, for the reason that their capital invested will be largely lost to them if the oleomargarine law shall be made effective, and also for the reason that their former extremely profitable business is now impossible for them. The number of oleomargarine manufacturers in the United States is small, their capital invested is very large, their profits heretofore have been enormous, the fortunes of the members of the various firms are very great, and there is not the slightest doubt that they will spend almost any sum of money necessary in their efforts to repeal the present law. They are banded together by their common interest, and their great wealth makes it certain that it will be no easy matter for the farmers and dairymen to retain on the statute books the present law, and certainly it will be a difficult matter to strengthen the law by future enactments of congress.

The National Dairy Union, which has led in the recent fight for national oleomargarine legislation, is expecting to continue the fight against the efforts of the oleomargarine people, and also for the purpose of strengthening the present law if possible. The officers of the union will be powerless unless they have the active and financial support of the creamery and dairy interests of the country, for little or nothing can be done in the way of presenting the case to members of committees of congress unless funds for legitimate and necessary expenses shall be provided by the persons interested in the legislation and who will be most benefited by it. Agricultural people are in a very great majority in the United States, and yet, by reason of their lack of organization, have too little influence in legislative matters. The National Dairy Union represents the organization of the creamery and dairymen of the country, and amounts to nothing at all except as it is supported in every desirable way by the dairy interests throughout the United States. The men who are the officers and active agents of the union are men of the highest character, who have no selfish ends to serve and who have already devoted, without compensation, their time and services to the cause of the dairymen. They are ready and willing to still further devote their time and energies in the cause of the dairyman, and are worthy of the support that they will ask.

Iowa produces 25 per cent of the creamery butter of the United States, and more than 10 per cent of all butter manufactured by any means in this country. It is therefore evident that any benefits derived from anti-oleomargarine legislation will accrue very largely to the dairymen of this state, and for that reason, we are the more interested in the passage of the recent law and in the proposed passage of amendments to it, making it so strong that the fraudulent sale of oleomargarine for butter shall be nearly or quite impossible, and for the same reason the creamerymen and dairymen of this state will be willing to assist in any necessary way the plans of the National Dairy Union in preventing the repeal of present oleomargarine laws and in securing amendments to make stronger the present statutes.

ADULTERATED AND RENOVATED BUTTER.

LIST OF RENOVATED BUTTER FACTORIES.

COUNTY.	LOCATION.	FIRM NAME.	POSTOFFICE ADDRESS.
1 Calhoun	Rockwell City	Andrew Wood Co.	Rockwell City
2 Clayton	McGregor	The J. D. Bicknell Produce Co.	McGregor
3 Dallas	Redfield	Smith Produce Co.	Redfield
4 Des Moines	Burlington	Iowa Grain & Produce Co.	Burlington
5 Dickinson	Spirit Lake	Stevens Cold Storage Co.	Spirit Lake
6 Johnson	Oxford	H. C. Brown	Oxford
7 Lee	Keokuk	Iowa Pure Butter Co.	Keokuk
8 Polk	Des Moines	E. M. Ellingson Co.	Des Moines
9 Polk	Des Moines	Schermerhorn-Shotwell Co.	Des Moines
10 Polk	Des Moines	MacRae Bros	Des Moines
11 Wayne	Hameston	Jas. L. Humphrey, Jr.	Hameston
12 Washington	Washington	Emery & Son	Washington
13 Woodbury	Sioux City	E. J. Hathaway & Co.	Sioux City

The foregoing list comprises all the process or renovated butter factories in this state which had been licensed up to November first under the new United States law. Of these, nine were in operation during the year ending May 1st, 1902. A considerable number of small plants which were in operation before the law went into effect are now closed, so far as renovated butter is concerned; and several of the plants that were ostensibly operated as creameries have been obliged to go out of the creamery business. Statistics furnished by the nine plants in operation last year, and also in operation at present, show the following totals:

Pounds of renovated butter made	4,530,388
Sold for consumption in Iowa	991,333
Shipped outside the state	3,539,055
Pounds of stock purchased in Iowa	1,469,281
Pounds of stock purchased elsewhere	3,061,107

The 3,539,055 pounds of renovated butter that was shipped out of the state went to the following markets:

New York	1,715,759
Boston	700,668
New Bedford, Mass.	514,807
The west	200,500
Chicago	171,572
Baltimore	120,000
Washington, D. C.	95,000
Buffalo	90,000
Ohio	29,749
Total	3,539,055

Almost one million pounds of process butter was sold in Iowa during the year ending May 1st, 1902. Nearly or quite all, of it has been sold in the larger cities, especially Des Moines, and is uniformly sold in pound bricks, and has usually been sold as creamery butter; sometimes as "gathered cream butter;" but since July first these bricks of renovated butter have been branded in accordance with the new law, both on the butter itself and on the parchment paper containing it, with the words RENOVATED BUTTER.

The new oleomargarine law, so called is an amendment of the original act of August 2nd, 1886, an act which defined butter and oleomargarine and imposed a tax of two cents per pound on oleomargarine and required certain license fees from manufacturers, wholesalers and retailers of oleomargarine. The new act amended these provisions, and also made new provisions governing the manufacture and sale of adulterated butter and renovated butter; so that the law contains definitions of oleomargarine and of three kinds of dairy products, butter, adulterated butter and renovated butter. Butter is defined as follows: "For the purpose of this act, the word 'butter' shall be understood to mean the food product usually known as butter, and which is made exclusively from milk or cream, or both, with or without common salt, and with or without additional coloring matter."

Adulterated butter is defined as follows: "'Adulterated' butter is hereby defined to mean a grade of butter produced by mixing, reworking, rechurning in milk or cream, refining, or in any way producing a uniform, purified or improved product from different lots or parcels of melted or unmelted butter or butter fat, in which any acid, alkali, chemical, or any substance whatever is introduced or used for the purpose or with the effect of deodorizing or removing therefrom rancidity; or any butter or butter fat with which there is mixed any substance foreign to butter as herein defined, with intent or effect of cheapening in cost the product; or any butter in the manufacture or manipulation of which any process or material is used with intent or effect of causing the absorption of abnormal quantities of water, milk, or cream."

Renovated butter is defined as follows: "'Process butter' or 'Renovated butter' is hereby defined to mean butter which has been subjected to any process by which it is melted, clarified

or refined and made to resemble genuine butter, always excepting 'adulterated butter' as defined by this act."

From these definitions, it will be seen that any butter which does not contain fat other than butter fat must come under one of these three heads. Attention is called to the fact that the definitions are entirely separate and distinct, and that the provisions in one of them do not necessarily apply to either of the others. Also that adulterated butter is, in general, butter in which "an acid, alkali, chemical or any substance whatever is used for the purpose, or with the effect of deodorizing or removing therefrom rancidity." It is also butter, "in the manufacture or manipulation of which any process or material is used with intent or effect of causing the absorption of abnormal quantities of water, milk or cream." This last provision applies to manipulated or reworked butter only and not to butter "made exclusively from milk or cream," without the use of chemicals and which may possibly contain a slight excess over the standard amount of water as established by the internal revenue department in defining the expression "abnormal quantities of water." The department regulation is as follows: "*Renovated* butter having 16 per cent or more of moisture will be held to contain abnormal quantities of water, milk or cream, and be therefore classed as 'adulterated butter.' " Hence, no butter maker who is not using chemicals to make his butter contain an excess of moisture need fear that he will be classed as a maker of adulterated butter, even if his product has more than 16 per cent of moisture, since the law will not apply to him, notwithstanding the reports to the contrary which at one time appeared in the dairy press. Neither will the butter maker who uses a preservative other than salt in his butter be classed as the maker of adulterated butter because of any reference to "chemicals" in the definition of adulterated butter, and the internal revenue department has so held. These provisions of the law are so stringent and the tax of ten cents per pound upon adulterated butter so great that no licenses for the making of adulterated butter, or for the sale of it, have been issued, and therefore, none is being made at present in accordance with the law. It will, no doubt, be the case that future amendments to this will establish a standard for water in *pure* butter, and in case this is done the standard of 16 per cent will no doubt be adopted.

The rules and regulations in regard to renovated butter formulated by the secretary of the treasury and the secretary of

agriculture in accordance with the provisions of the law practically restrict the definition of renovated butter to that product made by the usual process of melting, deodorizing by agitation and by blowing air through the melted oil, and rechurning, with the usual additions of salt and coloring matter. The manufacturer of renovated butter must pay a license fee of \$50.00 per annum; must attach to each package tax-paid stamps to the amount of a quarter of a cent a pound on the product made. He must display on the side or end of the building in which the business is carried on a conspicuous sign, giving his name, followed by the words "Manufacturer of renovated butter. Factory No. —." He must also stamp upon each print, brick, or roll, or on top of the solid body of butter, if it be packed in a tub or firkin the words "Renovated butter." In case he puts up his butter in bricks or rolls of not less than one pound, the successive papers or wrappers in which the print or roll is contained must also bear the words "Renovated butter." The outside of the original package, whether it be a tub containing a solid mass of butter, or a box of any kind containing a number of bricks or rolls, must also bear the words "Renovated butter." The manufacturer may also use a brand, giving his own name and words or marks descriptive of the quality of his product, provided the brands do not cover up the stamps or the other marks required by the law. From these provisions, it will be seen that, except in the case of butter packed in solid mass to be divided when retailed, the butter and all of its containers, or any of them, will always show the words "Renovated butter," unless the retailer removes the print or roll from its original package, erases the words "Renovated butter" pressed upon the butter itself, and re-wraps it. If he does this, he runs counter to the general provisions of internal revenue laws and the special rule of the secretaries of the treasury and agriculture, which provides that the butter must be retained in its "original package bearing the tax stamp and other prescribed marks until it is delivered to the consumer or purchaser in retail trade." The renovated butter, which may be packed in solid mass, must also be kept in its original package; but in this form might be easily sold to the purchaser for creamery butter. But when renovated butter is sold in bricks and in accordance with all the provisions of the law, the purchaser will invariably be informed as to the product he is buying. The difference in price between renovated butter and creamery butter is so small that scarcely

any retailer would take the risk of violating the internal revenue law for the sake of the small additional profit he might make by so doing. The creamery man and the maker of dairy butter as well will find it to his interest to encourage the retail sale of butter in bricks and prints, instead of in other forms, so that the purchaser may know at any rate that they are not receiving renovated butter and paying for creamery butter.

Before this new law went into effect no retailer of butter in Iowa ever sold any renovated butter. He invariably sold creamery butter or dairy bricks, or butter with some other euphonious title. Even now some retailers attempt to sell renovated butter for creamery butter. These evident intentions to defraud by selling renovated butter in place of a better product, and at the price of a better product, can not always be excused on the theory of the ignorance of the retailer. Formerly he may himself have been deceived by the manufacturer who perhaps was running a creamery; but under the present United States law, he knows invariably what he is buying, and hence, has no possible excuse for attempted deception of his patrons. The new law has depressed the retail price of renovated butter in the city of Des Moines about four cents per pound, and probably has depressed the wholesale price to an equal extent, and naturally these decreases in price are visited upon the original makers of the butter from which the renovated butter has been made. It should be noted, however, that this difference in price of packing stock has been caused by the fact that this renovated butter must now be retailed for what it is and must sell on its own merits, and not on the merit of a better product, namely, creamery butter; so that, it is now selling for exactly what it is worth in comparison with creamery butter, whereas, under former conditions, it was fraudulently sold as creamery butter and for a creamery butter price. At any rate, these losses to the makers of this packing stock effects Iowa farmers to a very small degree, for the reason that only one and a half million pounds of the renovated butter made in Iowa originated in this state. Nearly 70 per cent of the renovated butter stock was purchased outside of Iowa. Practically, the farmer who makes the butter which eventually goes into the renovating factory loses the amount of the tax upon it, which is a quarter of a cent a pound, and any other difference in price of packing stock caused by the new law is accounted for by the fact that it eliminates the illegitimate profits that were obtained by selling the renovated butter for

creamery butter; and this small loss may be easily changed into a considerable profit if, instead of making a cheap grade of butter, which must be renovated in order to be palatable, the farmers will patronize the creamery that is able to make the best and highest priced kind of butter.

NATIONAL DAIRY STATISTICS.

The following statistics are just now available from the United States census of 1900. The second column of the first table gives the total value of dairy products, and the third column approximately the total number of gallons of milk produced, while the fourth and fifth columns give only the pounds of butter and cheese made on the farms, and do not include the pounds of butter and cheese made in creameries or factories. For the year ending May 1st, 1900, the state of Iowa made 84,965,062 pounds of creamery butter, which is almost exactly twenty per cent. of the creamery butter reported as made in the United States for that year. This is in addition to the 61,789,288 pounds of farm made butter reported in the first of these tables. No other state approaches this total of butter made, and only the state of New York exceeds Iowa in the number of cows; Illinois, with 416,000 cows less than Iowa, being third on the list. It will also be noticed that relatively small amounts of butter and cheese are exported. It is only when butter is very low in price at home that it can be exported at a profit.

From the following table it will be seen that the income from each cow in the United States is about \$27.00. From New York, the value of each cow's product is \$36.94; Pennsylvania, \$38.03; Ohio, \$31.02; Illinois, \$29.41; Wisconsin, \$26.82; Iowa, \$19.32.

The states of Pennsylvania, Ohio and New York have large demands for the product of the cow in the form of milk; hence, their high averages. The conditions in Iowa, Illinois and Wisconsin are different from those in the eastern states and each differs from the other. In Iowa, particularly, a very large number of cows have been classed as dairy cows which are exclusively a part of the beef industry of the state. It is nevertheless true that the income per cow in Iowa is very much less than it should be.

DAIRY COWS, JUNE 1, 1900 AND DAIRY PRODUCTS OF 1899 ON FARMS AND RANGES, BY STATES AND TERRITORIES.

STATES AND TERRITORIES.	Number of dairy cows.	Value of dairy products.	Gallons of milk.	Pounds of butter made outside of creameries.	Pounds of cheese made on farms.
The United States	17,139,074	\$472,369,255	7,266,392,074	1,071,745,127	16,372,830
Alabama	279,263	6,610,967	95,882,103	19,121,964	36,374
Alaska	13	596	4,250	200	...
Arizona	17,965	540,700	3,056,109	379,311	33,305
Arkansas	312,577	6,912,459	100,861,565	21,546,258	18,386
California	367,245	12,124,471	153,647,441	20,859,390	4,240,588
Colorado	100,116	3,778,901	38,440,111	4,932,482	103,184
Connecticut	126,434	7,000,188	68,951,862	4,511,78	40,623
Delaware	32,531	1,062,807	12,681,268	1,629,949	104
District of Columbia	1,251	186,066	850,349	8,478	...
Florida	78,830	1,468,008	9,640,434	1,380,445	3,751
Georgia	276,024	5,954,575	82,438,532	15,111,404	2,236
Hawaii	4,023	91,876	584,120	118,871	12
Idaho	51,929	1,243,197	15,122,148	2,520,316	196,952
Illinois	1,007,604	29,638,619	467,105,905	52,483,450	323,485
Indiana	574,276	15,739,594	263,457,239	51,042,346	178,733
Indian Territory	110,687	1,504,747	29,483,855	5,105,715	1,227
Iowa	1,423,748	27,516,870	535,872,240	61,780,288	306,428
Kansas	676,456	11,782,902	244,906,123	41,640,772	201,445
Kentucky	364,025	9,985,540	159,311,527	30,446,381	45,759
Louisiana	184,815	4,168,015	39,251,413	4,918,229	135,104
Maine	173,592	8,182,344	60,586,188	16,174,173	425,102
Maryland	147,294	5,228,098	64,040,517	9,060,062	398,458
Massachusetts	184,592	12,885,744	105,571,873	4,080,262	19,629
Michigan	563,905	16,903,087	349,017,046	60,051,908	331,170
Minnesota	753,632	16,623,490	304,017,106	41,188,846	290,623
Mississippi	290,318	6,064,513	97,030,385	18,881,296	28,572
Missouri	765,386	15,042,390	258,207,755	45,500,110	323,430
Montana	45,036	1,669,978	15,096,214	2,454,072	30,624
Nebraska	512,544	8,545,408	190,477,911	34,518,759	264,430
Nevada	18,046	433,591	4,446,071	589,523	94,682
New Hampshire	115,036	5,591,272	60,724,590	6,385,011	104,330
New Jersey	157,407	8,486,809	77,714,055	5,894,363	24,577
New Mexico	16,775	499,423	3,069,657	313,003	68,571
New York	1,501,608	55,474,155	772,796,352	74,714,376	2,624,552
North Carolina	233,178	6,175,367	89,525,749	16,913,802	28,888
North Dakota	125,543	2,853,133	48,845,280	9,178,815	70,881
Ohio	818,230	25,983,927	425,870,394	79,551,299	1,107,001
Oklahoma	165,852	2,481,673	47,430,853	8,741,359	45,294
Oregon	122,447	3,550,953	48,582,908	8,107,450	407,256
Pennsylvania	943,773	35,890,110	487,033,818	74,221,685	857,167
Rhode Island	23,060	1,923,707	12,923,512	488,086	6,751
South Carolina	126,084	3,232,725	44,091,828	8,150,437	1,061
South Dakota	251,694	4,351,568	69,244,975	17,400,070	196,933
Tennessee	321,076	8,028,460	147,336,061	29,061,006	26,622
Texas	861,023	15,510,973	251,322,618	47,991,492	138,133
Utah	65,905	1,522,132	25,124,642	2,812,122	169,251
Vermont	270,194	9,321,389	142,042,223	18,834,706	406,659
Virginia	281,876	6,999,994	105,098,428	19,905,890	31,697
Washington	107,282	3,816,791	50,132,415	7,372,101	151,099
West Virginia	205,601	5,083,153	85,891,690	16,913,129	74,243
Wisconsin	998,397	26,778,721	472,274,264	44,759,147	1,635,218
Wyoming	18,272	421,618	5,121,974	888,554	24,827

DAIRY STATISTICS OF THE UNITED STATES,

[From preliminary reports of the Twelfth Census, for the year 1900; substantially complete, but subject to some revision.]

Numbers and products of dairy farms.

Farms—		
Total in the country	number..	5,739,657
Reported as dairy farms <i>a</i>	do ..	357,578
Reporting dairy cows.....	do ..	4,514,210
Cows—		
Kept for milk on farms.....	do ..	17,139,674
Kept not on farms, or "town cows".....	do ..	973,033
Total dairy cows.....	do ..	18,112,707
Milk—		
Produced on farms.....	gallons..	7,266,392,674
From cows not on farms <i>b</i>	do ..	462,190,676
Total produced.....	do ..	7,728,583,350
Butter—		
Made on farms.....	pounds..	1,071,745,127
Made in creameries, etc.....	do ..	420,954,016
Total produced.....	do ..	1,492,699,143
Cheese—		
Made on farms.....	do ..	16,372,330
Made in factories.....	do ..	282,332,774
Total produced.....	do ..	298,905,404
Condensed milk—		
Total produced.....	do ..	186,921,787

Total value of dairy products in 1900 *b* \$600,000,000

Exports of dairy products from the United States in the calendar year 1899, 1900, and 1901.

YEAR.	BUTTER.		CHEESE.		CONDENSED MILK.
	Pounds.	Dollars.	Pounds.	Dollars.	Dollars.
1899.....	27,308,869	4,502,744	34,686,833	3,376,108	1,188,057
1900.....	13,283,557	2,396,062	54,039,049	5,549,254	1,288,127
1901.....	24,249,565	4,184,966	31,396,115	3,006,344	1,646,579

Butter and cheese for 1901, by countries.

EXPORTED TO—	BUTTER.		CHEESE.	
	Pounds.	Dollars.	Pounds.	Dollars.
United Kingdom.....	17,140,985	3,048,395	29,179,896	2,740,947
Germany.....	552,714	96,462	5,295	540
Other Europe.....	622,526	87,626	...	...
British North America.....	905,475	178,345	359,996	35,019
Mexico.....	378,851	71,942	302,228	35,714
Central American States and Brit. Honduras.....	231,741	44,986	190,807	23,779
West Indies and Bermuda.....	1,850,059	311,410	842,696	107,648
Brazil.....	1,496,809	183,496	5,171	561
Other South America.....	806,526	124,715	107,831	13,624
Asia and Oceania.....	230,886	43,749	48,690	5,690
All other countries.....	84,968	6,346	15,016	1,792
Total calendar year 1901.....	24,249,565	4,184,966	31,396,115	3,006,344

a Farms deriving at least 40 per cent of total income from dairy. *b* Estimated.

AUDITOR'S REPORT ON NUMBER OF COWS.

The table given herewith shows the number of cows reported for the purposes of taxation by the county auditors to the state auditor, and of course, originate with the various assessors of the state. The figures for 1895 are from the state census of that year and were obtained in a different manner from those of the years 1900, 1901, 1902. From the figures given it will be seen that there has been a steady increase in the number of cows reported in almost, if not quite, every county of the state. In this classification is included all cows not embraced in the classification "heifers one year old" and "heifers two years old." Less than half the total number of cows here reported are tributary to the creameries and cheese factories of this state, which indicates the possibility of increase in the total butter production of the state by reason of increase of cows tributary to the creameries.

The values of cows as given by the assessors and auditors varies a great deal and naturally these average values are considerably below the actual selling value of good milk cows, for the reason that the classification embraces a very large number of cows that could not be sold as milk cows.

The assessors' reports make the following classification and returns:

Heifers one year, 545,808; average value, \$14.57; total value, \$7,954,382.
Heifers two years old, 352,456; average value, \$19.87; total value, \$7,004,020.

Cows, 1,423,348; average value, \$24.26; total value, \$34,540,890.

The average value as given is supposed to be the actual value, and the figures given by the assessors range from \$20.02 in Palo Alto county to \$34.08 in Muscatine county.

TABLE SHOWING NUMBER OF COWS FOR EACH COUNTY AND FOR THE STATE FOR THE YEARS 1895, 1900, 1901 1902 AND VALUES FOR 1902.

Figures are from census of 1895 and the reports of county auditors to the state auditor for the years 1900, 1901, and 1902.

COUNTIES.	VALUE.	1902.	1901.	1900.	1895.
The State.....	\$ 34,540,890	1,423,348	1,382,242	1,295,960	1,087,259
Adair.....	425,046	17,724	16,192	14,050	9,685
Adams.....	301,054	12,524	11,857	10,762	7,699
Allamakee.....	308,574	13,385	13,550	12,677	12,289
Appanoose.....	257,396	12,012	11,910	10,828	8,142
Audubon.....	363,803	13,673	12,920	11,581	8,276
Benton.....	458,520	18,698	18,653	17,407	14,508
Black Hawk.....	457,190	19,072	18,647	17,807	17,805
Boone.....	845,314	15,169	14,543	13,631	11,121
Bremers.....	423,302	17,442	17,089	17,071	18,001
Buchanan.....	408,743	17,816	17,605	17,254	18,790
Buena Vista.....	326,620	15,914	15,046	14,094	9,924
Butler.....	364,698	15,497	16,157	15,954	15,434
Calhoun.....	357,808	14,215	13,541	12,890	9,129
Carroll.....	355,125	15,825	16,172	14,477	10,823
Cass.....	406,563	14,446	13,372	12,299	9,813
Cedar.....	429,066	17,929	17,807	16,475	12,710
Cerro Gordo.....	280,966	12,252	12,609	11,795	10,089
Cherokee.....	327,204	13,877	13,969	11,743	8,842
Chickasaw.....	377,206	15,773	15,582	15,807	16,058
Clarke.....	271,180	10,701	10,298	9,597	6,897
Clay.....	276,686	12,464	12,782	11,689	8,394
Clayton.....	517,963	21,714	21,698	20,850	21,732
Clinton.....	492,780	19,706	19,583	19,167	21,272
Crawford.....	413,485	16,017	16,197	14,997	11,401
Dallas.....	399,967	15,346	14,199	13,703	10,512
Davis.....	247,121	10,260	10,252	9,877	7,242
Decatur.....	350,376	14,015	17,331	12,040	8,196
Delaware.....	434,764	20,836	21,193	20,301	20,777
Des Moines.....	222,656	8,624	8,501	7,793	7,525
Dickinson.....	171,413	7,010	6,842	6,188	4,018
Dubuque.....	424,465	18,054	19,095	17,844	19,372
Emmet.....	152,610	7,030	6,712	5,894	5,894
Fayette.....	552,968	23,018	22,575	22,282	23,784
Floyd.....	300,570	12,442	12,604	12,920	12,564
Franklin.....	528,217	13,801	13,656	12,117	11,320
Fremont.....	297,039	8,602	8,214	7,497	5,848
Greene.....	358,336	14,902	13,873	12,955	10,399
Grundy.....	374,110	15,177	15,214	14,778	13,608
Guthrie.....	428,643	17,354	15,961	14,525	8,894
Hamilton.....	387,792	16,099	15,535	14,441	12,799
Hancock.....	275,524	11,573	11,160	10,008	7,475
Hardin.....	386,731	17,113	15,825	14,639	11,659
Harrison.....	351,541	14,996	14,214	12,661	9,286
Henry.....	210,843	8,798	8,909	8,621	7,074
Howard.....	301,543	13,051	13,081	11,695	11,010
Humboldt.....	297,247	11,801	11,206	10,958	8,548
Ia.....	228,520	9,472	9,308	8,165	6,950
Iowa.....	405,869	17,175	17,382	15,457	12,270
Jackson.....	407,175	10,750	16,270	15,537	15,149
Jasper.....	536,187	18,862	17,974	16,301	15,870

TABLE SHOWING NUMBER OF COWS, ETC.—CONTINUED.

COUNTIES.	VALUE.	1902.	1901.	1900.	1898.
Jefferson	229,108	9,665	9,300	8,828	7,465
Johnson	489,800	17,549	17,897	17,430	12,659
Jones	539,072	18,175	19,045	18,454	18,347
Keokuk	379,468	14,922	14,203	13,340	10,120
Kossuth	461,019	22,912	21,467	19,846	14,120
Lee	276,761	10,868	10,629	10,370	8,014
Linn	542,651	22,071	20,653	20,046	24,363
Louis	193,064	7,075	7,250	6,701	5,808
Lucas	246,312	10,227	9,837	9,238	7,217
Lyon	228,600	10,350	9,231	8,239	5,301
Madison	378,056	15,388	14,065	13,300	9,426
Mahaska	346,088	13,919	13,725	12,840	10,389
Marion	365,709	12,226	12,267	11,936	9,930
Marshall	406,917	16,495	15,557	14,167	12,331
Mills	269,306	9,803	9,039	8,588	5,522
Mitchell	237,224	12,023	11,744	11,198	10,968
Monona	300,116	12,605	11,578	11,757	6,798
Monroe	232,076	8,981	9,132	8,221	6,535
Montgomery	314,552	10,853	10,402	9,967	6,970
Muscatine	213,315	9,193	11,040	10,104	9,238
O'Brien	315,975	12,895	12,350	11,023	10,179
Oscola	163,322	7,118	6,435	5,381	3,858
Page	388,025	14,007	12,875	12,756	8,084
Palo Alto	225,615	14,764	14,869	14,305	10,265
Plymouth	420,940	16,848	16,299	14,539	10,511
Pocahontas	346,205	14,083	14,191	12,790	9,354
Polk	435,841	15,492	14,415	13,616	11,578
Pottawattamie	539,544	22,356	21,378	18,393	14,437
Poweshiek	383,027	16,230	15,327	14,736	12,190
Ringgold	300,739	13,332	12,723	12,311	8,514
Sac	367,730	16,546	15,472	14,753	11,344
Scott	490,505	14,899	14,905	14,204	12,779
Shelby	431,904	17,960	17,117	15,195	9,523
Sioux	400,191	16,137	14,838	13,409	9,016
Story	390,990	16,017	15,112	14,394	12,216
Tama	471,429	18,697	17,974	17,028	13,653
Taylor	365,026	12,321	13,453	11,833	8,894
Union	262,648	12,735	11,590	11,344	7,510
Van Buren	200,992	9,247	9,099	8,478	7,132
Wapello	225,292	9,877	9,608	8,925	7,665
Warren	394,478	15,106	14,084	13,022	9,417
Washington	289,300	11,267	12,072	12,023	9,493
Wayne	399,994	14,064	14,459	13,178	8,545
Webster	452,943	16,135	15,438	14,928	13,492
Winnebago	236,324	11,769	10,450	9,398	7,100
Winneshiok	452,392	18,834	19,098	17,809	18,410
Woodbury	381,774	16,133	15,885	15,885	10,265
Worth	270,147	11,690	11,690	11,290	8,750
Right	281,029	13,798	13,749	12,191	10,103
The state	\$ 34,540,800	1,423,348	1,382,242	1,295,960	1,087,259

TABLE SHOWING NUMBER OF POUNDS OF MILK RECEIVED, NUMBER POUNDS OF CREAM RECEIVED, POUNDS OF BUTTER MADE, POUNDS SOLD TO PATRONS IN IOWA AND SHIPPED OUTSIDE THE STATE SO FAR AS REPORTED BY THE CREAMERIES.

COUNTY.	No. reporting.	Pounds of milk received.	Pounds of cream received.	POUNDS OF BUTTER MADE AND MARKETS FOR SAME.				
				No. reporting.	Pounds of butter.	Pounds sold to patrons.	Pounds sold in Iowa.	Pounds shipped out of the state.
The state	642	1,246,193,000	44,005,178	640	66,65,626	4,02,036	5,791,006	56,841,575
Adair	9	23,308,000	138,356	9	1,203,598	48,844	8,578	954,659
Adams	2	10,065,000	3,563	2	480,937	3,563	17,289	461,387
Allamakee	6	12,820,000	1,823,490	6	1,231,541	61,913	21,920	1,155,702
Andulson	10	27,065,000	.....	10	1,165,872	100,023	6,58	1,050,209
Benton	5	5,61,000	.....	5	255,695	11,100	257,058	153,070
Black Hawk	15	30,805,000	1,237,080	15	1,086,049	135,415	357,740	1,197,616
Boone	3	5,935,000	1,000	3	200,907	13,700	1,000	245,410
Bremer	21	64,611,000	.....	21	2,885,299	213,080	50,913	2,621,207
Buchanan	11	44,85,000	506,019	11	2,104,821	170,476	38,150	1,865,080
Buena Vista	5	10,335,000	411,717	5	572,733	35,907	3,42	593,224
Butler	16	38,538,000	404,072	16	1,883,933	170,132	143,133	1,462,458
Calhoun	7	9,814,000	76,987	7	464,630	13,174	11,07	489,155
Carroll	11	18,404,000	.....	11	553,511	38,688	725	717,098
Cass	1	8,745,000	.....	1	385,221	1,407	24,260	390,955
Cedar	5	3,390,000	784,120	5	326,400	7,590	124,000	103,820
Cerro Gordo	6	1,53,000	22,423	6	152,201	3,547	30,551	112,128
Cherokee	6	4,91,000	.....	6	215,014	8,180	14,801	180,573
Chickasaw	16	38,043,000	1,394,196	16	2,421,416	173,875	6,904	2,189,637
Clarke	1	1,522,000	.....	1	67,989	2,182	.....	65,800
Clay	8	14,946,000	.....	8	474,146	38,539	2,723	372,864
Clinton	18	81,47,000	1,846,108	18	2,348,528	123,416	34,535	2,227,577
Crawford	10	13,830,000	.....	10	565,053	23,806	102,467	430,070
Crystal	3	9,937,000	1,120,000	3	1,859,489	2,700	500	855,280
Dallas	4	9,983,000	.....	4	359,906	18,609	44,083	267,244
Davis	1	998,000	.....	1	39,125	235	3,250	35,640
Decatur .....	.....	.....	.....	.....	.....	.....	.....	.....
Delaware	10	50,878,000	.....	20	2,151,65	194,807	85,125	1,871,718
Des Moines .....	.....	.....	.....	.....	.....	.....	.....	.....
Dickinson .....	.....	3,916,000	65,373	3	375,268	24,839	17,603	392,026
Dubuque	18	27,921,000	.....	18	1,197,574	99,32	130,214	988,898
Emmett	11	11,137,000	400,553	11	73,270	54,734	38,753	381,780
Fayette	20	67,041,000	18,73	20	2,890,531	813,557	170,48	2,202,486
Floyd	3	.....	1,088,440	3	648,298	23,780	54,000	190,000
Franklin	8	18,082,000	544,630	8	859,905	29,602	11,500	818,243
Fremont .....	.....	.....	.....	.....	.....	.....	.....	.....
Greene	2	1,203,070	.....	2	4,005	867	32,508	9,730
Grundy	18	24,076,000	217,197	13	714,561	106,440	58,381	1,614,740
Guthrie	5	1,477,000	3,050	5	625,403	11,287	68,892	547,344
Hamilton	8	18,195,000	44,920	8	777,729	107,966	137,272	582,491
Hancock	7	9,778,000	414,218	7	498,714	15,814	4,112	497,228
Hardin	14	82,357,000	4,378	14	1,242,873	93,900	15,391	1,185,282
Harrison	4	3,798,000	152,237	4	179,981	12,113	8,841	137,777
Henry	3	698,000	.....	3	44,116	1,664	9,672	32,780
Howard	9	11,620,000	2,046,924	9	1,152,265	69,73	13,169	1,090,739

POUNDS OF BUTTER MADE AND MARKET FOR SAME—CONTINUED.

COUNTIES.	No. reporting.	Pounds of milk received.	Pounds of cream received.	POUNDS OF BUTTER MADE AND MARKETS FOR SAME.				
				No. reporting.	Pounds of butter made.	Pounds sold to patrons.	Pounds sold in Iowa.	Pounds shipped out of the state.
Humboldt	12	17,473,000	818,827	12	882,971	81,136	17,824	7,840,113
Ida	4	4,057,000	110,830	4	216,874	9,350	4,730	202,794
Iowa	8	9,576,000	350,014	8	389,414	29,815	9,853	349,746
Jackson	13	17,273,000	88,560	13	778,395	25,852	49,794	7,017,449
Jasper	7	6,900,000	77,964	7	312,532	18,038	32,887	261,667
Jefferson	4	2,075,000	95,211	4	103,036	10,301	34,186	59,447
Johnson	1		323,000	1	82,000	212	12,000	69,788
Jones	13	49,071,000	51,457	15	2,425,752	111,999		108,129
Keokuk	6	3,783,000		6	163,895	5,243	35,406	123,246
Kossuth	21	45,699,000	74,848	21	2,529,889	145,803	572,260	1,261,713
Lee								
Linn	16	22,577,000		16	1,250,367	71,062	164,577	1,014,728
Louisia								
Lucas	1	423,000		1	17,490	2,051	15,000	10,439
Lyon	2	1,383,000		2	109,796	8,178	5,000	96,618
Madison								
Mahaska	2	720,000	60,100	2	87,490	2,800	21,800	62,890
Marion	1		236,904	1	53,426		34,324	22,102
Marshall	7	3,196,000	1,695,558	7	552,847	14,918	7,000	549,718
Mills								
Mitchell	10	3,053,000	6,934,496	10	2,457,818	30,486	41,450	2,385,882
Monona								
Monroe	1	804,000		1	81,126	2,423	17,483	11,220
Montgomery	1	2,000,000		1	85,000	1,200	12,000	71,800
Muscataine	2	875,000	420,000	2	141,000	2,000	52,890	86,110
O'Brien	4	6,769,000		4	304,326	20,607	10,720	272,999
Osceola	1	480,000		1	19,200			19,200
Pago	3	2,327,000	300,000	3	148,167	2,300	40,700	105,167
Palo Alto	18	42,051,000		18	1,706,756	216,129	69,050	1,511,577
Plymouth	7	11,571,000	30,201	7	509,697	33,442	19,443	446,812
Pocahontas	8	9,086,000	266,327	8	468,811	28,112	3,239	437,408
Polk	2	4,063,000		2	205,048	13,651	171,082	20,315
Pottawattamie	5	5,028,000	190,692	5	323,188	7,910	124,789	195,489
Poweshiek	5	7,454,000		5	307,160	2,400	53,046	251,114
Ringgold	1	1,314,000		1	49,573	3,459		46,114
Sac	9	13,503,000	19,062	9	570,670	56,901	15,715	508,054
Scott	3	1,014,000	311,000	3	132,888	1,300	106,588	24,992
Shelby	7	15,393,000	91,705	7	707,917	39,893	91,275	576,799
Sioux	4	2,587,000	316,873	4	270,571	7,734	2,153	270,684
Story	13	27,139,000	17,317	13	1,168,949	112,040	155,112	901,798
Tama	6	6,049,000		6	345,196	16,200		328,996
Taylor	3	1,137,000	600,000	3	273,701	6,590	3,230	266,881
Union	4	18,000,000		4	753,809	19,058	84,914	654,787
Van Buren	2		520,000	2	130,000			130,000
Wapello	1	150,000		1	7,000			7,000
Warren	2	2,558,000		2	111,864	4,037	23,827	84,000
Washington	3	3,547,000		3	260,771	2,612	33,700	174,459
Wayne	1	3,245,000		1	140,540	3,000	500	137,040
Webster	6	4,242,000	353,507	6	268,163	10,092	13,058	239,113
Winnebago	8	20,365,000	642,367	8	1,160,354	120,410	36,169	1,003,795
Winneshek	14	7,728,000	5,115,701	14	1,683,247	33,726	27,732	1,749,705
Woodbury	3	115,000	7,467,411	3	1,874,379	3,039	7,039	1,864,901
Worth	10	15,839,000	500,938	10	826,717	64,366	35,144	728,217
Wright	8	4,853,000	1,340,920	8	569,598	27,908	12,026	529,664
The state	642	1,246,198,000	44,695,178	640	66,657,626	4,025,036	5,791,003	53,841,575

COMPARISON BY YEARS.

ENDING MAY 1—	1899.	1900.	1901.	1902.
Average pounds of butter per creamery.....	112,930	104,918	105,491	104,152
Total pounds of butter for all creameries.....	87,972,470	84,965,062	82,704,944	77,843,696

Of the creamery butter made, 14.7 per cent was consumed in Iowa.
Last year's report show 11.7 per cent for this item.

BUTTER PRICES.

The following table showing the average monthly price of butter in the New York market is prepared from the published reports of the official quotations and shows the average price of butter for the year ending November 1, 1902, to have been 24.16 cents. These figures are a trifle misleading for the reason that more butter is made and sold by the creameries when the prices are the lowest, and consequently the average price actually received by any Iowa creamery for its total make of butter for the year will be considerably below the average as here given. However, the figures will do for comparisons, because they have all been obtained by the same method. The uniform high price in the winter months points to the possible profit there is in winter dairying for the man who has farm buildings suitable for this practice.

The New York market is set forth in this report for the reason that it is the market which makes the standard of prices, not only for the east, but for the whole country as well, and only local conditions can cause the prices in other markets to vary greatly from the New York market, less the difference in freight rate. The table of total butter shipments which follows indicates very clearly that a very large proportion of Iowa's butter goes to New York, and that only a small part is marketed in the west. It is easy to believe that the place where large quantities of butter are sold is the market which must fix the price not only of butter sold in that particular market, but the price of butter sold in other markets. A comparison of prices made in the different markets of the country very clearly shows that they have all followed New York.

The prices as given in this table are the official quotations. Nine-tenths of the creameries of the state receive at least "a

half cent above the market." This is only another way of saying that the official markets are fixed at less than the price at which the butter actually sells. That this must be true is shown by the fact that nearly all creameries receive the same price for their butter, regardless of quality, and by the fact that commission men are advertising that they will pay a whole cent above for butter that will score extras. All this leads to the suspicion that possibly the official report is fixed not only a half or a whole cent below the actual selling price of butter, but perhaps two cents, or more, below. Further evidence on this point is not lacking. One of the largest creameries of the state effected a sale of half its product for several weeks at one and one-fourth cents above New York, the butter to be delivered at an Illinois point. The difference in freight makes this sale equivalent to two or two and one-fourth cents above New York. This butter was sold to a commission man, who must have sold it at the same price, or more, in order to have made his commission, so that he found it possible to pay two cents above the New York market, and his competitors and other commission men who made returns of only a half cent above must have made a profit in addition to their commissions of one and a half cents per pound, if they actually sold their butter at the same price received for the shipment mentioned. The larger creameries of the state, to a considerable number, are making an effort to find markets for themselves without the intervention of a commission merchant, and their uniform success in managing their large concerns is, no doubt, in no small degree due to the fact that they are able to make a great saving by selling their own butter, which is a plan that cannot be followed by the smaller creameries, but which commends itself to the management of those creameries which make annually a very large amount of butter.

SHOWING AVERAGE MONTHLY PRICE OF FANCY WESTERN
CREAMERY BUTTER IN NEW YORK MARKET.

MONTH.	Twelve months ending Nov. 1, 1896.	Twelve months ending Nov. 1, 1897.	Twelve months ending Nov. 1, 1898.	Twelve months ending Nov. 1, 1899.	Twelve months ending Nov. 1, 1900.	Twelve months ending Nov. 1, 1901.	Twelve months ending Nov. 1, 1902.
November	\$.2510	\$.2330	\$.2112	\$.2325	\$.2337	\$.2900	\$.2487
December .....	.2440	.2500	.2250	.2290	.2100	.2720	.2540
January .....	.2519	.2396	.1900	.2040	.1975	.2750	.2392
February .....	.2394	.2000	.2050	.2042	.2100	.2500	.2250
March .....	.2670	.2185	.1900	.1967	.2075	.2550	.2212
April .....	.2300	.1650	.1800	.1980	.1962	.1900	.2069
May .....	.175	.1572	.1530	.1580	.1700	.2012	.1900
June .....	.1794	.1530	.1500	.1687	.1881	.1950	.1925
July .....	.1770	.1505	.1500	.1687	.1835	.1900	.1900
August .....	.180	.1571	.1675	.1860	.2000	.2100	.2000
September .....	.2125	.1900	.1900	.2025	.2222	.2150	.2110
October .....	.2294	.150	.2200	.2235	.2400	.2140	.2200
Av. val. per lb. for each yr.	\$.2110	\$.182	\$.1885	\$.1971	\$.2005	\$.2278	\$.2105

The following shows the totals of butter shipped to the various markets of the United States as reported by the creameries of the state. Not all the creameries report the destination of butter shipments:

DESTINATION.	1901.		1902.	
	Per cent.	Pounds shipped.	Per cent.	Pounds shipped.
New York ..	67.4	35,703,374	70.8	38,264,280
Chicago	10.6	5,655,201	8.9	4,792,070
Philadelphia	3.5	1,855,910	3.5	1,920,308
Boston	5.4	2,869,043	3.3	1,824,659
New Orleans	3.1	1,664,978	3.1	1,606,090
Pacific coast	2.0	1,078,423	1.8	1,001,653
Illinois .....	.3	152,246	1.5	805,379
St. Louis	1.6	843,388	1.4	790,306
Cleveland .....	.7	405,049	.9	458,522
Buffalo .....	.5	246,432	.8	441,080
Baltimore .....	.5	246,432	.5	260,345
Elgin	1.5	804,447	.25	138,550
Miscellaneous .....	...	1,617,252	...	1,430,615
Total .....	...	52,025,730	...	53,896,076

THE CREAMERIES OF THE STATE.

OWNERSHIP—OPERATION—MILK BY TEST—NEW CHANGES.

COUNTIES.	OWNERSHIP— INDIVIDUAL, CO-OPERATIVE OR STOCK COMPANY.					HOW OPERATED.			REC'V'G MILK BY TE-T OR BY CWT.		NEW CREAMER- IES AND SKIM STATIONS AND PLANTS CLOSED.			
	No. of creameries.	No. of skim stations.	Individual.	Co-operative.	Stock company.	Separator.	Gathered cream.	Combined plant.	By test.	By cwt.	New creameries.	New skim stations.	Total.	Plants closed.
The State	748	172	377	376	165	748	105	65	862	57	34	22	50	97
Adair	8	5	8	3	2	13			13					2
Adams	2	4		2	4	6			6					1
Allamakee	7		1	5	1	2	4	1	7					1
Aspenwood														
Audubon	10	1	1	10		11			11					1
Benton	10	3	10	2	1	13			13					4
Black Hawk	20	5	5	13	2	16	1	3	20		1		1	2
Boone	5	2	5	2		6		1	7					1
Bremer	21	1	1	20	1	21			10	12				
Buchanan	12	6	3	5	10	15		3	18			1	1	3
Buena Vista	7	3	4	3	3	6	2	2	10					2
Butler	17	4	6	6	6	20	1		21					1
Calhoun	8	2	4	4	2	8		2	10		2	2	4	4
Carroll	13		6	4	3	12	1		10	3			1	
Cass	1	9			10	10			10		1	1	1	
Cedar	7	2	7		2	5	3	1	5	4		1	1	
Cerro Gordo	6		6			3	2	1	5	1				1
Cherokee	6	1	7			7			7					
Chickasaw	17	2	4	14	1	15	4		19		1		1	1
Clarke	1	3			4	4			4					1
Clay	10	3	7	2	4	13			13		1	1	2	
Clayton	19	1	4	8	8	15	1	4	20		1		1	
Clinton	12	5	15	2		16	1		17		2	1	3	1
Crawford	3	2	1	1	3	1	4		5					
Dallas	5	5	4	1	5	10			10					
Davis	2	3	5			3	2		5			1	1	
Decatur	2	2	2		2	3		1	4			1	1	
Delaware	21	4	9	15	1	25			23	2		1	1	4
Des Moines														
Dickinson	5		1	4		3		2	5			1	1	1
Dubuque	20		4	11	5	20			14	6				2
Emmet	11		1	9	1	10		1	10	1				
Fayette	20		2	16	2	19		1	18	2				
Floyd	7		4	1	2		5		6	1	2		2	2
Franklin	9	3	7	4	1	9	1	2	12					
Frederick														
Fromont	1			1		1			1		1		1	
Greene	3	3	5	1		6			6					5
Grundy	12	2	7	5	2	10	4		13	1	1			2
Guthrie	12	5	10	4	3	16		1	17		1		1	
Hamilton	11		5	4	2	10	1		10	1	1		1	2
Hancock	10	2	3	9		9	2	1	12		1		1	1
Hardin	14	3	4	9	4	16		1	17			2	2	
Harrison	5		2	3		4			5					
Henry	3		3			3			3					
Howard	10		2	4	4	3	6	1	10					1

* One condensed milk factory.

OWNERSHIP—OPERATION—MILK BY TEST—ETC.—CONTINUED.

COUNTIES.	OWNERSHIP— INDIVIDUAL, CO-OPERATIVE OR STOCK COMPANY.				HOW OPERATED.			REC'D G MILK BY TEST OR BY CWT.		NEW CREAMER- IES AND SKIM STATIONS AND PLANTS CLOSED.				
	No. of creameries.	No of skim stations.	Individual.	Co-operative.	Stock company.	Separator.	Gathered cream.	Combined plant.	By test.	By cwt.	New Creameries.	New skim stations.	Total.	Plants closed.
Humboldt	12		1	9	2	11		1	12		1		1	
Ida	3				1	2		1	3					1
Iowa	3	3	5			2	2		12		1	1	2	1
Jackson	13	7	17	3		17		3	20		1	1	2	3
Jasper	7	1	4	2	2	6	1	1	8					1
Jefferson	5		1	2	2	4		1	5					
Johnson	3		2	1		3			3					1
Jones	18	12	23	6	1	30			30		2	1	3	1
Keokuk	7		3	2	2	6	1		7					1
Kossuth	22		1	21		21		1	22					
Lee														
Linn	20	5	18	4	3	24		1	17	8		1	1	8
Louisa	2		2			2	2		1	1				
Lucas	1	1				2			2					
Lyon	6		4	2		5		1	5	1	1		1	
Madison														2
Mahaska	2			1	1	1	1		1	1				
Marion	1	1	1		1	1	1		1	1				1
Marshall	8		1	6	1	5	3		7	1				1
Mills	1	3		1	3	4			4			1	1	1
Mitchell	11		1	9	1	2	8	1	10	1	1		1	1
Monona														
Monroe	1		1			1			1					
Montgomery	1	3			4	4			4					
Muscatine	2	1	2		1	1	2		3					1
O'Brien	5		2	1	2	5			5		1		1	2
Osceola	4	1	5			5			5		2		2	1
Page	4		2		2	2	2		4					
Palo Alto	20			18	2	20			20			1	1	
Plymouth	10		1	7	2	9		1	9	1	1		1	
Pocahontas	10	2	8	2	2	8	2	2	12		1		1	1
Polk	3	1		1	3	4			4		1		1	1
Pottawattamie	5	2	4	1	2	5	2		3	4				2
Poweshiek	5	1	5	1		5	1		5	1				3
Ringgold	1	1		1	1	2			2					1
Sac	11	2	10	1	2	12		1	13			1	1	4
Scott	3		3			1	1	1	2	1				1
Shelby	9	3	1	10	1	9	2	1	12		2		2	
Sioux	7		5	2		5		2	7					1
Story	14		2	10	1	14			13	1				
Tama	7	2	8	1		9			9		1		1	2
Taylor	3	1	2		2	3	1		4					1
Union	4	10	7	1	6	14			14					
Van Buren	3	2	3		2	1	4		5			2	2	
Wapello	1		1			1			1					
Warren	2	3	3	1	1	5			5					1
Washington	5		5			3	2		5					
Wayne	1	3	4			4			4					1
Webster	6	1	7			4	1	2	7					4
Winnebago	8	7	1	14		14		1	15			1	1	
Winneshiek	15		6	3	6	1	14		15					1
Woodbury	3		2		1		2	1	3					3
Worth	10	2	2	9	1	9	1	2	12					
Wright	8		2	6		2	2	4	7	1				1
The State	748	172	377	376	165	748	105	65	862	57	34	22	50	97

* One creamery belongs to agricultural college.

COMPARISONS.

	1897.	1898.	1899.	1900.	1901.	1902.
Total number of creameries and skim stations.	891	954	967	994	960	920
OWNERSHIP.						
Individual.	504	516	501	524	497	377
Co-operative.	349	349	349	304	360	378
Stock company.	87	88	116	105	102	165
State property.	1	1	1	1	1	1
PLAN OF OPERATION.						
Separator.			842	853	772	748
Gathered cream.			71	85	92	105
Combined plant.			50	56	96	65
BASIS OF RECEIVING MILK OR CREAM.						
By the test.			849	896	890	822
By weight or measure.			110	98	70	57
CREAMERY CHANGES.						
Number of new creameries.	133	90	56	87	35	34
Number of new skim stations.	43	36	34	18	22	22
Number of plants closed.	55	53	79	75	87	97

TABLE SHOWING NUMBER OF PATRONS, COWS, FARM SEPARATORS, CREAMERIES USING ACID TEST, CREAMERIES THAT PASTEURIZE THE SKIMMED MILK AND CREAMERIES THAT USE A SKIMMED MILK WEIGHER.

COUNTIES.	No. of creameries reporting.	No. of patrons reported.	No. of creameries reporting number of cows.	No. of cows reported.	No. of creameries reporting hand separators.	Hand separators reported.	No. of creameries using test for acidity of cream.	No. of creameries that pasteurize skimmed milk.	Using skimmed milk weigher.
The state	651	70,948	486	376,877	334	8,323	179	232	301
Adair	9	1,347	8	7,259	2	84	5	1	6
Adams	2	700	2	4,900	1	5	1	1	1
Allamakee	3	1,523	5	1,300	7	279	2	1	1
Appanoose									
Audubon	10	1,052	10	7,475	1	1	7	6	4
Benton	6	534	5	2,085	2	5		4	4
Black Hawk	16	1,306	15	13,272	9	200	4	1	5
Boone	2	150					2	1	4
Bremer	21	1,726	16	14,710	1	2	7	3	10
Buchanan	11	2,142	6	10,651	6	223	4	9	10
Buena Vista	4	501	1	1,600	3	152	3	3	3
Butler	17	1,933	12	9,640	10	83	4	9	8
Calhoun	7	685	5	3,200	4	44	3	4	5
Carroll	13	1,057	11	5,410	5	259	2	3	7
Cass	1	650	1	2,700	1	5	1	1	1
Cedar	4	646	3	3,047	1	91	1	1	1
Cerro Gordo	5	449	3	2,400	5	108		2	1
Cherokee	6	336	4	1,344	2	2	2	3	1
Chicasaw	16	2,209	11	11,208	9	585	3	5	5
Clarke	1	140	1	1,000			1	1	1
Clay	8	685	5	2,433	8	28	4	9	3
Clayton	18	2,086	9	9,900	12	523	6	3	6
Clinton	8	489	7	3,800	2	28	1	9	3
Crawford	2	630	2	8,223	2	598	3	1	2
Dallas	4	628	2	2,300	1	2	3	3	1
Davis	1	108	1	650	1	1			
Decatur									
Delaware	19	1,603	17	14,351			6	12	12
Des Moines									
Dickinson	4	296	3	1,875	4	68		1	2
Dubuque	19	1,148	16	9,008	1	2	9	1	11
Emmet	11	494	11	5,275	6	62	2	5	11
Fayette	20	2,673	16	17,319	4	5	6	11	6
Floyd	5	1,070	3	4,200	5	355			1
Franklin	8	934	5	2,326	4	102		5	2
Fremont	1	50	1	125				1	1
Greene	3	130	1	300	3	9	1	1	1
Grundy	14	1,017	13	8,425	10	107	4	8	6
Guthrie	8	1,135	4	2,864	6	22	1	2	5
Hamilton	8	821	5	4,600	4	27	3	5	3
Hancock	8	554	6	3,506	5	30	4	3	4
Hardin	15	1,582	13	10,958	9	128	4	9	9
Harrison	4	346	3	1,400	1	65	2	1	2
Henry	3	85	2	145				1	1
Howard	7	2,790	6	6,900	7	234	2	3	3

TABLE SHOWING NUMBER OF PATRONS, ETC.—CONTINUED.

COUNTIES.	No. of creameries reporting.	No. of patrons reported.	No. of creameries reporting number of cows.	No. of cows reported.	No. of creameries reporting hand separators.	Hand separators reported.	No. of creameries using test for acidity of cream.	No. of creameries that pasteurize skimmed milk.	Using skimmed milk weigher.
Humboldt	13	883	9	4,762	12	150	4	6	12
Ida	4	280	4	2,250	2	56	2	3	5
Iowa	7	825	7	4,693	7	123	2	2	5
Jackson	11	778	7	5,148	4	24	3	4	5
Jasper	6	468	4	1,200	1	8	1	4	2
Jefferson	5	282	8	900	2	20	2		2
Johnson	1	256			1	72	1		
Jones	18	1,784	12	10,35	9	35	2	6	9
Keokuk	6	563	3	1,050	2	23	2	4	2
Kossuth	21	1,560	16	10,821	11	111	2	11	15
Lee									
Linn	17	1,132	9	5,925	1	3	4	5	11
Louisia									
Lucas									
Lyon	1	80	1	250	1	8		1	2
Madison									
Mahaska	2	200	2	1,350	1	5		1	1
Marion	1	270	1	1,080	1	1			1
Marshall	8	800	6	4,320	5	148	3		
Mills									
Mitchell	9	1,938	7	8,918	8	394		2	3
Monona									
Monroe	1	80	1	400					1
Montgomery	1	200	1	1,000	1	6	1	1	
Muscatine	2	270	2	950	2	7			
O'Brien	4	273	1	700	2	81	2	2	4
Oaccola	1	50	1	500	3			1	
Page	3	355	1	800	1	12	1		
Palo Alto	19	1,404	14	11,003	9	25	5	6	14
Plymouth	7	525	7	3,320	4	47	1	1	4
Pocahontas	10	578	8	4,164	5	209	2	3	5
Polk	2	240	1	1,000	1	2		2	
Pottawattamie	5	1,443	4	2,850	4	460		2	2
Poweshiek	4	395	3	1,750	1	80	1	4	2
Ringgold	1	50	1	160					
Sac	11	828	6	2,331	8	70	6	9	2
Scott	3	195	2	930	2	53			
Shelby	7	863	6	4,160	2	278	3	4	2
Stonx	5	315	5	2,675	3	154	2	2	3
Story	14	1,513	13	10,075	4	23	4	5	7
Tama	4	320	4	2,300	1	10		6	1
Taylor	3	440	2	1,200	3	209	1	1	1
Union	4	1,180	2	6,300	2	2	3	3	
Van Buren	2	250	2	725	1	3			
Wapello	1	130	1	150					
Warren	2	175	1	450	1	1	1	1	
Washington	3	454	2	1,000	1	16		2	
Wayne	1	490			1	1	1	1	
Webster	5	543	3	1,570	3	132	1	2	3
Winnebago	7	986	6	7,031	4	33	1	6	4
Winneshiek	14	1,945	12	10,075	14	292			1
Woodbury	2	182	1	200	2	112			
Worth	10	909	9	6,915	9	160	5	8	3
Wright	7	529	6	3,337	8	973	2	2	2
The State	651	70,048	486	376,877	334	8,323	1.9	282	301

COMPARISONS.

	1899.	1900.	1901.	1902.
Number of patrons of creameries	90,334	91,417	89,376	81,532
Average number of patrons per creamery	116	113	114	109
Total number of cows	625,512	631,829	627,934	579,700
Average number of cows per creamery	804	731	801	775
Average number of cows per patron	7	7	7	7

VALUE OF CREAMERIES AND SKIM STATIONS—WAGES OF BUTTER MAKERS.

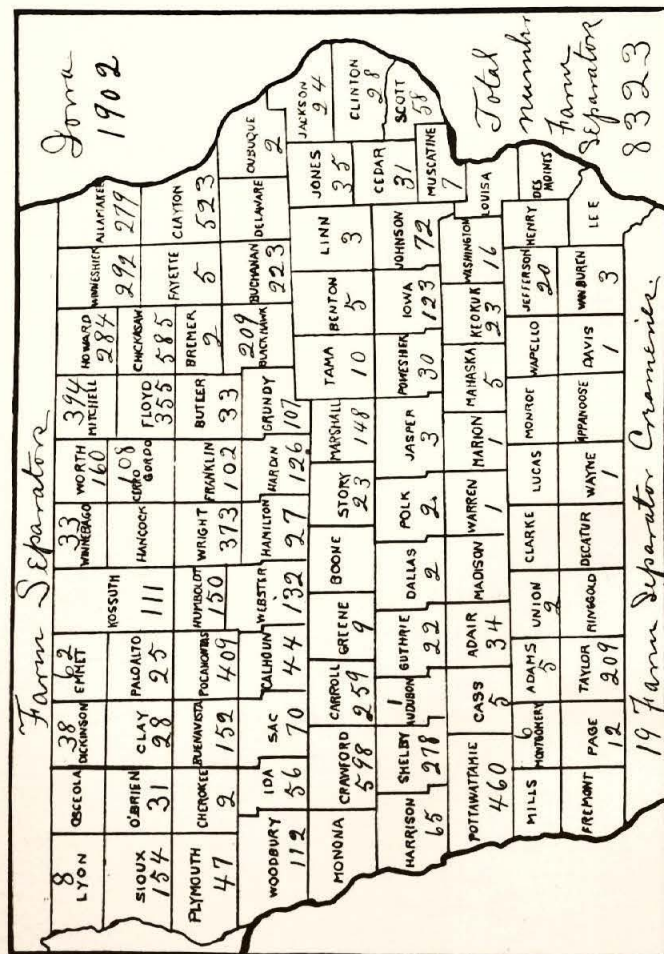
COUNTIES.	VALUES OF CREAMERIES AND SKIM STATIONS.				WAGES OF BUTTER MAKERS.		
	Number creameries reporting.	Average value.	Number of skim stations reported.	Average value.	Number creameries reporting.	Average wages.	Average months employed.
The State							
Adair	9	\$ 4,086	9	\$ 1,866	6	\$ 51.25	12
Adams	1	3,000	1	1,500	2	67.50	12
Allamakee	7	3,714			6	50.00	12
Appa oose							
Andubon	8	3,562			10	74.80	12
Benton	6	3,500			5	62.00	12
Black Hawk	15	3,100	1	1,000	11	59.00	12
Boone	4	3,875			3	66.66	12
Bremer	18	3,203			18	59.86	12
Buchanan	8	3,750	2	2,000	9	65.33	12
Buena Vista	4	3,750	2	1,500	4	69.75	12
Butler	15	3,333	3	1,466	12	55.00	12
Calhoun	7	4,590	2	1,500	3	53.33	12
Carroll	11	4,000	1	1,500	7	51.32	12
Cass	1	7,500	1	1,000	1	75.00	12
Cedar	4	1,500			2	50.00	12
Cerro Gordo	4	2,800			5	50.00	11.5
Cherokee	6	2,400	1	700	3	50.00	12
Chickasaw	15	3,533			16	61.25	12
Clarke	1	2,500	1	1,000	1	75.00	8
Clay	9	3,300	3	1,850	7	49.61	10.6
Clayton	15	3,533			15	50.00	12
Clinton	9	3,666			3	67.33	8
Crawford					2	53.75	12
Dallas	4	3,125	2	2,050	3	50.66	12
Davis	1	2,500	1	800	1	40.00	12
Decatur							
Delaware	19	3,552			14	53.32	12
Des Moines	4	3,750			4	62.50	10.6
Dickinson							
Dubuque	18	2,755			17	47.40	10.4
Emmet	11	3,410			10	53.00	12
Fayette	17	4,183	1	2,000	18	50.00	12
Floyd	4	2,375			4	62.50	12
Franklin	8	3,612	1	2,000	7	60.75	12
Fremont	1	5,500					
Greene	2	3,600			2	60.00	8

VALUE OF CREAMERIES AND SKIM STATIONS ETC.—CONTINUED.

COUNTIES.	VALUES OF CREAMERIES AND SKIM STATIONS.				WAGES OF BUTTER MAKERS.		
	Number creameries reporting.	Average value.	Number of skim stations reported.	Average value.	Number creameries reporting.	Average wages.	Average months employed.
Grundy.....	12	\$3,841	1	\$2,000	9	\$56.10	11
Guthrie.....	5	4,500	1	2,000	5	57.50	12
Hamilton.....	7	3,428	1	2,000	8	67.87	11.6
Hancock.....	6	3,333	1	1,400	6	56.80	12
Hardin.....	14	3,490	2	1,950	14	56.00	12
Harrison.....	4	3,325	...	...	3	50.00	11.8
Henry.....	2	1,750	...	...	2	55.00	12
Howard.....	8	2,925	...	...	6	55.00	11
Humboldt.....	12	2,756	...	...	11	53.27	12
Ida.....	3	2,833	...	...	2	55.00	12
Iowa.....	7	3,257	2	1,250	7	51.00	8.4
Jackson.....	12	3,203	3	1,700	8	47.44	10.6
Jasper.....	7	3,070	...	...	6	51.66	10.6
Jefferson.....	4	3,518	...	...	4	50.00	12
Johnson.....	1	4,000	...	...	1	50.00	10
Jones.....	15	3,440	...	...	10	61.36	11.2
Keokuk.....	6	3,533	...	...	6	48.33	7
Kossuth.....	20	3,475	...	...	20	57.70	12
Lee.....	...	...	...	...	...	...	...
Linn.....	12	3,166	2	2,250	8	50.60	12
Louisa.....	...	...	...	...	...	...	...
Lucas.....	1	3,000	...	...	...	...	...
Lyon.....	3	2,866	...	...	1	75.00	12
Martison.....	...	...	...	...	...	...	...
Mahaska.....	2	4,251	...	...	2	50.00	10
Marion.....	1	3,000	...	...	...	...	...
Marshall.....	3	3,120	...	...	3	46.00	7.8
Mills.....	...	...	...	...	...	...	...
Mitchell.....	8	2,500	...	...	8	57.50	12
Monona.....	...	...	...	...	...	...	...
Monroe.....	1	2,500	...	...	...	...	...
Montgomery.....	...	...	...	...	1	75.00	...
Muscatine.....	2	2,750	1	1,000	2	46.00	12
O'Brien.....	4	4,800	1	1,250	3	78.33	12
Osceola.....	1	3,500	...	...	1	50.00	12
Pago.....	3	3,666	...	...	...	...	...
Palo Alto.....	18	3,000	1	1,500	14	45.70	10
Plymouth.....	7	2,816	...	...	6	62.00	11.3
Pocahontas.....	9	2,800	2	1,400	6	55.40	11.5
Polk.....	1	4,000	1	2,000	2	50.00	12
Pottawattamie.....	5	3,750	2	1,400	4	57.50	12
Poweshiek.....	4	3,750	1	1,200	2	57.50	10.3
Ringgold.....	1	2,500	...	...	1	45.00	12
Sac.....	10	3,330	...	...	9	48.47	12
Scott.....	3	2,833	...	...	2	55.00	6
Shelby.....	6	3,066	...	...	6	59.25	12
Sioux.....	3	3,233	...	...	2	52.50	10
Story.....	13	4,730	...	...	13	63.80	12
Tama.....	6	3,666	2	2,000	4	50.00	12
Taylor.....	3	2,833	...	...	2	50.00	12
Union.....	4	4,125	4	2,025	4	58.75	12
Van Buren.....	2	2,250	...	...	2	45.00	10
Wapello.....	...	...	...	...	...	...	...
Warren.....	2	3,500	1	1,100	2	40.00	12
Washington.....	3	3,333	...	...	2	70.00	12

VALUE OF CREAMERIES AND SKIM STATIONS ETC.—CONTINUED.

COUNTIES.	VALUES OF CREAMERIES AND SKIM STATIONS.				WAGES OF BUTTER MAKERS.		
	Number creameries reporting.	Average value.	Number of skim stations reported.	Average value.	Number creameries reporting.	Average wages.	Average months employed.
Wayne.....	1	6,000	1	2,500	1	50.00	12
Webster.....	5	3,160	1	2,000	2	70.00	11.5
Winneshago.....	1	4,040	2	1,250	2	64.00	12
Winneshiek.....	13	2,500	...	...	13	47.69	12
Woodbury.....	2	2,750	...	...	2	70.00	12
Worth.....	2	3,000	2	1,700	0	61.40	12
Wright.....	2	2,343	...	...	7	51.80	12
The state.....	...	...	...	...	...	...	...



FARM SEPARATORS.

There are eighty-three creameries of the state which receive cream from twenty-five or more farm separators, ranging in number from twenty-five up to 688 for a single creamery. These creameries have 15,500 patrons, of whom 6,250 have farm separators. The total number of creamery patrons of the state is 81,532, and the number of farm separators, so far as reported, is 8,323, and there are 334 creameries, more than two-fifths of the total number of creameries, which have one or more farm separator patrons. The total number of creamery patrons as given above is obtained by multiplying the average number of patrons of the creameries reported, by the total number of the creameries, and hence, is approximately correct. The number of separators is not so estimated, but it is the real number of farm separators actually reported by those creameries that make a report at all. Hence, the proportion of farm separator patrons may be a trifle higher than is shown by these figures. The number of farm separators is 10.2 per cent of the creamery patrons of the state. There are nineteen plants in the state that receive only farm separator cream.

There has been a great deal of discussion of the merits or demerits of the farm separator system, and some of the most extreme views advanced have been by men who knew nothing of the system and its results except the knowledge they may have gained from observation. Some of the views have been correct, and others have been erroneous. With the hope of getting together the ideas of men who have actually had experience in making butter from farm separator cream in the creameries of Iowa, the following blank was sent out to the butter makers of the state that had reported more than twenty-five separators among their patrons, and the tables following have been compiled from reports received from these creameries.

1. County in which your creamery is located.....
2. Name of creamery
3. Whole number of patrons.....Number sending cream from hand separators.....Number sending milk

4. What difference in price, if any, do you make between butter fat in milk and in cream?.....
5. Have any of your patrons abandoned the use of the separator after using it a reasonable time?.....How many?.....And for what reason?.....
6. Is the use of the hand separator in your vicinity increasing?
7. Is the quality of the butter made at your creamery poorer on account of the hand separator cream you receive?.....
8. Have you had any complaint of the quality of the butter by your commission man?.....
9. Do your cream patrons receive more net returns for their butter fat than the whole milk patrons of your creamery or of neighboring creameries?.....
10. Do you consider the hand separator system a satisfactory one?
11. Do your patrons take better care of their cream than they did when they first began to use the separator?
12. The dairy commissioner will be glad to know your views on the hand separator system as fully as you may desire to write them.

The following tables are the answers received from three classes of creameries: First, from those receiving hand separator cream and whole milk, second, from those receiving hand separator cream and gravity cream and no milk; third, from creameries receiving hand separator cream only. These tables represent forty-two creameries of the state having 6,766 patrons, of whom 3,728 send cream from farm separators.

REPORTS FROM CREAMERIES RECEIVING HAND SEPARATOR CREAM AND WHOLE MILK.

Whole number of patrons.	Number sending cream from hand separators.	Number sending milk.	What difference in price, if any, do you make between butter fat in milk and in cream?	Have any of your patrons abandoned the use of the separator after using it a reasonable time?	Is the use of the hand separator in your vicinity increasing?	Is the quality of the butter made at your creamery poorer on account of the hand separator cream you receive?	Have you had any complaint of the quality of the butter by your commission man?	Do your cream patrons receive more net returns for their butter fat than the whole milk patrons of your creamery or of neighboring creameries?	Do you consider the hand separator system a satisfactory one?	Do your patrons take better care of their cream than they did when they first began to use the separator.
120	42	78	None	6	Yes	Yes	No	No	Yes	No
300	100	200	1c more	8	Yes	No	No	Yes	Yes	Yes
69	33	36	None	No	No	Yes	Yes	No	Yes	Yes
115	80	35	None	No	No	Yes	Yes	No	Yes	Yes
75	28	47	None	5	No	Yes	Once	No	No	Yes
138	25	113	None	No	Yes	No	No	No	No	Yes
172	54	118	None	2	Yes	No	No	No	No	Yes
165	29	136	None	2	Yes	Yes	Yes	No	Yes	No
230	90	140	None	No	Yes	Yes	No	No	No	Yes
45	28	17	None	No	Yes	Yes	No	Yes	Yes	Yes
160	30	130	None	5	Yes	Yes	Yes	No	No	Yes
193	133	130	None	No	Yes	Yes	No	Yes	No	Yes
220	150	70	None	No	Yes	Once	Yes	Yes	No	Yes
96	41	55	None	No	Yes	No	No	Yes	Yes	No
70	35	35	None	7	No	Yes	No	No	No	No
120	25	95	None	No	No	No	No	No	No	No
210	25	185	None	9	No	No	No	No	No	Yes
278	38	240	None	No	No	No	No	Yes	Yes	Yes
100	70	30	None	No	No	No	Yes	Yes	Yes	No
281	294	17	2c more	No	Yes	No	No	Yes	No	Yes
80	47	33	None	No	Yes	Yes	Yes	Yes	Yes	Yes
3,297	1,355	1,942								

REPORTS FROM CREAMERIES RECEIVING HAND SEPARATOR CREAM AND GRAVITY CREAM, BUT NO MILK.

90	26	.....	.....	Yes	Yes	Yes	None	Yes	No
150	20	.....	No	Yes	No	No	Yes	Yes	Yes
150	20	.....	No	Yes	No	No	Yes	Yes	Yes
285	30	.....	No	Yes	No	No	Yes	Yes	Yes
110	40	.....	No	Yes	No	No	Yes	Yes	Yes
70	15	.....	No	No	No	Yes	Yes	No	No
77	50	.....	No	Yes	No	No	Yes	Yes	Yes
150	20	.....	No	Yes	No	No	Yes	Yes	Yes
200	32	.....	No	Yes	No	Yes	Yes	Yes	Yes
130	60	.....	No	Yes	Yes	Yes	Yes	No	No
162	30	.....	No	Yes	No	No	Yes	Yes	Yes
1,450	368	.....	.....	.....	.....	.....	.....	.....	.....

REPORTS FROM CREAMERIES RECEIVING HAND SEPARATOR CREAM ONLY.

90	90	.....	No	Yes	Yes	No	Yes	Yes	.....
130	130	.....	No	Yes	No	No	Yes	Yes	.....
57	57	.....	No	Yes	Yes	Yes	No	No	No
200	200	.....	No	Yes	No	Yes	Yes	Yes	.....
688	688	.....	No	Yes	No	No	Yes	Yes	Yes
80	80	.....	No	Yes	Yes	No	Yes	Yes	Yes
250	250	.....	No	Yes	No	No	Yes	Yes	Yes
25	25	.....	No	Yes	No	No	Yes	Yes	Yes
300	300	.....	No	Yes	No	No	Yes	Yes	Yes
200	200	.....	No	Yes	Yes	Yes	No	.....	No
2,010	2,010	.....	.....	.....	.....	.....	.....	.....	.....
6,766	3,728	1,942	Grand totals.						

The first table shows very conclusively that scarcely any creameries are paying more for butter fat in cream than for butter fat in milk. Theoretically, the cream costs less money to make into butter than the milk, but the difference in quality more than compensates for this difference in the cost of manufacture, so that the usual practice is to receive the cream and milk by weight and test and pay for them on the same basis.

From time to time reports have been circulated that in different localities the hand separator was being discarded by its former users. The reports given here in answer to the question "Have any of your patrons abandoned the use of the separator after using it a reasonable time?" do not bear out the thought that the users of hand separators are generally disappointed in them. The hand separator in Iowa is no longer an experiment, and if the owners of hand separators in general were not reasonably satisfied with the use of the separator, much larger numbers of the machines would have long since been discarded. Such not being the case, it would seem very certain that the hand separator patrons of the creameries reported in the foregoing tables are well satisfied with the use of the separator and prefer the hand separator system to the whole milk system. If this be true, then the increase in the number of hand separator patrons in Iowa in the future will be equal to the increase in the hand separators during the last several years, because the satisfied patron is the best possible advertising medium for the sale of other machines. That this is true is further shown by the almost uniform answer that the use of the hand separator is now increasing. The number of hand separators reported in 1898 was 904; in 1899, 1,762; in 1900, 3,332; in 1901, 5,231; in 1902, 8,323, so that the increase for the last year has been nearly sixty per cent, a result which could not have been achieved if former users of hand separators were dissatisfied with them and were discarding them, as alleged.

The ideas of the creameryman in regard to the hand separator system are not quite the same as those of his patron. The question in regard to the quality of butter brings forth answers which seem to indicate very clearly a majority opinion that butter makers have found themselves unable to make from hand separator cream a quality of butter equal to that which they are able to make from whole milk. However, most of the butter makers who confess to making a poor quality of butter from hand separator cream assert that they are still getting a "half

cent above" and a uniform score of extras or better on the market to which they ship, and that it is only occasionally, usually during the warmest weather, that their butter is off flavor by reason of their hand separator cream. They further assert that complaints of the quality of the butter by the commission man are very rare, and yet, they freely admit that the butter is not so good as it ought to be. Several of the larger hand separator creameries are selling their butter on a contract which requires them to produce extras, and a number of the creameries of the state are making an excellent quality of butter from hand separator cream, but the majority of creameries receiving hand separator cream are not making so good a quality of butter as they did under the whole milk system. A good quality of butter *can* be made from hand separator cream, but most butter makers are unable to accomplish this result. This is the difference between theory and fact, and the small quantity of first class butter made from hand separator cream proves only that the theory is correct as a theory, while the larger quantities of lower grade butter made from hand separator cream prove that the theory is not easy to put into practice.

If the creamery patron could be induced or compelled to take better care of his cream and deliver it to the creamery every day, the butter maker would be able to make from it a first class product, but in the majority of cases it is seemingly impossible to get the cream to the creamery in a reasonably good condition.

Naturally the operators of hand separator creameries think that their patrons receive more net returns for their butter fat than the patrons of the whole milk creameries receive, and even some of the butter makers in the whole milk creameries also assert this fact. They add as an explanation the statement that they pay the same price per pound for their butter fat to their milk and cream patrons and that the cream patron has less expense in getting his product to the factory. They assert that it costs two and one-half cents per pound of butter fat to haul the whole milk to the creamery, while the cost per pound of butter fat for hauling cream is about one cent, and that this is the only saving that the hand separator patron makes. Some of them suggest, on the other hand, that there are losses in the skimmed milk from the farm separator which more than equal the difference in the cost of hauling. All of the butter makers, however, who express an opinion on this point, suggest that the

skimmed milk from the farm separator has more value than the skimmed milk from the creamery. Generally speaking, this must be true, because the skimmed milk from the farm separator is fed usually before it has time to sour or become contaminated, while the skimmed milk from the creamery is from twelve to twenty-four hours old. This fact is one of the chief reasons why the owners and users of farm separators are so uniformly satisfied with their machines, notwithstanding the allegations of losses of butter fat in the skimmed milk and of losses at the creamery because of poorer quality of butter made. The fact that the farmer reckons the value of his skimmed milk more carefully than he did several years ago is one of the good signs in the present dairy situation. Another is that nearly all the butter makers report that their patrons take better care of their cream than they did when they first began to use a separator.

There seems to be no question but that the hand separator has come to stay. The average number of cows per patron for the state is about seven, and a moment's thought will show that the number of creamery patrons who have a number of cows sufficiently large to warrant the expense of a hand separator is very much less than the total number of creamery patrons; hence, the number of farm separators now in use, which is about ten per cent of all the creamery patrons, is probably twenty per cent, possibly thirty per cent, of the creamery patrons of Iowa who have twelve or more cows. The rapid increase in the number of farm separator creameries is also an indication of the faith in the system which the builders of these creameries have. Considerable sums of money have been invested in central plants, to which it is expected the hand separator cream and other cream will be shipped by rail, and the success of such an enterprise depends upon the continuance of the hand separator system. Certainly these investments would not have been made unless the investors are reasonably sure that their system will continue. Despite all reports to the contrary, there is no locality in the state where any large numbers of farm separators have been abandoned; and, on the other hand, there is no locality in this state where any reasonable number of separators have ever been owned and operated in which the separator system is not increasing with great rapidity. It is also true that manufacturers of hand separators are enlarging their plants and making every effort to produce enough separators to fill their orders. All of these facts indicate a

future increase in the number of hand separators used in Iowa corresponding with the respective increases for the last four years. It is, therefore, a waste of energy to spend our time only in condemning the hand separator system and not making proper efforts toward educating the users of the separators so that they shall send to the creamery a proper product. The butter maker is equally to blame with the farmer when he receives cream that is too old, or that has been contaminated by a filthy separator, or by being kept under improper conditions. For business reasons he may not be able to refuse outright to accept such cream, but he ought to insist that the cream be better in the future, and he ought to point out to the farmer the way to make it better. The hand separator system will certainly continue, and it is folly not to make every effort to improve the quality of the cream brought to the creamery, and consequently the quality of the butter made from the cream. It is certain that the hand separator system has a great many faults. It is equally certain that its advantages appeal to the farmer much more than its disadvantages, and this being the case, the farmers will continue to buy and use hand separators and the butter makers and creamery operators will be compelled to make the best of the situation; and the best of the situation will not be obtained by attempting to induce the farmers to discard the separators.

A number of butter makers complain that the agents for hand separators have been asserting that their particular machine does not need washing more than once a week. The dairy commissioner will be very glad to assist in combating this statement wherever it is made. The laws of this state require that the patron shall not send to the creamery "any unclean, impure, unhealthy milk or cream," (section 4989), and certainly cream from a separator that is not washed after each time it is used could not, by any stretch of the imagination, be called either clean, or pure, or healthy. The dairy commissioner does not believe that any manufacturer of separators desires to have his agents use this kind of an argument in order to sell the machines, and if creamerymen will report such cases to the dairy commissioner's office, the matter will be taken up with the employers of these agents with the belief that the offending agent will be better controlled by his employer thereafter. Another fault of the hand separator system, which ought to be easily remedied, is the fact that most of the hand separator cream is not so rich

as it should be. The reports made to this office indicate that hand separator cream ranges all the way from twelve per cent up. The butter maker should insist that the hand separator cream which comes to him should test above thirty-five per cent. There will be no disadvantage in this to the farmer, because his machine will skim as closely when skimming a heavy cream as it will when skimming a lighter cream. He will also save in transportation and have more of his product left at home. The butter maker will have an advantage with the heavier cream, for the reason, that the acid in the cream is found in the milk serum and not in the butter fat; hence, there will be less of an "undesirable starter" in a forty per cent cream than in a twenty per cent cream, and he will be able to dilute the heavier cream with his own better starter and the result will be a better grade of butter.

The butter maker should insist that the farmer wash his separator after each time it is used, because otherwise the cream will become inoculated with bacteria from the slime which is found in every separator.

The butter maker should insist, where it is at all possible, that the cream be delivered to the factory every day, for the reason that under the best possible farm conditions, the cream necessarily deteriorates in quality from the time it is separated from the milk.

The butter maker should insist that the farmer skim thirty-five or forty per cent cream, for the reason that he will be able to use his prepared starter to the best advantage.

The farmer should then insist that the butter maker make an accurate test of his cream and that he make a quality of butter which will bring the highest quotations.

CREAM TESTING.

The importance of accurate cream testing is very great. With ten per cent. of our creamery patrons sending cream instead of milk the testing of this product should receive more attention. Cream testing is just as easy as the testing of milk if one has the proper apparatus with which to do the work. As frequently pointed out the pipette is a measure of a certain *weight* of milk, 18 grams. Milk varies but little in specific gravity and hence the 17.6 cc. pipette will always deliver the same weight of milk. But cream varies greatly in specific gravity in proportion to the amount of butter fat it contains, and when it is mixed or stirred it may contain unknown quantities of air bubbles. So that it is not possible to get accurate weights of cream by means of any pipette. This is particularly the case with cream that tests above 20 per cent.

The only absolutely accurate manner of testing cream is to weigh the cream into the bottles and then proceed in such a way that the tests shall be a clear yellow color. The cream must be cooled to 65 or 70 degrees before mixing with the acid or the resulting test will be black or dirty white instead of the golden yellow. Cream does not require quite so much acid as milk to dissolve the solid parts in the test and if too much acid is used, or too strong acid or too warm acid, the test will be spoiled. A creamery receiving separator cream should use a cream scale to weigh the cream and use every effort to have the tests accurate so that the farmer may get what is coming to him in every case.

This department sent out last spring a table of corrections to be used when using the pipette to measure the cream for testing, but it is not claimed that the use of this table will result in absolutely accurate tests and the scales should be used if at all convenient to obtain them. Some of the manufacturers of glassware are now making the 30 per cent. cream bottles with a slightly longer and narrower neck so that the scale on the bottle is three and a half inches long instead of two and a half inches, and the neck of the bottle correspondingly narrow. Insist on having this kind of cream bottles and if your dealer cannot supply you

this department will be glad to inform you how to obtain them. The best and most approved apparatus for testing is none too good and the best should be found in every creamery. The bottles here mentioned are for use with the usual form of test machine. Some of the larger creameries have had made special patterns of testers that will carry a bottle ten or twelve inches long and which has a scale which reads to 50 per cent. For testing heavy cream such an apparatus is admirable.

CHEESE MAKING IN IOWA.

The number of cheese factories in Iowa has never been very large, nor the amount of cheese made enough to make a beginning toward supplying the demands of our own people. The number of cheese factories as shown by the dairy commissioners' reports are as follows:

1891, 64; 1895, 81; 1896, 71; 1897, 76; 1898, 67; 1899, 69; 1900, 73; 1901, 59; 1902, 59.

In 1894 there were 780 creameries and skim stations, which made 54,572,902 lbs. of butter, an average of 70,000 pounds. In 1902, there are 920 creameries and skim stations, which made 77,885,696 pounds of butter, an average of 84,000 lbs. of butter. From these figures, it will be seen that the number of creameries has increased about one-sixth and their butter product has increased nearly one-half, and yet, the number of cheese factories of the state has not shown any perceptible increase during these eight years.

A study of the following table will in some degree make plain the reasons why butter making and creamery operation has increased much more rapidly than cheese making. The average amount of butter made by the creamery from each cow is 135 pounds, which has a value of about \$27.00. The value of the skimmed milk from each cow is variously estimated at from \$3.00 to \$5.00 so that the total value of the product of the cow in the form of butter is not far from \$30.00.

The average number of pounds of cheese, per cow, as shown by the following table, is only 200 pounds, and has a value at 10 cents a pound of \$20.00. The by product, whey, can not exceed in value a dollar, so that the total value of the product of the cow,

when made into cheese, under existing Iowa conditions, in existing Iowa cheese factories, is \$21.00.

The cheese factories report that the expense of cheese making varies from one cent a pound to one and four-tenths cents. It takes approximately ten pounds of milk to make a pound of cheese and twenty-three pounds of milk to make a pound of butter. The cost of making a pound of butter is about 2.25 cts. From this, it will be seen that the expense of making milk into butter is practically the same as the expense of making cheese. The expense of hauling the milk will be the same in either case, so that under existing conditions, the income from the cow whose product is sent to the creamery is about fifty per cent more than the income from the cow, whose milk is sent to the cheese factory.

There are about a dozen cheese factories in the state that are operated on a scale sufficiently large to make them profitable, and they are making a product that will compare favorably with the cheese from other states. These factories, without exception, were established, either before creameries became so general, or in localities where conditions are much different from the average farm conditions in Iowa.

The plain fact of the matter is that cheese factories are not now, and never have been, popular in Iowa, for the reason that the operation of the cheese factory does not fit into the usual farmer's plans of raising hogs and cattle. If our farms were forty or eighty acres, instead of 160 or more acres, the plan of our agricultural operations would have to be different from what it is, and the making of cheese would no doubt be a popular and profitable industry. The man who sends his milk to a creamery has left in his skimmed milk the very thing that he needs to raise the pigs and the calves, to which he will later feed his corn and grass and hay. The man who sends his milk to a cheese factory has no such valuable by-product, and is almost as restricted in the raising of pigs and calves as the man who milks no cows at all, with the additional disadvantage that he must raise his calves by hand, while the man who milks no cows at all can let his calves run with the cows. Cheese factories in Iowa might be made profitable if they could secure the patronage of a reasonable number of cows, but experience shows that in most cases they cannot secure such patronage, and that the creameries can secure the patronage, and hence, in the competition, the creamery has the advantage over the cheese factory.

	Number reporting.	Value of factory.	Aggregate number of months run.	Pounds of milk received.	Pounds of cheese made.	Number of patrons.	Number of cows.
Adams	1	1,000	5	144,000	19,080	20	100
Appanoose	3	1,700	24	588,423	62,000	55	255
Benton	2	7,000	24	2,413,829	198,000	110	1,100
Black Hawk	2		24	2,947,697	200,000	220	
Carroll	1	2,000	8	318,583	28,083	48	
Cerro Gordo	2	2,200	20	1,109,637	111,374	50	370
Crawford	1	1,200	11	500,000	50,000	18	200
Clarke	1	1,250	10	600,000	60,000	33	
Decatur	1	500	3	13,000	1,200	10	40
Floyd	1	5,000	12	850,000	85,000	40	
Greene	1	5,000	12	2,739,000	274,710	94	1,200
Guthrie	1	2,000	9	600,000	60,000	50	300
Hardin	1	2,000	12	750,000	75,000	54	250
Howard	2	2,100	22	1,146,208	112,620	85	500
Humboldt	1	1,000	8	335,000	33,000		100
Jefferson	3	3,700	33	1,738,750	166,875	162	500
Johnson	1	3,000	9	170,000	15,000		
Keokuk	1	2,500	2	11,000	1,100	10	
Marshall	1	4,000	5	1,210,000	124,000	128	800
Monroe	3	750	30	2,298,000	27,000	15	100
Muscatine	1	1,500	12	350,000	35,000	25	150
Page	1	1,600	12	980,000	98,000	80	500
Poweshick	2	4,000	24	1,669,000	154,912	55	600
Story	1	4,000	12	1,061,800	10,600	120	
Taylor	3	3,500	36	1,950,000	182,000	160	1,300
Washington	2	3,500	20	1,503,617	141,616	10	525
Wayne	4	5,400	16	658,374	64,634	200	1,140
Totals	44		415	26,926,967	2,499,960	1,931	10,020
Averages		1,708	9.2	641,118	59,522	40	280

Average number of pounds of cheese per cow, 200. Fifty-nine cheese factories must make 3,511,798 pounds of cheese worth approximately \$350,000.

PAMPHLET CONTAINING DAIRY LAW.

The following sixteen pages have been issued in pamphlet form and about 12,000 copies have been distributed among the creamery patrons and dairymen of the state. A small number of copies still remain on hand for distribution.

This pamphlet is printed for distribution among persons interested in dairying in Iowa and copies will be sent free of charge upon request; creamery operators can secure without cost copies for distribution to their patrons and the commissioner earnestly hopes that creamery men will use this pamphlet, as well as other means, to help in raising dairying in Iowa to a higher standard than ever before.

This department is supported by the state for the benefit of the dairy industry of Iowa, and any assistance or information that the dairy commissioner can render to any dairyman or creamery man of the state will be given. No fees of any kind are required. The department will be glad to assist farmers in the compounding of proper rations for milk production, or to answer, so far as possible, questions bearing upon the profitable production of milk and the manufacture of butter and cheese.

Iowa is a great dairy state. The creameries of the state annually make about 80,000,000 pounds of butter. The census of 1900 says that we make 61,789,288 pounds of butter on our farms. The same authority says that there is made in the United States 420,954,016 pounds of creamery butter, and 1,071,745,127 pounds of butter produced on farms. So that Iowa, with 56,025 square miles of area, produces almost 20 per cent of the creamery butter, and nearly 10 per cent of all the butter made in the United States. The value of our dairy products is about \$28,000,000 annually, to which must be added the value of milk and cream consumed as such, and the value of the skimmed milk and other by products which must aggregate, perhaps, \$5,000,000 more. All of these figures are very large and naturally are a source of some pride to those engaged or interested in the dairy business. But our pride in this does not increase our bank accounts.

The average number of cows kept by the creamery patron is only seven, and the average butter production per cow is less

than 140 pounds. If it is true that it costs \$25.00 per year to keep a cow it will be seen that there is not an extraordinary profit in the product of the average cow. The profits in dairying would be larger and more certain if the cows were fed and cared for with more attention to proper methods, and the number of cows would be very much greater if the possible profits in dairying were better understood. The profits of dairying will be largely increased,

First, by keeping the right kind of cows instead of scrubs. The only sure test of the value of a cow for milk production is the scales and the Babcock test. By their use the farmer can know to a certainty which of his cows give him the least return for their feed, and they should be sold from his herd.

Second, by proper feed and care. Not even the best of milk cows can return a profit if their feed and winter shelter consists of a straw stack. Comfortable quarters, considerate treatment, regularity in feeding and milking and a suitable ration are prime essentials in securing a large flow of milk. It is folly to spend money for mill or by products to feed to cows unless the first three essentials are provided.

In selecting cows to be kept for milking purposes, 5,000 pounds of milk and 200 pounds of butter per annum is a standard which the profitable cow ought to reach or exceed. It is plain that the value of the cow's product must be measured by the value of her butter added to the value of the skimmed milk; and that a cow that gives less than 5,000 pounds of milk might easily make more than 200 pounds of butter or, vice versa, depending upon the test of the milk. A very little labor expended in ascertaining which of the cows are supporting their owner, and which ones are being supported by him, will be a source of great profit to him. A number of late investigations have clearly shown that cows in the same community return all the way from 50 cents to \$2.00 for each dollar's worth of their feed. Eliminate the 50 cent cow.

Having selected the best cows of the herd and having replaced the poorest ones with better ones, proper handling becomes of more importance than ever. No one doubts that a reasonable expense in making the cow comfortable both in winter and summer, or that patience and kindness in treatment, and regular hours of feeding and milking bring ample returns for the trouble taken. Too many cows lack a sufficient supply of water, or are compelled to drink from muddy ponds or from a supply that is ice cold, all of which loses money for the owner. But the greatest loss is occasioned by improper feeding.

Experiment stations and scientific people have made innumerable tests of feeding stuffs and while their conclusions cannot be made up into mathematically correct rules which will apply to all

cases, yet certain principles have been established with reasonable accuracy, and any wide variation from them in feeding is practiced at the expense of the product of the cow. These principles are accepted by all authorities on feeding.

The feeder must take account of three groups of nutrients in feed stuffs, protein, carbohydrates and fats. A certain proportion must exist between these three classes of nutrients in order to secure the largest production of milk possible for the animal. The digestible fats and carbohydrates are the producers of heat and energy, or are the source of the fat deposited upon the body of the animal. The fat is about two and one-half times as valuable for these purposes as the carbohydrates. Protein may also be used by the animal in the production of both heat and energy and in a general way may take the place of the other nutrients, but neither the carbohydrates nor the fat can take the place of the protein in the formation of the muscles, hair, brain and nerves, and the casein and albumen of the milk. Hence protein is an absolute essential for the production of milk by an animal. It is easy to see that the proper amount of protein, fed in connection with the proper amount of carbohydrates and fat, will result in the maximum production of milk, and that a lesser amount of protein fed would result in a reduction of the amount of milk for lack of material out of which one of its parts may be produced.

If the cows give milk at all its average composition will be about the same and no change in the feed will result in a permanent increase or decrease of any of the constituents of the milk of that particular cow. The popular idea that by feeding a lot of corn, or anything else, the butter fat may be increased is a fallacy that has been disproved by scores of careful experiments. The cow gives milk with a certain percentage of fat in it, which is subject to changes by reason of excitement or heat or cold or condition of health, but no condition of feeding can make a 5 per cent cow out of one that naturally gives but 3 per cent milk.

If the cow is giving normal milk its constituents, other than the fat, will be very nearly the same as that found in the milk of other cows.

The individuality of cows varies a great deal and not only will a certain cow give milk that will average about the same in butter fat, but there will be a maximum quantity of milk which she can give no matter what the conditions. It is just as useless to try to increase the maximum quantity of milk beyond the cow's capacity as it is to try by feeding to increase the butter fat in the milk. No system of feeding can make a 30 pound cow out of one that naturally will give but 10 pounds of milk. Hence the necessity for selecting cows which have the capacity for giving such a

quantity of milk of such a per cent of butter fat that her production of butter and the skimmed milk that is left will be worth more than her feed.

All that proper feeding can do is to keep the cow up to her maximum of milk giving, instead of allowing her to have an improper ration which results in her giving less milk than the maximum.

Long continued and careful experiments have shown that a cow giving 20 to 25 pounds of milk must receive each day 2 to 2.5 pounds of digestible protein, 12 to 13 pounds of digestible carbohydrates and from .4 to .8 of a pound of fat. This is the ration that the cow of average size, say about 1000 pounds, should have to enable her to produce the quantity of milk stated. It is evident that a smaller cow would require a little less and a larger cow would require more feed, but about in this proportion. If one has an extraordinary cow that gives 30 or 40 pounds of milk he will have to feed more protein, because it is out of the protein that the casein of the milk is produced, and from no other source. Also that as the cow falls off in milk the amount of protein that is necessary is less than the standard. The point should be borne in mind that the carbohydrates and fats of the feed and a part of the protein is for the maintenance of the animal, and only the excess of the protein is necessary for the production of the milk. Since protein is the expensive portion of the feed, it will not be profitable to feed more than is necessary, but it will not otherwise do any harm if the protein is in excess.

On page 10 of this pamphlet will be found tables showing the percentages of dry matter, protein, carbohydrates and fats in about all of the feeds common in Iowa. Or these numbers may be considered as showing the number of pounds of each of the nutrients in 100 pounds of the feeds. A study of this table will show that a cow feeding on grass will, if she eats 100 pounds of grass per day, get as much protein as called for in the standard of rations. If she gets clover pasture she will do better yet, but green corn will not furnish the amount of protein required. If the cow is fed exclusively upon timothy hay, for instance she will not get sufficient protein, for the reason that about 25 pounds of hay is all that she could eat and this would contain less than one pound of protein. If the cow were fed 25 pounds of alfalfa she would get 2.7 pounds of protein, 9.4 of carbohydrates and .3 of a pound of fat, which is more than enough protein and too little of the others. So that neither timothy nor alfalfa hay would make the proper feed alone. It is evident that something containing an excess of protein, such as oil meal, must be mixed with the timothy hay in order to make the ration conform to the standard; and that something

containing a deficiency of protein, such as corn, should be mixed with the alfalfa in order to increase the proportion of carbohydrates and fats.

On pages 11 and 12 of this pamphlet are found some sample rations. It should be understood that these rations are sufficient for one day's feed for a cow giving a full flow of milk. A study of them and the tables of comparative values of feeds will show that one cannot make up a ration, conforming to the standard, out of timothy hay, corn fodder, oat straw and corn, since all of these common feeds contain too little protein. It will also appear that clover hay will contain more than twice the protein that there is in timothy hay, and that peas and oats have a still large proportion of this valuable and scarce nutrient. The advisability of raising those feeds that contain the largest proportion of protein is apparent.

If mill or by products are purchased, they should be bought on the basis of their protein content, and other things being equal, that one should be purchased which will furnish the protein for the least money per pound of protein.

It will pay the dairy farmer to experiment with fodder crops which, if successful, will give him a supply of protein. Alfalfa will grow in certain localities in western and southwestern Iowa and its protein value is so great that it should be grown wherever possible. Try an acre or two of alfalfa or of peas and oats.

Sorghum for fodder has also been highly recommended. It should be put in with a wheat drill after corn planting, using from 60 to 100 pounds of seed. Should be cut when the seed is in the dough, piled up without attempt at curing and left in the field until it is to be fed. Don't try to cut it nor to stack it, and don't pasture cattle on it, as it sometimes causes bloat. Sorghum fodder has about the same protein as corn stover and is valuable because it is palatable and because of the large amount an acre will produce.

In making up a ration not more than half its weight should be in grain. Bulky fodders need not be weighed but fed in such amounts as the animals will eat. Silage is valuable because it adds succulence to the winter ration. So do roots and to some extent sorghum fodder. The ration should first of all be balanced, that is contain the proper proportion of protein and carbohydrates and fats. Then it should be, if possible, succulent, ample in quantity and fed regularly.

CARE OF MILK AND CREAM.

The quality of Iowa butter could be considerably improved if the quality of the milk and cream delivered to the creamery could be improved.

Milk is never better than when it is first drawn from the cow. All the care and attention that may be given it can only retard the natural process of souring, or prevent the introduction of dirt or bad odors. Under farm conditions, cleanliness and a low temperature are the only means the farmer can use. The separator at the creamery cannot take out the bacteria that make the milk sour quickly or produce bad flavors. There is nothing that the farmer or butter maker can do to make the milk or cream any better, they can simply prevent it from getting any worse, and since the farmer has the first handling of the milk and cream, his responsibility is the greater. The milk must be drawn in a cleanly manner into clean pails, strained into a clean can, set in the tank of water as cold as possible, the can cover left loose, and the milk sent to the creamery as soon as possible.

Don't buy a can that has any seams in it, or if you must do so, have a tinner fill the seams with solder so that there can be no place where cream or sour milk may escape the washing. Use a brush instead of a cloth to wash the cans, and rinse them with boiling water.

A few salesmen of hand separators have assured their purchasers that one or two washings of the separator in a week is sufficient, and that weekly or semi-weekly delivery of cream is all that is necessary. Both statements are equally incorrect. The law provides a penalty for the delivery of "unclean, impure, and unwholesome" milk or cream to a creamery. Such milk is worth less, and brings less when converted into butter, than that which is clean. It will pay to keep the milk and cream in the best possible condition, so that the buttermaker can make the highest grade of butter out of it. The separator must be washed after each time it is used, and the cream should be delivered every day. Warm cream should not be mixed with cold cream.

Patronize a creamery that is near you. Shipping milk or cream long distances lowers the value of the cream for buttermaking. Sell your product to some one that you can deal with in person and then if there is an error of any kind you can compel a proper correction.

RAISING CALVES ON SEPARATOR SKIMMED MILK.

The skimmed milk that comes from a good separator has in it about .05 of one per cent of butter fat, instead of 3.8 per cent of fat contained in average whole milk. Its value is variously estimated at 10 to 40 cents per hundred pounds to feed to calves and young pigs. It is much more valuable sweet than sour, and the farmer should demand that his creamery sterilize the skimmed milk so that it may be kept sweet a longer time. Of course the milk must get to the separator sweet or the heating will curdle it.

The same principles of feeding apply as with the feeds for milk production, the standard being a little different. If the milk as supplied by the cow is the right ration for the calf, then of course skimmed milk must have something added to it that will take the place of the butter fat that has been taken out by the separator. In feeds the fats and the carbohydrates serve the same purpose, hence we may add either carbohydrates or fats to the skimmed milk to bring it into balance. There is nothing better than corn for this purpose. Flax seed meal is also good but corn is much cheaper and is found on every farm in the state, ready to feed to the calf with his skimmed milk.

Feed the calf the first milk from his mother. This colostrum milk is especially provided by nature to set in proper motion the digestive apparatus of the new born calf. Continue to feed him whole milk for two weeks. Give not more than 10 pounds, or 5 quarts, per day, in three feeds. Then gradually substitute skimmed milk for a part of the whole milk, increasing the one and decreasing the other so that at a month old he is getting skimmed milk. Increase the amount of skimmed milk, if desired, so that at three months the calf gets 20 pounds per day.

When the change is made to skimmed milk, teach the calf to eat shelled corn. The calf needs to chew the corn in order to get the saliva into his stomach. If corn meal is put in the milk he will gulp it down without chewing, to the detriment of his digestion.

The heifer calves should not have an excess of corn, if they are to be kept for the dairy. Steer calves and those which it is expected to fatten may have about all the corn they will eat.

Don't feed the calves too much milk.

Don't feed sour milk.

Don't feed the young calves cold milk.

If you neglect these don'ts the digestion of the calf will be in danger, and lack of thrift, scours, and so-called calf cholera will follow.

With sweet skimmed milk, fed in a cleanly manner, with corn to balance the loss of the fat, calves can be raised that will rival those that follow the cow.

VARIATIONS OF MILK TEST.

The Babcock test measures butter fat to one-tenth of a pound in the hundreds pounds of milk, and is just as accurate as an ordinary scale would be in weighing two or three pounds of sugar. A number of the variations in milk tests are uncontrollable. If milk or cream is sour or churned when it arrives at the creamery, a proper sample cannot be taken and an accurate test cannot be made. It will pay the farmer in his test to get his milk to the creamery in good shape.

If the cow is not starved, change of feed or increase in its amount will not change the per cent of butter fat though it may increase the amount of milk and the total of fat. A study of the following tables of comparison of milk tests from dairy authorities will be useful in understanding that the test of milk does vary. Note the small differences between the chemical analyses and the Babcock tests of the same milk. The first milk given by a cow in each milking is nearly all water. If you milk the first half of the milk, and let the calf have the remainder he will get three-fourths the butter fat. In the table showing the variations of a test of a cow's milk in eight successive months, it will be noticed that while the test increased very rapidly near the end of her milking period, yet even in the last month one day's milk fell below the legal minimum of 3.0 per cent, although the average was 7.2 per cent.

The effect of excitement on the test of milk is shown by the last of these tables. Such violent fluctuations of tests results in loss of milk as well as in per cent of butter fat. Hence the value of kind treatment and comfort for the cow. It is right to insist that the creamery give you what your milk really tests, but don't be unreasonable if the test shows only a reasonable variation.

Comparison of chemical analysis and Babcock test of samples.

Analysis.	Babcock.
3.86	3.8
3.47	3.4
5.49	5.5
.94	1.0

Test of first half pint and last half pint of milk from four cows:

First.	Last.
.6	7.2
.2	6.6
1.5	6.8
.8	7.8

Highest and lowest test of one cow's milk in each of the months of her period of lactation, and average monthly test:

High.	Low.	Average.
4.9	3.	4.7
4.6	2.7	4.9
5.8	3.2	4.5
4.7	3.4	4.7
5.8	3.	4.8
4.6	3.4	5.5
6.2	2.8	6.2
7.9	2.9	7.2

Fluctuations of tests of successive milkings of cows affected by excitement of shipping:

1.2	1.5	0.9
1.2	2.0	3.9
3.4	2.4	4.9
10.7	3.8	3.4
4.1	7.2	3.6
6.2	11.1	3.7
3.4	5.3	3.1
	3.9	

RATIONS FOR DAIRY COWS

It must be understood that the values in the following tables and in the rations are only approximate. Feeds all vary in quality. Hay and fodders lose their protein rapidly when exposed to weather. Hence the values given are only averages and other tables may give slightly different values. The judgment of the feeder must enter into every ration. On page 12 is a table in regard to soiling crops.

COMPARATIVE VALUE OF FEED STUFFS FOR DAIRY COWS

Calculations based upon the percentage of digestible protein.

	PERCENTAGE COMPOSITION				COMPARATIVE VALUE PER TON WHEN TIMOTHY IS WORTH—				
	Dry Matter	DIGESTIBLE			\$5.00	\$6.00	\$7.00	\$8.00	\$9.00
		Pro.	C-H.	Fat					
GREEN FODDER.									
Grasses	30.00	2.5	10.2	0.5					
Corn fodder	30.70	1.0	11.6	.4	1.47	1.76	2.06	2.35	2.65
Oat fodder	37.80	2.7	12.7	1.0	3.97	4.76	5.56	6.35	7.15
Red clover	28.30	3.1	14.8	.7	4.56	5.47	6.38	7.29	8.21
Corn silage	20.9	1.0	11.4	.7	1.47	1.76	2.06	2.35	2.65
HAY AND FODDERS.									
Corn stover	59.50	2.0	13.4	.6	2.94	3.52	4.12	4.70	5.30
Corn fodder	57.80	2.5	14.6	1.2	3.68	4.41	5.15	5.88	6.62
Sorghum fodder	59.70	1.5	17.3	0.4					
HAY FROM—									
Timothy	87.68	3.4	43.4	1.3	5.00	6.00	7.00	8.00	9.00
Alfalfa	91.60	10.6	37.3	1.4	15.59	18.71	21.83	24.94	28.06
Alsike clover	90.30	8.2	41.7	1.4	12.06	14.47	16.88	19.30	21.71
Red clover	87.75	7.6	40.0	1.5	11.18	13.41	15.65	17.88	20.12
Millet	88.00	3.0	48.5	1.0	5.74	6.88	8.03	9.16	10.32
Orchard grass	90.10	4.8	42.0	1.4	7.06	8.47	9.88	11.30	12.71
Prairie, upland	87.50	3.5	41.8	1.4	5.15	6.17	7.20	8.23	9.26
Prairie, mixed	84.10	3.4	41.5	1.2	5.00	6.00	7.00	8.00	9.00
Red top	91.40	4.8	46.8	1.0	7.06	8.47	9.88	11.30	12.71
Sedge grass	89.84	3.4	45.3	1.1	5.00	6.00	7.00	8.00	9.00
Soja bean	88.70	10.8	38.7	1.5	15.56	18.67	21.78	24.90	28.01
Wheat straw	92.59	1.0	38.0	.4	1.47	1.76	2.06	2.35	2.65
Oat straw	91.64	1.5	43.4	.5	2.21	2.65	3.09	3.53	3.97
Oat and pea hay	89.3	14.3	50.3	1.9					
ROOTS AND TUBERS.									
Potatoes	24.55	2.1	20.2		3.09	3.71	4.32	4.94	5.56
Sugar beets	15.00	1.5	12.3	1.0	2.21	2.65	3.09	3.53	3.97
Mangels	14.00	1.5	9.0	1.0	2.21	2.65	3.09	3.53	3.97
Turnips	9.50	.8	6.5	.1	1.18	1.41	1.65	1.88	2.12
Ruga-baga	11.40	.9	7.7	.1	1.33	1.59	1.86	2.12	2.39
Carrots	11.40	.8	7.8	.2	1.18	1.41	1.65	1.88	2.12

BY PRODUCTS.											
BRAN	89.50	12.5	42.1	3.0	7.00	8.00	9.00	10.00	11.0	12.00	13.00
Backwheat shorts	88.97	21.1	33.5	5.5	11.82	13.49	15.19	16.88	18.57	20.25	21.94
Cotton seed meal	91.36	32.0	30.2	10.0	17.92	20.48	23.04	25.60	28.16	30.72	33.28
Linseed meal	90.00	27.6	33.5	7.3	15.46	17.66	19.87	22.08	24.29	26.49	28.70
Gluten meal	90.00	24.5	47.0	5.7	13.72	15.68	17.64	19.60	21.56	23.52	25.48
Gerai meal	93.00	12.3	52.4	6.1	6.89	7.87	8.86	9.84	10.82	11.81	12.79
Brewers' grains (Dried)	91.10	14.7	36.6	4.8	8.23	9.41	10.58	11.76	12.94	14.10	15.29
Brewers' grains (Wet)	34.30	3.9	9.3	1.4	2.18	2.50	2.81	3.12	3.43	3.74	4.05
Malt sprouts	89.80	18.7	43.5	1.2	10.47	11.97	13.46	14.96	16.46	17.95	19.46
Shorts	89.50	10.0	55.9	2.3	5.60	6.40	7.20	8.00	8.80	9.60	10.40
MILL PRODUCTS.											
Barley meal	88.10	7.4	62.9	2.0	4.14	4.74	5.33	5.92	6.51	7.10	7.70
Corn meal	88.00	9.0	67.4	2.8	5.04	5.76	6.48	7.20	7.92	8.64	9.36
Corn and cob meal	84.90	6.5	56.3	2.9	3.64	4.16	4.68	5.20	5.72	6.24	6.76
Oat meal	92.10	11.5	52.1	5.9	6.44	7.36	8.28	9.20	10.12	11.04	11.96
Pea meal	89.50	16.8	51.8	.7	9.41	10.75	12.10	13.44	14.78	16.13	17.47
GRAINS.											
Barley	89.10	8.7	65.6	1.6	4.87	5.57	6.26	6.95	7.64	8.34	9.05
Corn	87.10	9.9	60.7	4.3	4.42	5.06	5.69	6.33	6.96	7.59	8.22
Flax	90.00	20.6	17.1	29.0	11.58	13.38	15.18	16.98	18.78	20.57	22.37
Millet seed	87.50	9.0	54.1	2.0	5.04	5.76	6.48	7.20	7.92	8.64	9.36
Oats	89.00	9.2	47.3	4.2	5.35	5.99	6.62	7.26	7.89	8.52	9.15
Peas	90.10	19.4	59.6	.5	10.86	12.52	14.17	15.82	17.47	19.13	20.78
Rye	88.40	9.6	67.6	1.1	5.54	6.34	7.13	7.93	8.71	9.49	10.28
Wheat	89.00	11.0	58.6	1.5	6.36	7.04	7.72	8.40	9.08	9.76	10.44
PRICE PER BUSHEL ON ABOVE BASIS					Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.
Barley					11.7	13.4	15.0	16.6	18.4	20.0	21.7
Corn					12.4	14.2	15.9	17.7	19.5	21.3	23.0
Millet seed					12.1	13.8	15.6	17.3	19.0	20.7	22.5
Oats					8.2	9.4	10.6	11.8	13.0	14.2	15.5
Peas					32.8	37.6	42.4	47.2	52.0	56.8	61.5
Rye					15.5	17.7	19.9	22.1	24.4	26.6	28.8
Wheat					18.5	21.0	23.5	26.0	28.5	31.0	33.5

RATIONS FOR DAIRY COWS

FORMULA	Organic matter	DIGESTIBLE NUTRIENTS			FORMULA	Organic matter	DIGESTIBLE NUTRIENTS		
		Protein	Carbohydrates	Fats			Protein	Carbohydrates	Fats
20 lbs. red clover	15.70	1.30	6.98	.32	40 lbs. silage	10.56	.52	5.60	.28
5 lbs. corn	4.38	.32	3.24	.25	15 lbs. stover	8.93	.26	4.88	.11
5 lbs. bran	4.12	.63	2.21	.15	5 lbs. bran	4.40	.63	1.93	.15
Totals	24.20	2.25	12.43	.72	5 lbs. corn	4.45	.40	3.34	.21
20 lbs. clover hay	16.94	1.36	7.16	.34	1 lb. cotton seed meal	.92	.37	.17	.12
5 lbs. corn	4.45	.40	3.34	.22	Totals	29.26	2.18	15.90	.87
5 lbs. oats	4.45	.46	2.37	.21	30 lbs. silage	7.92	.39	4.20	.21
Totals	25.84	2.22	12.87	.77	10 lbs. hay	8.78	.60	4.32	.15
20 lbs. clover hay	16.94	1.36	7.16	.34	20 lbs. roots	2.28	.16	1.86	.04
8 lbs. corn and cob meal	7.21	.51	5.04	.28	4 lbs. bran	3.52	.50	1.54	.12
1½ lbs. oil meal	1.36	.44	.49	.11	2 lbs. oil meal	1.82	.59	.65	.14
Totals	25.42	2.31	12.69	.73	Totals	24.32	2.24	12.27	.66
20 lbs. clover hay	15.70	1.30	6.98	.32	30 lbs. silage	7.26	.39	4.20	.21
6 lbs. ground corn	5.26	.38	3.89	.30	10 lbs. hay	8.00	.60	3.80	.15
4 pounds bran	3.30	.50	1.76	.12	8 lbs. bran	6.59	1.00	3.53	.23
Totals	24.26	2.18	12.63	.74	2 lbs. middlings	1.09	.24	.94	.05
20 lbs. clover hay	16.94	1.34	7.16	.34	Totals	23.54	2.23	12.47	.65
5 lbs. (corn) chop	4.45	.40	3.33	.22	25 lbs. silage	6.60	.43	3.50	.18
4 lbs. bran	3.52	.50	1.54	.12	10 lbs. clover hay	8.47	.68	3.58	.17
1 lb. oil meal	.91	.29	.33	.07	7 lbs. bran	6.17	.88	2.70	.21
Totals	25.82	2.53	12.36	.75	3 lbs. middlings	2.64	.38	1.59	.10
20 lbs. clover hay	15.70	1.30	6.98	.32	3 lbs. corn	2.67	.24	2.00	.13
4 lbs. bran	3.30	.50	1.76	.12	Totals	26.55	2.61	13.37	.79
4 lbs. ground oats	3.44	.36	1.79	.16	20 lbs. silage	5.28	.26	2.80	.14
Totals	22.44	2.16	10.53	.60	10 lbs. timothy hay	8.68	.28	4.34	.14
15 lbs. clover hay	12.70	1.02	5.36	.26	2 lbs. oat meal	1.82	.23	.95	.14
5 lbs. bran	4.40	.63	1.93	.15	2 lbs. corn meal	1.78	.16	1.33	.09
2 lbs. corn	1.78	.16	1.33	.09	8 lbs. bran	7.05	1.09	3.09	.24
2 lbs. oats	1.78	.18	.94	.08	Totals	24.61	2.00	12.21	.75
1 lb. oil meal	.91	.29	.33	.07	20 lbs. silage	5.28	.26	2.80	.14
10 lbs. stover	5.95	.17	3.24	.07	10 lbs. clover hay	8.47	.68	3.58	.17
Totals	27.52	2.45	13.13	.72	4 lbs. bran	3.52	.50	1.54	.12
15 lbs. clover hay	12.70	1.02	5.37	.26	4 lbs. gluten feed	3.69	.81	1.94	.12
6 lbs. corn stover	3.57	.10	1.94	.04	2 lbs. corn meal	1.78	.16	1.33	.09
6 lbs. bran	5.29	.75	2.32	.18	Totals	22.74	2.41	11.19	.64
4 lbs. corn and cob meal	3.40	.32	3.15	.18	20 lbs. silage	3.28	.26	2.80	.14
Total	25.96	2.19	12.79	.66	10 lbs. timothy hay	8.68	.28	4.34	.14
12 lbs. clover hay	10.16	.82	4.30	.20	2 lbs. oil meal	1.82	.59	.65	.14
10 lbs. corn stover	5.95	.17	3.24	.07	2 lbs. corn meal	1.78	.16	1.33	.09
5 lbs. bran	4.41	.63	1.93	.15	3 lbs. bran	2.64	.38	1.16	.24
2 lbs. corn	1.78	.16	1.33	.09	3 lbs. gluten food	2.77	.61	2.45	.15
2 lbs. oats	1.78	.18	.95	.08	Totals	22.87	2.28	11.73	.90
1 lb. barley	.89	.09	.66	.02	12 lbs. prairie hay	10.50	.42	5.02	.17
1 lb. oil meal	.90	.28	.33	.07	10 lbs. bran	8.81	1.26	3.86	.30
Total	25.88	2.33	11.74	.68	4 lbs. corn	3.56	.32	2.67	.17
10 lbs. clover hay	7.85	.65	3.49	.16	2 lbs. oil meal	1.82	.59	.65	.14
10 lbs. corn fodder	6.68	.37	4.04	.12	Totals	24.69	2.59	12.20	.78
6 lbs. bran	4.94	.75	2.65	.17	17 lbs. timothy hay	14.76	.48	7.48	.24
4 lbs. corn	3.50	.25	2.59	.20	5 lbs. rye bran	4.42	.58	2.52	.10
1 lb. oil meal	.85	.28	.33	.07	4 lbs. buckwheat middlings	3.49	.83	1.34	.21
Totals	23.82	2.30	13.10	.72	1 lb. oil meal	.91	.29	.33	.07
10 lbs. clover hay	7.85	.65	3.49	.16	Totals	23.58	2.23	11.67	.62
10 lbs. corn fodder	6.68	.37	4.04	.12					
6 lbs. bran	4.94	.75	2.65	.17					
4 lbs. corn	3.50	.25	2.59	.20					
1 lb. oil meal	.85	.28	.33	.07					
Totals	23.82	2.30	13.10	.72					

RATIONS FOR DAIRY COW—CONTINUED.

FORMULA	Dry matter	DIGESTIBLE NUTRIENTS			FORMULA	Dry matter	DIGESTIBLE NUTRIENTS		
		Protein	Carbohydrates	Fat			Protein	Carbohydrates	Fat
15 lbs. timothy hay.....	12.36	.45	6.59	.18	12 lbs. mixed hay.....	10.30	.58	4.75	.19
9 lbs. oats.....	7.74	.82	4.02	.36	10 lbs. corn stover.....	5.95	.17	3.24	.07
6 lbs. bran.....	4.94	.75	2.65	.17	4 lbs. ground corn.....	3.50	.32	2.67	.17
½ lb. oil meal.....	.43	.14	.16	.04	4 lbs. bran.....	3.52	.50	1.54	.12
Totals.....	25.47	2.16	13.41	.75	1 lb. oil meal.....	.91	.29	.33	.07
15 lbs. prairie hay.....	13.13	.53	6.27	.21	Totals.....	24.24	1.86	12.53	.62
10 lbs. bran.....	8.81	1.26	3.86	.30	12 lbs. prairie hay.....	9.76	.42	5.02	.17
2 lbs. oil meal.....	1.82	.59	.65	.14	10 lbs. corn stover.....	5.65	.20	3.34	.06
Totals.....	23.76	2.38	10.78	.65	10 lbs. bran.....	8.24	1.26	4.41	.29
12 lbs. timothy hay.....	10.42	.34	5.21	.17	1 lb. oil meal.....	.91	.29	.33	.07
10 lbs. corn stover.....	5.95	.17	3.24	.07	Totals.....	24.56	2.17	13.10	.59
5 lbs. bran.....	4.40	.63	1.93	.15	25 lbs. corn stover.....	14.90	.43	8.10	.18
4 lbs. gluten feed.....	3.69	.82	1.94	.20	10 lbs. bran.....	8.81	1.26	3.86	.30
1 lb. oil meal.....	.91	.29	.33	.07	2 lbs. oil meal.....	1.82	.59	.65	.14
Totals.....	25.37	2.25	12.65	.66	Totals.....	25.53	2.28	12.61	.62
12 lbs. timothy hay.....	9.89	.36	5.27	.14	20 lbs. corn stover.....	11.80	.34	6.48	.14
10 lbs. corn stover.....	5.65	.29	3.34	.06	30 lbs. beets.....	4.05	.33	3.06	.03
4 lbs. cob meal.....	3.34	.26	2.25	.12	4 lbs. corn.....	3.56	.32	2.67	.17
4 lbs. bran.....	3.30	.50	1.76	.12	6 lbs. buckwheat middlings.....	5.24	1.32	2.00	.32
2 lbs. middlings.....	1.69	.25	.94	.08	Totals.....	24.75	2.31	14.21	.66
2 lbs. oil meal.....	1.70	.57	.66	.14	10 lbs. millet hay.....	8.63	.45	4.64	.10
Totals.....	25.57	2.14	14.26	.66	10 lbs. prairie hay.....	8.13	.35	4.18	.14
10 lbs. oat hay.....	9.11	.43	4.64	.15	8 lbs. bran.....	6.59	1.00	3.53	.23
10 lbs. corn stover.....	5.95	.17	3.24	.07	4 lbs. oats.....	3.44	.36	1.79	.16
4 lbs. ground corn.....	3.56	.32	2.67	.17	Totals.....	26.79	2.16	14.14	.63
4 lbs. bran.....	3.52	.50	1.54	.12	15 lbs. oat straw.....	12.85	.24	6.21	.10
2 lbs. oil meal.....	1.82	.59	.35	.14	10 lbs. bran.....	8.24	1.26	4.41	.29
Totals.....	23.06	2.01	12.44	.65	5 lbs. oats.....	4.30	.46	2.24	.22
					Totals.....	25.39	1.96	12.86	.61

CROPS AND AREAS FOR SAME, FOR SOILING TEN COWS DURING THE ENTIRE SUMMER*

CROP	SEED PER ACRE	TIME OF SEEDING	AREA	TIME OF CUTTING
Rye.....	2 bushels.....	Sept. 10-15.....	¼ acre.....	May 20—May 30.
Wheat.....	2 bushels.....	Sept. 10-15.....	¼ acre.....	June 1—June 15.
Red clover.....	20 pounds.....	July 15—Aug. 1.....	½ acre.....	June 15—June 30.
Grass and clover.....	½ bu. red top..... ¼ bu. timothy..... 10 lbs. red clover.....	September.....	¾ acre.....	June 15—June 30.
Vetch and oats.....	3 bu. oats.....	April 20.....	¼ acre.....	June 25—July 10.
Vetch.....	50 lbs. vetch.....	April 30.....	½ acre.....	July 10—July 20.
Peas and oats.....	½ bu. Canada..... ¼ bu. oats.....	April 20.....	½ acre.....	June 25—July 10.
Peas and oats.....	½ bu. Canada..... ¼ bu. oats.....	April 30.....	½ acre.....	July 10—July 25.
Barnyard millet.....	1 peck.....	May 10.....	½ acre.....	July 25—Aug. 20.
Barnyard millet.....	1 peck.....	May 25.....	¼ acre.....	Aug. 10—Aug. 30.
Soja bean.....	18 quarts.....	May 10.....	½ acre.....	Aug. 25—Sept. 15.
Corn.....	.....	May 20.....	½ acre.....	Aug. 25—Sept. 10.
Corn.....	.....	May 30.....	½ acre.....	Sept. 10—Sept. 20.
Hungarian.....	1 bushel.....	July 15.....	½ acre.....	Sept. 20—Sept. 30.
Barley and peas.....	1½ bu. each.....	August 5.....	1 acre.....	Oct. 1—Oct. 20.

*Hatch Experiment Station, Massachusetts.

DAIRY LAWS OF IOWA.

CHAPTER 13.

OF THE DAIRY COMMISSIONER AND IMITATION BUTTER PRODUCTS.

SECTION 2515. *Appointment—bond—powers and duties of commissioner—report.*—On or before the first day of April of each even numbered year, the governor shall appoint a dairy commissioner, who shall have a practical knowledge of and experience in the manufacture of dairy products, and hold his office for two years from the first day of May following his appointment, and until his successor is appointed and qualified, subject to removal by the governor for inefficiency, neglect or violation of duty. He shall give bond in the sum of \$10,000, conditioned for the faithful performance of his duties, with sureties to be approved by and filed with the secretary of state. He shall keep on hand a supply of standard test tubes or bottles and milk measures or pipettes adapted for use by each milk testing machine, the manufactures or dealers of which have filed with the dairy commissioner a certificate from the director of the Iowa agricultural experiment station, which shall certify that said milk testing machine, when properly and correctly operated, will produce accurate measurements of butter fat, and furnish to any person or corporation desiring the same for testing milk one such tube or bottle, and such milk measure or milk pipette for each factory, of the kind adapted for the machine operated therein, upon request therefor, certifying it to be reliable, accurate and standard, placing thereon the letters "D. C." as a permanent mark; the tubes or bottles and pipettes to be furnished at the actual cost thereof. He shall have and keep an office in the capital, and preserve therein all correspondence, documents, records, and property of the state pertaining thereto, and may when necessary employ an office deputy at a salary of ten hundred dollars per year; the dairy commissioner may also appoint, upon the recommendation of the Iowa State College of agriculture and mechanic arts, the director of the Iowa experiment station and the professor of dairying, one assistant who shall perform such duties as may be assigned to him by the dairy commissioner, and who shall receive a salary of ten hundred dollars per year, and said deputy and assistant of the dairy commissioner shall be allowed in addition to their salaries, actual and necessary traveling expenses, when in the performance of their official duties, said expenses to be itemized, verified under oath, and when audited and approved by the executive council to be paid upon warrant of the state auditor upon the state treasurer, provided that such expenditure shall not exceed the appropriation made for the dairy commissioner's office. During his term of office he shall hold no other official position nor any professorship in any state educational institution, and on or before the first day of November shall make annual report to the governor, which shall contain a detailed account of all his doings as commissioner and the receipts and disbursements of his office since the preceding report, with such facts and statistics in regard to the production, manufacture and sale of dairy products, with such suggestions as he may regard of public importance in connection therewith. In the conduct of his office, he shall have power to issue subpoenas for witnesses, enforce their attendance, and examine them under oath by him to be administered, such witnesses to be allowed fees as in justices' courts, to be paid by the commissioner as part of the expenses of his office, and do such other acts and things as are necessary and proper in the enforcement of the provisions of this chapter.

SECTION 2516. Imitation butter or cheese.—Every article, substitute or compound, save that produced from pure milk or cream from milk of cows, made in the semblance of or designed to be used for and in the place of butter, is imitation butter; and every article, substitute or compound, save that produced from pure milk or cream from milk of cows, made in the semblance of or designed to be used for and in the place of cheese, is imitation cheese. No one shall manufacture, have in his possession, or offer to sell, solicit or take orders for delivery, ship, consign or forward by any common carrier, public or private, and no common carrier shall knowingly receive or transport any imitation butter or cheese, except in the manner and subject to the regulations in this chapter provided.

SECTION 2517. Substitute for butter or cheese—regulations as to sale and use—transportation.—A substitute for butter and cheese, not having a yellow color nor colored in imitation of butter and cheese as prohibited in the next section, may be manufactured, kept in possession, offered for sale, sold, shipped, consigned or forwarded by common carrier, public or private, if each tub, firkin, box or other package in which the same is kept, offered for sale, sold, shipped, consigned or forwarded shall have branded, stamped or marked on the side or top thereof in the English language, in a durable manner, the words "Substitute for butter" or "Substitute for cheese," as the case may be, the letters of the words to be not less than one inch in length by one-half inch in width. The defacing, erasure, canceling or removal of this brand or mark, with intent to mislead, deceive, or violate any provision of this chapter, is prohibited. Such substitute for butter or cheese may be kept, used or served as food or for cooking in hotels, restaurants, lunch counters, or other places of public entertainment, only in case the proprietor or person in charge of such place shall display and keep constantly posted a card opposite each table or other place where the guests or others are served with the same, which card shall be white, at least ten by fourteen inches in size, the words, "Substitute for butter used here" or "Substitute for cheese used here," as the case may be, printed in black Roman letters of the same size as herein required to be placed upon the tubs, firkins, boxes or other package in which substitute for butter or cheese is kept, and no other words or figures shall be printed thereon. No substitute for butter or cheese shall be offered for sale in the manufacturer's original package under the name of or for true butter or cheese made from the milk or cream of cows, nor shall any substitute for butter or cheese be offered for sale or sold unless the purchaser at the time was informed thereof, and, in addition furnished with a printed statement in the English language in prominent type that the substance sold is such substitute, and giving the name and place of business of the maker. Nothing herein contained, however, shall be so construed as to prohibit the transportation of imitation butter or cheese through and across the state.

SECTION 2518. Coloring—adulteration.—No one shall color with any matter whatever any substance intended as a substitute for butter or cheese, so as to cause it to resemble true dairy products, or combine any animal fat, vegetable oil or other substance with butter or cheese, or combine with any substance whatever, intended as a substitute for butter or cheese, any thing of any kind or nature for the purpose of or with the effect of imparting to the compound the color of yellow butter or cheese, the product of the milk or cream from cows, or use, solicit orders for delivery, keep for sale or sell any such substance so colored and disguised as a substitute for butter or cheese; but nothing in this chapter shall be construed to prohibit the use of salt, rennet, or harmless coloring matter in making the butter or cheese from such milk or cream.

SECTION 2519. Package branded.—No one shall have in his possession or under his control, except for the actual consumption of himself or family, any substance designed as a substitute for butter or cheese,

unless the tub, firkin, box or package holding the same is branded or marked as in this chapter required. Any person having in his possession or under his control such substance, not so branded or marked, shall be presumed to know its true character and name.

SECTION 2520. Contracts invalid.—No action shall be maintained in any of the courts of the state upon any contract or sale made in violation of or with the intent to violate any provision of this chapter by one who was knowingly a party thereto.

SECTION 2521. Search warrants—samples.—Whoever shall have in possession or control any imitation butter or cheese or any substance designed to be used as a substitute for butter or cheese contrary to the provisions of this chapter, shall be held to have possession of property with intent to use it as a means of committing a public offense, and all the provisions of the chapter relating to search warrants and proceedings thereon shall apply, except the officer serving the warrant, in addition to his duties therein required, shall deliver to the dairy commissioner, or to a person by him authorized in writing, to receive the same, a perfect sample of each article seized by virtue of such warrant, for the purpose of having the same analyzed, and forthwith return to the person from whom it was taken the remainder of each article seized. If any sample is found to be imitation butter or cheese, or substance designed to be used as a substitute for butter or cheese, it shall be returned to and retained by the magistrate for the purposes contemplated in said chapter on "search warrants and proceedings thereon," but if any sample be found not imitation butter or cheese, or a substance designed to be used as a substitute therefor, the value of the same shall be paid by the dairy commissioner as a part of the expenses of his office, to the person from whom it was taken.

SECTION 2522. Milk dealers—manufacturers and packers—reports.—Every city milk dealer, or every person furnishing milk or cream to such dealer, or the employe of such milk dealer, and, every person or corporation, or the employe of such person or corporation, who operates a creamery, cheese or condensed milk factory, or re-works or packs butter, shall maintain his premises and utensils in a clean and hygienic condition, and shall make, upon blanks furnished by the dairy commissioner, such reports and statistics as may be required for the purpose of compiling statistics authorized by this chapter, and such dealer, owner, operator, or business manager shall make such returns and reports within thirty days after receiving the proper blank form from the dairy commissioner and shall certify to the correctness thereof. Whoever shall violate any provision of this section shall be punished by a fine of not less than twenty-five nor more than one hundred dollars, or by imprisonment in the county jail for not more than thirty days.

SECTION 2523. Milk test.—Any person or corporation, or the employe of such person or corporation, who operates a creamery or cheese or condensed milk factory, and uses a chemical test to determine the quantity of butter fat in milk purchased, used or received, shall so use only such tests as shall be clear oil, free from any foreign substance, and produce correct measurements of butter fat, and every such person or person using a milk test shall procure from the dairy commissioner for each factory so operated one standard tube or bottle, and one standard measure or pipette, for testing milk, certified and marked by him as in this chapter provided, which shall be kept for inspection by the patrons, and used by such person or corporation in testing or verifying test tubes or bottles and milk measures or pipettes used. In any action arising between such operator and patron, the burden of establishing the use of reliable tests and the results therefrom, equivalent to the standard herein provided, shall be upon the operator.

SECTION 2524. Samples collected.—The commissioner may appoint agents in any city having over 10,000 inhabitants to collect from each dealer, not more than four times each month, samples of milk offered for sale therein. The agent shall make an accurate test of each sample

received by him, and keep a true record thereof, with the name and location of the person from whom it was obtained, and report his work in detail to the commissioner, the compensation therefor not to exceed three dollars for each day actually employed therein.

SECTION 2525. *Permits.*—Any person or corporation who shall sell milk or cream from a wagon, depot or store, or sell or deliver milk or cream to a hotel or restaurant or boarding house, or any public place in any such city, shall be considered a city milk dealer. No such city milk dealer shall sell milk or cream from a wagon, depot, or store in any such city without a written permit from the commissioner for each wagon, depot or store operated by him, for which he shall annually pay one dollar. A permit shall expire on the fourth day of July of each year, and no permit shall be issued for less than one dollar.

SECTION 2526. *Inspection.*—He or his agent may open any can or vessel containing milk or cream offered for sale in such city, and inspect the contents and take samples therefrom for testing and analysis. And any city milk dealer or employe of such milk dealer, or any other person who shall resist or interfere with the commissioner or his agent in the performance of his duties in executing any of the requirements of this chapter, shall be guilty of a misdemeanor and punished as provided in this chapter.

SECTION 2527. *Penalties.*—Whoever shall violate any provision of this chapter shall be punished by a fine not exceeding five hundred dollars, or by imprisonment in the county jail not exceeding six months, or by both such fine and imprisonment at the discretion of the court.

SECTION 2528. *Compensation—expenses.*—The commissioner shall be allowed necessary postage, stationery and office supplies, and shall receive an annual salary of fifteen hundred dollars and necessary expenses, which shall not exceed three thousand dollars per year; such expenses to be itemized, verified by him, and, when examined and approved by the executive council, to be paid upon a warrant of the state auditor drawn upon the state treasurer. The salary of the clerk shall be paid in the same manner.

FROM CHAPTER 10, TITLE 24, CODE.

SECTION 4989. *Sale of impure or skimmed milk—skimmed milk cheese—labeling.*—If any person shall sell, exchange, or expose for sale or exchange or deliver or bring to another, for domestic or potable use, or to be converted into any product of human food, any unclean, impure, unhealthy, adulterated, unwholesome or skimmed milk, or milk from which has been held back what is commonly known as strippings, or milk taken from an animal having disease, sickness, ulcers, abscess or running sore, or which has been taken from the animal within fifteen days before or five days after parturition; or if any person, having cows for the purpose of producing milk or cream for sale, shall stable them in an unhealthy place or in crowded manner, or shall knowingly feed them food which produces impure, unwholesome milk, or shall feed them distilled glucose or brewery waste in any state of fermentation, or upon any substance in a state of putrefaction or rottenness or of an unhealthy nature, or shall sell or offer for sale, as cream, an article, which shall contain less than the amount of butter fat as prescribed in this chapter; or if any person shall sell or offer for sale any cheese manufactured from skimmed milk, or from milk that is partially skimmed, without the same being plainly branded, stamped or marked on the side or top of both cheese and package, in a durable manner, in the English language, the words "skimmed milk cheese," the letters of the words to be not less than one inch in height and one-half inch in width, he shall be fined not less than twenty-five nor more than one hundred dollars, and be liable for double damages to the person or persons upon whom such frauds shall be committed; but the provisions of this section shall not apply to skimmed milk when sold as such and in the manner and subject to the regulations prescribed in this chapter.

SECTION 4990. *What deemed adulterated or impure milk.*—For the purposes of this chapter, the addition of water or any other substance or thing to whole milk or skimmed milk or partially skimmed milk is hereby declared an adulteration, and milk which is obtained from animals fed upon waste as defined in this chapter, or upon any substance of an unhealthy nature, is hereby declared to be impure and unwholesome and milk which is proved by any reliable method of test or analysis to contain less than twelve and one-half per cent. of milk solids to the hundred pounds of milk, or less than three pounds of butter fat to one hundred pounds of milk, shall be regarded as skimmed or partially skimmed milk, and every article not containing fifteen or more per cent. of butter fat shall not be regarded as cream.

SECTION 4991. *Enforcement.*—It is hereby made the duty of the dairy commissioner to enforce the provisions of the two preceding sections

CITY MILK INSPECTION.

The expense of the milk inspection in the fourteen cities of the state having more than 10,000 population during the year ending November 1, 1902, has been \$2,259.10, which is more than all the other expense of the dairy commissioner's office, not including salaries.

The growth of city milk inspection in this state is indicated by the following table showing the number of permits for milk dealers issued in the years from 1894 to 1902. The years end in every case on the 4th of July:

1894	1895	1896	1897	1898	1899	1900	1901	1902
359	491	566	620	574	676	714	784	821

The number of permits issued since July 4, 1902, is 674.

The milk inspection carried on under the direction of this department affects about one-seventh of the population of the state, as will be seen by the following table:

CITIES.	POPULATION	INSPECTOR.
Burlington	23,201	Dr. W. C. Hammell.
Cedar Rapids	25,656	Dr. J. W. Griffith.
Clinton	22,698	F. E. Bills.
Council Bluffs	25,802	W. A. Groneweg.
Davenport	35,254	H. J. High.
Des Moines	62,139	C. H. McCaughy.
Dubuque	36,297	Dr. B. Michel.
Fort Dodge	12,162	D. C. Benjamin.
Keokuk	14,641	A. A. Bland.
Marshalltown	11,544	Dr. E. M. Singleton.
Muscatine	14,073	Dr. John Tillie.
Ottumwa	18,197	E. B. Hill.
Sioux City	33,111	O. P. McCray.
Waterloo	12,580	Theo. Peek.
Total.	347,355	

About one-fourth of all the milk dealers in these fourteen cities are found in the city of Des Moines, and the inspection in Des Moines is closer and more effective in its results than it is in the other cities. Complaints are continually received that dealers are using preservatives in the warm weather, but scarcely any complaints of other adulterations of milk are received. It is not believed that the use of preservatives is at all general among milk men, and only one prosecution for the use of preservatives has been made during the last year. The inspection of milk is in the hands of honest and competent agents of this office and their work is highly appreciated, both by the dealers and the citizens of their respective cities.

CREAMERY LIST.

List of creameries in the state, alphabetically arranged according to counties and towns near which creameries are located, together with information pertaining to each.

Office record number.	LOCATION.	NAME OF CREAMERY.	How operated.	NAME OF PROPRIETOR, SECRETARY OR MANAGER.	P. O. ADDRESS OF PROPRIETOR, SECRETARY OR MANAGER.	NAME OF BUTTER MAKER.	Separator or gathered cream.	Test of product.
<i>Adair County.</i>								
1	Adair	Adair Co-op. Creamery	Co-op	W. Swart, Sec.	Adair	Roy Furst	Separator	Test.
2	Arbor Hill	Arbor Hill Co-op. Creamery	Co-op	A. H. Wambold, Sec.	Arbor Hill	R. J. Erb	Separator	Test.
3	Fontanelle	Blue Grass Creamery	Ind.	A. L. Stewart; Cal Shannon Sec.	Fontanelle	W. E. Stewart	Separator	Test.
4	Canby	Blue Grass Creamery (s)	Ind.	A. L. Stewart			Separator	Test.
5	Fisk	Blue Grass Creamery (s)	Ind.	A. L. Stewart			Separator	Test.
6	Greenfield	Blue Grass Creamery	Ind.	A. L. Stewart, Mgr.	Greenfield	Albert Heyn	Separator	Test.
7	Prussia	Blue Grass Creamery (s)	Ind.	A. L. Stewart, Mgr.	Greenfield		Separator	Test.
8	Greenfield	Greenfield Creamery	Stock	Jas. F. Laude	Greenfield	F. S. Odell	Separator	Test.
9	Howe	Home Co-op. Creamery Co.	Co-op	H. L. Hackthorn, Sec.	Stuart	Myron J. Webster	Separator	Test.
10	Orient	Elgin Creamery Co. (s)	Stock	O. Sands	Chicago, Ills.		Separator	Test.
11	Bridgewater	Blue Grass Creamery	Ind.	A. L. Stewart, Mgr.	Greenfield	M. N. Bates	Separator	Test.
12	Berea	Blue Grass Creamery (s)	Ind.	A. L. Stewart, Mgr.	Greenfield		Separator	Test.
13	Hebron	Hebron Creamery	Ind.	D. F. Hammers	Hebron	D. F. Hammers	Separator	Test.
<i>Adams County.</i>								
14	Corning	Elgin Creamery Co.	Stock	O. Sands, Chicago	Chicago	J. E. Anderson	Separator	Test.
15	Carbon	Elgin Creamery Co. (s)	Stock	O. Sands, Chicago	Chicago		Separator	Test.
16	Carl	Elgin Creamery Co. (s)	Stock	O. Sands, Chicago	Chicago		Separator	Test.
17	Mercer	Elgin Creamery Co. (s)	Stock	O. Sands, Chicago	Chicago		Separator	Test.
18	Prescott	Prescott Butter & Cheese Ass'n	Co-op	Frank Brandt, Sec.	Prescott	Chas. E. Chawgo	Separator	Test.
19	Williamson	Prescott Butter & Cheese Ass'n (s)	Co-op	Frank Brandt, Sec.	Prescott		Separator	Test.
<i>Allamakee County.</i>								
20	Dorchester	Dorchester Creamery Co.	Stock	L. Coppersmith	Dorchester	Ben W. Schulte	G. C.	Test.
21	Lansing	Calhoun Creamery Co.	Co-op	J. Leppert	Church	K. V. Ferris	G. C.	Test.
22	Postville	Postville Farmers Co-op. Cr'y Co.	Co-op	F. H. Welzel	Postville	Jas. A. Gordon	Separator	Test.
23	Waterville	Farmers' Co-op. Cr'y & Com. Co.	Co-op	Adolph Asleson	Waterville	Martin Frok	G. C.	Test.

CREAMERY LIST—CONTINUED.

Office record number.	LOCATION.	NAME OF CREAMERY.	How operated.	NAME OF PROPRIETOR, SECRETARY OR MANAGER.	P. O. ADDRESS OF PROPRIETOR, SECRETARY OR MANAGER.	NAME OF BUTTER MAKER.	Separator of cultured cream.	Method of receiving milk.
24	Waukon	Farmer's Waukon Co-op. Cr'y Co	Co-op.	S. H. Opper	Waukon	D. B. Oleson	S. & G. C.	I. & T.
25	Waukon	Ludlow Co-op. Creamery Co.	Co-op.	F. A. Lauderman	Waukon	W. P. Much	Separator.	Test.
26	Quandahl	Arctic Spring Creamery	Ind.	I. D. Johnson	Quandahl	Alburn Ellingson	G. C.	Test.
Audubon County.								
27	Audubon	Sharon Separator Creamery Co	Co-op.	W. Knudsen, Manager ..	Audubon, R. D. No. 4.	W. Knudsen	Separator.	Test.
28	Brayton	Oakfield Twp. Separator Cr'y Co	Co-op.	Jesse Nyman	Brayton	J. P. Nielson	Separator.	Test.
29	Brayton	Troublesome Valley Cr'y Co	Co-op.	J. C. Hardman	Brayton	H. A. Sherk	Separator.	Test.
30	Exira	Audubon Twp. Separator Cr'y Co	Co-op.	P. Jensen	Exira	P. Jensen	Separator.	Test.
31	Exira	West Hamlin Separator Cr'y Co	Co-op.	John Nielson	Exira	John Nielson	Separator.	Test.
32	Gray	Gray Creamery Co	Co-op.	Lou's Groteluschen	Gray	W. J. Lancelot	Separator.	Test.
33	Hamlin	Blue Grass Separator Creamery	Co-op.	J. Z. Moore	Hamlin	Fred Hedeman	Separator.	Test.
34	Kimballton	Danish Separator Creamery Co	Co-op.	Peter Lykke	Audubon, R. D. No. 4.	A. P. Rasmussen	Separator.	Test.
35	Ross	Ross Creamery Co.	Co-op.	H. W. Stearns	Audubon	B. Jensen	Separator.	Test.
36	Manning	Liberty Creamery Co.	Co-op.	Peter Witterup	Irwin	C. S. Christensen	Separator.	Test.
37	Exira	Elgin Creamery Co.(s)	Ind.	O. Sands	Chicago, Ill.		Separator.	Test.
Benton County.								
38	Van Horne	Van Horne Creamery (s)	Ind.	H. O. Dauchy, Mgr.	Van Horne		Separator.	Test.
39	Blairstown	Katie's Creamery	Co-op.	T. H. Veil, Sec.	Blairstown	L. R. Hass	Separator.	Test.
40	Blairstown	Mt. Auburn Creamery	Ind.	J. A. Duncalf	Blairstown	J. A. Duncalf	Separator.	Test.
41	Mt. Auburn	Mt. Auburn Creamery	Ind.	A. M. Rowe	Vinton	Homer Barber	Separator.	Test.
42	Urbana	Farmer's Co-operative Cr'y Co.	Co-op.	F. C. Nichols	Urbana	M. Briggs	Separator.	Test.
43	Vinton	Benton County Creamery Co.	Co-op.	Chester A. Hodge	Vinton	C. H. Vanderham	Separator.	Test.
44	Vinton	The Vinton Creamery	Ind.	A. M. Rowe	Vinton	Henry Bassett	Separator.	Test.
45	Garrison	Star Creamery	Ind.	J. C. Erhard, Prop.	Garrison	J. C. Erhard	Separator.	Test.
46	Gillespie	Oak Valley Creamery Co. (s)	Ind.	C. B. Gringrich	La Porte City ..		Separator.	Test.
47	Walford	Cedar Valley Creamery (s)	Stock.	J. L. Henshaw	Shellsburg	W. R. Carroll	Separator.	Test.
48	Shellsburg	Shellsburg Creamery	Ind.	Fred Walker	Shellsburg	M. B. Horsley	Separator.	Test.
49	Norway	Norway Creamery	Ind.	Harshy & McKay	Norway		Separator.	Test.
50	Van Horne	Van Horne Creamery	Ind.	H. O. Dauchy, Mgr.	Van Horne	H. O. Dauchy	Separator.	Test.

Black Hawk County.

51	Waterloo	Palmer-Hubbard Co.	Stock.	Palmer-Hubbard Co.	Independence	C. P. Jacobsen	G. C.	Test.
52	Benson	Benson Dairy Co.	Co-op.	W. Bozarth	Benson	John Soules	S. & G. C.	Test.
53	Cedar Falls	Cedar Falls Creamery	Ind.	Hale & Wild	Cedar Falls ..	W. Meier	S. & G. C.	Test.
54	Crain Creek	Crain Creek Creamery	Ind.	F. A. Riedel	Crain Creek ..	H. M. Crocker	S. & G. C.	Test.
55	Dewar	Dewar Dairy Association ..	Co-op.	A. D. Clark	Dewar	O. G. Alexander	Separator.	Test.
56	Dunkerton	Farmers' Creamery Co	Co-op.	G. S. Kleckner	Dunkerton			
57	Eagle Center	Eagle Center Dairy Association	Co-op.	T. J. Humphrey, Sec.	12 Grant Ave. Waterloo	Oscar Harvey	Separator.	Test.
58	Fairbank	East Laster Creamery Co.	Stock.	J. E. Wood	Fairbank	C. E. Brant	Separator.	Test.
59	Winchford	Union Creamery Co	Co-op.	C. A. George	Winchford	Q. R. Moon	Separator.	Test.
60	Gilbertville	Gilbertville Dairy Association	Co-op.	J. B. Kascht	Gilbertville ..	Wm. Cornell	Separator.	Test.
61	Hudson	Hudson Co-op. Creamery As'n	Co-op.	H. B. Eighmey	Hudson	Wm. F. Hammel	Separator.	Test.
62	Hudson	Rock Creek Farmers' Dairy As'n.	Co-op.	Wm. P. Thompson	Hudson	Geo. F. Ferris	Separator.	Test.
63	Janesville	Mt. Vernon Creamery	Co-op.	H. E. Randles	R. D. No. 1 Cedar Falls	A. J. Frees	Separator.	Test.
64	Jubilee	Jubilee Co-op. Creamery ..	Co-op.	J. G. Koob	Jubilee	Byron Leinius	Separator.	Test.
65	La Porte	La Porte Co-op. Creamery Co.	Co-op.	C. B. Gringrich, Sec.	La Porte City ..	Geo. Jensen	S. & G. C.	Test.
66	Voorhies	Red Bird Creamery	Co-op.	E. Stevens	Voorhies	E. S. Crouse	Separator.	Test.
67	Edwards	Edwards Creamery Co	Ind.	H. O. Moxdorf	Edwards R. F. D. No. 4.	H. O. Moxdorf	Separator.	Test.
68	Waterloo	Farmers' Dairy Association ..	Co-op.	W. S. Blough, Sec.	Waterloo	R. W. Chadwick	Separator.	Test.
69	Waterloo	The Fowler Co	Ind.	The Fowler Co	Waterloo	F. Nightman	Separator.	Test.
70	Waterloo	North Star	Ind.	The Fowler Co	Waterloo	Chas. Wood	Separator.	Test.

Boone County.

71	Berkeley	Red Star (s)	Ind.	J. Moody & Son	Perry		Separator.	Test.
72	Boone	Soenke Bros. Creamery	Ind.	Geo. F. Soenke	Boone	Geo. F. Soenke	Separator.	Test.
73	Madrid	Madrid Creamery (s)	Ind.	T. C. Herdman	Madrid	F. Symonds	Separator.	Test.
74	Bouton	Woodward Creamery (s)	Ind.	H. P. Caloney, Prop.	Woodward		Separator.	Test.
75	Boxholm	Boxholm Co-op. Creamery ..	Co-op.	Alphonse Johnson	Boxholm	Peter Lingman	S. & G. C.	Test.
76	Rosendale	Rosendale Co-op. Creamery Co	Co-op.	M. P. Petersen, Sec.	Stanholm	L. C. Peterson	Separator.	Test.
77	Boxholm	Renner Creamery	Ind.	Geo. F. Freie	Ogden R. F. D. No. 2	Joseph Michels	Separator.	Test.

Bremer County.

78	Bremer	Bremer Creamery Co	Co-op.	F. C. Kohagen	Bremer	Wm. Kallenbeck	Separator.	Test.
79	Bremer	Western Douglas Creamery Co.	Co-op.	Aug. Hoppenworth	Waverly Route No. 1.	Frank Finch	Separator.	Test.
80	Sumner	Little Valley Creamery Co	Co-op.	F. Seehase	Buck Creek	F. M. Zell	Separator.	Hd.
81	Denver	The Farrington Creamery Co.	Co-op.	F. Garton	Cedar Falls ..			
82	Denver	First Maxfield Creamery Co.	Co-op.	Wm. Milns	Route No. 1.	B. P. Squires	Separator.	Test.
83	Frederika	Frederika Creamery Ass'n	Co-op.	J. H. McDonald	Denver	John Wedemeyer	Separator.	Test.
84	Grovehill	Grovehill Creamery	Co-op.	A. F. Schmeltzer	Frederika	C. E. Carr	Separator.	Hd.
85	Klinger	Klinger Creamery	Ind.	C. H. Dickman, Prop.	Grovehill	F. D. Daniels	Separator.	Hd.
86	Knittel	Maxfield Creamery Co	Co-op.	J. Strotman	Klinger	C. H. Dickman	Separator.	Hd.
87	Sumner	Climax Creamery Co.	Co-op.	Henry Specht	Knittel	F. Willis	Separator.	Hd.
					Sumner	Fred Engel	Separator.	Hd.

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Office record number.	LOCATION.	NAME OF CREAMERY.	How operated.	NAME OF PROPRIETOR, SECRETARY OR MANAGER.	P. O. ADDRESS OF PROPRIETOR, SECRETARY OR MANAGER.	NAME OF BUTTER MAKER.	Separator or gathered cream.	Method of receiving milk.
88	Sumner	Excelsior Creamery Co.	Co-op	H. E. Wuttke	Sumner	F. G. Huntley	Separator.	Test.
89	Sumner	Spring Fountain Creamery Co.	Co-op	Joe Volker	Sumner	Fred Sumner	Separator.	Hd.
90	Sumner	Sumner Creamery Co.	Co-op	John Dawson	Sumner	Robt. Maille	Separator.	Hd.
91	Tripoli	Fremont Creamery Co.	Co-op	H. F. Braun	Tripoli	John E. Smith	Separator.	Hd.
92	Tripoli	Potter's Siding Creamery Co.	Co-op	H. C. Lahmann, Sec.	Tripoli	H. C. Ladage	Separator.	Hd.
93	Tripoli	Tripoli Creamery Co.	Co-op	A. A. Eisenhart, Sec.	Tripoli	F. C. Oltrogge	Separator.	Hd.
94	Denver	Artesian Creamery	Co-op	W. Graening, Sec.	Artesian	H. J. Hankner	Separator.	Hd.
95	Waverly	La Fayette Creamery Co.	Co-op	L. C. Oberdorf, Sec.	Waverly	Henry Piegors	Separator.	Test.
96	Waverly	Washington Creamery	Co-op	S. M. Lehman	Waverly	Dick Bollerman	Separator.	Test.
97	Tripoli	Siegle Creamery Co.	Co-op	J. Jones, Sec.	Waverly R. F. D., No. 1	Wm. Lenius	Separator.	Test.
98	Waverly	Wisconsin Cond. Milk Co.	Stock	W. A. Douglas, Mgr	Waverly	Con. D. E. Sheldon	Separator.	H. & T.
99	Denver	The Farrington Creamery (s)	Co-op	F. Garton, Sec	Cedar Falls		Separator.	Test.
<i>Buchanan County.</i>								
100	Brandon	Brandon Creamery Co.	Co-op	W. W. Bain	Brandon	M. E. Benson	Separator.	Test.
101	Fairbank	Fairbank Farmers' Creamery Co.	Co-op	E. Sanborn	Fairbank	H. H. Opperman	Separator.	Test.
102	Hazleton	Hazleton Farmers' Creamery	Stock	N. C. Peek	Hazleton	M. W. Ashby	S. & G. C.	Test.
103	Jesup	Jesup Creamery Co.	Co-op	James Dalton, Sec.	Jesup	E. M. Vorgason	S. & G. C.	Test.
104	Independence	Independence	Stock	C. B. Hubbard, Mgr	Independence	M. O. Wheelock	S. & G. C.	Test.
105	Rowley	Independence (s)	Stock	C. B. Hubbard, Mgr	Independence		S. & G. C.	Test.
106	Littleton	Independence (s)	Stock	C. B. Hubbard, Mgr	Independence		S. & G. C.	Test.
107	Vista	C. B. Hubbard, Manager (s)	Stock		Independence		S. & G. C.	Test.
108	Lamont	Lamont Creamery Co.	Stock	Thos. Taylor	Lamont	F. S. Kleckner	Separator.	Test.
109	Aurora	Aurora Creamery	Ind.	Geo. L. Weeks, Manager	Independence	Geo. L. Weeks	Separator.	Test.
110	Stanley	Stanley Creamery	Ind.	Geo. L. Weeks, Manager	Independence	F. W. Strong	Separator.	Test.
111	Winthrop	Winthrop Creamery	Stock	C. B. Hubbard	Independence	W. H. Plank	Separator.	Test.
112	Newtonville	Winthrop Creamery (s)	Stock	C. B. Hubbard	Independence		Separator.	Test.
113	Middlefield	Winthrop Creamery (s)	Stock	C. B. Hubbard	Independence		Separator.	Test.
114	Quasqueton	Winthrop Creamery (s)	Stock	C. B. Hubbard	Independence		Separator.	Test.
115	Otterville	Otterville Creamery Co.	Co-op	J. F. Booth	Otterville	Martin Youndt	Separator.	Test.
116	Rowley	Rowley Co-operative Co.	Co-op	John C. Orth	Rowley	Herbert Brochon	Separator.	Test.
117	Hamerville	Walker Creamery	Ind.	H. J. Nietert	Walker		Separator.	Test.

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<i>Buena Vista County.</i>								
118	Albert City	Fairfield Creamery Co.	Co-op	O. P. Petterson	Albert City	S. M. Geyer	Separator.	Test.
119	Albert City	Fairfield Creamery Co. (s)	Co-op	O. P. Petterson	Albert City		Separator.	Test.
120	Alta	Alta Creamery	Ind.	C. P. Corneleussen, Prop.	Alta	W. H. Cline	Separator.	Test.
121	Newell	Coon River Co-op. Creamery	Co-op	H. C. Kruse	Newell	Chas. A. Allison	Separator.	Test.
122	Newell	Newell Cheese Factory Co. (s)	Stock	Alex J. Davie	Newell	Fred Holtz	Separator.	Test.
123	Verina	Newell Cheese Factory Co.	Stock	Alex J. Davie	Newell		Separator.	Test.
124	Peterson	Crecent Creamery	Ind.	R. S. Lybarger, Prop.	Peterson	Herman Holmes	Separator.	Test.
125	Truesdale	Grant Creamery Co.	Stock	Geo. W. Cole, Sec.	Storm Lake	P. C. Flaskegnard	G. C.	Test.
126	Truesdale	Truesdale Creamery	Ind.	Henry Hustedt	Truesdale		G. C.	Test.
127	Marathon	Laurens Creamery (s)	Ind.	W. and J. G. Hinn, Props.	Laurens		S. & G. C.	Test.
<i>Butler County.</i>								
128	Aplington	Aplington Co-op. Creamery Co.	Co-op	R. B. Eckles, Sec. and Mgr.	Aplington	W. Gilbert	Separator	Test.
129	Aredale	Dumont Creamery (s)	Stock	T. I. Laird	Dumont		Separator	Test.
130	Austinville	White Rose Creamery	Ind.	Sam Patterson	Austinville	Sam Patterson	Separator.	Test.
131	Allison	Allison Creamery	Ind.	W. J. Daniels	Allison	W. J. Daniels	Separator.	Test.
132	Bristow	Bristow Creamery	Ind.	M. Trauffer	Bristow	Fred Farwell	Separator.	Test.
133	Butler Center	Allison Creamery (s)	Ind.	W. J. Daniels	Allison		Separator.	Test.
134	Clarksville	Clarksville Creamery Co.	Stock	E. D. Wilcox, Mgr	Clarksville	W. Barklev	Separator.	Test.
135	Dumont	Dumont Creamery	Stock	T. I. Laird	Dumont	A. W. Snyder	Separator.	Test.
136	Eleanor	Monroe Central Creamery	Co-op	A. Ontjes	Eleanor	C. Nisbar	Separator	Test.
137	Greene	Cold Water Co-op. Dairy Ass'n	Co-op	O. N. Crandall	Greene	P. J. Hagarty	G. C.	Test.
138	Greene	Northern West Point Cr'y Co.	Co-op	H. Delner, Sec.	Greene Rural Route No. 2	Fred H. Fisher	Separator	Test.
139	Kesley	Hitesville Creamery	Ind.	Jas. P. Johnson, Prop.	Kesley		Separator.	Test.
140	New Hartford	Beaver Creamery Co.	Co-op	William D. Ceperley	New Hartford	Peter Larson	Separator	Test.
141	New Hartford	Crescent Creamery Co.	Co-op	Ed. Fitch	New Hartford	W. F. Graham	Separator.	Test.
142	Parkersburg	Monroe Central Creamery (s)	Co-op	A. Ontjes	Eleanor		Separator.	Test.
143	Parkersburg	Parkersburg Creamery	Stock	M. A. Codner, Sec.	Parkersburg	N. H. Codner	Separator.	Test.
144	Coster	Columbian Creamery	Ind.	Adolph Olsen, Mgr	Shell Rock	Adolph Olsen	Separator.	Test.
145	Shell Rock	Shell Rock Creamery Ass'n	Co-op	W. H. Johnson	Shell Rock	August Thieleke	Separator.	Test.
146	Shell Rock	Victory Creamery	Stock	A. B. Shadbolt	Waverly	Louis Grobe	Separator.	Test.
147	Sinclair	Parkersburg Creamery (s)	Stock	N. H. Codner	Parkersburg		Separator.	Test.
148	Scranton	Albion Creamery Co.	Co-op	O. F. Courbat	Scranton	O. F. Courbat	Separator.	Test.
<i>Calhoun County.</i>								
149	Lytton	Williams' Creamery	Co-op	John C. Haack	Fonda	Olin Olsen	Separator.	Test.
150	Manson	Manson Creamery	Ind.	G. B. Moon	Manson	Chas. Moon	Separator.	Test.
151	Knoke	Butler Center Co-op. Cr'y Co.	Co-op	H. F. Meyer, Mgr	Pomeroy	J. P. Cummings	Separator.	Test.
152	Pomeroy	Pomeroy Co-op. Creamery	Co-op	John Behrends	Pomeroy	Geo. F. Allard	Separator.	Test.
153	Rockwell City	Andrew Wood & Co.	Stock	Andrew Wood, Pres	Rockwell City	Irvin Johnson	S. & G. C.	F. & H.
154	Somers	Somers Creamery	Ind.	Geo. C. Smith, Prop.	Somers	Geo. C. Smith	Separator.	Test.
155	Richard P. O.	Somers Creamery (s)	Ind.	Geo. C. Smith, Prop.	Somers		Separator.	Test.
156	Lytton	A. Wood & Co. (s)	Stock	Andrew Wood, Pres	Rockwell City		S. & G. C.	F. & H.
157	Lytton	Blue Grass Creamery	Ind.	I. Hillmann	Lytton	Geo. Hillmann	Separator.	Test.
158	Lake City	Lake City Co-op. Creamery	Co-op				Separator.	Test.

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<i>Carroll County.</i>								
159	Arcadia	Golden Star Creamery Co.	Stock	C. Wilbers, Sec. and Mgr.	Arcadia	S. J. Jans	Separator.	Test.
160	Coon Rapids	Coon Rapids Creamery	Ind.	H. L. Fest, Prop.	Coon Rapids	W. R. Wright	Separator.	Test.
161	Dedham	Lewis Bros. Creamery	Ind.	Lewis Bros.	Dedham	Reese Lewis	Separator.	Test.
162	Halbur	Halbur Creamery Co.	Co-op.	Christ Hansman, Sec. & Mgr.	Halbur	Jos. T. Stangl.	Separator.	Hd.
163	Manning	Manning Creamery	Ind.	J. H. Rushton.	Fairmount, Neb.	O. P. Yant.	G. C.	Test.
164	Manning	Washington Township Creamery.	Co-op.	John J. Kruse	Manning.	J. J. Lancelot	Separator.	Test.
165	Mount Carmel	Mt. Carmel Mutual Creamery Co.	Stock	Martin Berger, Sec. & Mgr.	Carroll, Route No. 2	Joseph A. Stamen	Separator.	Test.
166	Ralston	Ralston Creamery	Ind.	V. Young, Prop.	Ralston	V. Young	Separator.	Test.
167	Roselle	Rose Valley Creamery	Ind.	C. Kohorst, Prop.	Roselle	C. Kohorst	Separator.	Hd.
168	Templeton	Templeton Creamery Co.	Stock	Geo. Bierl	Templeton	M. J. Wagner	Separator.	Test.
169	Willey	Willey Creamery	Ind.	A. Witte, Prop.	R. R. No. 5, Willey	W. B. Witte.	Separator.	Hd.
170	Breda	Viola Mut. Creamery Ass'n.	Co-op.	Paul Luckow	Breda	Christ Sorenson.	Separator.	Test.
171	Lanesboro	Lanesboro Creamery	Co-op.	Henry Miller	Elidden	F. E. Wheeler	Separator.	Test.
<i>Cass County.</i>								
172	Atlantic	Elgin Creamery Co.	Stock	O. Sands, Pres.	Chicago, Ill.	P. M. Williams.	Separator.	Test.
173	Anita	Elgin Creamery Co. (s).	Stock	O. Sands, Pres.	Chicago, Ill.		Separator.	Test.
174	Benton Center	Elgin Creamery Co. (s).	Stock	O. Sands, Pres.	Chicago, Ill.		Separator.	Test.
175	Lewis	Elgin Creamery Co. (s).	Stock	O. Sands, Pres.	Chicago, Ill.		Separator.	Test.
176	Lyman	Elgin Creamery Co. (s).	Stock	O. Sands, Pres.	Chicago, Ill.		Separator.	Test.
177	Marne	Elgin Creamery Co. (s).	Stock	O. Sands, Pres.	Chicago, Ill.		Separator.	Test.
178	Astrus	Elgin Creamery Co. (s).	Stock	O. Sands, Pres.	Chicago, Ill.		Separator.	Test.
179	Massena	Elgin Creamery Co. (s).	Stock	O. Sands, Pres.	Chicago, Ill.		Separator.	Test.
180	Messena	Elgin Creamery Co. (s).	Stock	O. Sands, Pres.	Chicago, Ill.		Separator.	Test.
181	Messena	Elgin Creamery Co. (s).	Stock	O. Sands, Pres.	Chicago, Ill.		Separator.	Test.
<i>Cedar County.</i>								
182	Bennett	Golden Star Creamery	Ind.	Aug. Henricks & Co.	Bennett	W. H. Kroeger	Separator.	Test.
183	Clarence	Clarence Creamery	Ind.	Henry Struck	Clarence	Henry Struck	G. C.	Inch.
184	Clarence	Union Farmer's Creamery	Stock	Ernst Huxoll	Clarence	Ernst Huxoll	S. & G. C.	Test.

185	Durant	Durant Butter and Cheese Ass'n.	Stock	Chas. Sorgenfrey	Durant	Henry Puck	G. C.	Test.
186	Lowden	Home Creamery	Ind.	G. F. Reinking	Lowden	G. F. Reinking	G. C.	Inch.
187	Lowden	Yankee Run Creamery	Ind.	Chas. Boettger	Lowden	Chas. Boettger	Separator.	Test.
188	Lowden	Yankee Run Creamery. (s)	Ind.	Chas. Boettger	Lowden		Separator.	Test.
189	West Branch	West Branch Creamery	Ind.	Eves & Elliott	West Branch	Eves & Elliott	Separator.	Hd.
190	Springdale	West Branch Creamery. (s)	Ind.	Eves & Elliott	West Branch		Separator.	Hd.
<i>Cerro Gordo County.</i>								
191	Clear Lake	Clear Lake Creamery	Ind.	G. W. Kennedy	Thornton		S. & G. C.	Test.
192	Mason City	Mason City Creamery	Ind.	J. G. MacKeller & Co.	Mason City		Separator.	Test.
193	Plymouth	Plymouth Creamery	Ind.	Geo. A. Whaley, Prop. Mgr.	Plymouth	Chor. Armstrong	Separator.	Test.
194	Portland	Portland Creamery	Ind.	C. E. Sweet, Prop.	Portland	H. Clansen	Separator.	Test.
195	Rockwell	Rockwell Creamery	Ind.	G. H. Gurler, Prop.	DeKalb, Ill.	Chas. Logan	G. C.	Test.
196	Thornton	Thornton Creamery	Ind.	G. W. Kennedy	Thornton	Chris. Mortinson	G. C.	Inch.
<i>Cherokee County.</i>								
197	Aurelia	Aurelia Creamery	Ind.	Chris. Knutzen, Sec.	Aurelia	Chris. Knutzen	Separator	Test.
198	Baum	Quimby Creamery (s)	Ind.	W. N. Schwartz, Sec.	Quimby		Separator	Test.
199	Larrabee	Larrabee Creamery	Ind.	A. Younger, Sec.	Larrabee	A. Younger	Separator	Test.
200	Marcus	White Rose Creamery	Ind.	C. E. Austin, Prop.	Marcus	C. E. Austin	Separator	Test.
201	Quimby	Quimby Creamery	Ind.	W. N. Schwartz, Sec.	Quimby	Jay. E. Garden	Separator	Test.
202	Washta	Washta Creamery	Ind.	Jas. Robertson, Jr., Prop.	Washta	L. C. Carder	Separator	Test.
203	Quimby	Riedesel & Son	Ind.	Riedesel & Son, Sec.	Anrelia	Riedesel & Son	Separator.	Test.
<i>Chickasaw County.</i>								
204	Alta Vista	Alta Vista Farmers Cr'y Ass'n.	Co-op.	William Vick, Sec.	Alta Vista	C. H. Capper	Separator.	Test.
205	Boyd	Farmers' Creamery Ass'n	Co-op.	Wm. Denner, Sec.	Boyd	J. M. Zubrod	Separator.	Test.
206	Deerfield	Deerfield Creamery	Co-op.	J. W. Kane, Sec.	Deerfield	R. E. Newberry	Separator.	Test.
207	Devon	Devon Farmers' Co-op. Cr'y Co.	Co-op.	Alfred Larson, Sec.	Devon	A. W. Kaercher	Separator.	Test.
208	Dresden	New Hampton Creamery (s)	Ind.	J. L. Humphrey, Jr., Prop.	New Hampton		Separator.	Test.
209	Fredericksburg	New Hampton Creamery (s)	Ind.	J. L. Humphrey, Jr., Prop.	New Hampton		Separator.	Test.
210	Fredericksburg	Fredericksburg Butter Factory	Co-op.	Wm. Bee, Sec.	Fredericksburg	H. E. Forrester	Separator	Test.
211	Ionia	Ionia Co-op. Creamery Co.	Co-op.	K. K. Couley, Sec.	Ionia	J. W. Cagley	G. C.	Test.
212	Jerico	Jerico Creamery Ass'n	Co-op.	Chas. Barrett, Sec.	Jerico	Martin Donovan	Separator	Test.
213	Lawler	Lawler Creamery Co.	Co-op.	H. M. Kout, Sec.	Lawler	Fred Zigler	Separator.	Test.
214	Little Turkey	Little Turkey Creamery	Stock	A. O. Elvidge, Pres.	Elkader	L. H. Lee	Separator.	Test.
215	Republic	Republic Creamery	Ind.	Chas. Gurler, Mgr.	De Kalk, Ill.	Harry Davenport	G. C.	Test.
216	Nashua	Nashua Creamery	Ind.	Chas. Gurler, Mgr.	De Kalk, Ill.	A. Bethke	G. C.	Test.
217	Nansen	Farmer's Mutual Co-op. Cr'y	Co-op.	T. W. Munson, Sec.	Nansen	R. J. White	Separator.	Test.
218	New Hampton	New Hampton Creamery	Ind.	J. T. Riley, Mgr.	New Hampton	S. Peterson	Separator.	Test.
219	N. Washington	North Washington Creamery Co.	Co-op.	F. N. Gindorff, Sec.	N. Washington	Fred Schreiber	Separator	Test.
220	Sande	Sande Co-op. Creamery Co.	Co-op.	H. O. Natvig, Sec.	Sande	G. T. Sangquist	Separator	Test.
221	Williamstown	Williamstown Cr'y. Association	Co-op.	Julius Hall, Sec.	Williamstown	C. R. Gist	Separator	Test.
222	Nashua	Farmers Co-op. Creamery Co.	Co-op.	S. W. Blinn, Sec.	Nashua	F. R. Packer	G. C.	In & T.

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<i>Clark County.</i>								
223	Lacelle.....	Elgin Creamery (s).....	Stock..	O. Sands.....	Chicago.....	Separator.	Test.
224	Hopeville.....	Elgin Creamery (s).....	Stock..	O. Sands.....	Chicago.....	.....	Separator.	Test.
225	Murray.....	Elgin Creamery.....	Stock..	O. Sands.....	Chicago.....	James Currie.....	Separator.	Test.
226	Murray.....	Elgin Creamery (s).....	Stock..	O. Sands.....	Chicago.....	.....	Separator.	Test.
<i>Clay County.</i>								
227	Dickens.....	Farmers Co-op. Creamery Co.....	Co-op..	Wm. McCurdy, Sec. & Mgr.	Dickens.....	A. L. Remington.....	Separator.	Test.
228	Dickens.....	Sioux Valley Creamery.....	Ind.	H. B. Gregory.....	Spencer.....	F. A. Golden.....	Separator.	Test.
229	Everly.....	Everly Creamery.....	Ind.	H. B. Gregory.....	Spencer.....	T. N. Hollister.....	Separator.	Test.
230	Fostoria.....	Fostoria Creamery Co.....	Stock..	B. D. Dunning Mgr.....	Fostoria.....	Frank Riley.....	Separator.	Test.
231	Greenville.....	Greenville Creamery.....	Ind.	A. Younger.....	Larrabee.....	O. Ellis.....	Separator.	Test.
232	Greenville.....	Sioux Valley Creamery (s).....	Ind.	H. B. Gregory.....	Spencer.....	.....	Separator.	Test.
233	Spencer.....	Spencer Creamery.....	Ind.	W. Kepler.....	Spencer.....	Frank Repka.....	Separator.	Test.
234	Spencer.....	Spencer Creamery (s).....	Ind.	W. Kepler.....	Spencer.....	.....	Separator.	Test.
235	Terril.....	Trumbull Lake Creamery Co.	Stock..	C. M. Varney, Sec. & Mgr.	Terril.....	R. L. Bradburn.....	Separator.	Test.
236	Webb.....	Webb Creamery.....	Ind.	J. A. Reid, Prop.....	Webb.....	J. A. Reid.....	Separator.	Test.
237	Royal.....	Royal Creamery.....	Stock..	D. N. Gish, Mgr.....	Royal.....	D. N. Gish.....	Separator.	Test.
238	Willow Creek ..	Willow Creek (s).....	Stock..	D. N. Gish, Mgr.....	Royal.....	.....	Separator.	Test.
239	Langdon.....	Langdon Co-op Creamery Co.....	Co-op..	E. Kingsley, Sec & Mgr.....	Langdon.....	Chas. Johnson.....	Separator.	Test.
<i>Clayton County.</i>								
240	Communia.....	Communia Creamery.....	Stock..	A. O. Elvidge, Pres.....	Elkader.....	Peter Klink.....	Separator.	Test.
241	Edgewood.....	Fidelity Creamery.....	Ind.	H. F. Beyer.....	Edgewood.....	Ed. J. Whipple.....	Separator.	Test.
242	Elkader.....	Elkader Creamery.....	Stock..	A. O. Elvidge, Pres.....	Elkader.....	Geo. Heffron.....	Separator.	Test.
243	Elkport.....	Elkport Creamery.....	Ind.	H. F. Beyer.....	Edgewood.....	Ole Hauge.....	Separator.	Test.
244	Garnavillo.....	Garnavillo F'm's Co-op. Cr'y ..	Co-op..	H. H. Kuhlman, Sec.....	Garnavillo ..	C. B. Chandler.....	Separator.	Test.
245	Giard.....	Giard Creamery.....	Stock..	A. O. Elvidge, Pres.....	Elkader.....	Harvey Clough.....	Separator.	Test.
246	Gunder.....	Clermont Creamery (s).....	Co-op..	F. F. Ferguson, Sec.....	Clermont.....	.....	Separator.	Test.
247	Littleport.....	Littleport Creamery.....	Ind.	H. F. Beyer.....	Edgewood.....	Dan Whipple.....	Separator.	Test.
248	Luana.....	Luana F'm's Co-op. Cr'y Co.....	Co-op..	W. H. Russell, Sec. & Mgr.	Luana.....	C. C. Clifton.....	Separator.	Test.
249	Mederville.....	Mederville Creamery.....	Stock..	A. O. Elvidge, Pres.....	Elkader.....	A. H. Peacock.....	Separator.	Test.
250	Monona.....	Monona Creamery.....	Stock..	A. O. Elvidge, Pres.....	Elkader.....	R. L. Cagley.....	Separator.	Test.
251	Osborne.....	Osborne Creamery.....	Stock..	A. O. Elvidge, Pres.....	Elkader.....	.....	Separator.	Test.
252	Osterdock.....	Osterdock Creamery Co.....	Stock..	E. A. Bush, Sec.....	Osterdock.....	J. G. Slemmes.....	S. & G. C.	Test.
253	St. Olaf.....	St. Olaf Creamery.....	Ind.	Larson & Mickelson.....	St. Olaf.....	H. L. Mickelson.....	S. & G. C.	Test.
254	Strawb'ry Point	Strawberry Point Creamery Ass'n	Co-op..	A. R. Carrier, Sec. & Mgr.....	Strawb'ry Point	P. H. Keiffer.....	Separator.	Test.
255	Volga City.....	Volga City F'm's Co-op. Cr'y Co..	Co-op..	A. E. Olinger, Sec.....	Volga City.....	Jos. Jones.....	Separator.	Test.
256	Highland Tp.....	Highland Tp. Farmer's Cr'y Co ..	Co-op..	G. Gregerson.....	R. R. No. 2.....	.....	Separator.	Test.
257	Watson.....	Blue Grass Creamery Co.....	Co-op..	F. V. Blaha, Sec.....	Elgin.....	James Doty.....	S. & G. C.	Test.
258	Windsor.....	Farmersburg Co-op. Creamery Co.	Co-op..	John Johnson, Sec.....	R. F. D. No. 1.....	F. A. Flete.....	S. & G. C.	Test.
259	McGregor.....	McGregor Creamery.....	Stock..	The J. D. Bickel Produce Co.	McGregor.....	I. D. Hendershott.....	Separator.	Test.
<i>Clinton County.</i>								
260	Browns.....	Springbrook Creamery (s).....	Ind.	John Newman Co.....	Elgin, Ill.....	.....	Separator.	Test.
261	Charlotte.....	Springbrook Creamery.....	Ind.	John Newman Co.....	Elgin, Ill.....	Geo. Burton.....	Separator.	Test.
262	Delmar Junct.....	Springbrook Creamery.....	Ind.	John Newman Co.....	Elgin, Ill.....	L. J. Spohn.....	Separator.	Test.
263	Elwood.....	Springbrook Creamery.....	Ind.	John Newman Co.....	Elgin, Ill.....	Frank Leinbaugh.....	Separator.	Test.
264	Grand Mound.....	Grand Mound Creamery.....	Ind.	Chas. Hanbold.....	Grand Mound.....	Chas. Hanbold.....	Separator.	Test.
265	Lost Nation 19.....	Diamond Creamery Co (s).....	Ind.	Simpson, McL. & Co.....	Boston, Mass.....	.....	Separator.	Test.
266	Lost Nation 22.....	Diamond Creamery Co. (s).....	Ind.	Simpson, McL. & Co.....	Boston, Mass.....	.....	Separator.	Test.
267	Lost Nation 23.....	Diamond Creamery Co. (s).....	Ind.	Simpson, McL. & Co.....	Boston, Mass.....	.....	Separator.	Test.
268	Quigley.....	Springbrook Creamery.....	Ind.	John Newman & Co.....	Elgin, Ill.....	A. J. Spohn.....	Separator.	Test.
269	Bliebru.....	Grand Mound Creamery (s).....	Ind.	Chas. Hanbold.....	Grand Mound.....	.....	Separator.	Test.
<i>Clinton County.</i>								
270	Teeds Grove.....	Springbrook.....	Ind.	John Newman Co.....	Elgin, Ill.....	M. P. Kramer.....	Separator.	Test.
271	Toronto.....	Farmers' Co-op. Creamery Co.....	Co-op..	Edward Hart, Jr., Sec.....	Toronto.....	Peter M. Jenn.....	Separator.	Test.
272	Welton.....	Springbrook Creamery.....	Ind.	John Newman Co.....	Elgin, Ill.....	C. B. Berst.....	Separator.	Test.
273	Wheatland.....	Yankee Creamery (s).....	Ind.	Chas. Boettger.....	Lowden.....	.....	Separator.	Test.
274	Lost Nation.....	Farmers' Co-op. Creamery Co.....	Co-op..	A. L. Cook, Sec.....	Lost Nation.....	A. E. Carrier.....	Separator.	Test.
275	Clinton.....	Clinton Creamery.....	Ind.	J. Wright & Sons.....	Clinton.....	E. J. Wright.....	G. C.	Test.
276	Wheatland.....	Wheatland Creamery.....	Ind.	A. E. Banta.....	Wheatland.....	A. E. Banta.....	Separator.	Test.
<i>Crawford County.</i>								
277	Aspenwall.....	Manning Creamery Co. (s).....	Stock..	J. H. Rushton, Pres.....	Fairmont, Neb.....	.....	G. C.	Test.
278	Charter Oak.....	Charter Oak Creamery Co.....	Stock..	E. E. Springer, Sec.....	Charter Oak.....	John C. Keller.....	G. C. & S.	Test.
279	Denison.....	The Denison Creamery.....	Ind.	J. H. Rushton.....	Fairmont, Neb.....	A. F. Durkee.....	G. C.	Test.
280	West Side.....	Manning Creamery (s).....	Stock..	J. H. Rushton, Pres.....	Fairmont, Neb.....	.....	G. C.	Test.
281	Kiron.....	Kiron Co-op. Mutual Cr'y Co.....	Co-op..	W. M. Strahn, Gen. M. & S.	Kiron.....	H. J. Healy.....	Separator.	Test.
<i>Dallas County.</i>								
282	Brough.....	Yale Creamery (s).....	Ind.	Park & Son.....	Yale.....	Separator.	Test.

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CREAMERY LIST—CONTINUED.

Office record number.	LOCATION.	NAME OF CREAMERY.	How operated.	NAME OF PROPRIETOR, SECRETARY OR MANAGER.	P. O. ADDRESS OF PROPRIETOR, SECRETARY OR MANAGER.	NAME OF BUTTER MAKER.	Separator or gathered cream.	Method of receiving milk.
283	Dallas Center	Dallas Center Butter & Cream Co.	Stock	D. E. Hoff, Sec.	Dallas Center	W. P. Hall	Separator	Test.
284	Dawson	Dawson Star Creamery	Ind.	O. S. Gillon, Mgr.	Dawson	.....	Separator	Test.
285	Dexter	Farmers' Co-op. Creamery Ass'n	Co-op	Jas. L. Keachie, Sec.	Dexter	Jas. L. Keachie	Separator	Test.
286	Minburn	Waterloo Creamery Co. (s)	Stock	Burt B. Corliss, Pres.	Des Moines	.....	Separator	Test.
287	Panther Creek	Dallas Center But'r & Cream Co. (s)	Stock	D. E. Hoff, Sec.	Dallas Center	.....	Separator	Test.
288	Perry	J. M. Moody & Sons	Ind.	J. Moody & Son	Perry	Fred French	Separator	Test.
289	Van Meter	Waterloo Creamery Co. (s)	Stock	Bert B. Corliss	Des Moines	.....	Separator	Test.
290	Wauke	Waterloo Creamery Co. (s)	Stock	Bert B. Corliss	Des Moines	.....	Separator	Test.
291	Woodward	Woodward Creamery	Ind.	H. P. Calonkey, Prop.	Woodward	A. B. Calonkey	Separator	Test.
<i>Davis County.</i>								
292	Bloomfield	Bloomfield Creamery	Ind.	W. H. Davis	Bloomfield	Joe H. Davis	Separator	Test.
293	Drakesville	Bloomfield Creamery (s)	Ind.	W. H. Davis	Bloomfield	.....	Separator	Test.
294	Drakesville	Bloomfield Creamery (s)	Ind.	W. H. Davis	Bloomfield	.....	Separator	Test.
<i>Davis County.</i>								
295	Pulaski	Pulaski Creamery	Ind.	J. J. Miller, Mgr	Pulaski	J. M. Hunt	G. C.	Test.
296	Troy	Milton Creamery (s)	Ind.	V. F. Cooley	Milton	.....	G. C.	Test.
<i>Decatur County.</i>								
297	Grand River	Grand River Butter and C. Fact.	Stock	Covington and Overholtzer	Grand River	Sherman Beck	Separator	Test.
298	Leon	Leon Creamery	Stock	A. McCurtney & Co.	Leon	A. McCurtney	S. & G. C.	Test.
299	Le Roy	Old Colony Creamery (s)	Ind.	T. G. Hyde, Mgr	Humeston	.....	Separator	Test.
300	Lamont	Lamont Creamery (s)	Ind.	T. G. Hyde, Mgr	Humeston	.....	Separator	Test.
<i>Delaware County.</i>								
301	Almoral	Almoral Creamery Co.	Co-op	F. L. Carpenter, Sec	Almoral Stati'n	J. J. Schmidt	Separator	Test.
302	Colesburg	Colesburg Creamery Co.	Co-op	Robt. A. Gull, Sec. & Mgr	Colesburg	A. L. Landis	Separator	Test.
303	Hazel Green	Palmer-Hubbard Co.	Ind.	Palmer-Hubbard Co.	Independence	W. McKusker	Separator	Test.
304	Delaware	Delaware Creamery Co.	Co-op	G. R. Angell, Sec.	Delaware	M. McDowell	Separator	Test.
305	Delhi	Silver Springs Creamery Co.	Co-op	Chas. A. Howard, Mgr.	Delhi	Chas. A. Howard	Separator	Hd.
306	Dundee	Dundee Creamery	Ind.	H. F. Beyer	Edgewood	Fred Stephenson	Separator	Test.
307	Earlville	Gilt Edge Creamery	Ind.	J. M. Dunn, Prop.	Earlville	Ed. McCaffrey	Separator	Test.

308	Earlville	Earlville Creamery	Ind.	J. M. Dunn, Prop.	Earlville	J. M. Dunn	Separator	Test.
309	Ryan	Palmer-Hubbard Co. (s)	Ind.	Palmer-Hubbard Co.	Independence	.....	Separator	Test.
310	Ryan	Artesian Creamery	Ind.	J. J. McAveary, Prop.	Ryan	J. J. McAveary	Separator	Test.
311	Greeley	Greeley Co-op. Creamery	Co-op	J. C. Mathews, Sec.	Greeley	W. P. Crall	Separator	Test.
312	Hopkinton	Hopkinton Co-op. Creamery	Co-op	M. L. McGlade, Sec. & Mgr	Hopkinton	J. H. Griffith	Separator	Test.
313	Ryan	Barryville Co-op. Creamery Co.	Co-op	H. G. Keiser	Ryan	W. S. Heagy	Separator	Test.
314	Manchester	Manchester Co-op. Creamery	Co-op	James Bishop, Sec. & Mgr.	Manchester	C. D. Elder	Separator	Test.
315	Manchester	Spring Branch Creamery Co.	Co-op	W. J. Davis, Sec. & Mgr.	Delaware	A. A. Palmer	Separator	Test.
316	Masonville	Masonville Co-op. Creamery Co.	Co-op	F. S. Harris, Sec.	Masonville	W. A. Smarzo	Separator	Test.
317	Worthington	Central Co-op. Creamery	Co-op	J. H. White, Sec. & Mgr	Worthington	Anton Smith	Separator	Test.
318	Petersburg	Bear Grove Creamery	Co-op	F. H. Klosteman Sec	New Vienna	Geo. Dormayer	Separator	Hd.
319	Petersburg	Petersburg Co-op. Creamery	Co-op	H. H. Scherbring, Sec	Petersburg	Ed. Budden	Separator	Hd.
320	Willow Grove	Palmer-Hubbard Co.	Ind.	Palmer-Hubbard Co.	Independence	.....	Separator	Test.
321	Broadway	Palmer-Hubbard Co. (s)	Ind.	Palmer-Hubbard Co.	Independence	.....	Separator	Test.
322	Ryan	Silver Creek Creamery	Ind.	Geo. E. Packer, Prop.	Ryan	Geo. E. Packer	Separator	Test.
323	Sand Spring	Sand Spring Co-op. Creamery Co.	Co-op	F. E. Wood, Sec. and Mgr.	Sand Spring	O. W. Brazelton	Separator	Test.
324	Thorpe	Frm's Co-op. Cr'y Co. of Thorpe	Co-op	M. E. Blair, Sec. and Mgr.	Manchester	Walter Pollard	Separator	Test.
325	Ehler	Cedar Valley Creamery Co. (s)	Stock	G. L. Hubbell	Cedar Rapids	.....	Separator	Test.
<i>Dickinson County.</i>								
326	Milford	Milford Far. B. & C. Ass'n	Co-op	H. H. Shipman, Sec. & Mgr	Milford	J. O. Miller	Separator	Test.
327	Spirit Lake	Farmers' Co-op. Creamery Ass'n	Co-op	H. Van Steenburg	Spirit Lake	Geo. Williams	S. & G. C.	Test.
328	Terril	Terril Co-op. Creamery Ass'n	Co-op	Mrs. J. O. Woods	Terril	W. C. Frank	Separator	Test.
329	Wallace	Wallace Creamery	Ind.	T. L. Case, Mgr.	Wallace	T. L. Case	Separator	Test.
330	Lake Park	Farmers' Co-op. Creamery	Co-op	J. G. Chrysler, Sec.	Lake Park	E. A. Starr	S. & G. C.	Test.
<i>Dubuque County.</i>								
331	Balltown	Balltown Co-op. Creamery Co.	Co-op	C. D. Harrington, Sec	Spechts Ferry	Henry Koehler	Separator	Hd.
332	Cascade	Cascade Co-op. Creamery Co.	Co-op	P. J. Conlin, Sec.	Rural Route 1	F. C. Elliott	Separator	Test.
333	Cascade	Spring Valley Creamery Co.	Co-op	John N. Kremer, Sec.	Cascade	W. H. Maginnis	Separator	Test.
334	Dyersville	Farmers' Golden Star Cr'y Co.	Stock	F. P. Kern, Mgr	Dyersville	John B. Feldman	Separator	Test.
335	Epworth	Epworth Creamery Co.	Co-op	J. D. Burrell, Sec.	Epworth	J. M. Wollert	Separator	Test.
336	Farley	Farley Creamery Co.	Co-op	G. W. Cropp, Mgr	Farley	Thos. Landis	Separator	Test.
337	Farley	John's Creek Creamery	Ind.	A. K. Heald & Son	Farley	Rob. Parrott	Separator	Test.
338	Farley	Pleasant View	Ind.	A. K. Heald & Son	Farley	Will Dubbs	Separator	Test.
339	Fillmore	Fillmore Co-op. Creamery Co.	Co-op	Wm. Fagan, Sec	Fillmore	Peter Butler	Separator	Test.
340	Holy Cross	Pin Oak Creamery	Co-op	Peter Pfohl, Sec.	Holy Cross	J. P. Crippes	Separator	Hd.
341	Dubuque	Love Co-operative Creamery Co.	Co-op	Mich. Gansemer, Jr., Mgr	R. R. E. 5, Dubuque	Will Kohler	Separator	Hd.
342	Luxemburg	Globe Creamery	Co-op	John Langel, Sec.	Luxemburg	B. Goetzinger	Separator	Test.
343	Dyersville	Hickory Valley	Stock	W. C. Stratton, Sec.	Farley	Frank Rubly	Separator	Test.
344	New Vienna	New Vienna Central Creamery Co	Stock	Jacob Kerper, Mgr	New Vienna	Frank Heying	Separator	Hd.
345	O'Neill	Oak Grove Creamery	Co-op	John L. Cooney, Sec	O'Neill	Fredrick Muller	Separator	Hd.
346	Rickardsville	Farmers' Creamery	Stock	John Fisher, Sec.	Route E, Dubuque	John W. Farni	Separator	Hd.
347	Landeville	Columbian Creamery	Ind.	Laude Bros	Route D, Dubuque	Harry Sylvester	Separator	Test.
348	Sherrill	Sherrill Creamery Co.	Co-op	J. C. Boleyn, Sec. and Mgr.	Specht's Ferry	John Stillmunkes	Separator	Test.
349	Lattners	Breithach Bros.	Ind.	J. C. Breithach	Lattners	.....	Separator	Test.
350	Worthington	Worthington Creamery	Ind.	C. Baehler, Prop.	Worthington	C. Baehler	Separator	Test.

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Office record number.	LOCATION.	NAME OF CREAMERY.	How operated.	NAME OF PROPRIETOR, SECRETARY OR MANAGER.	P. O. ADDRESS OF PROPRIETOR, SECRETARY OR MANAGER.	NAME OF BUTTER MAKER.	Separator or gathered cream.	Method of receiving milk.
<i>Emmet County</i>								
351	Armstrong	Farmers' Creamery Co.	Co-op.	Peter H. Burt, Sec.	Armstrong	H. Chronholm.	Separator.	Test.
352	Dolliver	Dolliver Creamery Association.	Co-op.	L. P. Stillman, Secretary	Dolliver	Herman Wendt.	Separator.	Test.
353	Estherville	Estherville Creamery	Ind.	Joshua Morek, Prop.	Estherville	J. Morek	S. & G. C.	Test.
354	Gruver	Gruver Co-op. Creamery Co.	Co-op.	C. E. Fuller, Sec.	Gruver	F. M. Goldsberry	Separator.	Test.
355	Halfa	Halfa Co-op. Creamery Co.	Co-op.	V. E. Yessler, Sec.	Halfa	E. A. Bacon	Separator.	Test.
356	Huntington	Huntington Co-op. Creamery	Co-op.	W. J. Weir, Sec.	Huntington	Ben Lanning	Separator.	Test.
357	Ringsted	Denmark Co-op. Creamery Co.	Co-op.	Andrew Larsen, Sec.	Ringsted, Box 23	Peter Knudsen	Separator.	Hd.
358	Ringsted	Forsythe Creamery Co.	Co-op.	H. A. Gaarde, Sec.	Armstrong	Ed Kressin	Separator.	Test.
359	Hoprig	Farmers' Hoprig Creamery	Co-op.	Jno. Morrill, Sec.	Hoprig	Julius Jensen	Separator.	Test.
360	Wallingford	Wallingford Creamery Co.	Stock.	O. O. Anderson, Sec.	Wallingford	J. C. Jensen	Separator.	Test.
361	Raleigh	Raleigh Creamery Co.	Co-op.	C. E. Hite, Sec.	Raleigh	August Nurell	Separator.	Test.
<i>Fayette County</i>								
362	Alpha	Alpha Farmers' Creamery Co.	Co-op.	J. B. Hathaway, Sec.	Alpha	C. N. Beach	Separator.	Test.
363	Arlington	Arlington Creamery	Stock.	Guy L. Rawson, Sec.	Arlington	Geo. Hoisington	Separator.	Test.
364	Clermont	Burr Oak Creamery	Co-op.	Henry Smith, Sec.	Clermont	B. C. Iliff	S. & G. C.	Test.
365	Clermont	Clermont Valley Creamery Co.	Co-op.	F. F. Ferguson, Sec.	Clermont	Amon Erickson	Separator.	Test.
366	Elgin	Elgin Farmer's Dairy Co.	Co-op.	M. Luchsinger, Sec.	Elgin	Ed. Hanson	Separator.	Test.
367	Minkler	Oran Creamery Co.	Co-op.	J. P. Schmit, Sec.	Minkler	G. K. Knief	Separator.	Hd.
368	Fayette	Farmers' Fayette Creamery Ass'n	Co-op.	Peter E. Jubb, Sec.	Fayette	C. H. Wilson	Separator.	Test.
369	Hawkeye	Hawkeye Creamery	Co-op.	J. Q. Adams, Sec.	Hawkeye	F. C. Billings	Separator.	Test.
370	Maynard	Harlan Creamery Co.	Co-op.	F. E. Blethen, Sec.	Maynard	C. B. Bracey	Separator.	Test.
371	Oelwein	Jefferson Creamery	Co-op.	J. H. Meyer, Sec.	Oelwein	A. H. Ford	Separator.	Test.
372	Oelwein	Oelwein Farm Creamery Co.	Co-op.	E. E. Day, Sec.	Oelwein	Joe Beck	Separator.	Test.
373	Randalia	Randalia Creamery Co.	Co-op.	B. A. Care, Sec. and Mgr.	Randalia	Robt. Wagner	Separator.	Test.
374	Hawkeye	Richfield Creamery	Co-op.	F. Pleggenkuhle, Sec.	Hawkeye R. F. D. No. 1	Francis Zbornik	Separator.	Test.
375	Scott	Welch Bros. Creamery	Ind.	Welch Bros.	Scott	Guy Borland	Separator.	Test.
376	St. Lucas	The Far. Co-op. Cr'y of St. Lucas	Co-op.	John J. Milner, Sec. & Mgr.	St. Lucas	Math. H. Blong	Separator.	Test.
377	Sumner	Center Valley Creamery Co.	Stock.	A. E. Fridley, Sec. & Mgr.	Sumner	R. E. White	Separator.	Hd.
378	Wadena	Riverside Creamery	Ind.	F. J. Schroeder, Prop.	Wadena	F. J. Schroeder	Separator.	Test.
379	Waucoma	Waucoma Farmers' Creamery Co.	Co-op.	J. E. Scallan	Waucoma	F. L. Forrester	Separator.	Test.
380	West Gate	West Gate Creamery Co.	Co-op.	Thos. Beecher, Sec.	West Gate	W. B. Johnson	Separator.	Test.
381	West Union	West Union Farmers' Dairy Co.	Co-op.	Chas. L. Dwyer, Sec.	West Union	J. N. Gardner	Separator.	Test.

<i>Floyd County</i>								
382	Carney	Flood Creek Creamery Co.	Stock.	M. A. Hirsch, Sec.	Charles City	.....	G. C.	Inch.
383	Charles City	Charles City Creamery	Ind.	J. C. Daly, Prop.	Charles City	Fred Janes	S. & G. C.	Test.
384	Niles	Niles Creamery	Ind.	J. J. Bremer	Niles	.....	S. & G. C.	Test.
385	Powersville	Powersville Creamery	Ind.	Chas. Gurler & Co.	De Kalb, Ill.	W. H. Miller	G. C.	Test.
386	Rockford	Rockford Co-op. Dairy Ass'n	Co-op.	E. R. Franklin Mgr.	Rockford	J. C. Farnham	G. C.	Test.
387	Nora Springs	Nora Springs Creamery	Stock.	E. Pufahl, Sec. & Mgr.	Nora Springs	E. Pufahl	G. C.	Test.
388	Charles City	St. Charles Creamery	Ind.	W. W. Day	Charles City	W. W. Day	G. C.	Test.
<i>Franklin County</i>								
389	Ackley	Edna Creamery	Ind.	Martin Johnson & Co.	Ackley	Chas. Strassburg	Separator.	Test.
390	Alexander	Alexander Creamery	Ind.	G. H. Gurler	De Kalb, Ill.	H. K. Klepert	Separator.	Test.
391	Lee Center	Alden Co-op. Creamery Co. (s)	Stock.	N. J. Wheeler	Alden	.....	Separator.	Test.
392	Chapin	Chapin Creamery	Ind.	G. H. Gurler	De Kalb, Ill.	R. E. Shockey	S. & G. C.	Test.
393	Dows	Farmers' Co-op. Creamery Co.	Co-op.	C. A. Nicholson, Sec.	Dows	Frank Larson	Separator.	Test.
394	Fankner	Edna Creamery (s)	Ind.	Martin Johnson Co.	Ackley	.....	Separator.	Test.
395	Hampton	Hampton Creamery	Ind.	J. Juhl, Prop.	Hampton	Jake Juhl	G. C.	In. & T.
396	Latimer	Latimer Co-op. Creamery	Co-op.	Fred Rodemyer	Latimer	L. C. Cochran	Separator.	Test.
397	Coulter	Hamilton Co-op. Creamery Co.	Co-op.	Geo. Dohrmann, Sec.	Hampton	Geo. Jorgenson	Separator.	Test.
398	Sheffield	Chapin Creamery (s)	Ind.	G. H. Gurler	De Kalb, Ill.	.....	S. & G. C.	Test.
399	Iowa Falls	Grant Center Creamery Co.	Co-op.	J. J. Hensing, Sec.	Iowa Falls, R. R. No. 1	Ira O'Neil	Separator.	Test.
400	Popejoy	Popejoy Creamery	Ind.	W. J. Kicks Co.	Popejoy	.....	G. C.	Test.
<i>Fremont County</i>								
401	Hamburg	Hamburg Creamery	Co-op.	O. E. Redshaw	Hamburg	J. G. Wheelock	Separator.	Test.
<i>Greene County</i>								
402	Churdian	Andrew Wood & Co. (s)	Ind.	Andrew Wood & Co.	Rockwell City	.....	Separator.	Test.
403	Jefferson	Andrew Wood & Co. (s)	Ind.	Andrew Wood & Co.	Rockwell City	.....	Separator.	Test.
404	Grand Junction	Grand Junction Creamery	Co-op.	L. F. Hillman, Sec.	Grand Junction	Warren Adams	Separator.	Test.
405	Paton	Paton Creamery	Ind.	Geo. E. White, Prop. & Mgr.	Paton	Ralph White	Separator.	Test.
406	Scranton	Scranton Creamery	Ind.	T. Lewis—A. E. Adams	Scranton	A. E. Adams	Separator.	Test.
407	Coon Rapids	Coon Rapids Creamery (s)	Ind.	H. L. Fest, Prop.	Coon Rapids	.....	Separator.	Test.
<i>Grundy County</i>								
408	Johnson	Robertson Creamery (s)	Ind.	Martin Johnson Company	Ackley	.....	Separator.	Test.
409	Aplington	Buck's Grove Creamery Co.	Co-op.	O. Nielins	Wellsburg, R. F. D. No. 1	W. J. Dilger	Separator.	Test.
410	Beaman	Beaman Creamery	Ind.	P. McNelly, Prop.	Beaman	P. McNelly	Separator.	Test.
411	Dike	Dike Creamery	Stock.	Hale & Wild	Cedar Falls	S. E. Edwards	S. & G. C.	Test.
412	Fredsville	Fredsville Co-op. Creamery Co.	Co-op.	Erick Peterson	Cedar Falls, F. R. D. No. 3	Jens Christensen	Separator.	Test.
413	Grundy Center	Boies City Creamery	Ind.	Schrieber & Merrick	Reinbeck	Alfred Kindberg	Separator.	Test.
414	Grundy Center	J. H. Sperry Creamery	Ind.	J. H. Sperry	Grundy Center	A. Baughman	S. & G. C.	T. & I.

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Office record number.	LOCATION.	NAME OF CREAMERY.	How operated.	NAME OF PROPRIETOR, SECRETARY OR MANAGER.	P. O. ADDRESS OF PROPRIETOR, SECRETARY OR MANAGER.	NAME OF BUTTER MAKER.	Separator or gathered cream.	Method of receiving milk.
415	Holland	J. H. Sperry Creamery (s)	Ind	J. H. Sperry	Grundy Center .....	.....	S. & G. C.	T. & L.
416	Holland	Holland Creamery	Ind	J. H. Sperry	Grundy Center	Peter Larsen	S. & G. C.	Test.
417	New Hartford	Fairfinch Co-op. Creamery Co.	Co-op	Ira J. Wilson, Sec.	Cedar Falls, R. F. D. No. 3	George Graham	Separator.	Test.
418	Reinbeck	Schreiber & Merrick	Ind	Schreiber & Merrick	Reinbeck	Wm. Kitner	Separator.	Test.
419	Stout	Beaver Center Creamery Co	Co-op	Jacob A. Meyer, Sec.	Stout	F. E. Dilger	Separator.	Test.
420	Wellsburg	Wellsburg Farmers' Creamery Co ..	Stock	H. L. Meyer, Sec.	Wellsburg	Henry Suhr	Separator.	Test.
<i>Grundy County.</i>								
421	Zaneta	Zaneta Creamery Association	Co-op	Geo. C. Terral	Zaneta	Wm. McFarlane	Separator.	Test.
<i>Guthrie County</i>								
422	Bagley	Yale Creamery (s)	Ind	Park & Son	Yale .....	.....	Separator.	Test.
423	Casey	Casey Creamery Co	Co-op	C. C. Jones, Sec.	Casey	F. W. Sargent	Separator.	Test.
424	North Adair	Elgin Creamery Co. (s)	Ind	O. Sands	Chicago, Ill. ....	.....	Separator.	Test.
425	Dale City	Nebraska & Iowa Creamery Co(s) ..	Stock	John J. King	Omaha, Neb. ....	.....	Separator.	Test.
426	Glendon	Glendon Creamery Co	Co-op	J. C. Hanes, Sec.	Glendon	Joseph Girard	Separator.	Test.
427	Guthrie Center	Hygeia Creamery (s)	Ind	E. C. Sharpe, Mgr	Guthrie Center .....	.....	Separator.	Test.
428	Menlo	Menlo Creamery Co	Stock	A. C. Curtis	Adair	H. H. Colbert	Separator.	Test.
429	Monteith	Nebraska & Iowa Creamery Co(s) ..	Ind	John J. King	Omaha .....	.....	Separator.	Test.
430	Casey	Elgin Creamery Co. (s)	Ind	O. Sands	Chicago, Ill. ....	.....	Separator.	Test.
431	North Branch	Nebraska & Iowa Creamery Co(s) ..	Ind	John J. King	Omaha, Neb. ....	.....	Separator.	Test.
432	Panora	Panora Creamery	Ind	F. F. Wilcox	Panora	John Tuff	Separator.	Test.
433	Safeside	Nebraska & Iowa Creamery Co(s) ..	Ind	John I. King	Omaha, Neb. ....	.....	Separator.	Test.
434	Stuart	Stuart Co-op. Creamery Co	Co-op	C. M. Cady	Stuart	A. Cochrane	Separator.	Test.
435	Wichita	Nebraska & Iowa Cr'y. Co. (s) ..	Stock	John S. King	Omaha, Neb. ....	.....	Separator.	Test.
436	Yale	Yale Creamery	Ind	Park & Son	Yale	D. C. Barthlow	Separator.	Test.
437	Bayard	Bayard Creamery	Ind	C. J. Wurtz, Prop	Bayard	M. J. Goodnow	S. & G. C.	Test.
438	Guthrie Center	Guthrie Center Co-op. Cr'y. Co ..	Co-op	M. O. Moore, Sec	Guthrie Center	J. L. Clark	Separator.	Test.
<i>Hamilton County.</i>								
439	Blairsburg	Blairsburg Creamery	Ind	P. E. Saxer, Prop	Blairsburg	P. E. Saxer	Separator.	Test.
440	Rose Grove	Ellsworth Co-op. Cr'y Ass'n (s) ..	Co-op	S. Sternburg, Sec	Ellsworth .....	.....	Separator.	Test.

441	Ellsworth	Ellsworth Co-op. Creamery Ass'n ..	Co-op	S. Sternburg, Sec	Ellsworth	M. J. Mansager	Separator.	Test.
442	Jewell	Jewell Creamery	Ind	H. K. Gronbeck, Prop	Jewell	H. K. Gronbeck	Separator.	Test.
443	Radcliffe	Lincoln Co-op. Creamery	Co-op	Wm. Willis, Sec	Radcliffe	M. A. Mason	Separator.	Test.
444	Randall	Randall Farmers' Creamery Co ..	Co-op	H. N. Miller, Sec	Randall	H. N. Miller	Separator.	Test.
445	Stratford	McKay Soenke & Co	Ind	S. O. Rice, Mgr	Stratford	S. O. Rice	Separator.	Test.
446	Webster City	Ellingson, Mathre & Co	Stock	Ellingson, Mathre & Co	Webster City	John Soren	G. C.	Test.
447	Webster City	Prairie Queen Creamery	Stock	H. E. Ford, Sec	Webster City	H. E. Ford	Separator.	Test.
448	Williams	Payne's Model	Ind	F. R. Payne, Prop	Williams	Wm. Evans	Separator.	Test.
449	Wilke	Wilke, Soenke & McKay Cr'y Co ..	Ind	Wilke, Soenke & McKay	Wilke .....	.....	Separator.	Test.
<i>Hancock County.</i>								
450	Britt	Britt Co-op. Creamery Co	Co-op	John Fisk, Sec	Britt	H. L. McNary	Separator.	Test.
451	Crystal Lake	Crystal Lake Creamery Co	Co-op	J. C. Nelson, Sec	Britt, Route 3	L. A. Nelson	Separator.	Test.
452	Duncan	Duncan Co-op. Creamery Ass'n ..	Co-op	Frank Formanek, Sec	Duncan	Ant'n J. Doleschal	G. C.	Test.
453	Miller	Model Co-op. Dairy Ass'n	Co-op	J. Isaacson, Mgr & Sec	Forest City, R. No. 2	A. G. Paulson	Separator.	Test.
454	Hayfield	Forest City Co-op. Creamery (s) ..	Co-op	P. N. Anderson, Sec	Forest City	C. R. Conway	Separator.	Test.
455	Garner	Concord Creamery	Co-op	J. Klesel, Sec	Garner .....	.....	Separator.	Test.
456	Madison	Forest City Co-op. Creamery (s) ..	Co-op	P. N. Anderson, Sec	Forest City	J. D. Gift	Separator.	Test.
457	Kanawha	Kanawha Creamery	Ind	G. H. Gurler, Prop	De Kalb, Ill.	Miron Haskin	G. C.	In. & T
458	Klemme	Klemme Creamery Co	Co-op	Louis Sampson	Klemme .....	.....	Separator.	Test.
459	Miller	Model Co-op. Dairy Ass'n	Co-op	J. Isaacson, Mgr. & Sec	Forest City, R. No. 2 .....	.....	Separator.	Test.
460	Woden	Woden Creamery	Ind	L. C. Peterson, Prop	Woden	L. C. Peterson	Separator.	Test.
461	Garner	Garner Creamery	Ind	H. C. Shultz, Prop	Garner	C. D. Driver	S. & G. C.	Test.
<i>Hardin County.</i>								
462	Alden	Alden Co-op. Creamery Co	Stock	N. J. Wheeler, Mgr	Alden	N. H. Trimble	Separator.	Test.
463	Buckeye	Cottage Creamery Co	Co-op	Carl F. Sietoff, Sec	Buckeye	Geo. H. Whitney	Separator.	Test.
464	Cleves	Cleves Creamery	Ind	Martin, Johnson Co	Ackley	W. F. Gimer	Separator.	Test.
465	Hubbard	Hubbard Co-op. Creamery Co	Co-op	Ernest Hilker, Sec	Hubbard	J. W. Mohler	Separator.	Test.
466	Eldora	The Eldora Creamery	Ind	Peter Jensen, Prop	Eldora	Peter Jensen	S. & G. C.	Test.
467	Steamboat Rock	Steamboat Rock Creamery Co	Co-op	E. Christians	Steamboat Rock	Walter Peterson	Separator.	Test.
468	Hubbard	Spring Branch Co-op. Creamery ..	Co-op	J. K. Fomley, Sec	Hubbard	R. Nelson	Separator.	Test.
469	Iowa Falls	Iowa Falls Creamery Co	Co-op	G. L. Whinery, Sec	Iowa Falls	C. W. Calkins	Separator.	Test.
470	New Providence	New Providence Creamery Co	Stock	W. T. Kersey, Sec	New Providence	Chas. N. Hart	Separator.	Test.
471	Owasa	Owasa Creamery	Stock	A. M. Chamberlin	Waterloo	Guss Kruempel	Separator.	Test.
472	Radcliffe	Concord & Scott Co-op. Cr'y Co ..	Co-op	Oscar Sampson	Radcliffe	H. R. Alcorn	Separator.	Test.
473	Garden City	Concord & Scott Co-op. Cr'y Co. (s) ..	Co-op	Martin Johnson & Co	Ackley	A. D. Gimer	Separator.	Test.
474	Robertson	Robertson Creamery	Ind	O. W. Dillon, Sec. and Mgr	Union	O. W. Dillon	S. & G. C.	Test.
475	Union	Union Creamery	Co-op	Henry Dieckman	Hubbard	H. Dieckman	Separator.	Test.
476	Radcliffe	Buckeye Creamery	Stock	N. J. Wheeler	Alden .....	.....	Separator.	Test.
477	Buckeye	Alden Co-op. Creamery Co	Stock	Ernest Wilkner, Sec	Hubbard	Separator.	Test.
478	Hubbard	Hubbard Co-op. Creamery (s)	Co-op	Separator.	Test.

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Office record number.	LOCATION.	NAME OF CREAMERY.	How operated.	NAME OF PROPRIETOR, SECRETARY OR MANAGER.	P. O. ADDRESS OF PROPRIETOR, SECRETARY OR MANAGER.	NAME OF BUTTER MAKER.	Separator or gathered cream.	Method of receiving milk.
<i>Harrison County.</i>								
479	Beebeetown.	E. B. Ryan	Ind.	E. B. Ryan.	Neola		Separator.	Test.
480	Dunlap	Dunlap Co-op. Butter and Cheese Co.	Co-op.	H. B. Peters, Sec.	Dunlap	Albert Mondt.	S. & G. C.	Test.
481	Magnolia	Magnolia Creamery Co.	Co-op.	F. H. Cadwell, Sec.	Logan	G. F. Scott	Separator.	Test.
482	Missouri Valley.	Missouri Valley Butter and Cheese Co.	Ind.	N. H. Teilmann, Prop.	Missouri Valley	Mrs. Teilmann	Separator.	Test.
483	Crisp	Crisp Co-op. Creamery Co.	Co-op.	E. E. Harris, Mgr.	Logan	Niles Danielson.	Separator.	Test.
<i>Henry County.</i>								
484	Noble	Christner B. & C. Factory	Ind.	C. C. Christner Prop.	Noble	C. C. Christner.	Separator.	Test.
485	St. Paul	Fette's Separator Creamery	Ind.	Ed. Fette	Salem	Henry Fette	Separator.	Test.
486	Salem	Farmers' Co-op. Mutual Ass'n	Stock.	Louis Nielson, Sec. & Mgr.	Box 75, Salem.	Louis Nielson.	Separator.	Test.
<i>Howard County.</i>								
487	Bonair	Bonair Creamery	Stock.	A. O. Elvidge.	Elkader	J. J. Boland	G. C.	Test.
488	Chester	Farmers' Co-op. Creamery Co.	Co-op.	M. Leslie, Pres.	Chester	E. A. Hoopman.	G. C.	Test-in.
489	Cresco	Cresco Creamery	Ind.	Geo. Bolman, Prop.	Cresco	Geo. Bolman	S. & G. C.	Test.
490	Elma	Elma Co-op. Creamery Co.	Co-op.	Daniel Fallgather, Sec. & Mgr.	Elma	Ben H. Arnese.	Separator.	Test.
491	Lime Springs.	Lime Springs Creamery	Stock.	A. O. Elvidge.	Elkader	John Foss	G. C.	Test.
492	Lourdes	Lourdes Creamery	Stock.	A. O. Elvidge	Elkader		G. C.	Test.
494	Elma	Maple Leaf Co-op. Creamery Co.	Co-op.	John Lauck, Sec.	Maple Leaf.	G. W. Hatch	Separator.	Test.
493	Protivin	Protivin Creamery Association.	Co-op.	J. A. Dostal, Sec.	Protivin	J. A. Dostal	G. C.	Test.
495	Saratoga	Saratoga Creamery	Stock.	A. O. Elvidge	Elkader	S. G. Twomly.	G. C.	Test.
496	Schley	Schley Creamery	Ind.	F. Pecinovsky, Mgr. & Prop.	Schley	F. Pecinovsky.	Separator.	Test.
<i>Humbolt County.</i>								
497	Arnold	Grove Co-op. Creamery Co.	Co-op.	Chas. J. Nelson, Sec.	Arnold	John Schultz	Separator.	Test.
498	Bode	Bode Creamery Ass'n	Co-op.	C. A. Rossing, Sec.	Bode	M. H. Rossing.	Separator.	Test.
499	Bradgate	Bradgate Co-op. Creamery Co.	Co-op.	J. L. Van Horn, Sec. & Mgr.	Bradgate	H. B. Phelps.	Separator.	Test.
500	Hardy	Hardy Co-op. Creamery	Co-op.	A. N. Clancy, Sec.	Hardy	E. K. Junkins.	Separator.	Test.
501	Humbolt	Humbolt Creamery Co.	Co-op.	G. L. Cruikshank, Sec. & Mgr.	Humbolt	L. D. Hill.	Separator.	Test.
<i>Ida County.</i>								
502	Ottosen	Waconsta Creamery Ass'n	Co-op.	L. J. Clare.	Ottosen	J. J. Thurson.	Separator.	Test.
503	Owl Lake	Farmers Mutual Co-op. Cr'y Ass'n	Co-op.	L. M. Michaelson, Sec.	Owl Lake	Lewis Tysrer	Separator.	Test.
504	Pioneer	Pioneer Creamery Co.	Stock.	J. F. Wittman, Sec.	Pioneer	E. J. Hall	Separator.	Test.
505	Renwick	Renwick Creamery Co.	Co-op.	Aug. Griebel, Sec. and Mgr.	Renwick	W. G. Stultzbach	S. & G. C.	Test.
506	Rutland	Rutland Creamery Ass'n	Co-op.	S. S. Bartley, Sec.	Rutland	T. M. Borglum	Separator.	Test.
507	Thor	Clover Creamery	Stock.	Lewis Olson, Sec.	Thor	P. O. Knutson	Separator.	Test.
508	Gilmore City	Gilmore City Creamery	Ind.	A. A. Briggs, Prop.	Gilmore City	A. A. Briggs.	Separator.	Test.
<i>Iowa County.</i>								
509	Arthur	Arthur Creamery	Ind.	M. J. Concklin.	Arthur	M. J. Concklin	Separator.	Test.
510	Galva	Hopkins & Hubbard Creamery	Stock.	Hopkins & Hubbard.	Holstein	Chas. A. Watson.	Separator.	Test.
511	Holstein	Holstein Creamery	Ind.	Hopkins & Hubbard.	Holstein	Wm. O. Bradley.	S. & G. C.	Test.
<i>Jackson County.</i>								
512	Conroy	Shimer Creamery Co.	Co-op.	S. H. Stonerson, Sec.	Conroy	W. F. Reid	Separator.	Test.
513	Genoa Bluff	Genoa Bluff Creamery	Co-op.	Geo. R. Howard, Sec.	Genoa Bluff	Geo. P. Bryne.	S. & G. C.	Test.
514	North English.	North English Creamery	Ind.	I. E. Mathew, Mgr.	North English.	S. P. Chiles.	Separator.	Test.
515	Ladora	Ladora Creamery Co.	Co-op.	L. W. Wil on, Sec.	Ladora	Jno. Baitinger.	Separator.	Test.
516	Marengo	Marengo Creamery	Ind.	Shipton & Vette.	Marengo	N. D. Suther and	G. C.	Test.
517	Green Center.	North English Creamery (s).	Ind.	I. E. Mathew, Prop.	North English.		Separator.	Test.
518	Victor	Victor Creamery	Ind.	H. C. Felver.	Victor	J. Gould	S. & G. C.	T. J.
519	Victor	Victor Creamery (s).	Ind.	H. C. Felver.	Victor		S. & G. C.	T. J.
520	Williamsburg	Troy Creamery	Co-op.	Geo. C. Horse, Sec.	Williamsburg.	E. E. Montgomery	Separator.	Test.
521	Williamsburg	Troy Creamery (s).	Co-op.	Geo. C. House, Sec.	Williamsburg.		Separator.	Test.
522	Williamsburg	York Creamery	Co-op.	H. W. Huedepohl.	Williamsburg.	Theo. Winter	Separator.	Test.
523	Marengo	Marengo F. M. Co-op. Cr'y Ass'n.	Co-op.	S. M. Heck	Marengo	Geo. Strait	Separator.	Test.
<i>Jackson County.</i>								
524	Andrew	Andrew Lily Creamery	Ind.	Henry Flagel	Andrew	Louis H. Flagel.	Separator.	Test.
525	Baldwin No. 27.	Diamond Creamery Co. (s).	Ind.	Diamond Creamery Co.	Monticello		Separator.	Test.
526	Springbrook	Springbrook Creamery	Ind.	J. J. Kegler	Springbrook.	Geo. Waidler.	S. & G. C.	Test.
527	Monmouth	Emeline Creamery	Ind.	W. Brady & Son	Monmouth	Henry Brady	Separator.	Test.
528	Fulton	Fulton Co-op. Creamery Co.	Ind.	John Heide	Fulton	Scott Wylie	Separator.	Test.
529	Monmouth	Emeline Creamery (s).	Ind.	W. Brady & Son.	Monmouth		Separator.	Test.
530	Lamotte	Lamotte Creamery	Ind.	N. B. Nemmers.	Lamotte	J. C. Nemmers.	S. & G. C.	Test.
531	Lamotte	Lamotte Creamery (s).	Ind.	N. B. Nemmers.	Lamotte		S. & G. C.	Test.
532	Lamotte	Sterling Separator Creamery	Ind.	N. A. Hoffman, Prop.	Lamotte	John M. Hoffman	Separator.	In. & T.
533	Maquoketa	Farmers' Union Co-op. Cr'y Co.	Co-op.	W. M. Miller, Sec.	Maquoketa.	H. P. Bancroft	Separator.	Test.
534	Miles	Springbrook Creamery	Ind.	John Newman Co.	Elgin, Ill.	Thos. Pope.	Separator.	Test.
535	Monmouth	Emeline Creamery (s).	Ind.	W. Brady & Son.	Monmouth		Separator.	Test.
536	Otter Creek	Otter Creek Creamery	Ind.	Laible Bros	Otter Creek	Geo. Turner	Separator.	Test.
537	Preston	Preston Creamery Ass'n.	Co-op.	Samuel McNeil, Sec.	Preston	G. W. Clark	Separator.	Test.
538	Preston	Springbrook Creamery	Ind.	John Newman Co	Elgin, Ill.	A. J. Negus.	Separator.	Test.
539	Spragueville	Springbrook Creamery (s).	Ind.	Henry Blossfield, Operator.	Spragueville		Separator.	Test.
540	St. Donatus	St. Donatus Creamery	Ind.	Krier & Dupont.	St. Donatus.	R. J. Dupont.	Separator.	Test.
541	Union Center.	Springbrook Creamery (s).	Ind.	John Newman Co.	Elgin, Ill.		Separator.	Test.

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Office record number.	LOCATION.	NAME OF CREAMERY.	How operated.	NAME OF PROPRIETOR, SECRETARY OR MANAGER.	P. O. ADDRESS OF PROPRIETOR, SECRETARY OR MANAGER.	NAME OF BUTTER MAKER.	Separator or gathered cream.	Method of receiving milk.
542	Preston	Preston Creamery Ass'n (s)	Co-op ..	Samuel McNeil, Sec.	Preston			
543	Manquoketa ..	Springbrook Creamery	Ind.	John Newman Co.	Elgin, Ill.	C. E. Lilaus	Separator. Separator.	Test. Test.
<i>Jasper County.</i>								
544	Baxter	Baxter Dairy Co.	Co-op ..	H. Krampe, Jr., Sec.	Baxter	A. E. McClune ..	Separator	Test.
545	Kellogg	Kellogg Creamery	Ind.	H. F. Pierce	Kellogg	H. F. Pierce	G. C.	Test.
546	Monroe	Monroe Creamery	Ind.	M. L. Chase	Monroe	John Murray	Separator.	Test.
547	Newburg	Newburg Creamery Co.	Stock ..	G. D. Alden, Sec.	Newburg	H. E. Webb	Separator.	Test.
548	Ira	Ira Creamery	Ind.	N. W. Mass	Ira	J. C. Grey	S. & G. C.	Test.
549	Reasoner	Alto Dairy Co.	Stock ..	B. B. Trout, Pres.	Reasoner	T. E. Bean	Separator.	Test.
550	Sully	Sully Creamery Co.	Co-op ..	L. Reerink	Sully	C. C. Bomberger ..	Separator.	Test.
551	Turner	J. W. Fowler (s)	Ind.	J. W. Fowler	Grinnell		Separator.	Test.
<i>Jefferson County</i>								
552	Fairfield	Fairfield Creamery	Stock ..	H. A. Hoopes, Mgr.	Fairfield	G. Y. Ross	S. & G. C.	Test.
553	Four Corners ..	Four Corners Creamery	Co-op ..	E. B. Colee, Mgr. and Sec.	Four Corners ..	E. B. Colee	Separator.	Test.
554	Germanville ..	The Germanville Creamery Ass'n ..	Stock ..	Wm. Stortz, Mgr.	Germanville ..	Geo. W. Baitinger ..	Separator.	Test.
555	Lockridge	Lockridge Creamery	Ind.	W. C. Rauscher, Sec.	Lockridge	Jno. Hanson	Separator.	Test.
556	Salina	Salina Creamery	Co-op ..	J. Schillerstrom, Sec.	Salina	Henry Goers	Separator.	Test.
<i>Johnson County</i>								
557	Hills	Hills Siding Creamery Co.	Co-op ..	F. C. Hirt	Hills	G. Wright	G. C.	Test.
558	Lone Tree	Hildebrand Creamery	Ind.	E. Hildebrand	Lone Tree	C. L. McComas ..	G. C.	Test.
559	Oxford	Estella Creamery	Ind.	H. C. Brown	Oxford	Harry Ambler	G. C.	Test.
<i>Jones County</i>								
560	Amber	Amber Creamery	Ind.	James P. Younger	Freeport, Ill.	Wm. Geirhart	Separator.	Test.
561	Amber	Hazel Green	Ind.	E. E. Snyder, Prop.	Olin	E. E. Glick	Separator.	Test.
562	Amber	Jackson Creamery	Ind.	James P. Younger	Freeport, Ill.	H. H. Sargent	Separator.	Test.
563	Anamosa	Cass Center Creamery	Ind.	Geo. Benton	Anamosa	Geo. Benton	Separator.	Test.
564	Anamosa	Fawn Creek Creamery	Ind.	J. S. Condit	Anamosa	W. D. Romine	Separator.	Test.
565	Center Junction	Center Junction	Ind.	J. P. Younger	Freeport, Ill.	A. E. Robertson ..	Separator.	Test.
566	Hale	Hale Creamery Co.	Stock ..	W. E. Walston, Sec. and Mgr.	Hale	W. F. Brownell ..	Separator.	Test.
567	Langworthy ..	Langworthy Co-op. Creamery Co.	Co-op ..	Lewis Batchelder, Sec.	Langworthy ..	J. H. Batchelder ..	Separator.	Test.
568	Langworthy 2 G	Diamond Creamery (s)	Ind.	Simpson, McIntire Co.	Boston, Mass.		Separator.	Test.
569	Martelle	Martelle Creamery	Ind.	Batchelder Bros	Martelle	S. Batchelder	Separator.	Test.
570	Monticello	Clover Leaf Creamery Co.	Co-op ..	Geo. Mardorf, Sec.	Monticello	Ira Hutton	Separator.	Test.
<i>Jones County.</i>								
571	Monticello	Farmer' Co-op. Creamery	Co-op ..	R. Bohren, Sec.	Monticello	D. A. Palmer	Separator.	Test.
572	Monticello	Diamond Creamery Co.	Ind.	Simpson, McIntire Co.	Boston, Mass.	C. E. Lee	Separator.	Test.
573	Monticello	Diamond Creamery Co. (s)	Ind.	Simpson, McIntire Co.	Boston, Mass.		Separator.	Test.
574	Monticello	Diamond Creamery Co. (s)	Ind.	Simpson, McIntire Co.	Boston, Mass.		Separator.	Test.
575	Monticello	Diamond Creamery Co. (s)	Ind.	Simpson, McIntire Co.	Boston, Mass.		Separator.	Test.
576	Monticello	Diamond Creamery Co. (s)	Ind.	Simpson, McIntire Co.	Boston, Mass.		Separator.	Test.
577	Monticello	Diamond Creamery Co. (s)	Ind.	Simpson, McIntire Co.	Boston, Mass.		Separator.	Test.
578	Monticello	Diamond Creamery Co. (s)	Ind.	Simpson, McIntire Co.	Boston, Mass.		Separator.	Test.
579	Monticello	Diamond Creamery Co. (s)	Ind.	Simpson, McIntire Co.	Boston, Mass.		Separator.	Test.
580	Monticello	Diamond Creamery Co. (s)	Ind.	Simpson, McIntire Co.	Boston, Mass.		Separator.	Test.
581	Olin	Olin Creamery	Ind.	J. S. Condit	Anamosa	Tobias Swanson ..	Separator.	Test.
582	Onslow	Clay Valley Co-op. Creamery Co.	Co-op ..	R. C. Walters, Sec.	Onslow	J. H. Huyck	Separator.	Test.
583	Oxford No. 20	Diamond Creamery Co. (s)	Ind.	Simpson, McIntire Co.	Boston, Mass.		Separator.	Test.
584	Scotch Grove ..	Scotch Grove Co-op. Creamery Co.	Co-op ..	H. R. Jacobs, Sec.	Scotch Grove ..	H. C. Dice	Separator.	Test.
585	Wyoming	Wyoming Co-op. Creamery Ass'n.	Co-op ..	J. W. Rhodes, Sec.	Wyoming	C. R. Fishtemler ..	Separator.	Test.
586	Wyoming No. 18	Diamond Creamery Co. (s)	Ind.	Simpson, McIntire Co.	Boston, Mass.		Separator.	Test.
587	Onslow	Center Junction (s)	Ind.	J. P. Younger	Freeport, Ill.		Separator.	Test.
588	Cascade	Temple Hill Creamery	Ind.	J. L. Bader	Cascade	J. L. Bader	Separator.	Test.
589	Onslow	Onslow Creamery	Ind.	H. Null	Onslow	Hans Klein	Separator.	Test.
<i>Keokuk County.</i>								
590	Delta	Delta Creamery	Ind.	E. S. Sturdevant, Prop.	Delta	E. S. Sturdevant ..	Separator.	Test.
591	Harper	Harper Creamery Co.	Stock ..	P. T. Fitzgerald, Sec.	Harper	E. F. Jones	Separator.	Test.
592	Keota	Keota Creamery	Stock ..	S. E. Reisman, Sec. & Mgr.	Keota	W. W. Carpenter ..	Separator.	Test.
593	Sigourney	Sigourney Creamery Co.	Ind.	J. R. Jones, Mgr.	Sigourney	W. T. Starr	Separator.	Test.
594	Thornburg	Thornburg Creamery Co.	Co-op ..	N. Haldeman, Sec.	Thornburg	W. Woodcock	Separator.	Test.
595	Webster	Webster Creamery	Ind.	E. E. Gates	Webster	G. C.	Test.	
596	South English ..	Farmers' Co-op. Creamery Co.	Co-op ..	M. Child	North English ..	Wm. Miles	Separator.	Test.
<i>Kossuth County.</i>								
597	Algona	Algona Co-op. Creamery Co.	Co-op ..	A. W. Sterzbach	Algona	A. W. Sterzbach ..	Separator.	Test.
598	Algona	Plum Creek Co-op. Creamery Co.	Co-op ..	C. W. Hopkins, Sec.	Algona	J. K. Hallar	Separator.	Test.
599	Bancroft	Bancroft Co-op. Creamery Co.	Co-op ..	John Haupt, Sec.	Bancroft	J. R. Deitering ..	S. & G. C.	Test.
600	Burt	Burt Co-op. Creamery	Co-op ..	O. H. Belknap, Sec.	Burt	D. L. Driver	Separator.	Test.
601	Fenton	Fenton Creamery Co.	Co-op ..	G. W. Newel, Sec.	Fenton	H. W. Pettibone ..	Separator.	Test.
602	Germania	Germania Co-op. Creamery Co.	Co-op ..	Peter Graves, Sec.	Germania	John Lumburg	Separator.	Test.
603	Hobart	Hobart Co-op. Creamery Co.	Co-op ..	W. H. King, Mgr.	Hobart	W. H. Keller	Separator.	Test.
604	Irvington	Irvington Co-op. Creamery Co.	Co-op ..	S. R. Roney, Sec.	Irvington	L. P. Anderson	Separator.	Test.
605	Ledyard	Farmer's Co-op. Creamery Ass'n.	Co-op ..	E. J. Skinner, Sec.	Ledyard	Henry Deyer	Separator.	Test.
606	Lone Rock	Lone Rock Co-op. Creamery Co.	Co-op ..	Horace J. McChesney, Sec.	Lone Rock	L. C. Adams	Separator.	Test.

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Office record number.	LOCATION.	NAME OF CREAMERY.	How operated.	NAME OF PROPRIETOR, SECRETARY OR MANAGER.	P. O. ADDRESS OF PROPRIETOR, SECRETARY OR MANAGER.	NAME OF BUTTER MAKER.	Separator or gathered cream.	Method of receiving milk.
607	LuVerne	LuVerne Co-op. Creamery Ass'n.	Co-op.	Alex McLaughlin, Sec.	LuVerne	Geo. L. Minkler	Separator.	Test.
608	Seneca	Seneca Co-op. Creamery Co.	Co-op.	W. W. Alcorn, Sec.	Seneca	August Johnson	Separator.	Test.
609	Sexton	Sexton Co-op. Creamery Co.	Co-op.	B. O. Bromlee, Mgr.	Sexton	B. O. Brownlee	Separator.	Test.
610	St. Benedict	St. Benedict Co-op. Creamery Co.	Co-op.	Frank Van Erdwyk, Sec.	St. Benedict	Hugh F. Jones	Separator.	Test.
611	St. Joseph	St. Joseph Co-op. Creamery Co.	Co-op.	P. Klein, Sec. and Mgr.	St. Joseph	Gilbert Gray	Separator.	Test.
612	Swea City	Swea City Co-op. Creamery Co.	Co-op.	Olaf Pearson, Sec.	Swea City	Chris. Morek	Separator.	Test.
613	Titonka	Woden Creamery (s)	Ind.	L. C. Peterson	Woden		Separator.	Test.
614	Titonka	German Valley Co-op. Creamery	Co-op.	Herman Nelson, Sec.	Titonka	N. E. Hanson	Separator.	Test.
615	Wesley	Wesley Co-op. Creamery Co.	Co-op.	P. E. Skow, Sec.	Wesley	Christian Bogh	Separator.	Test.
616	West Bend	Garfield Creamery	Co-op.	L. C. Dorweiler, Sec.	West Bend	W. H. Cutshaw	Separator.	Test.
617	Whittemore	Lotts Creek Co-op. Creamery	Co-op.	Aug. Boettcher, Sec.	Lotts Creek	M. J. Deyer	Separator.	Test.
618	Whittemore	Whittemore Creamery Co.	Co-op.	Thos. Carmody, Sec.	Whittemore	Edward Walsh	Separator.	Test.
<i>Linn County.</i>								
619	Anamosa	Birk Creamery	Ind.	I. P. Minnehart	Anamosa	C. E. Minnehart	Separator.	Hd.
620	Alburnet	Alburnet Creamery	Ind.	Henderson & Sawyer	Central City	W. C. Dubbs	Separator.	Test.
621	Cedar Rapids	Cedar Valley Creamery	Stock	G. L. Hubbell, Sec. & G. M.	Cedar Rapids	G. L. Hubbell	Separator.	Hd.
622	Center Point	Center Point Creamery	Ind.	L. F. Derflinger	Center Point	John Derflinger	Separator.	Test.
623	Central City	Central City Creamery	Ind.	P. W. Sawyer & Henderson	Central City	P. W. Sawyer	Separator.	Test.
624	Central City	Ross Creamery	Ind.	W. W. Ross, Prop.	Central City	W. W. Ross	Separator.	Hd.
625	Central City	Valley Farm Creamery	Ind.	P. G. Henderson	Central City			
626	Coggon	Coggon Creamery	Ind.	Fred Lehman, Prop.	Route 3	St. Elmo Wright	Separator.	Test.
627	Coggon	North Side Creamery	Co-op.	C. J. Johnson, Sec.	Coggon	Fred Lehman	Separator.	Test.
628	Coggon	Cedar Valley Creamery (s)	Stock	G. L. Hubbell, Sec. & G. M.	Coggon	Chas. Rayder	Separator.	Test.
629	Ely	Ely & Western Creamery	Co-op.	Frank J. Dolezal, Sec.	Cedar Rapids		Separator.	Hd.
630	Marion	Cedar Valley Creamery (s)	Stock	G. L. Hubbell, Sec. & G. M.	Ely	F. J. Adkins	Separator.	Test.
631	Mt. Vernon	Mt. Vernon Creamery	Ind.	H. F. Beyer	Cedar Rapids		Separator.	Test.
632	Prairieburg	Diamond Creamery Co. (s)	Ind.	Simpson McI. & Co	Edgewood	Frank Sherman	S. & G. C.	Test.
633	Prairieburg	Axtell Creamery	Ind.	Minchert & Cook	Bo-ton, Mass.		Separator.	Test.
634	Rogers	Minchert & Spitzer Bros.	Ind.	Minchert & Spitzer Bros.	Prairieburg	L. E. Minchert	Separator.	Test.
635	Springville	Springville Creamery	Ind.	Batchelder Bros.	Rogers	A. L. Minchert	Separator.	Hd.
636	Toddville	Monroe Creamery	Ind.	C. M. Fisher, Mgr.	Springville	Batchelder Bros.	Separator.	Test.
637	Troy Mills	High and Creamery Co.	Co-op.	John Iehl, Sec. & Mgr.	Toddville	C. M. Fisher	Separator.	Hd.
638	Troy Mills	Troy Mills Creamery	Ind.	J. M. Tupper, Mgr.	Walker	G. R. Batchelder	Separator.	Hd.
					Troy Mills	J. M. Tupper	Separator.	Hd.

639	Viola	Viola Creamery	Ind.	C. N. Pollock	Viola	C. N. Pollock	Separator.	Test.
640	Walker	Walker Creamery	Ind.	H. J. Nietert	Walker	S. W. Laird	Separator.	Test.
641	Wanbeck	Wanbeck Creamery	Ind.	Bates & Hemenway, Prop.	Wanbeck	H. E. Hemenway	Separator.	Hd.
642	Western College	Ely & Western Creamery (s)	Co-op.	Frank J. Dolezal, Sec.	Ely		Separator.	Test.
643	Paralta	Springville Creamery (s)	Ind.	Batchelder Bros.	Springville		Separator.	Test.
<i>Louisa County.</i>								
644	Fredonia	Fredonia Creamery	Ind.	Thomas Carey	Fredonia	E. W. Kelley	G. C.	Test.
645	Letts	Letts Creamery	Ind.	J. M. Hildebrand	Letts	J. M. Hildebrand	G. C.	Inch.
<i>Lucas County.</i>								
646	Derby	Old Colony Creamery (s)	Ind.	T. G. Hyde, Mgr.	Humeston		Separator.	Test.
647	Russell	Russell Creamery Co.	Ind.	W. J. Marshall, Sec.	Russell	W. J. Marshall	Separator.	Test.
<i>Lyon County.</i>								
648	George	George Creamery	Ind.	H. J. Turner	George	W. J. Becker	Separator.	Test.
649	Inwood	Inwood Creamery Co.	Ind.	A. Nordmark, Prop.	Inwood	A. Nordmark	S. & G. C.	Test.
650	Larchwood	Larchwood Creamery	Ind.	M. M. Lewis	Larchwood	M. M. Lewis	Separator.	Test.
651	Lester	Lester Co-op. Creamery Co.	Co-op.	L. W. Billings	Lester	L. W. Billings	Separator.	Hd.
652	Rock Rapids	Home Lawn Creamery	Ind.	H. E. Morrow	Rock Rapids	H. E. Morrow	Separator.	Test.
653	Little Rock	Little Rock Creamery Co.	Co-op.	R. E. Struzel	Little Rock	J. Dubbs	Separator.	Test.
<i>Mahaska County.</i>								
654	New Sharon	New Sharon Creamery Co.	Stock	W. J. Nicholson, Sec.	New Sharon	John Roberts	G. C.	Inch.
655	Peoria	Peoria Creamery Co.	Co-op.	W. S. Lindsley, Sec.	Peoria	A. U. McLaren	Separator.	Test.
<i>Marion County.</i>								
656	Pella	Pella Creamery	Ind.	J. J. Bousquet, Prop.	Pella	F. Smorenburg	G. C.	Inch.
657	Pleasantville	Waterloo Creamery Co. (s)	Stock	Bert B. Corliss	Des Moines		Separator.	Test.
<i>Marshall County.</i>								
658	Clemons	Minerva Valley Creamery Co.	Co-op.	A. D. McCormack, Sec.	Clemons	W. S. Cousins	G. C.	Inch.
659	Dunbar	Dunbar Creamery Co.	Co-op.	O. J. Olson, Sec.	Dunbar	C. E. McIntire	Separator.	Test.
660	Haverhill	Columbia Creamery	Co-op.	Jacob Fredman, Sec.	Haverhill	Jos. Stamen	Separator.	Test.
661	Laurel	Laurel Co-op. Creamery	Co-op.	H. Cavell, Sec.	Laurel	F. M. Dowden	Separator.	Test.
662	Liscomb	Liscomb Cheese Co.	Stock	Thos. E. Culp, Mgr.	Liscomb	Thos. E. Culp	G. C.	Test.
663	Melbourne	Melbourne Creamery	Ind.	Hez. G. Webster, Mgr.	S.S. Brown & Co.	Hez. G. Webster	Separator.	Test.
664	State Center	State Center Farmers' Cr'y Ass'n	Co-op.	J. W. Carney, Mgr.	105 1st St. N.Y.	N. E. Lorenzen	G. C.	Test.
665	St. Anthony	St. Anthony Creamery Co.	Co-op.	J. C. Evans, Sec.	State Center	H. C. Schettler	Separator.	Test.
					St. Anthony			
<i>Mills County.</i>								
666	Mincola	Waterloo Creamery Co. (s)	Stock	Leroy Corliss, Sec.	Council Bluffs		Separator.	Test.

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SIXTEENTH ANNUAL REPORT OF THE [No. 29]

Office record number.	LOCATION.	NAME OF CREAMERY.	How operated.	NAME OF PROPRIETOR, SECRETARY OR MANAGER.	P. O. ADDRESS OF PROPRIETOR, SECRETARY OR MANAGER.	NAME OF BUTTER MAKER.	Separator or gathered cream.	Method of receiving milk.
667	Silver City.	Waterloo Creamery Co. (s).....	Stock.	Leroy Corliss	Council Bluffs.	.....	Separator.	Test.
668	Mineola	Waterloo Creamery Co. (s).....	Stock.	Leroy Corliss	Council Bluffs.	.....	Separator.	Test.
669	Glenwood	Farmers' Co-op. Creamery	Co-op.	.....	.....	.....	Separator.	Test.
<i>Mitchell County.</i>								
670	Bailey	Bailey Creamery	Stock.	A. O. Elvidge	Elkader	M. G. Bailey	S. & G. C.	Test.
671	Little Cedar	Little Cedar Creamery	Co-op.	C. F. Hockens, Sec. & Mgr.	Little Cedar	F. H. Wooden	G. C.	Test.
672	Meroa	Rock Creek Co-op. Cr'y Ass'n...	Co-op.	E. N. Nelson, Sec.	Meroa	E. V. Cady	G. C.	Inch.
673	New Haven	New Haven Creamery Co	Co-op.	A. J. Carroll, Sec.	New Haven	D. C. Thomas	G. C.	Test.
674	Orchard	Farmers' Co-op. Creamery Co....	Co-op.	J. W. Clay, Mgr.	Orchard	Knute Hauge	G. C.	Test.
675	Osage	Osage Co-op. Creamery	Co-op.	John Forsleff, Sec.	West Mitchell	Geo. Helfter	G. C.	Test.
676	Riceville	Riceville Co-op. Creamery Co....	Co-op.	F. J. Carpenter, Gen. Mgr.	Riceville	H. B. Groover	G. C.	Test.
677	Stacyville	Stacyville Creamery	Ind.	James Spensley & Son	Stacyville	G. M. Spensley	Separator.	Test.
678	St. Ansgar	Farmers' Co-op. Creamery Co....	Co-op.	J. M. Tollefson, Sec. & Mgr.	St. Ansgar	Eugene Mereness	G. C.	Test.
679	Toeterville	Toeterville Co-op. Creamery Co....	Co-op.	L. C. Baker, Sec.	Toeterville	S. N. Nelson	Separator.	Test.
680	David	David Co-op. Creamery Co.	Co-op.	Nick. Weyland, Sec.	Meyer	V. Fairbrother	G. C.	Test.
<i>Monroe County</i>								
681	Albia	Albia Creamery	Ind.	S. D. Thompson, Sec	Albia	S. D. Thompson	Separator.	Test.
<i>Montgomery County</i>								
682	Villisca	Elgin Creamery Co. (s).....	Stock.	O. Sands	Chicago, Ill. ....	.....	Separator.	Test.
683	Stanton	Elgin Creamery Co. (s).....	Stock.	O. Sands	Chicago, Ill. ....	.....	Separator.	Test.
684	Elliott	Elgin Creamery Co	Stock.	O. Sands	Chicago, Ill.	J. H. Baldwin	Separator.	Test.
685	Morton's Mills	Elgin Creamery Co. (s).....	Stock.	O. Sands	Chicago, Ill. ....	.....	Separator.	Test.
<i>Muscatine County.</i>								
686	Atalissa	Atalissa Creamery & Produce Co.	Stock.	Jacob Long, Sec. and Mgr.	Atalissa	James T. Starr	G. C.	Test.
687	Moscow	Nickel Plate Creamery (s)	Ind.	Geo. W. Kelly & Son	Wilton .....	.....	S. & G. C.	Test.
688	Wilton	Nickel Plate Creamery	Ind.	Geo. W. Kelly & Son	Wilton Jet.	Geo. A. Mengies	S. & G. C.	Test.

<i>O'Brien County.</i>								
689	Germantown ..	Caledonia Creamery	Stock.	Wm. Gehrls	Germantown ..	Wm. Gehrls	Separator.	Test.
690	Hartley	Hartley Creamery	Ind.	A. D. Roseboom	Hartley	A. D. Roseboom	Separator.	Test.
691	Paullina	The Union Creamery Co.	Stock.	Wm. Strampe, Sec.	Paullina	Wm. Strampe	Separator.	Test.
692	Sheldon	Sheldon Creamery	Ind.	D. A. Miller, Prop.	Sheldon	James Cleveland	Separator.	Test.
693	Primghar	Primghar Creamery Co	Co-op.	W. J. Semmons	Primghar	Henry Brummer	Separator.	Test.
<i>Osceola County.</i>								
694	Melvin	Melvin Creamery	Ind.	F. S. Remble Mgr.	Ashton	Ernest Kundson	Separator.	Test.
695	Ashton	Ashton Creamery	Ind.	F. S. Remble, Mgr.	Ashton	F. S. Remble	Separator.	Test.
696	Melvin's Corn'r's ..	Hartley Creamery (s).....	Ind.	A. D. Roseboom	Hartley .....	.....	Separator.	Test.
697	Ocheyedan	Ocheyedan Creamery	Ind.	.....	Hartley .....	.....	Separator.	Test.
698	Sibley	Sibley Creamery	Ind.	C. A. Smith, Sec.	Sibley .....	.....	Separator.	Test.
<i>Page County.</i>								
699	Clarinda	Wall Street Creamery	Stock.	I. B. Sunderman	Clarinda	A. H. Gay	Separator.	Test.
700	Essex	Essex Creamery	Ind.	Wm. Tolander	Essex	Wm. Tolander	G. C.	Test.
701	Yorktown	Yorktown Creamery Co.	Ind.	Kimble & Mitchell	Yorktown	Kimble & Mitchell	Separator.	Test.
702	Clarinda	Clarinda Poultry, Butter & Eggs Co.	Stock.	E. R. Bailey, Supt.	Clarinda	L. N. Clark	G. C.	Test.
<i>Palo Alto County.</i>								
703	Ayrshire	Silver Lake Creamery	Co-op.	C. H. Cookinham, Sec.	Ayrshire	Wm. Eagan	Separator.	Test.
704	Curlew	Curlew Creamery Co.	Co-op.	F. W. Shellman, Sec.	Curlew	F. W. Shellman	Separator.	Test.
705	Laurens	Curlew Creamery Co. (s)	Co-op.	F. W. Shellman, Sec.	Curlew .....	.....	Separator.	Test.
706	Cylinder	Cylinder B. & C. Ass'n	Co-op.	Theo. De Mouth, Sec.	Cylinder	E. P. Conway	Separator.	Test.
707	Cylinder	Fairview Creamery	Co-op.	W. R. Moore, Sec.	Cylinder	Earl Moore	Separator.	Test.
708	Cylinder	Maple Leaf Creamery	Co-op.	A. Helland, Sec.	Depew	A. B. Conway	Separator.	Test.
709	Emmetsburg	Emmetsburg Creamery	Stock.	Lewis Stuchner, Sec.	Emmetsburg ..	N. H. Knudsen	Separator.	Test.
710	Emmetsburg	Nevada Creamery Co.	Co-op.	Thomas Kirby	Emmetsburg ..	T. R. Wilson	Separator.	Test.
711	Graettinger	Farmers' Co-op. Creamery Co....	Co-op.	F. L. Lambe, Sec.	Graettinger ..	Al. J. Johnson	Separator.	Test.
712	Graettinger	Lost Island Creamery Co	Co-op.	Lars. C. Christenson, Sec.	Fallow	John N. Bruck	Separator.	Test.
713	Mallard	Mallard Butter & Cheese Ass'n.	Co-op.	T. C. Truog, Sec.	Mallard	J. W. Finnell	Separator.	Test.
714	Osgood	Osgood Creamery Co	Co-op.	E. P. McElvoy, Sec.	Emmetsburg ..	E. Chadwick	Separator.	Test.
715	Rodman	Rodman Co-op. Creamery Co....	Co-op.	E. J. Frye, Sec.	Rodman	Emil Anderson	Separator.	Test.
716	Ruthven	Farmers' Co-op. Creamery Co....	Co-op.	Chas. E. Youcum, Sec.	Ruthven	W. H. Anderson	Separator.	Test.
717	Ruthven	Highland Butter Association.	Co-op.	T. J. Brennan, Sec.	Ruthven	W. W. Bond	Separator.	Test.
718	West Bend	Eureka Co-op. Creamery Co....	Co-op.	Wm. Reardon	West Bend	F. O. Buck	Separator.	Test.
719	Ruthven	Ruthven Co-op. Creamery Ass'n	Co-op.	Geo. Chaffee, Mgr.	Ruthven	Frank J. Mable	Separator.	Test.
720	West Bend	West Bend Co-op. Creamery Co....	Co-op.	Geo. W. Brown, Sec.	West Bend	E. A. Clark	Separator.	Test.
721	Fairville	Fairville Creamery Co	Stock.	Jos. Kliegl, Sec.	Fairville	W. D. Kucker	Separator.	Test.
722	Graettinger	Palo Alto Creamery Co.	Co-op.	S. A. Smith	Ruthven	E. J. Remington	Separator.	Test.
<i>Plymouth County.</i>								
723	Ruble	Johnson Tp. Far. Mut. Co-op. Cr'y	Co-op.	E. Mann	Ruble	Wm. Anderson	Separator.	Test.
724	Lemars	Le Mars Co-op. Creamery Co....	Co-op.	K. K. Kennedy, Sec.	Le Mars	K. K. Kennedy	Separator.	Test.

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CREAMERY LIST—CONTINUED.

Office record number.	LOCATION.	NAME OF CREAMERY.	How operated.	NAME OF PROPRIETOR, SECRETARY OR MANAGER.	P. O. ADDRESS OF PROPRIETOR, SECRETARY OR MANAGER.	NAME OF BUTTER MAKER.	Separator or gathered cream.	Method of recd-y-ing milk.
725	Mammen	Grant Township Creamery Co.	Co-op.	H. F. Maust, Sec.	Ireton.	John Kennedy.	Separator.	Test.
726	Ellendale	Ellendale Creamery.	Co-op.				Separator.	Test.
727	Merrill	Merrill Creamery Co.	Stock.	R. M. Crouch, Sec.	Merrill	Chas. N. Roberts	Separator.	Test.
728	Millnerville	Millnerville Creamery Co.	Stock.	J. F. Banks, Mgr.	Millnerville.	James Back	Separator.	Test.
729	Neptune	Neptune Co-op. Creamery	Co-op.	Dan O'Brien, Sec.	Le Mars, Route No. 2	Elmer Julian	Separator.	Test.
730	Remsen	Remsen Co-op. Creamery.	Co-op.	Henry Raker	Remsen	Christ Hasentank	Separator.	Hd.
731	Struble	Struble Creamery Co.	Co-op.	G. Lewis, Mgr.	Struble		Separator.	Test.
732	Kingsley	Payne's Creamery.	Ind.	R. Payne	Kingsley	Ira Stewart	S. & G. C.	Test.
<i>Pocahontas County.</i>								
733	Havelock	Laurens Creamery (s)	Ind.	W. & J. G. Hinn, Props	Laurens		S. & G. C.	Test.
734	Laurens	Laurens Creamery Co.	Ind.	W. & J. G. Hinn, Props	Laurens	F. W. Johnson	S. & G. C.	Test.
735	Lilly	Lilly Creamery Co.	Co-op.	J. E. Lilly, Sec. and Mgr.	Lilly	B. M. Lamb	Separator.	Test.
736	Palmer	Lizard Creamery	Stock.	Geo. Siebels, Sec.	R. F. D., Gilmore City	E. H. Richards	Separator.	Test.
737	Palmer	Lizard Creamery (s)	Stock.	Geo. Siebels, Sec.	R. F. D., Gilmore City		Separator.	Test.
738	Palmer	B. Fisher	Ind.	B. Fisher	Palmer	B. Fisher	Separator.	Test.
739	Pocahontas	Pocahontas Creamery.	Ind.	M. F. Sly, Prop.	Pocahontas	J. P. Cummings	Separator.	Test.
740	Pomeroy	Breiholz Creamery	Ind.	Wm. Breiholz	Pomeroy	Wm. Breiholz	Separator.	Test.
741	Rolfe	Gilt-Edge Creamery.	Ind.	W. R. Rogers, Prop	Rolfe	W. R. Rogers	Separator.	Test.
742	Rusk	Rusk Co-op. Creamery Co.	Co-op.	E. O. Christenson.	Rusk	Oscar Peterson	Separator.	Test.
743	Plover	Plover Creamery	Ind.	F. J. Bradsky, Prop.	Plover	F. J. Bradsky	G. C.	Test.
744	Ware	J. L. Blunt & Co. Hand Separator	Ind.	C. A. Vittum, Sec.	Ware	C. A. Vittum	G. C.	Test.
<i>Polk County.</i>								
745	Campbell	Grimes Butter & Cheese Co. (s)	Stock	W. J. Stewart, Sec.	Grimes		Separator.	Test.
746	Des Moines	Waterloo Creamery.	Stock	Burt B. Corliss	Des Moines	C. E. Gustin	Separator.	Test.
747	Grimes	Grimes Butter & Cheese Co.	Stock	W. J. Stewart, Sec.	Grimes	G. A. Stewart	Separator.	Test.
748	Mitchellville	Mitchellville Creamery Co.	Co-op.	S. J. Lee, Sec.	Mitchellville	C. H. Phillips	Separator.	Test.
<i>Pottawattamie County.</i>								
749	Avoca	Avoca Creamery	Ind.	Sorrenson & Hanson	Avoca	Chris. Sorrenson	G. C.	Test.
750	Council Bluffs	Waterloo Creamery Co.	Stock	Leroy Corliss, Sec.	Council Bluffs	Pearl Mannal	Separator.	Hd.
751	Hancock	Hancock Creamery	Ind.	H. H. Brandes, Prop.	Hancock	C. B. Johnston	Separator.	Test.
752	Hancock	Hancock Creamery (s)	Ind.	H. H. Brandes, Prop.	Hancock		Separator.	Test.
753	Minden	Minden Creamery	Ind.	N. P. Jorgensen, Prop.	Minden	N. P. Jorgensen	G. C.	Inch.
754	Minden	York Creamery	Co-op.	B. Eichenberger, Sec.	Minden	John Loehla	Separator.	Hd.
755	Underwood	Waterloo Creamery Co (s)	Stock	Leroy Corliss, Sec.	Council Bluffs		Separator.	Hd.
<i>Poweshiek County.</i>								
756	Deep River	Deep River Creamery	Ind.	Hatter & Baird	Deep River	F. A. Kinster	G. C.	Inch.
757	Guernsey	Springbrook Creamery.	Ind.	John Newman Co.	Elgin, Ill.	O. W. Hicks	Separator.	Test.
758	Hartwick	Springbrook Creamery	Ind.	John Newman Co.	Elgin, Ill.	D. E. Murphy	Separator.	Test.
759	Grinnell	Fowler Creamery	Ind.	J. W. Fowler, Prop.	Grinnell	J. W. Fowler	Separator.	Test.
760	Searsboro	Fowler Creamery (s)	Ind.	J. W. Fowler, Prop.	Grinnell		Separator.	Test.
761	Montezuma	Montezuma Creamery Co.	Co-op.	John Hall, Jr., Sec.	Montezuma	A. M. Christensen	Separator.	Test.
<i>Ringgold County.</i>								
762	Shannon City	Union Creamery	Co-op.	Anna Vorhies, Sec.	Shannon City	L. C. Klopp	Separator.	Test.
763	Diagonal	Elgin Creamery Co. (s)	Stock	O. Sands	Chicago, Ill.		Separator.	Test.
<i>Sac County</i>								
764	Carnarvon	Hoon & Wicker	Ind.	Hoon & Wicker	Carnarvon	Hoon & Wicker	Separator.	Test.
765	Early	Early Creamery	Ind.	J. W. Wright	Early	H. Best	Separator.	Test.
766	Lake View	Gold Medal Creamery	Ind.	Wright & Ritter, Props	Wall Lake	C. A. Ritter	Separator.	Test.
767	Herring	Gold Crown Creamery	Ind.	N. A. Wright, Prop.	Herring	N. A. Wright	Separator.	Test.
768	Lake View	Gold Medal Creamery (s)	Ind.	Wright & Ritter, Props	Wall Lake		Separator.	Test.
769	Lake View	Lake View Creamery	Ind.	Wright & Irwin	Lake View	C. P. Irwin	Separator.	Test.
770	Nemaha	Delaware Center Creamery Co.	Co-op.	Clark A. Searle, Sec.	Nemaha	Chas. Post	Separator.	Test.
771	Odebolt	Farmers' Creamery Co.	Stock	J. A. Crans on, Sec.	Odebolt	Edw'd McFarlan	Separator.	Test.
772	Schaller	Schaller Creamery	Ind.	C. & P. T. Schaefer	Schaller	P. T. Schaefer	Separator.	Test.
773	Storm Lake	Geyer Creamery Co.	Ind.	E. W. Geyer, Mgr.	Storm Lake	E. A. Carter	S. & G. C.	Test.
774	Wall Lake	Rose Valley Creamery	Ind.	M. R. Wright, Mgr.	Wall Lake	M. R. Wright	Separator.	Test.
775	Wall Lake	Wall Lake Creamery	Ind.	Thos. Ahern, Prop.	Wall Lake	Thos. Deacon	Separator.	Test.
776	Lytton	Andrew Wood & Co. (s)	Stock	Andrew Wood & Co.	Rockwell City		Separator.	Test.
<i>Scott County</i>								
777	Amity	Amity Creamery	Ind.	Wm. Koberg	Amity	Wm. Koberg	S. & G. C.	Test.
778	Donahue	Donahue Eagle Creamery.	Ind.	Frank Keppy, Prop.	Donahue	Louis A. Keppy	Separator.	Test.
779	Long Grove	Start Creamery	Ind.	J. H. Marriott, Prop.	Long Grove	J. W. Blair	G. C.	Inch.
<i>Shelby County.</i>								
780	Corley	Corley Creamery	Co-op.	W. F. Bohlander, Sec.	Corley	J. H. Pardum	S. & G. C.	Test.
781	Earling	The Earling Creamery Co.	Co-op.	Frank Theile, Sec. & Mgr.	Earling		Separator.	Test.

CREAMERY LIST—CONTINUED.

Office record number.	LOCATION.	NAME OF CREAMERY.	How operated.	NAME OF PROPRIETOR, SECRETARY OR MANAGER.	P. O. ADDRESS OF PROPRIETOR, SECRETARY OR MANAGER.	NAME OF BUTTER MAKER.	Separator or gathered cream.	Method of recov- ing milk.
782	Harlan	Center Creamery	Co-op.	J. M. Garst	Harlan, R. R. No. 2	E. H. Hoover...	Separator.	Test.
783	Irwin	Manning Creamery (s)	Co-op.	J. H. Rushton	Fairmont, Neb.	Peter Peterson ..	Separator.	Test.
784	Marne	Clay Twp. Separator Creamery ..	Co-op.	E. O. Corey, Sec.	Marne	J. Clemmensen ..	Separator.	Test.
785	Jacksonville ..	Buck Valley Creamery Co.	Co-op.	R. Rasmussen, Sec.	Harlan, R.F.D. 2	Jas. C. Hanson ..	Separator.	Test.
786	Kirkman	Danway Creamery (s)	Co-op.	W. R. Adams, Sec.	Kirkman	M. A. Sorenson ..	Separator.	Test.
787	Portsmouth	Portsmouth Creamery	Ind.	M. A. Sorenson	Portsmouth	Council Bluffs ..	Separator.	Test.
788	Shelby	Waterloo Creamery Co (s)	Stock.	Leroy Corliss	Earling	Lewis Schack	Separator.	Test.
789	Westphalia	The Earling Creamery (s)	Co-op.	Frank Theile, Sec. & Mgr ..	Prairie Rose ..	.....	Separator.	Test.
790	Prairie Rose ..	Prairie Rose Creamery	Co-op.	J. D. Lorentzen	Harlan .....	.....	Separator.	Test.
791	Harlan	Harlan Creamery Co.	Co-op.	Harlan Creamery Co. ....	.....	.....	Separator.	Test.
<i>Sioux County.</i>								
792	Alton	Alton Creamery	Ind.	Geo. R. Mueller, Prop.	Alton	Geo. R. Mueller ..	Separator.	Test.
793	Chatsworth	Farmers' Co-op. Creamery Co.	Co-op.	Jas. Carpenter, Sec.	Chatsworth	W. A. Evans	Separator.	Test.
794	Granville	Granville Creamery	Ind.	Ben. Karhoff	Granville	Ben. Karhoff	Separator.	Test.
795	Hawarden	Hawarden Creamery Ass'n.	Co-op.	J. M. Lynn, Sec.	Hawarden	R. J. Hesler	S. & G. C.	Test.
796	Hosper	Hosper Creamery	Ind.	Storer & Boterman	Hosper .....	.....	Separator.	Test.
797	Hull	Stensvad Bros	Ind.	Rud. Stensvad, Mgr.	Hull	E. Denkerder	S. & G. C.	Test.
798	Rock Valley ..	Rock Valley Creamery	Ind.	C. H. Day	Rock Valley	C. H. Day	Separator.	Test.
<i>Story County.</i>								
799	Ames	Iowa State College Creamery ..	State	Prof. G. L. McKay, Mgr.	Ames	J. F. Burrets	Separator.	Test.
800	Cambridge	Farmers' Co-op. Creamery Co.	Co-op.	M. F. King, Sec.	Cambridge	A. G. Armstrong ..	Separator.	Test.
801	Collins	Farmers' Co-op. Creamery Co.	Co-op.	A. G. Armstrong	Collins	J. E. Swanson	Separator.	Test.
802	Colo	Farmers' Co-op. Creamery	Co-op.	E. J. Carver, Sec.	Colo	C. P. Lake	Separator.	Test.
803	Gilbert Station ..	Farmers' Co-op. Creamery Ass'n.	Co-op.	C. F. Ruth	Gilbert Station ..	J. P. Severaid	Separator.	Test.
804	Huxley	Huxley Farmers Co-op. Creamery ..	Co-op.	A. H. Sheldahl, Sec.	Huxley	K. T. Naa	Separator.	Test.
805	Kelley	Kelley Farmers' Creamery Co.	Stock.	Jno. F. Gerbracht, Sec.	Kelley	Chris. Russler	Separator.	Test.
806	Maxwell	The Farmers' Co-op. Creamery Co ..	Co-op.	J. I. Flemming	Maxwell	W. O. Bates	Separator.	Test.
807	McCallsburg	McCallsburg Creamery	Ind.	W. O. Bates	McCallsburg	E. R. Mitchell	Separator.	Test.
808	Nevada	Nevada Creamery	Ind.	Boardman Bros.	Nevada	T. B. Russel	Separator.	Test.
809	Roland	Roland Farmers' Creamery Co.	Co-op.	H. C. Duer, Sec.	Roland	R. J. Severaid	Separator.	Test.
810	Slater	Slater Farmers' Creamery Co.	Co-op.	Ole Langland, Sec.	Slater .....	.....	Separator.	Test.

811	Story City	Story City Farmers' Co-op. Cr'y.	Co-op.	Alex. Henderson, Sec.	Story City	Geo. Nick	Separator.	Test.
812	Zearing	Zearing Creamery Co.	Co-op.	C. A. Burkhart, Sec.	Zearing	J. J. Ross	Separator.	Test.
<i>Tama County.</i>								
813	Berlin	Berlin Creamery	Ind.	Schieber & Merrick	Reinbeck	C. L. Schieber	Separator.	Test.
814	Chelsea	Springhook	Ind.	John Newman Co.	Elgin, Ill.	J. C. Bucher	Separator.	Test.
815	Clutier	Schieber & Merrick (s)	Ind.	Schieber & Merrick	Reinbeck .....	.....	Separator.	Test.
816	Crystal	Schieber & Merrick (s)	Ind.	Schieber & Merrick	Reinbeck .....	.....	Separator.	Test.
817	Dinsdale	Dinsdale Creamery	Ind.	Schieber & Merrick	Reinbeck	T. W. Merrick	Separator.	Test.
818	Dysart	Schieber & Merrick	Ind.	Schieber & Merrick	Reinbeck	J. W. Burtchett ..	Separator.	Test.
819	Elberon	Springhook Creamery	Ind.	John Newman Co.	Elgin, Ill.	Chas. Kucera	Separator.	Test.
820	Gladbrook	Gladbrook Creamery	Ind.	P. McNelly, Prop.	Beaman	Burton Owens	Separator.	Test.
821	Tama	Tama Co-op. Creamery Co.	Co-op.	L. I. Carson	Tama .....	.....	Separator.	Test.
<i>Taylor County.</i>								
822	Clearfield	Clearfield Creamery Co.	Stock.	Joe Doubet, Sec.	Clearfield	G. W. McNair	Separator.	Test.
823	Bedford	Bedford Creamery	Ind.	W. A. Geithman, Mgr.	Bedford	G. C.	Separator.	Test.
824	Guss	Cold Spring Creamery	Ind.	H. B. Moats	Guss	C. J. Ellis	Separator.	Test.
825	Lenox	Elgin Creamery Co.	Stock.	O. Sands	Chicago, Ill. ....	.....	Separator.	Test.
<i>Union County.</i>								
826	Arispe	Elgin Creamery Co.	Ind.	O. Sands	Chicago, Ill.	Geo. Beckman	Separator.	Test.
827	Creston	Elgin Creamery Co.	Ind.	O. Sands	Chicago, Ill.	A. W. McColl	Separator.	Test.
828	Cromwell	Elgin Creamery Co. (s)	Ind.	O. Sands	Chicago, Ill. ....	.....	Separator.	Test.
829	Afton	Elgin Creamery Co.	Ind.	O. Sands	Chicago, Ill.	G. W. Kelley	Separator.	Test.
830	Kent	Prescott B. & C. Ass'n (s)	Co-op.	Frank Brandt, Sec.	Prescott .....	.....	Separator.	Test.
831	Dodge Twp.	Elgin Creamery (s)	Ind.	O. Sands	Chicago .....	.....	Separator.	Test.
832	Lorimer No. 4.	Talmage Creamery (s)	Ind.	W. F. Craig, Foreman	Talmage .....	.....	Separator.	Test.
833	Lincoln Twp.	Elgin Creamery (s)	Ind.	O. Sands	Chicago .....	.....	Separator.	Test.
834	Talmage	Talmage Creamery Co.	Stock.	W. F. Craig, Mgr.	Talmage	Chas. Mostaller ..	Separator.	Test.
835	Talmage No. 1.	Talmage Creamery Co. (s)	Stock.	W. F. Craig, Mgr.	Talmage .....	.....	Separator.	Test.
836	Talmage No. 2.	Talmage Creamery Co. (s)	Stock.	W. F. Craig, Mgr.	Talmage .....	.....	Separator.	Test.
837	Talmage No. 3.	Talmage Creamery Co. (s)	Stock.	W. F. Craig, Mgr.	Talmage .....	.....	Separator.	Test.
838	Pleasant Twp.	Elgin Creamery Co. (s)	Ind.	O. Sands	Chicago .....	.....	Separator.	Test.
839	Thayer	Elgin Creamery Co. (s)	Ind.	O. Sands	Chicago .....	.....	Separator.	Test.
<i>Van Buren.</i>								
840	Milton	Milton Creamery	Ind.	V. F. Cooley	Milton	Richard Quirk	G. C.	Test.
841	Cantril	Milton Creamery (s)	Ind.	V. F. Cooley	Milton .....	.....	G. C.	Test.
842	Bonaparte	Bonaparte Creamery	Stock.	Kirk Meek	Bonaparte	A. J. Miller	G. C.	Test.
843	Cantril	Bonaparte Creamery (s)	Stock.	Kirk Meek	Bonaparte .....	.....	G. C.	Test.
844	Leando	Leando Creamery	Ind.	.....	.....	.....	Separator.	Test.
<i>Wapello County.</i>								
845	Blakesburg	Blakesburg Creamery	Ind.	Foland Bros.	Blakesburg	Foland Bros.	Separator.	Test.

CREAMERY LIST—CONTINUED.

Office record number.	LOCATION.	NAME OF CREAMERY.	How operated.	NAME OF PROPRIETOR, SECRETARY OR MANAGER.	P. O. ADDRESS OF PROPRIETOR, SECRETARY OR MANAGER.	NAME OF BUTTER MAKER.	Separator or gathered cream.	Method of receiving milk.
<i>Warren County</i>								
846	Carlisle	Farmers' Co-op. Creamery Co.	Co-op.	C. Beauchamp.	Carlisle	H. Owens	Separator.	Test.
847	Indianola	Warren County Creamery	Ind.	E. Haldeman	Indianola	E. Culbertson	Separator.	Test.
848	Indianola	Warren County Creamery (s)	Ind.	E. Haldeman	Indianola		Separator.	Test.
849	Prole	Waterloo Creamery (o. s)	Stock	B. B. Corliss	Des Moines		Separator.	Test.
850	St. Marys	Warren County Creamery Co. (s)	Ind.	E. Haldeman	Indianola		Separator.	Test.
<i>Washington County</i>								
851	Kalona	Kalona Creamery	Ind.	W. G. Brooke, Mgr	Kalona	L. W. Brooke	G. C.	Test.
852	Noble	Oak Ridge Creamery	Ind.	J. A. Eicher, Mgr	Noble	Jno. Widmer	Separator.	Test.
853	Riverside	Riverside Creamery	Ind.	Geo. Nicola, Mgr	Riverside	Geo. Nicola	G. C.	Test.
854	Washington	Washington Creamery	Ind.	T. L. Emery & Sons	Washington	John McLane	Separator.	Test.
855	Wellman	Wellman Creamery	Ind.	P. J. Gregg	Wellman		Separator.	Test.
<i>Wayne County</i>								
857	Cambria	Old Colony Creamery (s)	Ind.	T. G. Hyde, Mgr	Humeston		Separator.	Test.
858	Corydon	Old Colony Creamery (s)	Ind.	T. G. Hyde, Mgr	Humeston		Separator.	Test.
859	Humeston	Old Colony Creamery	Ind.	T. G. Hyde, Mgr	Humeston	L. D. Winland	Separator.	Test.
860	Lainsburg	Old Colony Creamery (s)	Ind.	T. G. Hyde, Mgr	Humeston		Separator.	Test.
<i>Webster County</i>								
861	Badger	Badger Creamery	Ind.	Roger Smith	Humboldt	C. F. Wendt	Separator.	Test.
862	Barnum	Barnum Creamery	Ind.	G. B. Moon & Co	Manson	E. D. Rogers	Separator.	Test.
863	Clare	Clare Creamery	Ind.	J. A. Blakeman, Prop.	Clare	J. A. Blakeman	Separator.	Test.
864	Duncombe	Duncombe Creamery	Ind.	S. Smith	Duncombe	C. E. McBride	Separator.	Test.
865	Gowrie	Gowrie Creamery	Ind.	R. E. Gould, Prop.		G. C.		Test.
866	Fort Dodge	Oakdale Creamery	Ind.	Z. W. Thomas, Prop.	Fort Dodge	G. C. Benson	S. & G. C.	Test.
867	Industry	Oakdale Creamery (s)	Ind.	Z. W. Thomas, Prop.	Fort Dodge		S. & G. C.	Test.
<i>Winnebago County</i>								
868	Buffalo Center	Farmers' Co-op. Creamery Co	Co-op.	Geo. J. Anderson, Sec	Buffalo Center	A. Woolery	S. & G. C.	Test.

869	Dahl's Church	Lake Mills Creamery Co. (s)	Co-op.	J. A. Howie	Lake Mills		Separator.	Test.
870	Forest City	Forest City Co-op. Creamery	Co-op.	P. N. Anderson, Sec	Forest City	Lewis Richards	Separator.	Test.
871	Lake Mills	Lake Mills Creamery Co	Co-op.	J. A. Howie, Pres. & Mgr.	Lake Mills	A. M. Hanson	Separator.	Test.
872	Forest City	Forest City Co-op. Creamery (s)	Co-op.	P. N. Anderson, Sec	Forest City		Separator.	Test.
873	Leland	Forest City Co-op. Creamery (s)	Co-op.	P. N. Anderson, Sec	Forest City		Separator.	Test.
874	Mount Valley	Fertile Co-op. Creamery (s)	Co-op.	J. F. Tallackson, Sec	Fertile		Separator.	Test.
875	Newton Twp	Lake Mills Co-op. Creamery (s)	Co-op.	J. A. Howie	Lake Mills		Separator.	Test.
876	Norman	Norman Creamery Ass'n	Co-op.	Axel Arneson	Norman	A. O. Dahlen	Separator.	Test.
877	Scarville	Scarville Creamery Ass'n	Co-op.	Isaac Larson, Pres. & Mgr.	Scarville	W. J. Nagel	Separator.	Test.
878	Thompson	Eden Co-op. Creamery Ass'n	Co-op.	David Skutle, Sec	Amund	Morris J. Erdal	Separator.	Test.
879	Thompson	Thompson Co-op. Creamery Co	Co-op.	Jas. Ellickson, Mgr.	Thompson	E. W. Borne	Separator.	Test.
880	Thompson	Thompson Co-op. Cr'y Co (s)	Co-op.	Jas. Ellickson, Mgr.	Thompson		Separator.	Test.
881	Rake	Lincoln Co-op. Creamery	Co-op.	B. Quamme	Rake	P. N. Peterson	Separator.	Test.
882	Hollandale	Woden Creamery (s)	Ind.	L. C. Petersen	Woden		Separator.	Test.
<i>Winneshiek County</i>								
883	Calmar	Calmar Creamery	Ind.	A. E. Boe & N. H. Nelson	Calmar	A. Fluegel	G. C.	Test.
884	Burr Oak	Silver Creek Creamery Co	Co-op.	F. W. Heasel, Sec	Burr Oak	F. W. Hessel	G. C.	Test.
885	Festina	Festina Creamery Co	Co-op.	W. A. Schrandt, Sec	Calmar Rural			
886	Fort Atkinson	Fort Atkinson Creamery	Stock	A. O. Elvidge, Pres.	F. D. No. 1	Henry Hess	G. C.	Test.
887	Hesper	Hesper Creamery	Ind.	T. G. Meader, Prop.	Elkadar	H. B. Fortney	G. C.	Test.
888	Highlandville	Highlandville Creamery	Ind.	Bidne, Akre & Bjorgo, Props	Hesper	J. H. Hiatt	G. C.	Test.
889	Hesper	Rock Springs Creamery	Stock	H. O. Larson, Sec	Highlandville	P. J. Bidne	G. C.	Test.
890	Jackson Jet	Jackson Junction Creamery	Stock	A. Webster	Hesper	V. V. Johnson	G. C.	Test.
891	Kendallville	Kendallville Creamery	Ind.	Boe Nelson & Co.	Waucoma	R. M. Barbour	Separator.	Test.
892	Nordness	Nordness Creamery	Stock	J. N. Bragestad, Sec. & Mgr.	Kendallville	Ed. Haines	G. C.	Test.
893	Nordness	Red Oak Creamery	Co-op.	Erik E. Clement, Mgr	Nordness	Nels Olsen	G. C.	Test.
894	Ossian	Silver Spring Creamery	Stock	M. J. Nicholson, Sec	Decorah Rural	Erick E. Clement	G. C.	Test.
895	Ridgeway	Lincoln Farmers' Co-op. Cr'y	Co-op.	A. W. Praun, Sec	F. D. No. 2	Geo. H. Thume	G. C.	Test.
896	Ridgeway	L. T. Fosse & Son	Ind.	L. T. Fosse & Son	Ridgeway	Ole Sjobakken	G. C.	Test.
897	Spillville	Spillville Creamery Ass'n	Ind.	M. J. Nicholson & Co.	Ridgeway		G. C.	Test.
<i>Woodbury County</i>								
898	Correctionville	Correctionville Creamery	Ind.	Hopkins & Hubbard	F. D. No. 2	Wm. Spicher	G. C.	Test.
899	Danbury	Danbury Creamery	Ind.	W. C. Hayden	Holstein	Arthur R. Meen	G. C.	Test.
900	Sioux City	Hanford Hazelwood Cream Co.	Stock	David Brown, Pres	Danbury	W. C. Hayden	S. & G. C.	Test.
<i>Worth County</i>								
901	Bolan	Bolan Creamery	Ind.	Henry White	Sioux	M. Mortensen	G. C.	Test.
902	Bristol	Lake Mills Creamery Co. (s)	Co-op.	J. A. Howie	Grafton	Henry White	Separator.	Test.
903	Fertile	Fertile Co-op. Dairy Co.	Co-op.	J. F. Tallackson, Sec	Lake Mills		Separator.	Test.
904	Grafton	Bolan Creamery (s)	Ind.	Henry White	Fertile	J. A. Johnson	Separator.	Test.
905	Joice	Nordland Creamery	Co-op.	T. L. Lee, Mgr	Grafton		Separator.	Test.
906	Kensett	Danville Co-op. Creamery Ass'n	Co-op.	H. K. Mylie, Sec. and Mgr	Joice	A. H. Nielson	Separator.	Test.
					Kensett	Herman Stendel	Separator.	Test.

CREAMERY LIST—CONTINUED.

Office record number.	LOCATION.	NAME OF CREAMERY.	How operated.	NAME OF PROPRIETOR, SECRETARY OR MANAGER.	P. O. ADDRESS OF PROPRIETOR, SECRETARY OR MANAGER.	NAME OF BUTTER MAKER.	Separator or gathering system.	Method of receiving milk.
907	Manly.....	Farmers Co-op. Ass'n.....	Co-op.....	E. R. Stock, Sec. and Mgr.....	Manly.....	J. F. Cochranour.....	Separator.....	Test.....
908	Northwood.....	Brookfield Creamery Ass'n.....	Co-op.....	E. A. Tenold, Sec. and Mgr.....	Northwood.....	R. S. Bergsather.....	S. & G. C.....	Test.....
909	Northwood.....	Farmers' Butter and Cheese Ass'n.....	Co-op.....	M. D. Johnson, Sec.....	Northwood.....	J. H. Jones.....	S. & G. C.....	Test.....
910	Northwood.....	Farmers' Co-op. Creamery Ass'n.....	Co-op.....	O. G. Anderson, Sec.....	Tenold.....	N. O. Dahlen.....	Separator.....	Test.....
911	Northwood.....	Hartland Dairy Ass'n.....	Co-op.....	E. T. Hanson, Sec. and Mgr.....	Silver Lake.....	T. A. Storvick.....	Separator.....	Test.....
912	Meltonville.....	Meltonville Dairy Ass'n.....	Stock.....	A. S. Larson, Sec.....	Meltonville.....	S. Klemesrud.....	G. C.....	Test.....
<i>Wright County.</i>								
913	Belmond.....	Greenfield & Frohling.....	Ind.....	Greenfield & Frohling.....	Belmond.....	Greenfield & Frohling.....	S. & G. C.....	Test.....
914	Belmond.....	Norway Co-op. Creamery Co.....	Co-op.....	C. J. Baxter, Sec.....	Belmond, Route No. 2.....	H. E. Gates.....	G. C.....	Inch.....
915	Clarion.....	Clarion Creamery.....	Co-op.....	O. P. Morton, Sec.....	Clarion.....	A. H. Adams.....	G. C.....	Test.....
916	Eagle Grove.....	Eagle Grove Co-op. Creamery Co.....	Co-op.....	Geo. L. Webster, Sec.....	Eagle Grove.....	E. J. Ford.....	G. C.....	Test.....
917	Goldfield.....	Goldfield Creamery Co.....	Ind.....	Guy Thomas.....	Goldfield.....	Guy Thomas.....	S. & G. C.....	Test.....
918	Galt.....	Galt Creamery Co.....	Co-op.....	A. J. Ketchum.....	Galt.....	E. W. Umbreit.....	S. & G. C.....	Test.....
919	Palsville.....	Palsville Co-op. Creamery Co.....	Co-op.....	A. Meinderr, Sec.....	Palsville.....	C. O. May.....	Separator.....	Test.....
920	Rowan.....	Rowan Creamery Co-op. Co.....	Co-op.....	F. B. Sheldon, Sec.....	Rowan.....	Ben Fanselon.....	Separator.....	Test.....

IOWA CHEESE FACTORY LIST.

Arranged alphabetically according to counties and towns near which factory is located, together with information pertaining to each.

Office record number.	LOCATED AT OR NEAR.	NAME OF CHEESE FACTORY.	How operated.	NAME OF PROPRIETOR, SECRETARY OR MANAGER.	P. O. ADDRESS OF PROPRIETOR, SECRETARY OR MANAGER.	NAME OF CHEESE MAKER.	Method of receiving milk.
<i>Adams County.</i>							
1	Cumberland.....	Lincoln Center Factory.....	Individual.	Henry Fleharty.....	Hays.....	H. Fleharty.....	Hundred.
<i>Appanoose County.</i>							
2	Moulton.....	Moulton Cheese Factory.....	Individual.	A. Dickson.....	Moulton.....	A. Dickson.....	Hundred.
3	Ray.....	Ray Cheese Factory.....	Stock.....	L. C. Main, Sec.....	Ray.....	John F. Hiatt.....	Hundred.
4	Hiattsville.....	Hiatt Factory.....	Individual.	W. D. Hiatt, Prop.....	Centerville, R. F. D.....	W. O. Hiatt.....	Hundred.
<i>Benton County.</i>							
5	Atkins.....	Ideal Factory.....	Individual.	A. C. Stewart, Prop.....	Atkins.....	J. W. Stewart.....	Hundred.
6	Menhall.....	Red Arrow Cheese Factory.....	Individual.	C. B. Chenoweth, Mgr.....	Newhall.....	.....	Hundred.
<i>Black Hawk County.</i>							
7	Waterloo.....	Waterloo Cheese Factory.....	Stock.....	Geo. V. Fowler, Mgr.....	Waterloo.....	F. E. Wightman.....	Test.
8	Waterloo.....	North Star.....	Stock.....	Geo. V. Fowler, Mgr.....	Waterloo.....	Chas. Wood.....	Test.
<i>Bremner County.</i>							
9	Janesville.....	Janesville.....	Stock.....	Geo. V. Fowler, Mgr.....	Waterloo.....	John McMurray.....	Test.
<i>Carroll County.</i>							
10	Carrollton.....	Carrollton.....	Individual.	F. E. Hessler.....	Carrollton.....	F. E. Hessler.....	Hundred.

IOWA CHEESE FACTORY LIST—CONTINUED.

Office record number.	LOCATED AT OR NEAR.	NAME OF CHEESE FACTORY.	How operated.	NAME OF PROPRIETOR, SECRETARY OR MANAGER.	P. O. ADDRESS OF PROPRIETOR, SECRETARY OR MANAGER.	NAME OF CHEESE MAKER.	Method of receiving milk.
	<i>Cerro Gordo County.</i>						
11	Burchinal	Burchinal Cheese Factory	Individual.	T. R. Coates, Sec.	Burchinal	B. G. Schafer	Hundred.
12	Mason City	Lincoln Dairy Co	Co-op	John W. Smith, Sec.	Mason City	J. C. Schafer	Test.
	<i>Crawford County.</i>						
13	Astor	Astor Cheese Factory	Co-op	Ed. Theobald, Sec.	Astor	Wm. Gerber	Hundred.
	<i>Clark County.</i>						
14	Weldon	Weldon Cheese Factory	Individual.	L. M. Parr	Weldon	L. M. Parr	Hundred.
	<i>Decatur County.</i>						
15	Bracewell	Snow's Cheese Factory	Individual.	A. A. Snow	Bracewell .....	.....	Hundred.
	<i>Floyd County.</i>						
16	Charles City	Elm Spring Cheese Factory	Individual.	H. D. White	C. B. Higgins .....	.....	Test.
	<i>Greene County.</i>						
17	Dana	Dana Mutual Co-op. Cr'y Co.	Co-op	W. J. Elling	Dana	W. J. Elling	Test.
	<i>Guthrie County.</i>						
18	Jamaica	Jamaica Cheese Factory	Individual.	A. H. Chadsey	Jamaica .....	.....	Hundred.
	<i>Hardin County</i>						
19	Iowa Falls	Ellis Cheese Factory	Stock	W. J. Clark, Mgr	Iowa Falls	E. Clark	Hundred.
	<i>Howard County</i>						
20	Cresco	Cresco Cheese Factory	Individual.	Wm. Kellow, Jr.	Cresco	W. N. Lathrop ..	Hundred.

21	Cresco	Clover Leaf Cheese Factory	Individual.	J. J. House	Cresco.....	J. J. House	Hundred.
	<i>Humboldt County.</i>						
22	Renwick	Sunny Grove Cheese Factory...	Stock	Conrad Elmer	Renwick	Fred Gugger.....	Hundred.
	<i>Jefferson County.</i>						
23	Pleasant Plain...	Pleasant Plain Cheese Ass'n ...	Co-op. .	E. N. Crumley, Sec.....	Pleasant Plain...	W. J. Alter	Test.
24	Veo	Veo Cheese Association	Co-op.	James Jones, Sec.	Veo	F. S. Rynor.....	Test.
25	Woolson.	Woolson Cheese Company	Stock	Sanford Bray	Woolson.....	Austin Lassen ..	Test.
	<i>Johnson County</i>						
26	Iowa City	Sharon Cheese Factory	Co-op.	Jno. T. Jones, Sec.....	Iowa City	Robert Gongo	Hundred.
	<i>Keokuk County.</i>						
27	Talleyrand.	Talleyrand Cheese Factory.....	Stock	L. M. Tucker, Sec.	Talleyrand.....	C. Tucker	Test.
	<i>Kossuth County</i>						
28	LaVerne	Pioneer Cheese Factory.	Stock	S. B. Hefty, Sec.	Renwick .....	.....	Test.
	<i>Monroe County.</i>						
29	Albia	Bone Cheese Factory	Individual.	S. G. Bone	Albia	Merle Bone.....	Hundred.
30	Albia	Hinton Cheese Factory.....	Individual.	Sam Hinton.....	Albia	Gail Hinton	
31	Albia	Hollingshead.....	Individual.	J. C. Hollingshead	Albia	J. C. Hollingshead.	
	<i>Marshall County.</i>						
32	Liscomb.....	Liscomb Cheese Factory	Stock	Thos. E. Culp, Mgr.....	Liscomb.....	J. D. Mills	Test.
	<i>Muscatine County</i>						
33	Wilton Junction..	Muscatine French Cheese Co ...	Co-op	Fritz Kolb	Wilton Junction.	Bruno Schultz. ..	Hundred.
	<i>Page County.</i>						
34	College Springs..	College Springs Cheese Factory.	Individual.	J. H. Loughlin	College Springs..	J. H. Loughlin. ..	Hundred.
	<i>Poweshiek County.</i>						
35	Grinnell.....	Bartell Cheese Factory.....	Individual.	J. E. Bartell	Grinnell.....	J. E. Bartell	Test.
36	Jacobs	Jacobs Factory	Individual.	A. C. Payne.....	Jacobs	Geo. Manor	Test.
	<i>Ringgold County.</i>						
37	Benton	Benton Cheese Factory.....	Individual	.....	.....	.....	Hundred.

IOWA CHEESE FACTORY LIST—CONTINUED.

Office record number.	LOCATED AT OR NEAR	NAME OF CHEESE FACTORY.	How operated.	NAME OF PROPRIETOR, SECRETARY OR MANAGER.	P. O. ADDRESS OF PROPRIETOR, SECRETARY OR MANAGER.	NAME OF CHEESE MAKER.	Method of receiving milk.
38	Scott County. Princeton	Wapsie Cheese Factory	Individual.	L. W. Pope & Son	Princeton.		
39	Story County Iowa Center	Iowa Center Cheese Factory	Individual.	J. Q. Moore, Prop.	Iowa Center.	W. H. Moore.	Test.
40	Ames	L. A. C. Cheese Factory	State	G. L. McKay, Mgr.	Ames		Test.
41	Tama County Dysart	Gold Dust Factory	Individual.	R. E. Fairbanks	Dysart		Hundred.
42	Taylor County Sharpsburg	Sharpsburg Cheese Factory	Individual.	G. S. Eastlack, Mgr.	Sharpsburg	G. S. Eastlack	Hundred.
43	Gravity	Gravity Cheese Factory	Individual.	Neal Johnson, Prop.	Gravity	Neal Johnson	Hundred.
44	Guss	Maple Grove Cheese Factory	Individual.	E. G. Schoonover	Guss		Hundred.
45	Blockton	Blockton Cheese Factory	Individual.	Waldrip & Bonafield	Blockton	Waldrip & Bonafield	Hundred.
46	Warren County Milo	Belmont Cheese Factory	Individual.	Jno. Keller	Milo		Hundred.
47	Washington County Clay	Clay Cheese Factory	Stock	O. Meacham, Sec.	Richland R. F. D. No. 2	O. W. Hake	Test.
48	West Chester	Leet Cheese Factory	Individual.	W. E. Leet, Prop.	West Chester	W. E. Leet	Hundred.
49	Wayne County Promise City	Promise City Cheese Factory	Co-op	C. A. Sager	Seymour	Geo. Hanna	Hundred.
50	Sewall	Sewall Cheese M'fg Co.	Individual.	J. N. Farnsworth	Sewall	A. Kent	Hundred.
51	Lineville	Lineville Cheese Factory	Individual.	Matthew DeHaan	Lineville	Matthew DeHaan	Hundred.
52	Seymour	Seymour Cheese Co.	Stock	R. A. Weagley, Sec.	Seymour	R. E. Spencer	Hundred.

DISTRICT ASSOCIATIONS.

One of the most valuable efforts made during the last season to promote interest in buttermaking has been the organization of several local dairy associations. A list of these associations and their officers appears below. The territory of each of these associations is not limited to any number of counties and buttermakers from any creamery conveniently situated to the places of meeting are at liberty to send butter to these meetings and to have it scored.

Eastern Iowa Buttermakers and Dairymens Association.

President, C. D. Elder, Manchester.
Vice-President, A. A. Palmer, Manchester.
Secretary, P. H. Kieffer, Strawberry Point.
Treasurer, A. L. Landis, Colesburg.

North Central Iowa Buttermakers and Dairymens Association.

President, Fred Schreiber, North Washington.
Vice-President, J. J. Brunner, Nilesville.
Secretary, E. Pufahl, Nora Springs.
Treasurer, W. W. Day, Charles City.

Wapsie and Cedar Valley Buttermakers Association.

President, F. C. Oltrogge, Tripoli.
Secretary, C. E. Carr, Fredrika.
Treasurer, H. C. Ladage, Tripoli.

Northwestern Iowa Buttermakers Association.

President, N. H. Knudson, Emmetsburg.
Vice-President, J. Fennell, Mallard.
Secretary, W. L. Kepler, Spencer.
Treasurer, D. L. Driver, Burt.

Central Iowa Buttermakers Association.

President, P. Jensen, Eldora.
Vice-President, N. H. Trimble, Iowa Falls.
Secretary-Treasurer, H. K. Gronbeck, Jewell.

The Botna Valley Creamery Association.

President, J. C. Hardman, Brayton.
Vice-President, M. P. Hoegh, Brayton.
Secretary-Treasurer, J. P. Nielsen, Brayton.

The State Dairy Association, meets at Cedar Rapids, Feb. 3-5, 1903.

President, S. B. Shilling, Mason City.
Vice-President, H. R. Carpenter, Elkader.
Secretary, J. C. Dalv, Charles City.
Treasurer, M. W. Ashby, Hazleton.

RAILWAY BUTTER SHIPMENTS.

The following tables of butter shipments represent the shipments of butter from Iowa points to points outside the state for the year ending September 30, 1902. Attention is called to the fact that the creamery butter statistics printed before in this report are for the year ending May 1, 1902, and hence the tables following are the latest as well as the most accurate of any published herewith. No figures show the exact facts in regard to the state's dairy business except the statistics of shipments of dairy products out of the state.

The greatest amount of butter ever shipped out of Iowa in one year was 83,620,081 pounds in the year ending September 30, 1897, and the average price for that year was 18.85 cents, the lowest price that butter has ever reached. The butter that year must have brought to the state \$15,000,000 besides paying the freight. This year the butter shipped from the state aggregates 72,714,584 pounds and the price has been 24.16 cents a pound and the value to the state must be in excess of the amount received when the maximum amount of butter was produced.

From a study of the following tables it will be seen that really only a few of the counties of the state are making any extraordinary quantities of butter, and that the chance for dairy development is still very great.

The decrease in butter shipments is much less than was anticipated, and will be surprising to many who had looked for a revolutionary statement in these figures. The following statistics are direct from the freight agents of the various railroads, who very courteously furnish this department with these statistics each year. They are accurate as well as comprehensive, and are greatly appreciated both by the commissioner and by those who are interested in this report. A small amount of business of Iowa creameries is secured from the state of South Dakota as some of their creameries are shipping cream to Sioux City. Also small amounts of packing stock are shipped in from Nebraska and elsewhere, made into renovated butter and shipped out of the state. These items swell the butter shipments of the state. While this amount of butter, whatever it is, has

not been produced in the state, it should not be forgotten that a good deal of cream along the northern and eastern border of the state is shipped to Minneapolis and to eastern points, and it is believed that these shipments nearly or quite equalize the shipments of cream and packing stock into the state which are afterwards included in the butter shipments as shown in the following table. So that for all practical purposes the tables following are reasonably accurate.

BUTTER SHIPMENTS.

COUNTIES.	NUMBER OF CREAMERIES FOR 1901 AND 1902.		GROSS POUNDS OF BUTTER SHIPPED OUT OF THE STATE FOR THE YEARS ENDING SEPTEMBER 30, 1901, AND 1902, SHOWING INCREASE AND DECREASE BY COUNTIES.			
	1901.	1902.	1901.	1902.	Increase.	Decrease.
The State.....			89,123,697	83,564,081	7,560,406	9,859,182
Adair.....	15	13	875,916	846,409		29,507
Adams.....	7	6	559,190	444,431		114,699
Allamakee.....	8	7	1,332,513	1,004,818		27,695
Appanoose.....			12,635	70,757	58,102	
Audubon.....	12	11	1,314,022	1,000,121		223,001
Benton.....	17	13	1,010,623	600,067		410,520
Black Hawk.....	21	20	2,153,417	1,847,781		305,636
Boone.....	8	7	127,843	103,517		24,326
Bremer.....	22	23	3,512,230	2,878,128		634,101
Buchanan.....	20	18	3,188,855	3,191,442	2,587	
Buena Vista.....	12	10	1,530,403	1,020,794		509,609
Butler.....	22	21	2,734,339	2,318,258		416,081
Calhoun.....	10	10	1,735,258	1,417,367		317,891
Carroll.....	12	12	840,622	1,193,172	352,550	
Cass.....	9	10	452,539	370,228		82,331
Cedar.....	9	9	350,945	443,197	92,252	
Cerro Gordo.....	7	6	970,306	788,204		182,102
Cherokee.....	7	7	272,286	129,246		143,040
Chickasaw.....	19	17	2,801,605	2,715,724		85,881
Clarke.....	5	4	109,950	17,000		92,950
Clay.....	11	13	863,539	605,572		257,967
Clayton.....	19	20	2,257,040	2,080,386	722,446	
Clinton.....	15	17	1,247,339	1,180,200		67,139
Crawford.....	5	5	822,091	1,079,005	256,914	
Dallas.....	10	10	764,781	877,279	112,498	
Davis.....	2	5	50,207	131,015	80,808	
Decatur.....	3	4	52,104	22,757		29,347
Delaware.....	28	25	2,662,636	2,472,243	19,393	
Des Moines.....			325,002	205,026		119,976
Dickinson.....	5	5	600,596	641,590	40,994	
Dubuque.....	22	30	2,238,028	2,322,444	84,416	
Emmet.....	11	11	800,590	775,618		24,972
Fayette.....	20	20	2,441,381	2,448,703	7,322	
Floyd.....	7	7	703,575	659,608	43,967	
Franklin.....	12	12	208,686	534,104	325,418	
Fremont.....		1	5,112	3,432		1,680
Greene.....	11	6	429,496	284,813		144,683
Grundy.....	15	14	850,050	675,555		174,495
Guthrie.....	16	17	1,804,308	1,218,177		586,131
Hamilton.....	12	11	905,320	1,170,630	265,310	
Hancock.....	12	12	531,237	548,176	16,939	
Hardin.....	15	17	2,475,405	1,835,521		639,884
Harrison.....	5	5	170,826	411,943	241,117	
Henry.....	4	3	70,253	71,534	1,281	
Howard.....	11	10	1,559,704	1,433,452		126,252

* Errors in statements of butter shipments from Dubuque and Franklin counties for 1901 reduce the figures from these counties and from the State by 682,067 pounds. The figures here given are correct.

BUTTER SHIPMENTS—CONTINUED.

COUNTIES.	NUMBER OF CREAMERIES FOR 1901 AND 1902.		GROSS POUNDS OF BUTTER SHIPPED OUT OF THE STATE FOR THE YEARS ENDING SEPTEMBER 30, 1901, AND 1902, SHOWING INCREASE AND DECREASE BY COUNTIES.			
	1901	1902	1901	1902	Increase.	Decrease.
Humboldt.....	11	12	840,503	888,985	48,362	
Iida.....	4	3	252,210	307,990	15,770	
Iowa.....	11	12	654,850	616,428		38,431
Jackson.....	22	20	1,052,066	1,141,627	89,561	
Jasper.....	9	8	440,509	255,717		184,792
Jefferson.....	5	5	75,810	97,937	18,127	
Johnson.....	4	3	144,384	211,461	67,067	
Jones.....	28	30	3,214,444	4,034,175	819,731	
Keokuk.....	8	7	219,808	292,962	73,154	
Kossuth.....	18	15	2,441,718	1,955,550		286,159
Lee.....	27	25	82,388	816,233	733,905	
Linn.....	27	25	1,305,230	1,192,201		113,019
Louisa.....	2	2	342,80	63,910	29,630	
Lucas.....	2	2	700			700
Lyon.....	5	6	380,868	378,184		18,674
Madison.....	2	2	62,662	11,435		51,247
Mahaska.....	2	2	78,020	96,319	21,290	
Marion.....	3	2	73,300	72,861		439
Marshall.....	9	8	644,982	605,221		39,711
Mills.....	2	4	29,412	6,310		23,102
Mitchell.....	11	11	1,740,397	1,884,063	143,666	
Monona.....	1	1	44,877	44,867	280	
Monroe.....	1	1	20,292	41,715	21,423	
Montgomery.....	4	4	165,901	115,707		50,194
Muscatine.....	4	3	93,914	88,619		5,295
O'Brien.....	6	5	650,822	626,465		24,357
Osceola.....	4	5	116,800	231,160	114,360	
Page.....	3	4	387,001	672,674	285,673	
Palo Alto.....	19	20	1,930,612	1,608,361		211,621
Plymouth.....	10	10	785,742	555,840		229,902
Pocahontas.....	12	12	514,428	802,024	287,606	
Polk.....	4	4	450,364	2,073,395	1,623,001	
Pottawattamie.....	9	7	766,119	564,360		201,759
Poweshiek.....	9	6	408,773	406,335		2,438
Ringgold.....	3	2	119,727	30,516		90,211
Sac.....	16	13	857,333	849,046		8,287
Scott.....	4	3	300,623	258,700		41,923
Shelby.....	10	12	814,667	706,450		108,247
Sioux.....	8	7	477,404	614,462	137,058	
Story.....	14	14	1,571,909	1,355,452		216,457
Tama.....	10	9	747,528	671,110		73,418
Taylor.....	5	4	167,222	200,203	32,981	
Union.....	14	14	1,064,867	696,700		368,167
Van Buren.....	5	5	96,142	96,350		208,792
Wapello.....	1	1	216,485	177,359		39,126
Warren.....	6	5	50,315	13,400		39,915
Washington.....	5	5	340,590	276,575		70,015
Wayne.....	5	4	840,815	633,732		207,083
Webster.....	11	7	839,672	403,382		346,290
Winneshago.....	14	15	1,431,116	1,508,593	75,447	
Winneshiek.....	16	15	1,930,404	1,508,593		427,841
Woodbury.....	6	3	3,845,852	3,994,627	148,775	
Worth.....	12	12	1,021,882	958,253		63,579
Wright.....	9	8	1,075,520	728,671		346,849
The State.....	960	920	89,123,697	86,564,981	7,300,466	9,859,182

Net decrease, gross pounds, 2,558,716.

Table showing total net butter shipments of the state for the years 1890 to 1902, inclusive, from Iowa to points outside the state; also increase or decrease as compared with the year preceding.

YEARS ENDING OCTOBER 1.	Net pounds of butter shipped.	Increase over preceding year.	Decrease from preceding year.
1890.....	71,255,790		
1891.....	68,680,716		2,565,080
1892.....	60,112,931		8,567,785
1893.....	54,572,942		5,540,021
1894.....	54,508,417		63,485
1895.....	66,497,108	11,987,691	
1896.....	80,032,916	13,535,808	
1897.....	83,620,081	3,587,165	
1898.....	77,364,337		6,255,744
1899.....	70,620,326		744,011
1900.....	71,719,329		4,910,997
1901.....	74,863,965	3,144,666	
1902.....	72,714,584		2,149,411

Counties shipping more than 1,000,000 pounds, net, of butter in the year ending, September 30, 1902.

1902.	COUNTIES.	1901.
3,355,487	Woodbury.	3,230,515
3,388,707	Jones.	2,700,133
2,680,611	Buchanan.	2,678,638
2,503,524	Clayton.	1,896,678
2,417,627	Bremer.	2,950,322
2,281,208	Chickasaw.	2,353,348
2,244,684	Delaware.	2,236,110
2,056,986	Fayette.	2,052,776
1,950,853	Dubuque.	2,397,400
1,947,337	Butler.	2,296,844
1,741,626	Polk.	378,305
1,642,669	Kossuth.	1,883,043
1,582,612	Mitchell.	1,461,998
1,552,136	Blackhawk.	1,811,390
1,541,837	Hardin.	2,079,390
1,401,448	Palo Alto.	1,621,210
1,267,195	Winneshiek.	1,626,579
1,204,099	Howard.	1,282,692
1,190,589	Calhoun.	1,547,616
1,138,580	Story.	1,320,403
1,096,047	Allamakee.	1,119,311
1,050,472	Winnebago.	1,204,817
1,023,269	Guthrie.	1,515,619
1,005,048	Linn.	1,096,384
1,003,265	Carroll.	706,122
44,308,016	Totals.	45,447,643

These twenty-five counties ship 60 per cent of the 72,714,584 net pounds of butter shipped from the state.

NET BUTTER SHIPMENTS BY COUNTIES AND RANK —AREA OF COUNTIES.

Showing pounds of butter shipped per square mile and rank of counties; also total net butter shipments for the state and net pounds per square mile, for the year ending, September 30, 1902.

COUNTIES.	Total net shipments of butter for the year.	Rank by total lbs. shipped.	Area of square miles in counties.	Pounds per square mile.	Rank by lbs. per square mile.
The state	72,714,584		56,025		
Adair	710,983	96	576	1,234	38
Adams	373,801	60	432	864	50
Allamakee	1,096,047	21	658	1,666	26
Appanoose	59,419	86	516	115	86
Audubon	915,602	28	443	2,066	18
Benton	504,081	54	720	700	54
Black Hawk	1,552,136	14	576	2,712	11
Boone	98,313	80	576	162	81
Bremer	2,417,627	5	432	5,596	2
Buchanan	2,680,811	3	576	4,654	3
Buena Vista	862,506	30	576	1,497	30
Butler	1,947,337	10	576	3,381	7
Calhoun	1,190,589	29	576	2,067	17
Carroll	1,003,265	25	576	1,741	22
Cass	910,092	65	576	539	62
Cedar	572,285	61	576	646	56
Cerro Gordo	662,09	39	576	1,149	40
Cherokee	108,588	78	576	188	
Chickasaw	2,281,208	6	504	452	62
Clarke	14,380	93	432	33	92
Clay	590,390	43	576	1,025	43
Clayton	2,503,524	4	728	3,438	
Clinton	991,308	26	698	1,406	31
Crawford	606,360	29	720	1,253	36
Dallas	733,914	34	538	1,253	37
Davis	112,237	77	503	223	77
Decatur	19,116	91	534	35	91
Delaware	2,244,684	7	576	3,897	4
Des Moines	248,578	67	413	601	57
Dickinson	533,935	48	405	1,300	35
Dubuque	1,950,853	9	601	3,246	8
Emmet	649,889	40	494	1,608	27
Fayette	2,056,986	8	720	2,856	10
Floyd	806,071	31	504	1,599	28
Franklin	448,698	58	576	796	52
Fremont	2,833	97	509	5	97
Greene	239,243	69	576	415	70
Grundy	567,466	45	504	1,125	41
Guthrie	1,023,269	23	593	1,725	24
Hamilton	9,893	94	576	17	94
Hancock	460,467	57	576	799	51
Hardin	1,541,837	15	576	2,688	13
Harrison	345,561	62	695	498	64
Henry	60,117	85	433	138	84
Howard	1,204,099	18	476	2,529	14
Humboldt	746,747	53	432	1,728	23
Ida	253,703	66	433	597	53
Iowa	537,799	49	584	920	47
Jackson	953,966	27	633	1,503	29
Jasper	214,802	72	730	294	74
Jefferson	82,267	82	432	190	78
Johnson	177,627	74	618	287	75
Jones	3,838,707	1	576	5,882	1
Keokuk	246,113	68	576	427	69

NET BUTTER SHIPMENTS—CONTINUED.

COUNTIES.	Total net shipments of butter for the year.	Rank by total lbs. shipped.	Area of square miles in counties.	Pounds per square mile.	Rank by lbs. per square mile.
Kossuth	1,642,639	12	977	1,680	23
Lee	685,686	37	512	1,329	34
Linn	1,005,048	24	720	1,395	32
Louisa	53,684	87	407	131	85
Lucas			432		
Lyon	317,674	64	587	541	61
Madison	9,605	95	576	16	95
Mahaska	83,428	81	576	144	82
Marion	61,203	84	576	106	87
Marshall	508,335	53	576	882	46
Mills	5,300	96	444	11	96
Mitchell	1,582,612	13	473	2,946	16
Monona	37,688	8	556	67	89
Monroe	35,040	89	432	81	88
Montgomery	97,271	79	432	225	76
Muscataine	74,439	83	437	170	80
O'Brien	524,230	51	576	913	48
Osceola	194,174	73	400	485	67
Page	541,246	47	557	971	46
Palo Alto	1,401,448	10	576	2,433	15
Plymouth	466,905	56	860	549	63
Pocahontas	673,700	38	576	1,169	39
Polk	1,741,626	11	555	2,078	9
Pottawattamie	474,082	57	960	493	65
Poweshiek	341,321	63	532	536	59
Ringgold	17,233	92	542	31	93
Sac	713,558	35	576	138	83
Scott	218,308	71	455	481	66
Shelby	595,933	42	590	1,010	45
Sioux	516,148	52	769	671	65
Story	1,138,580	20	576	1,977	20
Tama	553,732	46	720	769	63
Taylor	163,171	15	548	306	79
Union	533,388	44	432	1,250	33
Van Buren	30,534	90	484	63	90
Wapello	148,982	76	432	344	72
Warren	112	98	569	19	98
Washington	233,323	70	566	412	71
Wayne	542,352	50	523	1,017	44
Webster	414,441	59	720	575	60
Winnebago	1,000,572	22	403	2,706	12
Winneshiek	1,267,195	17	694	1,825	21
Woodbury	3,855,487	2	873	3,843	5
Worth	804,933	32	462	2,000	19
Wright	612,094	41	576	1,062	42

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SEVENTEENTH ANNUAL REPORT

OF THE

STATE DAIRY COMMISSIONER

TO THE

GOVERNOR OF THE STATE OF IOWA

FOR THE YEAR 1903.

H. R. WRIGHT,
STATE DAIRY COMMISSIONER.

PRINTED BY ORDER OF THE GENERAL ASSEMBLY.

DES MOINES:
BERNARD MURPHY, STATE PRINTER.
1903.

LETTER OF TRANSMITTAL.

To His Excellency, ALBERT B. CUMMINS, Governor of Iowa:

SIR,—In compliance with the law, I have the honor to submit herewith the Seventeenth Annual Report of the Dairy Commissioner.

Very respectfully,

H. R. WRIGHT,

Dairy Commissioner.

Des Moines, November 1, 1903.

**EXPENSE OF OFFICE OF DAIRY COMMISSIONER FOR THE YEAR
ENDING NOVEMBER 1, 1903.**

Dairy commissioner's salary	\$ 1,500.00	
Dairy commissioner's expense	625.03	
Total		\$ 2,125.03
Deputy dairy commissioner's salary	\$ 1,000.00	
Deputy dairy commissioner's expense	15.24	
Total		1,015.24
Assistant dairy commissioner's salary	\$ 1,000.00	
Assistant dairy commissioner's expense	1,103.41	
Total		2,103.41
EXPENSE OF MILK INSPECTION IN FOURTEEN CITIES—		
Milk agents' fees	\$ 1,772.00	
Milk agents' expense	175.53	
Milk agents' special work	24.37	
Total		1,971.90
OFFICE EXPENSES—		
Printing dairy law	\$ 21.00	
Legal expenses	150.00	
Analyses	30.05	
Miscellaneous	15.21	
Total		216.26
Express, freight and cartage		103.50
Telegraph and telephone		17.49
Total		\$ 1,850.78
*Less salaries		3,500.00
Total expenditures from appropriations		\$ 4,050.78
Average monthly expense		344.73

*Salaries are not paid from the specific appropriation. The amount appropriated for the biennial period beginning April 1, 1902, was \$3,000.00, of which has been expended in nineteen months, to November 1, 1903, \$3,550.48.

DAIRY COMMISSIONER'S REPORT.

The statistics given in this report are for the year ending July 1, 1903. The statistical portions of former reports have been in each case for the years ending May 1st. This change has been made in the hope of getting more complete statistics and also in the hope of getting this volume into the hands of dairy people while the statistics are of some value.

The statistics in regard to railway shipments of butter, both in this report and in former reports, are for the years ending September 30th, in each case.

It is the practice of this office to correct the creamery list down to November 1st.

It has also been the practice of this office to avoid rigidly anything in the way of padding either the creamery list of the statistical tables, and so far as the figures are given, they are, therefore, reasonably correct. The law requires creameries and renovated butter factories to report within thirty days after receiving the blank from the dairy commissioner. If these creamery reports could be secured promptly, the annual report of the dairy commissioner could easily be in print by October 1st, instead of January 1st, which is the usual time.

CITY MILK INSPECTION.

The city milk inspection, which is carried on under the direction of this office, in fourteen cities of the state, costs about \$2,000.00 per annum. Except in the city of Des Moines this inspection is carried on by the local inspectors with little or no real supervision on the part of the dairy commissioner and practically is confined to testing the milk by means of the Babcock test in order to ascertain whether the same has been watered or skimmed, or whether the cream that has been sold tests up to the legal standard of 15 per cent. In one or two

towns, the department has enlisted the aid of the local health department in carrying on some investigations in regard to the adulteration of the milk by the use of preservatives. Experiences in Iowa and in other states has shown that a frequent inspection of the milk sold in the cities tends to a much better quality of milk so far as regards the amount of cream it contains, but under existing conditions it is impossible to make sure that the milk sold in the city is not adulterated with preservatives. A number of analyses have been made, particularly of milk from Des Moines, and very little milk has been found containing preservatives. The efficient milk agent at Ottumwa, Mr. E. B. Hill, together with the city physician of that town, have done very efficient work in inspecting the milk sold in Ottumwa, and one of the milkmen of the city, on complaint of the milk inspector, was arrested and fined for selling milk containing formaldehyde.

The growth of the city milk inspection in this state is indicated by the following table showing the number of permits for milk dealers issued in the years from 1894 to 1892. The years end in every case on the 4th of July:

1894	1895	1896	1897	1898	1899	1900	1901	1902	1903
359	491	566	620	574	676	714	784	821	783

The number of permits issued since July 4, 1903, is 633.

The milk inspection carried on under the direction of this department affects about one-seventh of the population of the state, as will be seen by the following table:

CITIES.	POPULATION.	INSPECTOR.
Burlington	23,201	Dr. W. C. Hummell.
Cedar Rapids	25,656	Dr. J. W. Griffith.
Clinton	22,698	W. L. Cousins.
Council Bluffs	25,802	W. A. Groneweg.
Davenport	35,254	H. J. High.
Des Moines	62,139	Hal M. Heaton.
Dubuque	36,297	Dr. A. G. Staples.
Fort Dodge	12,162	D. C. Benjamin.
Keokuk	14,641	A. A. Bland.
Marshalltown	11,544	Dr. E. M. Singleton.
Muscatine	14,073	Dr. John Tillie.
Ottumwa	18,197	E. B. Hill.
Sioux City	33,111	O. P. McCray.
Waterloo	12,580	Theo. Peek.
Total	347,355	

The most important work undertaken by the dairy commissioner's office is that of creamery inspection. This state has a law requiring the operator and manager of a creamery, or cheese or condensed milk factory, to keep his utensils and buildings in a clean and hygienic condition. The evident intention of this law is to provide a penalty to be inflicted upon the responsible party in case a creamery is not kept in a fit condition to be the place of manufacture of human food. This state has a great many creamery plants that were built a considerable number of years ago, and some of these plants have been neglected. The work of inspection has been very largely done by the assistant dairy commissioner, and it has been the policy of this department to insist that every creamery, so far as we have been able to visit them, shall be properly kept. In a few instances the management have been asked to choose between immediate prosecution and rebuilding the creamery. In most cases, however, butter makers and managers have been anxious and willing to remedy the defects when the same have been pointed out to them, and a considerable improvement in a large number of creameries, has been effected. A very large number of plants have been found to be well kept and operated, and a few were not up to standard of cleanliness demanded by a reasonable interpretation of the spirit of the law. The butter makers of a creamery in Butler county and the manager of a creamery in Delaware county were each fined \$25.00 and costs for maintaining creameries that were inexcusably unclean.

WORK OF ASSISTANT DAIRY COMMISSIONER.

The work to be done by the assistant dairy commissioner is not specified in the statute authorizing his appointment, and a very large part of his efforts have been in expert instruction and assistance to a large number of butter makers. The present assistant commissioner, Mr. P. H. Keiffer, since his appointment on January 1, 1903, has visited 174 creameries, some of them twice and a few of them three times. So popular has been his work among the creameries that demands for his assistance have been much more numerous than he could meet. The state should have at least five assistant commissioners, if it desires to carry out fully the inspection of creameries and the instruction and assistance of butter makers and patrons. There is given in this report some suggestions by the assistant commissioner

founded upon experiences which he has met in the discharge of his duties and which it is believed will be helpful to butter makers in general.

FARMERS' INSTITUTES.

In October, 1902, the dairy commissioner sent circular letters to the officers of the farmers' institutes of the state urging them to use at least half a day of their sessions in the discussion of the dairy business and offering the assistance of the department without expense to the institutes. A much larger number of institutes than ever before devoted a part of their time to the dairy subjects and the dairy commissioner attended and addressed thirty-one farmers' institutes during the winter season and sixteen farmers' meetings during the summer and early fall. While Iowa is the greatest dairy state in the union, judged by the aggregate amount of butter produced, she is, it is believed, just at the beginning of a probable, certainly a possible, development along dairy lines that will make the record of the future surpass that of the past, especially in the profits derived from the industry. While the time of the dairy commissioner is largely taken up in the other business of his office, certainly the spirit of the law authorizing his appointment demands that he should assist in every way possible in the work of pointing out to the farmers of the state the possible profits in dairying and the way to attain them, and for this reason he has spent considerable of his time in attending farmers' institutes and other similar meetings.

The condition of the dairy business in the state is not all that could be desired. As frequently pointed out in these reports, the dairy business booms when other lines of agriculture return but meager profits. During the year up to 1898, prices of farm products other than butter were extremely low and uncertain. From and including 1898, prices of other farm products have been very high. This is the chief factor which accounts for the present ebb in the dairy business. Without doubt, the introduction of the hand separator and the centralizing plants have reduced the output of creamery butter in this state, as is pointed out elsewhere in this report under the discussion of hand separator statistics. One of the striking features which the statistics of the last several years show is that the number of skimming stations in Iowa is steadily and rapidly decreasing.

In the boom times of creamery building, beginning about 1896 and before the advent of the hand separator and the system of shipping cream by rail from patron to creamery, about the only method by which a creamery could increase its product was by the use of the skimming station system. There have been a number of disastrous failures of the creamery companies that have operated a central plant and numerous skimming stations. There have been other failures, more or less complete and equally disastrous in the aggregate, of smaller concerns with only a few skimming stations, each. If one may judge the future by the past history of the skimming station idea, it seems to be only a question of a few years until the skimming station will be a thing of the past. It is difficult to make a general statement that will apply in every case, but it seems entirely safe to assert that it is bad policy at this time to invest any money in a skimming station. If there is patronage enough at any point to warrant the building of a skimming station, the patronage will be entirely sufficient to warrant the erection of a co-operative creamery. The difference in expense between building a skimming station and a creamery is very small and the difference in expense in operating them is still less.

There are two creameries in the state, within fifty miles of each other and operating under very similar conditions, but upon entirely different plans. Each of them has about six hundred patrons, but one of them has not only a churning plant but eight skimming stations. This creamery has an investment in the creamery of \$5,000.00 and reports the average value of the skimming stations at \$2,500.00, which makes the total investment \$25,000.00. This creamery makes 175,000 pounds of butter. The other creamery has an investment of \$5,000.00 in the creamery and makes 540,000 pounds of butter. It is evident that the expense in the first of these plants must include the wages of eight skimming station operators, as well as the wages of the men who operate the churning plant, and hence the expense of operating this system of skimming stations will be very much larger than the expense of operating the other creamery, which makes three times as much butter. And it is evident that when two creameries such as these get into competition, that the creamery with the skimming stations must certainly give way to the creamery that has no skimming stations.

The creamery operator who invests his money in a skimming station, in a very large number of cases, is almost certain to lose a large part of his investment.

A large number of centralizing plants are now in operation in this state and a still larger number are apparently about to be built and the question to be settled in the dairy business of Iowa is whether these plants will take the place of the smaller creameries of the state.

The dairy department of the Iowa State College has been carrying on a scoring contest during the year 1903 in which this department was invited to assist. The assistant dairy commissioner has been at Ames during the scoring of each lot of butter and has endeavored to visit those buttermakers whose butter has shown serious defects and to locate the cause of the defects and to remedy them. The results obtained have been very gratifying and valuable.

ASSISTANT DAIRY COMMISSIONER.

I beg to submit an account of a few of the experiences I have encountered during the past few months which may be found beneficial to those who are interested in the manufacture of butter.

At the first scoring of the Ames contest some butter was exhibited which scored very low. One package in particular scored 78 points, due to a tallowy flavor, and the butter had the appearance of being process butter. Another package had a score of 88, which had a very peculiar, unclean flavor, not one which might be termed a wintry flavor, but a very stale flavor so much different from any other butter there that it was easy to carry the impression of the flavor in one's mind. I visited both these creameries, and in the first one visited—the one scoring 78—I found that the room where the butter was made where the cream vat was located and the cream was kept, had the same strong tallowy sickening flavor, due possibly to not being properly ventilated and the room not being kept strictly clean. The churn was in very bad condition and had the same odor as the room. These people immediately bought a starter can and secured some culture, bought a new churn and cleaned up the room and the result at the next scoring was decidedly better.

The importance in quality was recognized by the commission men, and so notified the secretary of the creamery.

In visiting the other creamery alluded to, I found it rather a difficult matter to locate the cause of that peculiar flavor in the butter, because the machinery was practically new, the building was clean inside, and especially where the butter was made. But I found the milk room to be in a rather unclean condition, but could not lay the blame wholly to that. I asked the butter maker whether or not he used a starter for ripening his cream and he said he did not, but it being in the spring of the year when it was still cold, it was necessary for him to use something in order to ripen his cream for churning, and I rather suspected that he was using buttermilk, but he said to me that he was not. I told him I could not understand where the peculiar flavor got into his butter, being a whole milk plant and the milk arriving in good condition. I finally got him interested enough in the matter so that he admitted that he used something in the cream and I ask him to show me what it was. He went to his cooling room and brought out a ten-gallon can of cream which was fairly frothing over at the top. It had a doughy appearance and a flavor identical with his butter, which he very readily recognized as being the same flavor as that of his butter. When I asked him how he happened to be using that to ripen his cream, he said that during the winter the cream would not ripen, so he saved out a ten-gallon can of cream every morning, which he continued doing during the whole winter. This produced a peculiar bacteria in there, which predominated and controlled the flavor of his cream and butter. He stopped using this as a starter, and he also made a good showing at the next scoring.

Another incident which I wish to call to the attention of butter makers is the temperature of churning and the degree of acidity of the butter at the time it is churned. In visiting a certain creamery one morning, I found that the cream was fairly sweet, did not contain very much acid, but did not take the temperature of the cream. The butter maker ran the cream into the churn and started to churn. After the churn had revolved a few minutes he stopped it, and I supposed that it was to pull the plug and let the gas out, but noticing the churn was not set in motion again, I examined to see what the trouble was, and found that the butter had already come, that the cream was churned. I waited until he drew off his buttermilk, at which time I took a sample of his buttermilk, made a test of it there, and we found that there was over 1 per cent butter fat in the

buttermilk, due undoubtedly to the high temperature of the cream when it was churned.

In relation to starters I wish to say that the butter makers who are using starters in this state are making a high and uniform grade of butter and are having practically no fault found with their goods by their commission houses. After inspecting the milk at a certain creamery one morning, I found that the butter maker had an excellent starter. It is customary for him to have an excellent starter. This starter was used to ripen his cream out of which he made a package of butter to be sent to the Ames contest. I took a pint jar full of this starter down to his neighboring creamery and got his neighbor to use it to ripen his cream with in making his butter to be sent to the Ames contest for scoring. He was very particular in selecting his skim milk for this starter, pasteurized it and when cooled down to the proper temperature added the starter. The next morning he made his butter for the Ames contest. As far as I was concerned, I gave this matter no more attention for the time being. The next week I was at Ames to take note of the scoring.

After the scoring was finished, there were five tubs of butter found to have scored very high. Three scored 98 and two scored 98 1-2. It was found that one of the 98 1-2 butter was made by the man from whom I got the starter and the 98 butter was made by the man to whom I took the starter. After the butter was scored the second time in New York and the average taken for the two scorings, the man to whom I had taken the starter won out, the other one being a very close second.

There are other things besides the starter that are very important in butter making, among which are the milk pump and pipes that connect the milk to the tempering vat. I had an experience this summer in this connection that fairly frightens me when I recall my butter making days. The particular creamery of which I am now speaking has one of our best butter makers in the state, a man who always scores high, keeps his creamery in a good clean condition and has the best of standing among his patrons and board of directors. But for some reason or another, he found himself making butter that had a very strong musty flavor,—so bad that it was almost impossible to eat it. I undertook to assist him in running down the cause of this musty flavor, inspected his creamery very carefully in the afternoon and still was not satisfied that I had found the cause of this flavor. The next morning I inspected the milk very closely

as it came in and the butter maker started the separators, and after they had been in operation a few minutes, to test the cream, I found that it had that very strong musty flavor. I was quite certain that I had let no milk pass which was not A-1 so that I concluded the trouble must be in the milk pump and pipe, but the butter maker assured me that he steamed them out every day (and I am satisfied that he did) and that the trouble could not be there, but that it might possibly be due to some feed that was fed to the cows. But as I had not been able to discover any bad odors in the milk, I was quite confident that this peculiar flavor was added to the milk after it had left the receiving vat, and so informed the butter maker, and told him if he would stop his machinery and let us clean the pump I thought that we could avoid trouble. He stopped the machinery and we took the pump apart, and he immediately discovered where his musty flavor came from. It was so strong that we could smell it in the creamery. We took the hose and steamed the pump for nearly five minutes but were unable to kill the musty odor, so I suggested that we take the pump all apart and burn it out. The farmers who hauled their milk that morning came in and also the directors, as they had been notified the previous afternoon, who all took part and helped us take the pump apart. I then threw the milk pump, which was an ordinary rotary pump, into the fire box of the boiler and burned it out, and every piece of pipe was put in the fire and burned out, after which, when it was cooled, we adjusted the pump and pipe after the delay of about an hour and set the machinery in motion and got as fine cream from those separators as it is possible to get from ordinary milk. This man has since scored very high in recent contests, and we were all greatly pleased to locate the trouble. This merely goes to show that with all the care that may be exercised in a creamery, one is liable to overlook matters that are of great importance, which are considered minor matters at the time.

A certain creamery had been writing to the dairy commissioner and myself in regard to his tests, which were very low, stating that some of the milk had tested as low as 1.8 per cent. I visited the creamery as soon as possible and told the secretary and manager that I wanted to take a sample of every man's milk that had tested below 3 per cent. They furnished me bottles for the purpose and I took samples from twenty-four pa-

trons whose milk had been tested below 3 per cent. When the milk was in I went to the tester to test the same, but found that the spindle was loose from the circle which holds the bottles. Upon starting the tester, the spindle would start first, followed by the wheel, and while it was possible to speed the spindle, the matter of estimating the actual speed of the bottles was all guess work. I informed the parties that I could not make the tests with this tester and refused to do so, but took the samples I had to another creamery, the manager going with me, and made the test there in a machine that was all right, and the difference in the result of my tests and that of the manager was considerable. My lowest test was 3.4 per cent and my highest 4.4 per cent, which proved to my mind that the motion of the loose tester was too slow to separate the fat.

I notice that some butter makers occasionally steam their churn by taking a steam hose and opening up the cover of the churn, holding the steam hose in hand and letting the steam blow into the opening of the cover. This way of steaming does not have the required effect upon the churn, because it is impossible to heat the churn to any extent and the presence of the steam there has no effect upon the unclean bacteria. The way to steam the churn is to fasten the cover down and put the steam hose in the bung hole of the churn and fasten it and then steam the churn for fifteen or twenty minutes in this way and heat it up so that the wood will be fairly hot on the outside.

The preceding incidents are only mentioned in order to show the different causes for trouble in the creameries. No trouble ever arises for which there is not a cause; and when properly investigated the cause can be located and corrected.

P. H. K.

OLEOMARGARINE.

The new national oleomargarine law has been in force since July 1, 1902, so that statistics are at hand for the year ending June 30, 1903. The make of oleomargarine for the year just preceding the new national law was 126,315,427 pounds. For the first year under the new law the make was 71,211,344 pounds, a decrease of 55,104,183 pounds, or 44 per cent. The following table shows the number of fifty-pound tubs of oleomargarine made during September in the Chicago oleo factories:

MONTHS.	1903	1902	1901
July.....	18,562	53,100	75,849
August.....	22,360	27,800	63,268
September	34,096	37,100	80,594

The total make for the whole United States for the months of July and August during the last three years has been as follows:

1901.....	15,814,835 pounds.
1902.....	9,002,054 pounds.
1903.....	5,795,125 pounds.

A careful study of the foregoing figures will show clearly that there has been a very great decrease in the amount of oleomargarine made in the United States, and that the decrease seems to be more and more the longer the law is in effect. For many years the opponents of the oleomargarine traffic have been putting forth the claim that there was a small legitimate trade for oleomargarine sold as such, but that the bulk of the oleomargarine trade was only possible when the oleomargarine was colored in imitation of butter and sold so that the ultimate consumer was deceived into thinking that it was butter. The figures from the internal revenue department given above seem to prove that this assertion is borne out by the decreased sale of so-called "uncolored oleomargarine" even when the oleomar-

garine was given a slight yellow color as has been the case with most oleomargarine put on the market since July 1, 1902.

It was to be expected that manufacturers of oleomargarine would make every effort to avoid the regulations and restrictions of the new law and that they would also use every legal means to weaken the value of the law by adverse court decisions. A number of expedients were resorted to by them, but the only one that seemed to be effective was the use of palm oil in very small quantities. This was successful in evading the spirit of the law until a chemist was found who could detect in the oleomargarine the small quantity of palm oil that had been used.

Following the discovery that certain manufacturers of oleomargarine had been using palm oil, the internal revenue department assessed against a number of them very large sums under the feature of the law which requires the payment of ten cents per pound on oleomargarine having in it any "artificial coloration." These sums of money they have been obliged to pay and they are now suing the government for the return of the money so paid and these suits, of course, raise all the points that have been urged against the oleomargarine law, and the determination of them will go very far towards settling the exact meaning of the law and determining the future effect of it. In the meantime the make of oleomargarine decreases still more because the manufacturers are not using the palm oil now as it is alleged by the department of internal revenue they were doing last year.

The oleomargarine interests have also succeeded in getting a case before the Supreme Court of the United States on appeal from the United States District Court, Southern District of Ohio, the determination of which will have a very important bearing on the future success of the law. While it is true that the law has been a large part of what its supporters hoped for and that the enforcement of it has been rigidly carried out by the internal revenue department, and all the suits, under this law so far have been determined in favor of the support of the law, yet it is also true that the butter interests should not now give up the fight against oleomargarine, and must be warned against assuming that the battle for honesty in the sale of both butter and oleomargarine has been won. The oleomargarine interests are, as always, well supplied with money and loth to give up a business that has made them wealthy, and they are certain to use every possible means to avoid the enforcement of the law, to weaken its effect by adverse court decisions and if possible to have some

of its obnoxious features repealed. The dairy interests should be more than ever on guard so that we shall not lose what has been obtained by most strenuous efforts during the past four or five years. The National Dairy Union and its officers who have led in the fight for the recent oleo law, have proved themselves to not only earnest but successful opponents of the enemies of the dairy industry. For reasons of self-interest the organization ought to receive the active financial support of every man who believes that oleomargarine ought to be sold for what it is, and not, as has been the case for so many years, sold for and in the place of butter.

For a considerable number of years there have been scarcely any retail dealers in the state of Iowa; not more than two or three licenses have been issued each year. The reason for this is that it was extremely easy in Iowa to convict a man for the sale of colored oleomargarine and practically all the oleo put on the market was of this variety, hence, no dealer would take out a license if he fully understood the Iowa law, and the fact that the dairy commissioner would certainly find him out and easily succeed in having him fined for selling yellow oleomargarine. As a result of the effort made by all manufacturers of oleomargarine immediately after the new law went into effect and of their representations and misrepresentations to Iowa dealers in regard to the Iowa law, a large number of grocery and meat market men in all parts of Iowa, but principally in the large cities, took out licenses for the sale of oleomargarine. It will be remembered that the new law reduced the retailer's license fee from \$48.00 a year to \$6.00 a year. Two hundred and five licenses were issued in Iowa in the year ending June 30, 1903. It was early discovered that only a few of the dealers that had taken out licenses were selling any large quantities of oleomargarine. It was not thought best to make a crusade against the retailers, but rather to make one case against a prominent dealer who would be certain to oppose prosecution and if possible to have the case carried to the supreme court and a decision rendered on that feature of our law which is held to forbid the sale of oleomargarine "having a yellow color." There is no question in regard to any state law which forbids the sale of oleomargarine which has been artificially colored in imitation of butter, but there seems to have been no decision rendered by any court of last resort which bears directly upon the part of the Iowa law mentioned above. Early in January the dairy commissioner purchased from the Armour

Packing Company in the city of Des Moines a quantity of uncolored oleomargarine, which, nevertheless, had a considerable tinge of yellow, and after some effort an indictment was secured charging the Armour Packing Company with having sold oleomargarine "having a yellow color." The commissioner was assured that the Armour Packing Company was as anxious as himself to have the supreme court pass upon this feature of the law at the earliest date possible. However, this desire on the part of the Armour Packing Company has not prevented their attorneys from using every technical means to delay the suit. The first trial of the case resulted in a disagreement of the jury; a jury under peculiar instructions. The second trial, before the same judge, but with slightly different instructions to the jury, resulted in a conviction. The Armour Packing Company then interposed an objection to the form of the indictment, an objection which had nothing whatever to do with the meaning of the oleo law, but was simply a technical error in wording the indictment which compelled the court to set aside the verdict. Instead of dismissing the case, as he might have done, the judge sent the indictment back to the grand jury for correction. On the meeting of the grand jury in September the indictment was again returned and again objected to by the attorneys for the Armour Packing Company and up to this date, November 1st, the case has not come to trial. However, upon convicting the Armour Packing Company the dairy commissioner sent out the following circular to the 205 dealers in the state:

DES MOINES, IOWA, May 12, 1903.

DEAR SIR,—From the records of the Internal Revenue office I understand you are selling so-called "uncolored" oleomargarine, and this letter is addressed to you for your information in regard to the laws of this state governing the sale of oleomargarine, or substitute for butter.

One of the provisions of the law is that the substitute for butter sold must not have a yellow color, and this department holds that this provision means that it must not have any shade of yellow. In order that the courts might pass upon this phase of the law a test case was made against the Armour Packing Company in Des Moines, upon the sale of a tub of "uncolored" oleomargarine, which nevertheless had a slight shade of yellow color. On May 8th this corporation was convicted on an indictment charging the sale of oleomargarine "having a yellow color."

It is the duty of the dairy commissioner to enforce the law against the sale of oleomargarine in this state. I have refrained from making suits against the numerous dealers until this test case could be decided. This case having resulted in conviction, I am sending you this statement, in the belief that you will, without further efforts on the part of this office, desist

from selling oleomargarine having any shade of yellow color, whether it be called "colored" or "uncolored." Respectfully,

H. R. WRIGHT,
Dairy Commissioner.

A considerable number of the men who held licenses in the state answered this circular, saying that the sale of oleomargarine was not a success with them and had been only an experiment, the result of which would prevent them from attempting the sale of oleomargarine in the future. On October 15, 1903, there was not a single license for the sale of oleomargarine held in the Northern District of Iowa, and only six in the Southern District of Iowa. There will doubtless be a few more licenses taken out before next July. The dairy commissioner hopes to secure a final conviction in the case mentioned above, and a supreme court interpretation of the law which will support the contention that a man may not sell oleomargarine in Iowa if it has a yellow color.

RENOVATED BUTTER.

LIST OF RENOVATED BUTTER FACTORIES.

COUNTY.	LOCATION.	FIRM NAME	POSTOFFICE ADDRESS.
1 Calhoun	Rockwell City	Andrew Wood Co.	Rockwell City
2 Clayton	McGregor	The J. D. Bickel Produce Co.	McGregor
3 Dallas	Redfield	Smith Produce Co.	Redfield
4 Des Moines	Burlington	Iowa Grain & Produce Co. .	Burlington
5 Dickinson	Spirit Lake	The Stevens Co.	Spirit Lake
6 Keokuk	Keota	Keota Produce Co.	Keota
7 Lee	Keokuk	Iowa Pure Butter Co.	Keokuk
8 Polk	Des Moines	E. M. Ellingson Co.	Des Moines
9 Polk	Des Moines	Schermerhorn-Shotwell Co.	Des Moines
10 Polk	Des Moines	MacRae Bros.	Des Moines
11 Wayne	Humeston	Jas. L. Humphrey, Jr.	Humeston
12 Washington	Washington	T. L. Emery & Son.	Washington
13 Woodbury	Sionx City	N. R. Hathaway	Sionx City

The foregoing table shows the names and locations of the thirteen process butter factories of the state of Iowa. All of these factories have been in operation for the year ending July 1, 1903, and have made to this office quite complete reports of the amount of business done, and the table given below shows the aggregate for the state. For obvious reasons the amount of business done by each factory is not given. It is sufficient to say that the product of these factories ranges in amount from

50,000 pounds to 2,250,000 pounds each, and that seven of them put out half a million pounds of butter each, annually.

BUTTER.	Year ending July 1, 1902—reports from nine factories	Year ending July 1, 1903—reports from thirteen factories.
Pounds of renovated butter made.....	4,530,388	9,193,450
Average per factory.....	503,376	707,188
Sold for consumption in Iowa.....	991,323	2,168,276
Shipped outside the state.....	3,539,065	7,025,174

It is impossible to state just how much of the stock from which this butter was made was produced in Iowa, for the reason that some of it changes hands a number of times before it comes to the process factory and so the renovator cannot tell the origin of the butter. Perhaps not more than one third of it is Iowa butter originally.

NATIONAL STATISTICS.

Number of pounds of renovated butter made.....	54,658,790
Total number of factories, about.....	63

The managers of these factories have shown a disposition to obey in all its features the United States Renovated Butter Law, although they have objected very strenuously to some features of the law, as well as some of the rulings of the Secretary of the Treasury and the Secretary of Agriculture. Their business, moreover, shows a remarkable increase over the business done in the previous year. Attention is called to the fact that the figures for the year ending 1903 are statistics for the first year under the new renovated butter law and the figures for the year ending July 1, 1902, are the statistics for the year immediately preceding the operation of the United States Renovated Butter Law. This large increase is doubtless due to the fact that before the law went into effect butter was renovated in a small way by a very large number of factories. The taxing feature of the law has served to concentrate the business in the hands of the larger operators, as will be clearly shown by the average product of the thirteen factories of the state. There is every reason to believe that the business of renovating butter and selling the same is one of the most profitable branches of the dairy industry at the present time. In this connection there is given herewith

a letter from the Secretary of Agriculture to the Secretary of the National Association of the Process Butter Manufacturers in answer to a request on the part of the process butter manufacturers that the word "process" might be substituted for the word "renovated" in branding the product when it is put upon the market. Further experience has shown that the Secretary of Agriculture is right at least when he says "Evidence is constantly accumulating that full and cordial compliance with the existing regulations is no real impediment to the business. * * * Those who keep the name 'renovated butter' most prominent in all their transactions and especially in the retail trade, are now doing the best business."

WASHINGTON, D. C., January 6, 1903,

[Copy of letter to Mr. W. B. Goodhue, Secretary of the National Association of Process Butter Manufacturers, Chicago, Ill.]

DEAR SIR,—Referring to the interview with yourself and your associates of the executive committee of your association on the twentieth of last November, and correspondence which has ensued, I wish to assure you that full and earnest consideration has since been given to the matters presented. It has been my aim to study, in all its aspects, the fifth section of the Act of Congress approved May 9, 1902, commonly known as the Oleo Law, with reference to the provisions and purposes of that section and the duties thereby assigned to the Secretary of Agriculture.

The manifest purpose of the section named is two-fold: First, to insure the food product now known by law as "Renovated Butter" or "Process Butter" (as defined in section 4 of the same act), being healthful and wholesome, by subjecting the materials going into the manufacture of the same, the factories and storehouses, and the products of such manufacture, to sanitary inspection at the discretion of the Secretary of Agriculture; second, to cause the manufactured product to be marked, labeled, and branded "in such manner as may be prescribed by the Secretary of Agriculture," with the object of maintaining the identity of this particular kind or grade of butter for the benefit of all persons handling the same, including the ultimate purchasers for consumption.

It is not understood that your committee or the members of your association made any serious objection to the first purpose stated. On the contrary, I have been gratified to find that, during the half year that this law has been in operation, the officers authorized by me to perform this inspection service have been courteously received and given every facility for the proper discharge of their duties. Manufacturers have, indeed, appeared to favor this inspection, and have made a point of advertising the fact in connection with the sale of their products. The inspection feature of the law and its administration seem to require no further present consideration.

The "needful regulations for carrying this section into effect" were formulated and promulgated in conjunction with the Secretary of the Treasury. The sole object in this connection was to prescribe such "marks, labels or

brands' as would accomplish the spirit of the law, as recognized in the second purpose above described. In so doing, the counsel and advice of the Attorney-General was sought; and the 'needful regulations' received the approval of that officer.

The special request of your committee was to amend the existing regulations so as to change the required name and marking of the product from 'Renovated Butter' to 'Process Butter.' It is deemed inexpedient to change the regulations in this particular. No objection is made to the use of the words 'Process Butter' by the manufacturer in describing and marking his product, but the regulations prescribe that this shall be in addition to, and not in place of, the words 'Renovated Butter,' and in no way more conspicuous. 'Renovated Butter' has been established as the government designation and for the required marking, because it is correctly descriptive of the product, significant, and fulfills the purpose of the law, while it is also approved by public opinion. Several states have laws upon their statute books which require this commodity to be distinctly marked by this name wherever sold or exposed for sale. This fact undoubtedly had influence upon the congress in connection with this legislation. That such state laws meet with public approval is shown by the failure of repeated attempts to repeal them. To adopt a name and manner of marking for general use at variance with existing laws in several states, would result in confusion, prove obstructive to business, and be detrimental to the interests of interstate commerce. The state officials known as Dairy Commissioners and Food and Dairy Commissioners have been consulted, and their opinions are practically unanimous in favor of the existing regulations. They regard the name and marking now required as accomplishing the desired end and as satisfactory to the vast majority of persons concerned. On the contrary they consider the name 'process' indefinite, almost meaningless, unsuited to the manifest purpose of the law, and tending to defeat its main object. Other representative men have expressed like views. It seems proper also to consider the sentiments of prominent organizations of dairymen, representing the producers of untaxed butter, whose interests the congress undoubtedly had in view when framing the law in question. The expressed sentiment of those bodies, so far as ascertained, including those in a number of important dairy states, is equally unanimous in favor of 'Renovated Butter' as the required mark and brand of this product.

Practical difficulties in administration preclude the use of two names, together or alternately, in equal prominence, for a single article which is the subject of legislation, taxation, and surveillance with a view to regulation and commercial identification. After careful consideration, 'Renovated Butter' was selected as the official and legal designation of the product, and for its conspicuous branding. Nothing has occurred since the law went into effect, in connection with its administration and no new views have been advanced, which seem to justify a change. It is believed that this fundamental regulation is essential to the efficient administration of the law.

The same reasons apply to markings required upon renovated butter for export. The suggestion of one name and manner of marking for domestic trade and a different one for the same article when exported, is deemed entirely impracticable. Such a dual arrangement would be an obstruction

to business and would complicate administration and add greatly to its expense. The simplest and most sensible rule on this subject is that in the existing regulations: "All renovated butter for export must be stamped and marked the same as for the domestic market."

In making these decisions it is my conviction that while they accord with the spirit of the law, they are not detrimental to the best interests of manufacturers. Evidence is constantly accumulating that full and cordial compliance with the existing regulations is no real impediment to the business. Although the changes in markings and appearances were not fully understood by retail merchants and their customers in July, the temporary shrinkage in trade has been overcome where proper effort has been made. Manufacturers and their agents who have exerted themselves to explain the facts and convince customers that they were getting the same goods as before, or better, are not now finding the name and markings obstructive. On the contrary, those who keep the name 'Renovated Butter' most prominent in all their transactions, and especially in the retail trade, are now doing the best business. The timidity of retailers can be removed by a little effort, and if manufacturers are able to give satisfaction as to the quality and price of their product, they will, it is confidently believed, soon find that dealers and consumers are alike indifferent to the substance and style of labels and marks, except for the purpose of recognition and identification.

It is my opinion that renovated butter should be regarded as a legitimate food product and that no needless restriction should be placed upon its manufacture and no obstruction to its trade, so long as it is made and sold under its right name.

The intent of the law is evidently to require clean and sound materials, sanitary methods of preparation, and a wholesome product. And, in addition, such plain marking and handling at all points as to insure complete identification and honesty in trade, whether in domestic markets or for purposes of export.

I shall be pleased to see that all regulations are made and enforced necessary to accomplish these essential features and beyond this that, in all minor matters, the wishes and convenience of manufacturers and merchants are duly considered and complied with so far as practicable. Rulings have already been made which show my purpose in this respect. Arrangements will be made at once for packing in half-pound prints, and other requests will receive proper attention. This can be done without material changes in the existing regulations. No revision seems to be necessary at the present time.

In performing my share of this administrative duty I shall endeavor to convince the members of your association that I act without prejudice and with the earnest purpose of obeying the law in letter and in spirit, and of doing justice to all concerned.

Very truly yours,

JAMES WILSON,
Secretary.

The prices of renovated butter for the year ending November 1, 1903 are shown in the table below and compared with the prices of creamery butter.

DATE.	Renovated butter.	Creamery extras.
November, 1902	21.0 c.	26.5 c.
December, 1902	21.9 c.	29.2 c.
January, 1903	21.5 c.	27.62c.
February, 1903	18.87c.	26.0 c.
March, 1903	18.80c.	28.60c.
April, 1903	18.87c.	27.25c.
May, 1903	18.0 c.	22.0 c.
June, 1903	18.40c.	21.60c.
July, 1903	17.75c.	20.12c.
August, 1903	17.0 c.	19.40c.
September, 1903	17.0 c.	20.75c.
October, 1903	17.0 c.	21.0 c.

SHOWING AVERAGE MONTHLY PRICE OF FANCY WESTERN CREAMERY BUTTER IN NEW YORK MARKET.

MONTH.	Twelve months ending Nov. 1, 1885.	Twelve months ending Nov. 1, 1896.	Twelve months ending Nov. 1, 1897.	Twelve months ending Nov. 1, 1898.	Twelve months ending Nov. 1, 1899.	Twelve months ending Nov. 1, 1900.	Twelve months ending Nov. 1, 1901.	Twelve months ending Nov. 1, 1902.	Twelve months ending Nov. 1, 1903.
November	\$.2510	\$.2330	\$.2112	\$.2325	\$.2337	\$.2600	\$.2487	\$.2412	\$.2650
December	.2440	.2500	.2250	.2290	.2160	.2720	.2540	.2510	.2920
January	.2519	.2206	.1900	.2040	.1975	.2450	.2262	.2125	.2762
February	.2334	.2000	.2050	.2042	.2100	.2500	.2250	.2362	.2600
March	.2670	.2185	.1900	.1937	.2075	.2550	.2212	.2840	.2860
April	.2000	.1650	.1880	.1980	.1962	.1960	.2099	.2325	.2725
May	.1785	.1572	.1530	.1580	.1790	.2012	.1900	.2275	.2200
June	.1794	.1550	.1500	.1687	.1831	.1950	.1925	.2195	.2160
July	.1770	.1505	.1500	.1687	.1835	.1960	.1960	.2131	.2012
August	.1980	.1571	.1675	.1800	.2000	.2100	.2050	.1990	.1940
September	.2125	.1600	.1930	.2025	.2262	.2150	.2110	.2170	.2075
October	.2204	.1850	.2290	.2235	.2400	.2190	.2200	.2332	.2100
Average value per lb. for each year	\$.2100	\$.1882	\$.1885	\$.1971	\$.2065	\$.2278	\$.2165	\$.2416	\$.2417

THE PRODUCT OF IOWA'S CREAMERIES.

It is impossible to get complete returns from all the creameries. The following table shows the figures of milk and cream received and butter made at 601 of the 661 creameries of the state, and in a general way at least shows the relative amount of milk and cream produced and brought to the creameries in each county. The reports show very generally that four pounds of cream are necessary to make one pound of butter and so about 17,500,000 pounds of butter or about 29 per cent of all that was reported was made from cream instead of from milk.

TABLE SHOWING NUMBER OF POUNDS OF MILK RECEIVED, NUMBER POUNDS OF CREAM RECEIVED, POUNDS OF BUTTER MADE, POUNDS SOLD TO PATRONS IN IOWA AND SHIPPED OUTSIDE THE STATE, SO FAR AS REPORTED BY THE CREAMERIES.

COUNTIES.	Number reporting.	Pounds of milk received.	Pounds of cream received.	POUNDS OF BUTTER MADE AND MARKET FOR SAME.				
				Number reporting.	Pounds made.	Pounds sold to patrons.	Pounds sold in Iowa.	Pounds shipped out of the state.
THE STATE	601	975,906,837	69,628,449	601	59,042,487	3,924,489	3,945,978	51,772,020
Adair	8	18,781,323	183,859	8	855,826	25,902	10,411	810,513
Adams	1	3,000,000	13,000	1	120,000	1,200	1,020	110,880
Allamakee	6	11,428,020	2,523,858	6	1,167,578	93,977	21,115	1,109,380
Audubon	11	20,286,055	471,849	11	994,103	78,063	3,250	962,190
Benton	8	9,530,918	112,713	8	974,093	7,146	21,820	345,123
Black Hawk	14	24,987,484	2,730,987	14	1,287,458	207,367	243,073	830,918
Boone	3	5,004,876	438	3	244,204	12,000	34,110	198,148
Bremer	20	63,540,159	6,238	20	2,847,263	253,344	57,233	2,530,030
Buchanan	11	46,653,180	990,774	11	2,205,786	171,925	75,593	2,018,268
Buena Vista	4	8,253,754	289,030	4	427,027	19,711	16,681	391,535
Butler	17	38,292,174	591,590	17	1,804,287	123,700	77,094	1,658,443
Calhoun	6	5,561,960	248,709	6	909,696	19,572	19,219	930,885
Carroll	11	9,133,887	17,553	11	453,770	18,448	4,517	430,805
Cass	2	892,904	3,784	2	15,804	990		15,504
Cedar	7	5,091,240	703,132	7	456,937	19,479	89,863	347,595
Cerro Gordo	4	1,983,789	679,884	4	264,924	7,872	28,446	224,606
Cherokee	5	2,063,682	250,076	5	149,127	2,388	13,815	132,924
Chickasaw	16	34,405,713	5,131,096	16	2,680,175	197,544	72,887	2,555,518
Clay	7	11,098,614	80,336	7	523,930	39,623	23,743	460,564
Clayton	17	38,638,113	4,588,771	17	2,293,068	88,640	11,931	2,192,497

POUNDS OF MILK RECEIVED, ETC.—CONTINUED.

COUNTIES.	Number reporting.	Pounds of milk received.	Pounds of cream received.	POUNDS OF BUTTER MADE AND MARKET FOR SAME.				
				Number reporting.	Pounds made.	Pounds sold to patrons.	Pounds sold in Iowa.	Pounds shipped out of the state.
Clinton	10	13,613,748	474,000	10	683,491	13,640	68,261	601,590
Crawford	2	438,983	204,154	2	87,220	1,258	511	85,553
Dallas	4	9,390,047	40,090	4	442,376	18,828	105,873	277,675
Davis	1	845,367		1	33,688	804	5,540	27,344
Decatur	1	160,000	45,000	1	28,800	5,675	300	12,825
Delaware	22	63,339,256	128,484	22	2,823,509	258,432	220,577	2,344,556
Dickinson	4	4,604,577	200,372	4	265,229	30,336	24,680	210,213
Dubuque	18	29,181,880	6,150	18	1,378,021	98,445	114,615	1,166,961
Emmet	8	9,028,547	306,877	8	478,110	43,454	8,499	426,207
Fayette	20	57,539,164	351,937	20	2,623,556	263,501	153,541	2,208,514
Floyd	5		2,941,478	5	710,836	36,316	16,319	658,196
Franklin	6	10,971,377	301,432	6	496,567	30,699	12,474	453,796
Greene	3	2,079,447	25,195	3	89,806	1,263	38,243	50,294
Grundy	8	16,745,241	404,532	8	794,009	71,299	12,916	709,794
Guthrie	7	14,483,231	216,338	7	751,449	29,103	55,004	667,282
Hamilton	6	12,995,277	117,421	6	608,023	54,117	4,449	549,457
Hancock	8	6,147,433	556,870	8	382,408	15,515	3,429	363,464
Hardin	11	20,632,971	643,071	11	1,019,113	73,287	34,179	911,647
Harrison	2	2,355,659	1,200	2	103,427	10,580	48,694	44,153
Henry	1	689,549		1	33,597	1,419	825	31,353
Howard	9	13,635,871	1,953,850	9	1,083,322	36,243	1,396	1,045,683
Humboldt	11	10,625,025	869,722	11	678,056	59,482	1,166	617,408
Iowa	2	8,016,301	345,637	2	215,701	4,460	2,000	199,141
Jackson	8	12,183,468	1,189,746	8	791,516	185,748	69,114	536,654
Jasper	11	13,327,979	477,505	11	785,115	21,889	32,370	730,865
Jefferson	4	4,801,448	95,624	4	234,179	11,780	8,152	214,247
Johnson	4	1,812,192	285,570	4	145,065	7,785	24,260	113,020
Jones	1		87,248	1	24,307			24,307
Keokuk	13	51,393,619	506,891	13	2,331,521	163,465	113,289	2,054,767
Keokuk	3	448,970	138,694	3	51,850	204		51,646
Kossuth	20	35,653,208	962,065	20	1,908,137	188,842	66,698	1,652,597
Linn	17	21,080,687	80,209	17	1,154,310	64,406	128,444	963,410
Louisa	1		72,000	1	1,800		5,000	13,000
Lucas	1	22,500		1	1,112	90	1,022	
Lyon	4	771,675	597,302	4	121,322	2,467	9,605	109,450
Mahaska	2	502,639	280,000	2	99,757	3,564	28,564	57,621
Marion	1		167,176	1	42,822		13,973	28,844
Marshall	6	5,720,222	1,978,994	6	658,746	20,062	31,221	607,453
Mitchell	10	1,504,040	5,479,775	10	1,798,183	51,720	318,315	1,428,148
Monona	1		12,853	1	8,714	67	130	3,517
Monroe	1	1,331,800		1	52,292	2,808	13,464	36,960
Montgomery	1	850,000	30,000	1	46,828	3,000	13,323	30,000
Muscatine	2	300,000	469,200	2	123,900	1,100	43,400	73,400
O'Brien	4	4,902,317	281,815	4	295,667	71,720	20,777	203,110
Osceola	2	2,450,000	103,031	2	135,572	220	2,624	133,326
Page	3	2,176,700	1,017,425	3	846,007	2,900	82,000	261,707
Palo Alto	14	32,524,788	1,335,501	14	1,861,018	136,201	75,572	1,539,245
Plymouth	4	7,067,986	221,784	4	370,218	21,925	7,332	350,961
Pocahontas	7	2,618,579	957,672	7	391,311	10,711	4,605	375,995
Polk	4	2,620,429	1,970,538	4	629,193	11,232	351,919	263,642
Pottawattamie	3	1,054,225	269,096	3	114,015	4,898	28,426	80,691
Poweshiek	4	2,532,126	826,120	4	324,780	4,906	45,320	274,554
Ringgold	1	135,202		1	5,116	529		4,587
Sac	8	8,157,866	1,471,849	8	689,625	41,013	42,404	605,606
Scott	2	657,000	410,000	2	131,880	1,200	89,000	441,180

POUNDS OF MILK RECEIVED, ETC.—CONTINUED.

COUNTIES.	Number reporting.	Pounds of milk received.	Pounds of cream received.	POUNDS OF BUTTER MADE AND MARKET FOR SAME.				
				Number reporting.	Pounds made.	Pounds sold to patrons.	Pounds sold in Iowa.	Pounds shipped out of the state.
Shelby	7	8,746,092	889,087	7	587,016	32,941	2,742	545,333
Sioux	5	1,778,728	1,526,169	5	592,330	5,538	14,178	572,684
Story	12	21,542,343	407,916	12	992,620	103,209	168,767	720,644
Tama	5	1,307,314	1,371,001	5	403,917	1,504	2,641	403,762
Taylor	2	1,339,730	2,196,330	2	613,635	2,200	10,000	608,485
Union	2	3,031,374	101,928	2	188,090	7,875	7,608	152,607
Van Buren	2		227,420	2	53,853	500	9,000	47,355
Wapello	2	1,855,790	4,349	2	80,011	1,800	29,486	48,725
Warren	2	1,985,000		2	83,050	3,759	23,050	56,250
Washington	5	3,267,066	1,028,912	5	343,085	2,616	64,112	324,357
Wayne	1	4,103,734		1	172,666	3,000		169,800
Webster	4	3,728,753	524,138	4	248,972	7,896	37,036	204,040
Winnebago	9	21,920,535	481,313	9	1,011,717	117,484	29,477	873,750
Winneshiek	16	920,000	6,238,020	16	1,592,451	20,157	85,440	2,480,848
Woodbury	2		1,173,620	2	341,607	4,276	4,276	332,053
Worth	10	12,261,629	1,089,650	10	823,797	64,053	15,516	740,322
Wright	6	1,301,189	1,213,381	6	356,307	23,101	15,348	317,858
THE STATE	601	975,906,837	69,626,444	601	59,042,487	3,924,450	3,945,478	51,772,020

Average make of butter per creamery, 97,770 pounds. On this basis the 601 creameries of the state make 64,565,970 pounds.

COMPARISON BY YEARS.

ENDING MAY 1—	1900.	1901.	1902.	1903.
Average pounds of butter per creamery.....	104,918	105,491	104,152	97,770
Total pounds of butter for all creameries.....	84,965,062	82,701,944	77,835,696	64,565,970

Of the creamery butter made, 15.4 per cent was consumed in Iowa.
The figures for 1903 are for the year ending July 1st.

TABLE SHOWING NUMBER OF COWS FOR EACH COUNTY AND FOR THE STATE FOR THE YEARS 1895, 1900, 1901, 1902, 1903, AND VALUES FOR 1903.

Figures are from census of 1895 and the reports of county auditors to the state auditor for the years 1900, 1901, 1902 and 1903.

COUNTY.	VALUE.	NUMBER.				
	1903.	1903.	1902.	1901.	1900.	1895.
THE STATE.....	\$ 32,181,179	1,370,082	1,423,348	1,882,242	1,295,960	1,087,250
Adair.....	300,992	17,013	17,724	16,192	14,050	9,685
Adams.....	278,773	11,925	12,524	11,857	7,669	
Allamakee.....	314,507	13,639	13,395	13,550	12,677	12,289
Appanoose.....	300,540	11,518	12,012	11,910	10,928	8,142
Audubon.....	208,902	13,282	13,673	12,920	11,581	8,276
Benton.....	422,616	17,959	18,668	18,653	17,407	14,508
Black Hawk.....	433,989	17,908	19,072	18,647	17,807	17,865
Boone.....	293,922	14,289	15,169	14,543	13,631	11,121
Bruwer.....	454,042	17,065	17,492	17,689	17,071	18,001
Buchanan.....	385,984	10,506	17,816	17,605	17,254	18,790
Buena Vista.....	382,030	15,028	15,914	15,046	14,094	9,924
Butler.....	370,188	15,564	16,157	15,954	15,434	14,401
Calhoun.....	275,046	13,758	14,215	13,544	12,380	9,929
Carroll.....	327,915	16,538	15,825	16,172	14,407	10,823
Cass.....	345,430	14,200	14,446	13,872	12,169	9,813
Cedar.....	428,088	16,615	17,929	17,807	16,475	12,710
Cerro Gordo.....	555,980	12,718	12,252	12,609	11,745	10,089
Cherokee.....	304,568	12,466	13,377	13,909	11,743	8,882
Chickasaw.....	357,487	14,890	15,773	15,382	15,807	16,058
Clarke.....	240,251	10,108	10,701	10,298	9,397	6,887
Clay.....	226,293	12,110	12,464	12,782	11,689	8,394
Clayton.....	580,564	21,724	21,714	21,698	20,850	21,732
Clinton.....	470,376	19,541	19,706	19,583	19,167	21,272
Crawford.....	358,255	17,344	16,917	16,997	14,997	11,401
Dallas.....	328,761	15,152	15,346	14,169	13,703	10,512
Davis.....	249,080	10,620	10,260	10,252	9,877	7,242
Decatur.....	322,700	13,210	14,515	17,331	12,040	8,196
Delaware.....	444,448	21,334	20,838	21,163	20,301	20,777
Des Moines.....	228,694	8,779	8,624	8,501	7,793	7,525
Dickinson.....	157,261	6,502	7,010	6,842	6,188	4,018
Dubuque.....	498,738	18,169	18,054	19,065	17,844	19,372
Emmet.....	150,694	7,598	7,080	6,712	5,894	3,834
Fayette.....	524,208	21,798	23,018	22,575	22,352	23,734
Floyd.....	283,934	12,008	12,462	12,920	12,654	12,654
Franklin.....	282,217	13,680	13,801	13,056	12,117	11,820
Fremont.....	204,049	8,744	8,602	8,214	7,497	5,348
Greene.....	287,412	14,050	14,062	13,873	12,955	10,399
Grundy.....	344,134	14,559	15,177	15,214	14,778	13,000
Guthrie.....	390,389	16,197	17,354	15,961	14,555	8,384
Hamilton.....	371,723	15,267	16,099	15,585	14,441	12,769
Hancock.....	231,356	11,580	11,573	11,160	10,008	7,475
Hardin.....	376,047	15,519	17,113	15,825	14,669	11,959
Harrison.....	292,124	4,325	14,986	14,214	12,061	9,286
Henry.....	208,090	8,264	8,798	8,409	8,621	7,074
Howard.....	291,157	12,638	13,051	13,081	11,995	11,010

NUMBER OF COWS, ETC.—CONTINUED.

COUNTIES.	VALUE.	NUMBER.				
	1903.	1903.	1902.	1901.	1900.	1895.
Humboldt.....	220,321	10,695	11,081	11,266	10,358	8,546
Ia.....	213,698	8,949	9,472	9,308	8,165	5,950
Iowa.....	404,040	16,996	17,175	17,382	15,457	12,270
Jackson.....	409,132	16,684	16,750	16,270	15,337	15,149
Jasper.....	478,442	18,689	18,662	17,974	16,201	13,870
Jefferson.....	248,120	9,110	9,675	9,306	8,228	7,465
Johnson.....	452,314	7,893	17,549	17,897	17,430	12,156
Jones.....	490,022	17,757	18,175	19,145	18,450	18,347
Keokuk.....	340,152	14,279	14,922	14,263	13,840	10,126
Kossuth.....	439,488	21,239	22,912	21,467	19,846	14,120
Lee.....	289,071	11,118	10,868	10,623	10,570	8,914
Linn.....	497,067	21,212	22,071	20,153	20,646	24,393
Louisa.....	187,976	7,345	7,675	7,256	6,701	5,503
Lucas.....	243,948	10,138	10,227	9,837	9,238	7,217
Lyon.....	236,298	10,724	10,350	9,231	8,239	5,301
Madison.....	289,802	13,773	15,988	14,095	13,300	9,426
Mahaska.....	329,660	13,676	13,919	13,725	12,840	10,328
Marion.....	311,124	13,063	13,226	12,667	11,225	9,624
Marshall.....	343,848	15,891	16,496	15,557	14,167	12,331
Mills.....	234,952	9,255	9,803	9,089	8,588	5,522
Mitchell.....	279,964	11,684	12,063	11,744	11,198	10,965
Monona.....	234,980	11,651	12,525	11,573	11,757	6,739
Monroe.....	231,452	8,981	9,152	8,222	6,533	
Montgomery.....	225,504	10,853	10,984	10,462	9,907	6,970
Muscataine.....	287,962	10,228	9,193	11,040	10,104	9,233
O'Brien.....	262,835	17,728	12,895	12,356	11,023	10,179
Osceola.....	155,043	7,142	7,118	6,435	5,391	3,858
Page.....	344,753	13,061	14,067	11,875	12,750	8,084
Palo Alto.....	284,990	14,764	14,764	14,389	10,269	
Plymouth.....	365,964	17,868	16,848	16,219	14,563	10,811
Pocahontas.....	254,784	13,493	14,083	14,191	12,790	9,354
Polk.....	392,116	15,082	15,492	14,315	13,616	11,578
Pottawattamie.....	614,124	21,933	22,356	21,378	18,336	14,457
Poweshiek.....	359,680	15,978	16,220	15,327	14,780	12,190
Ringgold.....	298,883	12,525	13,332	12,723	12,311	8,514
Sac.....	368,502	15,615	16,546	15,472	14,658	11,344
Sac t.....	393,207	14,717	14,899	14,995	14,204	12,779
Shelby.....	365,840	16,674	17,990	17,117	15,195	9,522
Sioux.....	390,214	16,839	16,137	14,838	13,469	9,016
Story.....	346,733	15,082	16,017	15,112	14,394	12,216
Tama.....	433,461	16,461	18,098	17,974	17,028	13,653
Taylor.....	286,570	13,577	12,321	13,453	11,833	8,894
Union.....	280,832	12,024	12,735	11,590	11,344	7,510
Van Buren.....	248,248	9,154	9,247	9,096	8,678	7,132
Wapello.....	230,892	9,672	9,877	9,608	8,925	7,685
Warren.....	347,320	14,888	15,106	14,084	13,022	9,417
Washington.....	304,666	12,381	11,267	12,972	12,020	9,086
Wayne.....	322,276	13,413	14,064	14,450	13,178	8,543
Webster.....	405,080	16,196	16,135	15,438	14,028	13,462
Winneshiek.....	187,448	11,519	11,769	10,450	9,368	7,100
Winnebago.....	448,656	18,613	18,834	19,093	17,809	16,410
Woodbury.....	308,184	15,078	16,139	16,106	13,885	10,285
Worth.....	242,301	11,385	11,980	11,630	11,386	9,758
Wright.....	261,477	12,836	13,796	13,749	12,191	10,103

THE STATE..... \$ 32,181,179 1,370,082 1,423,348 1,882,242 1,295,960 1,087,250

Average value of cows, \$23.48.

Lowest reported value, Winnebago county, \$16.27.

Highest reported value, Appanoose county, \$31.08.

The very low average value is accounted for by the fact that the assessors include as "cows" all the animals not included in the classification "heifers one year old," and "heifers two years old."

Heifers two years old, 332,476; average value, \$18.36; total, \$6,103,178.

Heifers one year old, 516,071; average value, \$13.51; total, \$6,974,484.

NUMBER OF CREAMERY PATRONS.

The following table gives the number of patrons of the creameries, so far as reported and, as in the case of a number of creameries, the figures show a decided decrease from those of a year ago. The table shows that of the 661 creameries now in operation in Iowa, only 194 use a commercial starter, and of these only a few use a commercial starter every month in the year. There are a number of things which have been definitely settled in regard to creamery operation, and one of them is that the intelligent use of a commercial starter every day in the year will raise the quality of butter very decidedly. The most successful creameries, and the creameries making the highest grade of butter, the creameries that receive a cent and a half above extras, are operated by butter makers who are especially skillful in the use of starters, and the man who expects to continue in the butter making business and to better his condition and be able to make better butter than he does now, will be obliged to adopt the use of a starter. The assistant dairy commissioner points out a number of first-class butter makers who are making butter that will score about 92 or 93, and who are capable of making butter that will score three or four points higher if they would take pains to familiarize themselves with the use of a starter.

TABLE SHOWING NUMBER OF PATRONS, COWS, CREAMERIES USING ACID TEST, CREAMERIES THAT PASTEURIZE THE SKIMMED MILK AND CREAMERIES THAT USE A SKIMMED MILK WEIGHER.

COUNTIES.	No of creameries reporting.	No. of patrons reported.	No. of creameries reporting number of cows.	No. of cows reported.	No. of creameries using commercial starter.	No. of months commercial starter is used.	No. of creameries using test for acidity of cream.	No. of creameries that pasteurize skimmed milk.	Using skimmed milk weigher.
THE STATE.....	592	65,510	477	891,077	194	.....	189	203	275
Adair.....	8	1,092	6	5,605	4	9	4	2	5
Adams.....	1	200	1	500	.....	.....	.....	.....	.....
Allamakee.....	6	1,352	6	7,710	3	9	2	1	.....
Audubon.....	11	1,104	9	6,975	9	8	8	7	3
Benton.....	6	656	2	600	5	.....	4	7	3
Black Hawk.....	16	1,382	11	7,711	5	9	5	9	8
Boone.....	3	240	3	2,350	2	9	2	2	3
Bremer.....	20	1,068	16	15,141	5	12	0	4	13
Buchanan.....	10	1,932	6	9,104	2	10	2	8	5
Buena Vista.....	4	444	2	2,495	2	7	3	3	3
Butler.....	17	1,845	14	10,317	3	8	4	8	8
Calhoun.....	7	901	6	5,970	3	10	3	4	6
Carroll.....	11	571	10	3,800	4	8	2	5	6
Cass.....	2	145	1	436	1	12	1	2	2
Cedar.....	7	656	5	3,923	.....	.....	.....	1	1
Cerro Gordo.....	3	225	3	1,960	.....	.....	.....	1	.....
Cherokee.....	5	220	4	1,560	3	9	2	2	.....
Chickasaw.....	16	2,364	14	17,751	2	8	3	6	5
Clay.....	7	500	5	2,754	3	10	4	6	3
Clayton.....	17	2,453	13	18,775	5	8	7	3	4
Clinton.....	11	702	9	4,900	2	9	1	7	4
Crawford.....	3	851	2	1,172	2	7	3	1	1
Dallas.....	4	565	2	1,850	2	12	1	3	2
Davis.....	1	120	.....	.....	1	12	1	1	1
Delaware.....	20	1,784	18	15,456	9	10	11	14	11
Dickinson.....	4	252	3	1,280	3	8	2	2	2
Dubuque.....	10	950	17	9,705	6	6	4	4	10
Emmet.....	8	492	9	4,056	3	12	1	4	8
Fayette.....	19	2,464	13	14,262	12	7	6	12	6
Floyd.....	5	1,073	3	5,820	.....	.....	2	.....	3
Franklin.....	8	933	6	4,345	1	6	2	5	3
Greene.....	3	146	2	629	1	6	1	1	.....
Grundy.....	9	749	9	6,706	2	12	1	4	4
Guthrie.....	7	1,011	4	3,690	3	12	1	5	5
Hamilton.....	7	629	6	4,100	3	9	4	5	1
Hancock.....	9	594	6	3,400	2	8	3	4	4
Hardin.....	11	1,367	11	10,404	2	11	5	7	8
Harrison.....	3	177	2	840	2	9	1	2	2
Henry.....	1	59	1	300	1	12	1	1	1
Howard.....	9	1,276	6	7,843	.....	.....	2	2	3
Humboldt.....	11	678	10	4,880	3	9	3	5	10
Ia.....	2	213	2	1,800	1	12	1	1	.....
Iowa.....	8	834	7	4,580	3	10	4	2	7
Jackson.....	10	762	9	6,482	2	5	4	6	7
Jasper.....	3	293	1	960	1	12	.....	.....	.....

NUMBER OF PATRONS, COWS, ETC. - CONTINUED.

COUNTIES.	No. of creameries reporting.	No. of patrons reported.	No. of creameries reporting number of cows.	No. of cows reported.	No. of creameries using commercial starter.	No. of months commercial starter is used.	No. of creameries using test for acidity of cream.	No. of creameries that pasteurize skimmed milk.	Using skimmed milk weicher.
Jefferson.....	4	231	3	1,455	2	10	2	.....	1
Johnson.....	2	254	1	366	.....	.....	.....	.....	.....
Jones.....	16	1,557	10	8,962	4	9	1	5	7
Keokuk.....	3	189	2	605	.....	.....	1	1	.....
Kossuth.....	21	1,494	16	10,729	4	12	3	8	16
Linn.....	16	1,083	13	7,090	6	9	6	8	12
Louisia.....	1	80	1	500	1	12	.....	.....	.....
Lucas.....	1	30	1	250	.....	.....	.....	1	.....
Lyon.....	4	296	4	2,320	1	8	1	2	2
Mahaska.....	1	67	2	1,100	.....	.....	.....	.....	.....
Marion.....	1	151	1	1,000	.....	.....	.....	.....	.....
Marshall.....	6	1,025	4	4,714	2	7	1	1	2
Mitchell.....	9	1,754	7	9,684	2	8	3	1	1
Monona.....	1	65	1	400	1	12	1	.....	.....
Monroe.....	1	82	1	575	.....	.....	.....	.....	1
Montgomery.....	1	130	1	700	1	12	1	1	.....
Muscatine.....	2	335	1	850	.....	.....	.....	.....	.....
O'Brien.....	5	477	3	2,700	1	6	1	3	5
Osceola.....	2	233	1	800	.....	.....	.....	2	.....
Page.....	3	546	1	600	1	6	1	.....	.....
Palo Alto.....	15	1,639	13	14,542	7	10	4	7	12
Plymouth.....	5	349	5	3,090	1	6	1	.....	4
Pocahontas.....	7	398	6	2,225	1	10	3	2	3
Polk.....	3	458	1	900	.....	.....	.....	3	1
Pottawattamie.....	4	656	2	775	1	.....	.....	2	1
Poweshiek.....	4	604	3	2,344	1	12	.....	3	2
Ringgold.....	1	40	1	820	.....	.....	1	.....	.....
Sac.....	8	681	6	4,990	1	6	3	7	1
Scott.....	2	238	2	2,072	.....	.....	.....	.....	.....
Shelby.....	7	917	5	3,800	3	10	3	4	1
Sioux.....	4	763	5	5,835	3	10	3	3	3
Story.....	12	1,271	10	7,350	5	8	6	8	5
Tama.....	3	322	2	1,250	.....	.....	1	2	.....
Taylor.....	2	680	1	640	.....	.....	1	.....	1
Union.....	2	209	1	400	2	12	2	2	.....
Van Buren.....	2	325	2	1,800	.....	.....	.....	.....	.....
Wapello.....	1	80	1	600	1	3	1	2	1
Warren.....	2	150	.....	.....	1	6	.....	2	1
Washington.....	4	772	5	3,733	2	7	2	3	.....
Wayne.....	1	651	.....	.....	.....	.....	1	.....	.....
Webster.....	2	315	2	1,159	.....	.....	2	3	2
Winnobago.....	9	1,093	8	7,065	2	10	2	7	6
Winneshiek.....	15	2,329	12	16,026	2	11	.....	.....	1
Woodbury.....	1	400	1	3,200	1	12	.....	.....	.....
Worth.....	10	938	10	6,910	4	9	3	7	3
Wright.....	7	563	4	1,496	.....	.....	1	2	1
THE STATE.....	592	65,510	477	391,077	194	.....	189	293	275

The average number of patrons per creamery is 110.

Total number of creamery patrons for the 661 creameries of the state is 72,710.

The average number of cows per creamery is 862.

Total number of cows for the 661 creameries of the state is 569,782.

COMPARISONS.

	1899	1900	1901	1902	1903
Number of patrons of creameries.....	90,384	91,417	89,376	81,532	72,710
Average number of patrons per creamery.....	116	113	114	109	110
Total number of cows.....	625,512	631,829	627,984	579,700	569,782
Average number of cows per creamery.....	804	781	801	775	862
Average number of cows per patron.....	7	7	7	7	8

PASTEURIZATION OF SKIMMED MILK.

A very large proportion of the creameries of the state are operated either in whole or in part on the creamery separator plan and very largely heat the skimmed milk before it is returned to the patrons. There has been a very considerable amount of discussion in regard to the methods of prevention of foam, which is the one objection to the pasteurization of skimmed milk at the creameries. The experience of numerous butter makers, who have tried numerous plans, is convincing that there is no successful method of preventing, absolutely, the foaming of the skimmed milk when it is heated by the introduction of steam into the milk. The foam, however, can be taken care of at slight expense so that it will not be at all annoying.

For some unknown reason practically every creamery has been built with the skimmed milk tank inside, a fact for which there exists no necessity. A skimmed milk tank built outside the creamery at a reasonable distance from it and situated over the drain, is the ideal skimmed milk tank, and in any case, in order that the foam may be controlled, the skimmed milk tank must be a closed tank. There should be a man-hole in the cover of the tank so that it can be cleaned, and besides the opening of the inlet and outlet for the passage of the skimmed milk, there should be another opening in the cover of the tank from which a tin or sheet iron pipe twelve or fourteen inches in diameter leads down and is finally connected with the drain. Such a device is cheap and easily made by any tinner and will effectually dispose of any amount of foam that may arise.

CREAMERY AND SKIM STATION VALUES.

One of the most extraordinary things in the history of the creamery industry is the fact that so many creameries have been built in places where there was no demand for a creamery, and in too many cases too little need of one, and that the prices paid have been in so many cases from 25 to 50 per cent. more than the real value of the finished plants. The following table will show the average values of the creameries of the state to be \$3,830.00, which is a much higher figure than ever before reported. This is accounted for by reason of the fact that so many of the smaller and cheaper creameries have closed this year and so are not included in the figures that go to make up the average value of \$3,830.00. The creameries of the state range from \$1,500.00 to \$20,000.00 each in value.

The dairy commissioner's report for 1900 contained some figures relating to the first cost of creameries built in that year. Creameries having but one separator ranged in cost from \$2,200.00 to \$4,250.00 and the average cost was \$3,150.00. These figures may be taken as the average first cost of the ordinary creamery. Yet it seems easy for the creamery promoter to get into a community and sell a second-class creamery outfit for about \$4,500.00, at least half of which is clear profit to himself for a few months work. That this has been done too often is one of the reasons why so many of our creameries are closing now. They were built where there was not sufficient demand for them, they cost more than they were worth, and the necessity of replacing some of the machinery almost as soon as the plant was started and the costliness of the whole experiment was a very discouraging fact that in many cases could not be overcome.

A number of creameries have lately been built in Iowa in which a large tank of water is supposed to furnish the "refrigeration." This is an abominable contrivance which results in a very wet, mouldy, ill-smelling butter room, that always has a temperature almost as high as that outside and which serves absolutely no good purpose. If creamery associations would do

their own organizing, buy their machinery and supplies of the well-established and reputable houses, they would be well advised in regard to appliances and apparatus and would save one-fourth to one-half the original cost of their plants, and a good deal of annoyance and disaster that arises when too high a price is paid for inferior machinery.

WAGES OF BUTTER MAKERS.

The following table also shows the maximum and minimum and average wages paid, so far as reported in the several counties and the average wages for the state. A good many smaller creameries in which low wages were paid have been closed and so the average wage is considerably higher than ever before. But it is also true that employing creameries are offering a higher scale of wages than ever before. Five years ago few butter makers received as much as \$75.00 per month and many were working for \$40.00 or less, while now \$75.00 per month is common among butter makers and a good many get \$100.00 per month and a few receive more. The larger creameries have found that they cannot afford to employ a cheap and incompetent man, and the smaller ones are discovering that they cannot compete unless they also have a man who is competent to make good butter. Butter makers used to pride themselves on getting a half cent premium, but the man who draws \$75.00 to \$100.00 per month for making butter nowadays must be able to command a good deal larger premium on his butter than a half a cent a pound. A cent and a half premium seems to be about the standard nowadays and many of our butter makers are getting it. They are the modern fellows who have kept up with the times and have improved and so are making better butter now than they did last year and the year before that. The dairy commissioner had numerous requests to furnish high grade butter makers to creameries during last summer, and has been unable in most cases to mention any high grade man who was not already getting a good salary. The upward tendency of butter makers wages is one of the hopeful signs in the dairy business.

TABLE SHOWING THE AVERAGE VALUE OF CREAMERIES, OF SKIM STATIONS, THE MAXIMUM, MINIMUM, AND AVERAGE WAGES OF BUTTER MAKERS PER MONTH.

COUNTIES.	Number of creameries reporting.	Average value of creameries reporting.	Number of skim stations reporting.	Average value of skim stations reporting.	Number of butter makers reported.	Minimum wages paid.	Maximum wages paid.	Average wages paid.
THE STATE.....	550	\$3,830	67	\$1,580	563			\$59.38
Adair.....	8	4,387	3	1,900	7	\$55.00	\$65.00	61.90
Adams.....	1	7,000	3	2,500	1			77.50
Allamakee.....	6	3,250			5	40.00	75.00	52.00
Audubon.....	9	3,444			10	50.00	125.00	75.90
Benton.....	7	4,857	1	1,200	6	50.00	100.00	74.16
Black Hawk.....	16	4,218	1	1,500	18	37.50	100.00	60.30
Boone.....	3	3,866			2	55.00	85.00	70.00
Bremer.....	19	3,521			20	37.60	85.00	64.57
Buchanan.....	9	4,033	5	1,520	11	50.00	112.50	70.81
Buena Vista.....	4	3,875	2	1,500	5	50.00	100.00	64.00
Butler.....	18	2,760	4	1,550	14	80.85	85.00	63.20
Calhoun.....	8	3,800	2	1,100	4	50.00	60.00	52.50
Carroll.....	9	3,238			7	50.00	65.00	57.14
Cass.....	2	4,100			2	65.00	65.00	65.00
Cedar.....	6	2,118	2	1,300	3	45.00	60.00	51.60
Cerro Gordo.....	3	3,766			3	45.00	60.00	50.53
Cherokee.....	5	2,560			2	40.00	50.00	45.00
Chickasaw.....	14	3,521			16	50.00	110.00	66.70
Clay.....	7	3,428			5	40.00	65.00	55.60
Clayton.....	13	4,730			16	40.00	100.00	60.72
Clinton.....	8	3,450	1	500	5	50.00	75.00	55.62
Crawford.....	3	3,666			2	60.00	83.33	71.66
Dallas.....	4	3,250	2	1,750	4	50.00	65.00	55.00
Davis.....	1	2,000	1	1,000	1			50.00
Decatur.....	1	2,800			1			50.00
Delaware.....	21	3,152	1	1,500	21	40.00	105.00	61.20
Dickinson.....	4	3,500			4	50.00	80.00	62.50
Dubuque.....	19	2,974			18	38.00	80.00	50.35
Emmet.....	9	3,400			9	50.00	75.00	60.55
Fayette.....	20	3,575	1	2,000	19	50.00	100.00	63.46
Floyd.....	5	2,900			4	50.00	60.00	56.87
Franklin.....	9	3,322	1	2,000	8	50.00	96.00	62.50
Greene.....	3	3,510			1			60.00
Grundy.....	9	3,422			8	45.00	70.00	58.75
Guthrie.....	6	4,550	1	1,500	7	45.00	70.00	58.14
Hamilton.....	6	3,800	1	2,000	4	60.00	90.00	71.25
Hancock.....	9	3,022	2	1,450	8	45.00	65.00	55.60
Hardin.....	12	3,900	3	2,266	12	40.00	80.00	62.00
Harrison.....	3	3,033			2	60.00	60.00	60.00
Henry.....	1	2,500			1			65.00
Howa d.....	8	3,437			6	50.00	67.00	57.00
Humboldt.....	12	2,766			11	45.00	81.00	57.18
Ida.....	2	2,750			2	65.00	65.00	65.00
Iowa.....	8	3,510	1	1,400	8	40.00	75.00	60.62
Jackson.....	8	3,037	2	1,875	10	50.00	62.00	54.20
Jasper.....	5	3,400			4	50.00	65.00	58.75
Jefferson.....	4	3,250			4	40.00	60.00	53.75
Johnson.....	2	2,000			1			60.00
Jones.....	15	4,700	2	2,000	16	45.00	100.00	59.00
Keokuk.....	2	2,750			1			60.00

VALUE OF CREAMERIES, ETC.—CONTINUED.

COUNTIES.	Number of creameries reporting.	Average value of creameries reporting.	Number of skim stations reporting.	Average value of skim stations reporting.	Number of butter makers reported.	Minimum wages paid.	Maximum wages paid.	Average wages paid.
Kossuth.....	21	3,405			21	42.00	75.00	58.27
Linn.....	18	3,722	2	1,750	13	40.00	70.00	51.00
Louisa.....	1	1,000			1			50.00
Lucas.....	1	2,500	1	2,000				
Lucas.....	5	3,200			5	20.00	60.00	46.00
Lyon.....								
Mahaska.....	2	3,500			2	40.00	40.00	40.00
Marion.....	1	3,000			1			87.50
Marshall.....	6	3,250			6	52.00	75.00	60.40
Mitchell.....	9	2,311			9	25.00	65.00	55.22
Monona.....	1	3,000						
Monroe.....	1	3,000						60.00
Montgomery.....	1	3,000			1			55.00
Muscatine.....	2	2,500			4	40.00	60.00	63.75
Muscatine.....	5	3,910	1	800	4	55.00	60.00	57.50
O'Brien.....	2	5,000			2			
Osceola.....								
Page.....	2	6,000			2	50.00	60.00	55.00
Palo Alto.....	15	3,140	1	1,500	15	45.00	83.00	63.12
Plymouth.....	5	3,000			5	45.00	85.00	57.00
Pocahontas.....	7	1,800			5	45.00	65.00	51.00
Polk.....	4	6,125	2	1,350	4	50.00	65.00	56.00
Pottawattamie.....	6	4,450	2	1,100	5	45.00	75.00	57.00
Poweshiek.....	3	3,000	2	1,200	5	50.00	65.00	57.50
Ringgold.....	1	3,000			1			45.00
Sac.....	9	4,644	1	1,800	7	40.00	65.00	50.71
Scott.....	2	3,250			1			60.00
Shelby.....	9	3,333	1	1,000	7	50.00	80.00	58.42
Sioux.....	6	3,500			5	50.00	65.00	57.00
Story.....	11	4,818			12	50.00	60.00	61.00
Tama.....	4	3,125			4	50.00	65.00	55.00
Taylor.....	2	3,250			2	50.00	50.00	50.00
Union.....	4	4,125	3	700	4	45.00	60.00	52.50
Van Buren.....	2	2,600			2	40.00	45.00	42.50
Wapello.....	2	1,450	1	1,000	1			50.00
Warren.....	2	2,750	1	1,200	2	40.00	50.00	45.00
Washington.....	5	3,260			4	30.00	100.00	52.50
Wayne.....	1	10,000	1	2,500	1			50.00
Webster.....	4	1,837	1	2,500	4	55.00	70.00	61.87
Winnebago.....	9	3,555	3	1,650	9	20.00	100.00	64.44
Winneshiek.....	14	2,818	1	600	14	30.00	85.00	50.00
Woodbury.....	1	2,000			1			65.00
Worth.....	10	2,770	1	2,500	9	50.00	75.00	62.50
Wright.....	7	2,957			5	45.00	60.00	49.00
THE STATE.....	550	\$3,830	67	\$1,580	563			\$59.38

AVERAGE WAGES OF BUTTER MAKERS.

1897.....	\$50.04	1900.....	\$53.80
1898.....	53.63	1901.....	55.72
1899.....	52.77	1903.....	59.38

The average value of skim stations, according to the foregoing table, is \$1,580. The average value of creameries is \$3,830. On this valuation the 661 creameries and 181 skim stations of the state have an aggregate value of \$2,787,611, and the 661 butter makers are paid wages amounting to \$471,000 annually.

HAND SEPARATORS IN IOWA.

The first statistics of hand separators secured for use in the dairy commissioner's reports were obtained in the year 1898. It is evident that any reports made will fall below the actual facts. A number of creameries neglect to report in regard to the number of separators in use and there is no way of determining how many they have. This is true for each of the years, so that for purposes of comparison the figures given below are sufficiently correct and, indeed, it is believed that they do not in any instance fall much below the actual facts.

NUMBER OF HAND SEPARATORS REPORTED.

1898	1899	1900	1901	1902	1903
904	1,762	3,332	5,231	8,323	16,841

The introduction of the hand separator into Iowa creamery methods has caused something like a revolution in the last six years. The total number of creamery patrons is now estimated to be about 75,000, of which more than 16,000 are using hand separators. This is more than 20 per cent. of the total creamery patronage of the state. It is also estimated that 14,500,000 pounds of butter are made from hand separator cream. There are in the state 38 creameries that are practically receiving nothing but hand separator cream. Two-thirds of the creameries of the state receive cream from one or more hand separators. There are forty-five plants which report that they receive cream shipped to them by rail and of these forty-five plants eleven are receiving nearly all their cream by rail and are properly called centralizing plants. In this connection, attention is called to the fact that sixty-one skim stations have been closed in the state during the last year, and the tendency seems to be to substitute for the skimming station the hand separator and the shipping of cream. The skimming station has been found to be a very expensive addition to the local creamery and for this reason it seems certain that the skimming stations will soon disappear.

In the following table, which shows the number of hand separators and number of pounds of butter made, the figures for the number of separators are taken exactly as given in the reports from the creameries and, as suggested before, are slightly incomplete. The figures giving the number of pounds of hand separator butter made are estimated in the following manner: It is assumed that the number of pounds of hand separator butter made by a creamery is in the same proportion to the whole amount of butter made as the number of hand separator patrons is to the whole number of patrons.

COUNTIES.	No. of creameries reporting hand separators.	Hand separators reported.	No. of exclusive hand separator creameries.	No. receiving cream by rail.	No. of pounds of hand separator butter made.
THE STATE.....	410	16,841	88	45	14,594,800
Adair.....	6	177	.....	.....	100,000
Adams.....	1	32	.....	.....	20,000
Allamakee.....	5	455	.....	.....	400,000
Audubon.....	7	179	1	.....	197,500
Benton.....	3	16	.....	.....	10,000
Black Hawk.....	8	248	1	2	107,000
Boone.....	1	1	.....	.....	.....
Bremer.....	2	6	.....	.....	8,000
Buchanan.....	8	311	.....	1	230,000
Buena Vista.....	3	260	1	.....	228,000
Butler.....	10	93	1	.....	75,000
Calhoun.....	6	216	.....	1	55,800
Carroll.....	4	140	1	1	100,000
Cass.....	3	159	.....	1	100,000
Cedar.....	5	48	.....	.....	35,000
Cerro Gordo.....	7	273	1	1	225,000
Cherokee.....	2	59	1	1	40,000
Chickasaw.....	14	782	2	.....	844,000
Clay.....	5	36	.....	.....	25,000
Clayton.....	17	1,868	4	4	1,015,800
Clinton.....	6	99	.....	2	75,000
Crawford.....	3	330	.....	2	268,000
Dallas.....	3	37	.....	1	29,000
Decatur.....	1	100	.....	1	25,000
Delaware.....	6	44	.....	1	25,000
Dickinson.....	4	66	.....	.....	68,900
Dubuque.....	4	325	2	2	300,000
Emmet.....	6	94	.....	1	89,700
Fayette.....	6	108	.....	1	108,800
Floyd.....	5	432	1	.....	309,600
Franklin.....	6	141	.....	.....	97,100
Greene.....	3	10	.....	.....	8,000
Grundy.....	9	111	.....	.....	120,000
Guthrie.....	6	109	.....	.....	70,900
Hamilton.....	5	140	.....	.....	47,700
Hancock.....	9	229	1	.....	143,400
Hardin.....	8	257	.....	1	249,200
Harrison.....	1	14	.....	.....	12,000
Howard.....	5	323	.....	.....	197,200
Humboldt.....	10	139	.....	.....	135,400

COUNTIES.	No. of creameries reporting hand separators.	Hand separators reported.	No. of exclusive hand separator creameries.	No. receiving cream by rail.	No. of pounds of hand separator butter made.
Ida.	2	155			147,600
Iowa.	6	119			78,200
Jackson.	7	71			76,500
Ja-per.	3	11			14,000
Jefferson.	1	41			40,000
Johnson.	2	38			20,000
Jones.	13	147			210,000
Keokuk.	2	43			25,800
Kossuth.	14	211			260,100
Linn.	5	444	2	2	200,000
Louisa.	1	6			2,000
Lyon.	5	167	1		80,700
Mahaska.	1	18			15,000
Marion.	1	1			500
Marshall.	4	133			80,700
Mitchell.	9	446			630,400
Monona.	1	14			5,000
Montgomery.	1	45			20,000
Muscatine.	2	19			10,000
O'Brien.	3	250		1	84,000
Osceola.	2	118		1	26,500
Page.	2	400	1	1	289,000
Palo Alto.	7	34			30,000
Plymouth.	2	80	1		78,000
Pocahontas.	6	328	3		218,400
Polk.	2	375	1	2	276,000
Pottawattamie.	4	497	1	1	300,000
Poweshiek.	4	148		1	100,400
Sac.	9	171	1	1	121,200
Scott.	2	81		1	35,000
Shelby.	6	583	1	1	245,000
Sioux.	6	764	3	2	490,700
Story.	4	35			20,000
Tama.	1	157	1	1	70,000
Taylor.	2	619	1	1	540,000
Union.	2	216		1	97,500
Van Buren.	1	4			8,500
Wapello.	1	1			500
Washington.	1	14			6,000
Webster.	4	168		2	90,000
Winnebago.	4	17			37,000
Winnebuck.	15	450			315,000
Woodbury.	2	650	2	2	2,500,000
Worth.	8	216			202,300
Wright.	6	319	2	1	249,000
THE STATE.	410	16,841	38	45	14,594,800

HAND SEPARATOR CREAMERIES.

The following thirty-eight creameries make their butter almost altogether from hand separator cream. Most of them receive nothing but hand separator cream.

COUNTY.	NAME OF CREAMERY.	LOCATION.
Audubon.	Gray Creamery Co.	Gray.
Black Hawk.	Palmer-Hubbard Co.	Waterloo.
Buena Vista.	Grant Creamery Co.	Storm Lake.
Butler.	Walker Creamery.	Shell Rock.
Carroll.	Coon Rapids Creamery.	Coon Rapids.
Cerro Gordo.	J. D. Bickel Produce Co.	Mason City.
Cherokee.	Washta Creamery.	Washta.
Chickasaw.	Republic Creamery.	Republic.
	Nashua Creamery.	Nashua.
Clayton.	Elkader Creamery Co.	Elkader.
	Monona Creamery Co.	Monona.
	Blue Grass Creamery.	Watson.
	J. D. Bickel Produce Co.	McGregor.
Dubuque.	S. P. Wadley & Son.	Dubuque.
	Dubuque Butter & Milk Co.	Dubuque.
Floyd.	Niles Creamery.	Niles.
Hancock.	Kanawha Creamery Co.	Kanawha.
Linn.	Cedar Valley Creamery Co.	Cedar Rapids.
	The Cedar Rapids Butter & Cream Co.	Cedar Rapids.
Lyon.	Home Lawn Creamery.	Rock Rapids.
Page.	Clarinda Poultry, Butter & Egg Co.	Clarinda.
Plymouth.	Payne Creamery.	Kingsley.
Pocahontas.	Plover Creamery Co.	Plover.
	Pocahontas Creamery.	Pocahontas.
	Ware Creamery.	Ware.
Polk.	Des Moines Creamery Co.	Des Moines.
Pottawattamie.	Avoca Creamery.	Avoca.
Sac.	Geyer Creamery.	Storm Lake.
Shelby.	Portsmouth Creamery.	Portsmouth.
Sioux.	Alton Creamery.	Alton.
	Hull Creamery.	Hull.
	Rock Valley Creamery.	Rock Valley.
Tama.	Tama Co-operative Creamery Co.	Tama.
Taylor.	Bedford Creamery.	Bedford.
Woodbury.	Hanford-Hazelwood Cream Co.	Sioux City.
	Hopkins & Hubbard.	Correionville.
Wright.	Norway Co-operative Creamery Co.	Belmond.
	Clarion Creamery Association.	Clarion.

THE CREAMERIES OF THE STATE.

The following table shows certain statistical information in regard to the number of creameries and of skim stations and the plan on which they are organized and operated, and gives information in regard to the number of new creameries and of creameries closed or removed from the creamery list for other reasons. During the year for which these statistics are taken, 161 plants in the state of Iowa have ceased to operate. Of these plants, exactly 100 were creameries and sixty-one were skim stations. That is to say, more than one-third of the skim stations that were in operation a year ago have closed, and of these sixty-one that have closed, twenty-one were plants of the Elgin Creamery Co. that failed about a year ago.

OWNERSHIP—OPERATION—MILK BY TEST—NEW CHANGES.

COUNTIES.	OWNERSHIP— INDIVIDUAL, CO-OPERATIVE OR STOCK COMPANY.					HOW OPERATED.			REC'V'G MILK BY TEST OR BY CWT.		NEW CREAMER- IES AND SKIM STATIONS AND PLANTS CLOSED.			
	No. of creameries.	No. of skim stations.	Individual.	Co-operative.	Stock company.	Separator.	Gathered cream.	Combined plant.	By test.	By cwt.	New creameries.	New skim stations.	Total.	Plants closed.
THE STATE	661	131	306	350	136	538	119	185	748	44	25	16	41	161
Adair	8	5	8	3	2	11		2	13					3
Adams	1	2		3		3			3					
Allamakee	7		1	5	1	2	4	1	7					
Appanoose														
Audubon	11			8	3	9	1	1	11		1		1	1
Benton	8	2	7	2	1	8		2	10		1	1	2	5
Black Hawk	17		2	12	3	13		4	17					3
Boone	3	1	2	2		4			4					3
Bremer	21		1	18	2	20		1	12	9				1
Buchanan	11	6	2	5	10	14		3	17					1
Buena Vista	5	2	1	5	1	2	1	4	7					3
Butler	17	3	5	8	7	16	1	3	20		1		1	2
Calhoun	7	1	2	4	2	3		5	8					2
Carroll	12		6	4	2	10		2	10	2				1
Cass	4	3	4	2	1	7			7		3		3	6
Cedar	7	2	8		1	6	3		7	2				1
Cerro Gordo	6	1	5	1	1	2	4	1	6	1	1	1	2	1
Cherokee	4		4			2	1	1	4					3
Chickasaw	16	2	5	12	1	12	3	3	16	2				1
Clarke														4
Clay	8		4	2	2	8			8		1		1	6
Clayton	17	1	3	9	6	7	5	6	17	1				2
Clinton	10	5	11	3	1	9	1	5	15					2
Crawford	3		1	1	1	1	1	1	3					2
Dallas	5	3	3	1	4	8			8					2
Davis	1	3			4	4			4					1
Decatur	1	4	5			4		1	5			2	2	1
Delaware	22	4	6	16	4	25		1	24	2	1		1	
Des Moines														
Dickinson	4			4		2		2	4					1
Dubuque	22	1	7	12	4	21	2		18	5	3	1	4	1
Emmet	8		1	6	1	8			8					3
Fayette	19		1	18	5	17	1	1	17	2				1
Floyd	6		3	2	1	6		6	6					1
Franklin	8	2	5	4	1	4	3	3	10					2
Fremont														1
Greene	3	1	3	1		3	1		4					2
Grundy	9	1	2	7	1	6	2	2	10					4
Guthrie	8	7	9	5	1	14		1	15					2
Hamilton	8	5	6	4		11		2	13		1	3	4	2
Hancock	9	3	2	8	2	7	3	2	12		1		1	1
Hardin	13	3	5	10	1	14	1	1	16			1	1	2
Harrison	2			2		1		1	2					3
Henry	1			1		1			1					12
Howard	9		2	4	3	4	4	1	5	4				1
Humboldt	11		9	1	1	9		2	11					1
Ida	2		2			1		1	2					1
Iowa	9	1	1	8	1	9	1		10					2
Jackson	12	4	12	4		10		6	16		1		1	5
Jasper	5	1	2	2	2	4	2		5	1	1		1	3

OWNERSHIP—OPERATION—MILK BY TEST—NEW CHANGES—CONTINUED.

COUNTIES.	OWNERSHIP— INDIVIDUAL, CO-OPERATIVE OR STOCK COMPANY					HOW OPERATED			REC'D G MILK BY TEST OR BY CWT.		NEW CREAMER- IES AND SKIM STATIONS AND PLANTS CLOSED.			
	No. of creameries.	No. of skim stations.	Individual.	Co-operative.	Stock company.	Separator.	Gathered cream.	Combined plant.	By test.	By cwt.	New creameries.	New skim stations.	Total.	Plants closed.
Jefferson	3	1		3	1	4			4			1	1	2
Johnson	12		12				1	1	12					1
Jones	15	10	17	6	2	13		12	25					5
Keokuk	3		2	1		2	1		3					4
Kossuth	21	1	1	20	1	19		3	21	1				
Lee														
Linn	19	3	17	4	1	17	2	3	15	7	1		1	4
Louisa	1		1			1	1		1					1
Lucas	1	1	1		1	2			2					
Lyon	5		3	2			1	4	4	1				1
Madison														
Mahaska	2			1	1	1	1		2					
Marion	1	2	1			2	1		2	1		1	1	
Marshall	6			4	2	3	3		6					2
Mills		3			3	3			3					1
Mitchell	10		1	9		1	8	1	10					1
Monona	1		1			1	1		1		1		1	
Monroe	1		1			1			1					
Montgomery	1				1	1			1					3
Muscatine	2		2				1	1	2					1
O'Brien	5		2	1	2	3		2	4	1				
Osceola	2	1	3					3	3					2
Page	3		1	1	1	3			3					1
Palo Alto	14	1		12	8	14		1	16					6
Plymouth	5	1	1	4	1	4	2		6					4
Pocahontas	7	1	6		2	5	2	1	8					4
Polk	4	1		1	4	4	1		5		1		1	
Pottawattamie	6	2	5	1	2	5	1	2	7	1	1		1	
Poweshiek	5	2	5	2		1			7			1	1	
Ringgold	1	1	1	1		1	1		2					
Sac	10	1	8	2	1	5	2	4	11		1		1	13
Scott	2		2			1	1		2					1
Shelby	9	1	3	6	1	5	1	4	10					2
Sioux	6		5	1		1	2	3	6					1
Story	13	1	3	10	1	12		2	14					
Tama	5		4	1		2	2	1	5					4
Taylor	2		1		1	1	1		2					2
Union	4	5	3		6	3	1		6					5
Van Buren	2	1	1		2	1	2		2	1		1	1	3
Wapello	2	1	1		2	3			3		1	1	2	
Warren	2	1	2	1		3			3					2
Washington	5		4		1	2	2	1	5					
Wayne	1	3	4			4			4					
Webster	4	1	5			1		4	5					2
Winnebago	12	4	1	14	1	14		2	16		1	1	2	1
Winneshiek	16	1	8	4	5	2	12	3	17		1	1	2	
Woodbury	2	1		1		2		2	2					1
Worth	11	1	3	9		8	3	1	12					
Wright	7		2	5		3	1	3	7		1		1	2
THE STATE	661	131	306	350	136	538	119	135	748	44	25	16	41	161

* 2 Changed to cheese factories. + Error in old list. 11 changed to cheese factory.

COMPARISONS.

	1897.	1898.	1899.	1900.	1901.	1902.	1903.
Total number of creameries and skim stations. . .	891	954	967	994	960	919	792
OWNERSHIP.							
Individual	504	516	501	524	497	377	306
Co-operative	349	349	349	364	360	376	350
Stock company	87	88	116	105	102	165	135
State property	1	1	1	1	1	1	1
PLAN OF OPERATION.							
Separator			842	853	772	748	538
Gathered cream			71	85	92	105	119
Combined plant			50	56	96	65	135
BASIS OF RECEIVING MILK OR CREAM.							
By the test			849	896	890	882	748
By weight or measure			110	98	70	57	44
CREAMERY CHANGES.							
Number of new creameries	138	90	56	87	35	34	25
Number of new skim stations	43	43	36	34	18	22	16
Number of new plants closed	55	53	79	75	87	97	160

Of the 160 plants closed, as noted in above table, sixty-one were skim stations. Three plants previously reported as making butter are now making only cheese. Also five duplications on the old list were discovered. This makes a total to subtract from last year's list amounting to 168, which with the forty-one new plants, accounts for the net loss of 127 numbers from the creamery list.

CO-OPERATIVE CREAMERIES IN IOWA.

The State of Iowa has been the pioneer in every particular in the creamery business and for this reason the state has been a sort of experiment station for different methods of creamery operation and the creamery companies of this state have learned some very expensive lessons in regard to creamery operation. The result of this has been that the dairy commissioner's report every year for the last ten years has shown a considerable number of creameries and skim stations that have closed. A study of the localities where creameries have closed for any reason whatever very definitely shows that the creameries have been most nearly permanent in those counties where the co-operative creamery has been most in evidence, and the fact will also appear that it is the individual creamery more than the co-operative creamery that has succumbed to the disasters of the last three years.

It is true that the co-operative creameries have been the especial victims of creamery promoters and in a very large number of cases have paid originally for their plants much more than they were actually worth. It is also true that the management of the co-operatives has in too many cases been intrusted to persons who were incompetent to manage a business of the kind and character and volume of the ordinary creamery, and yet, notwithstanding these disadvantages, they have been largely successful and where the management has been at all competent they have easily competed with any other creameries operated on any other plan. These facts are too well established to require specific proof here and are mentioned simply to give force to the suggestion that the farmers of Iowa will do well now to stand by their own local creameries until such time as they may be thoroughly satisfied that a larger income will be theirs by patronizing some other system. The dairy business as a whole has been the victim of a desire for experimentation, and hence it has not been the certain thing that it ought to be, and might be, if the patrons of the industry would settle upon some one

method and stick to it long enough to show whether or not it would be successful, and so a very large number of creameries have started out with ample patronage and the best of prospects and have later gone into bankruptcy because a portion of the patronage desired to experiment with some other line of agriculture, or some other creamery, or some other method of marketing their produce than that of the local creamery.

Formerly the farmer had but one choice; he could either patronize the local creamery or churn his butter at home. Later, in a good many sections of the state, creameries were established close enough together so that the farmer might send his milk to either one of two or three creameries. Still later the introduction of the hand separator and of the centralizing plant that was bidding for cream to be shipped by rail, enlarged the farmer's opportunity so that he was able to choose between a number of different ways of marketing his milk or cream. Naturally and properly, the farmer desires to get the most for his product. There have been a good many creameries of which the patronage was small and the expense of operating proportionately large, that have not been able to stand the competition of the larger concern to which the cream might be shipped, and so they have been obliged to quit business. It is very evident that the result of closing such a creamery has decreased the amount of butter made in that community, for the reason that only the larger patrons who can afford the farm separator, were able to have any market at all for their product, and so the smaller dairymen were obliged to churn their butter at home or go out of business altogether, and too many of them have chosen the latter alternative. That the centralizing plants have, in some greater or less measure, succeeded in decreasing the make of butter in the state, is certain. It does not follow, however, that this is sufficient reason for condemning the larger plants. The farmer who finds a market in which he can get more for his produce than in the one that he has usually patronized cannot be blamed for selling the product of his farm in the better market. A farmer cannot be blamed for shipping his cream to a better market than his local one, even though that has the effect eventually of removing the local market, and so injuring, in a way, his neighbor, who has less produce to sell than himself. The man with twenty cows cannot be expected to take less money per pound of butter fat than he can secure elsewhere when the only advantage to be gained is that the local market

may continue for the benefit of his neighbor who has only three or four cows, particularly when the man with three or four cows is responsible in large measure for the fact that the local market is not so good as the foreign market.

There is a temptation to dairy officials and others, who look upon the creamery and dairy business as a whole, to take great pride in a large aggregate make of butter, a large number of creameries in operation, and to feel something of a personal loss when creameries are closed, but the individual farmer is not subject to this kind of a temptation. He sells his milk or cream just as he sells his hogs and cattle; that is to say, in the best market at his command. For this reason the patrons of a good many small creameries have sent their cream to the larger plants and have so closed up the smaller plants. For exactly the same reason patrons of other local creameries have not sent their cream to the centralized plants. It will doubtless continue to be the case that in some localities the farmer will patronize the central plant, and that in others he will decline to do so and will stand by his local creamery.

The co-operative creamery has long served the dairy people of Iowa. It has added great wealth to those parts of the state where it has long flourished and it will take more evidence and longer experience than is now at hand to conclusively prove that its day of usefulness is past. Not one of the larger co-operative creameries has failed to be able to meet all competition up to this time, and it is a safe prophecy to make that they will continue to do so for an indefinite time in the future. There is a field for the centralizing plants and the shipping of cream, but there is not yet any evidence at hand to show that they are to be substitutes for the co-operative creameries or the local creameries of any kind. But the whole matter is not a question of sentiment, but a question of dollars and cents, and a question that must be settled by the individual producers of milk.

WATER CONTENT OF BUTTER.

A good many people do not seem to understand the legal provisions in regard to the water content of butter. Numerous inquiries come to this office asking whether creamery or farm made butter which might contain more than 16 per cent of water should be considered "adulterated butter." Considerable pains have been taken to secure from authoritative sources accurate information in regard to the situation under the present law.

There is no law of the United States fixing any standard for butter except for those grades or kinds which are specially taxed and which are now known to the law as Renovated Butter and Adulterated Butter. The Act of May, 1902, in defining adulterated butter, says practically that everything known and passed as butter shall be deemed adulterated, "in the manufacture or manipulation of which any process or material is used with *intent* or *effect* of causing the absorption of abnormal quantities of water, milk or cream." It was evident at the outset that there must be some more definite line of distinction, for purposes of revenue administration, between adulterated butter and renovated butter, so far as this particular feature was concerned. Therefore the Secretary of the Treasury and the Secretary of Agriculture united in declaring that renovated butter having 16 per cent or more of moisture would be held to contain "abnormal quantities of water, milk or cream," and be therefore classed as adulterated butter.

This is all the law and all the regulation there is on the subject. The standard of 16 per cent was used primarily to draw the line between renovated butter and adulterated butter, in cases where the only difference was the degree of water content. Note the expression "intent or effect" in the law as above quoted.

But under a strict construction of the law it is manifest that, if renovated butter containing 16 or more per cent of water therefore becomes legally adulterated butter, the same is true of any other butter. And, although there is no regulation upon the subject, it is certainly a fact that churning at too high a

temperature or under other peculiar conditions or any other equally simple manipulation or process which has "*the effect*" of causing the product to absorb or finally contain 16 per cent or more of water, milk or cream, must be legally "adulterated butter," no matter what the "intent" may have been and regardless of the absence of any intent to accomplish this result.

A moment's thought shows that the revenue department which has in charge the enforcement of this law, is not obliged to distinguish between an "intent" and an "effect." Hence, when the effect,—namely, 16 per cent or more of moisture in butter, is discovered, it must be assumed that this has resulted from some process or manipulation and that the product must be held to be adulterated, no matter where or how made, and with what purpose or intention. Consequently, if the Commissioner of Internal Revenue should have called to his attention a case in which butter had been made by any farm dairy or any creamery, by processes usual to it or in its ordinary operations, although the conditions might be temporarily peculiar and uncommon, and which butter evidently contained 16 per cent or more of moisture or such quantity of water, milk or cream as was undoubtedly abnormal, it is probable that he would consider it his duty to administer the law impartially, declare such product to be adulterated butter and apply the prescribed penalties (which are very severe) upon the manufacturer of the article.

Penalties may also be imposed, under an equally strict interpretation of the law, upon any person who *sells* butter of this character, no matter where produced, at either wholesale or retail, because of the specific provisions regarding dealers in adulterated butter, which are contained in the Act of 1902.

From the foregoing, it is manifestly important for everybody making or selling butter of any kind, who wants to avoid the possibility of getting into trouble by being held to be a manufacturer or dealer in adulterated butter, to see to it that the butter they make or handle *does not contain* "abnormal quantities of water, milk or cream." And as two departments of the government now hold that 16 per cent or more of moisture answers that definition, everybody concerned should be on the lookout to keep below this 16 per cent standard *for all butter*, unless it is to be regarded as adulterated butter and subjected to all the legal requirements accordingly.

From the foregoing it will be seen that it is very desirable that all butter makers, whether on the farm or in the creamery,

shall be sure not to allow their product to pass from their control containing 16 per cent or more moisture. It is manifestly impossible for the revenue officials to carry on anything like complete surveillance of all the butter manufactured, but creamery and dairy butter makers should not fancy themselves secure from prosecution because they do not hear of numerous cases in which farm and creamery-made butter have been classified as adulterated butter on account of containing abnormal quantities of water. The fact is that the revenue department is operated for the purpose of revenue and not for the purpose, primarily, of discouraging violations of the revenue laws, and the policy of that department has always been to maintain secrecy in regard to penalties and fines collected. This is why the dairy and creamery papers are unable to report specific instances of the enforcement of the law, but this office is informed upon good authority that the revenue officials have made very many seizures and confiscations of every kind and description of butter, including ladled butter, creamery butter, whey butter, as well as dairy butter, because the same contained more than 16 per cent of moisture, and hence was classified as adulterated. It is fair to the revenue department to say, however, that they have not attempted to penalize innocent holders of adulterated butter, but have attempted to get back to the original maker of it, who was responsible for the incorporation of the abnormal quantities of water, and with the evident intention of first reaching those who have purposely loaded their butter with an excess of water.

The United States Department of Agriculture has issued a bulletin giving the result of an investigation of the water content of American creamery butter, from which it is shown that the average moisture content of the samples was 11.78 per cent, and that only eight samples out of 802 were found to contain more than 16 per cent of moisture, from which it appears that under the usual and ordinary creamery conditions there is little likelihood that the butter will contain more than the prescribed maximum. However, those butter makers who are attempting to incorporate a reasonable amount of moisture in the butter in order that the overrun may be satisfactory should take great care not to exceed the 16 per cent of moisture in the butter.

GLASSWARE FOR BABCOCK TEST. CREAM TESTING.

In the last three or four years the quality and accuracy of glassware in use among the creameries of the state has very greatly improved. The Code of 1897 required that machines for operating the Babcock test should be examined by the director of the experiment station and by him certified regarding the accuracy thereof, and that the dairy commissioner should keep and furnish to the creameries standard certified glassware to be used in verifying the calibration of the glassware in use by the creameries. The manufacturers of glassware and the manufacturers of test machines as well, have greatly improved their apparatus since that law went into effect, so that it is not now so important a matter as it was at the time of its passage. Practically all test machines nowadays are made with a diameter of sixteen or seventeen inches and the speed required is about 1,000 revolutions. The accuracy of the glassware is much better than formerly, yet it is true that certain makers of test bottles have two grades. The better grade is guaranteed to be accurate and the other grade consists simply of "test bottles." This leads to the suspicion that cheap test bottles are the culls from the manufacturer's stock, and this department recommends very strongly that creameries refuse to purchase test bottles at any price unless they are guaranteed to be accurate, and on receipt of them they should be very carefully tested to see that the bottles are as guaranteed. Your creamery supply firm will furnish you for a reasonable price the best grade of glassware, guaranteed to be accurately calibrated, if you insist upon having that kind of glassware. The law of the state requires, and the self-interest of every creamery man demands, that the test shall be accurately made, a thing that cannot be accomplished with inaccurate glassware.

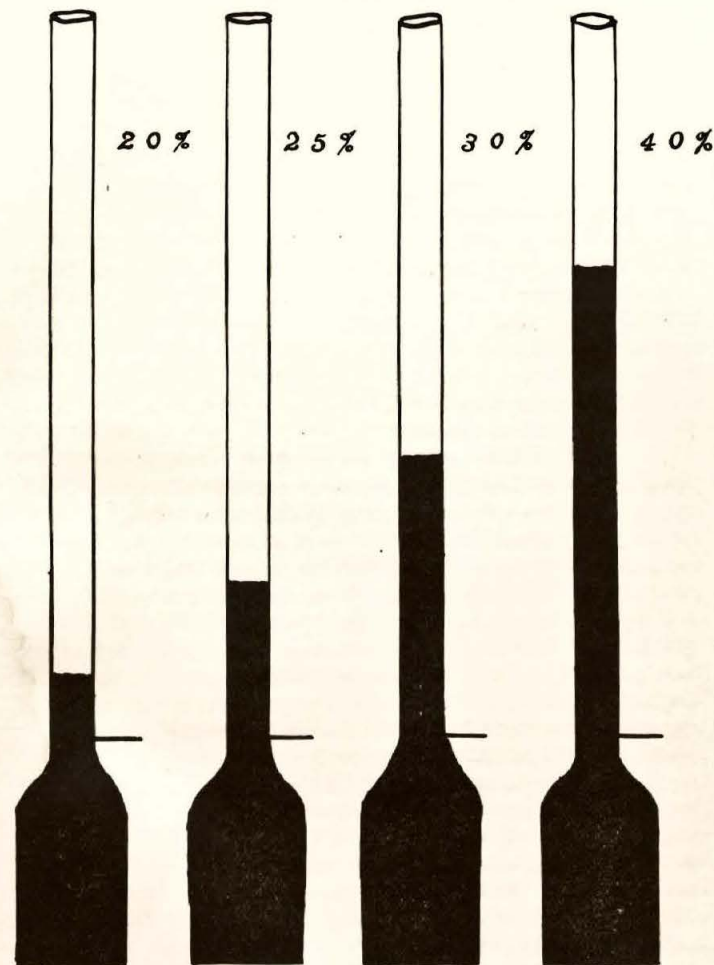
The growing number of hand separators and the increase in the amount of cream delivered to the creameries warrant some further remarks on the subject of cream testing. The only method of testing cream that will insure accurate results includes

the use of a scale for weighing the cream into the bottles. The accompanying sketch will show plainly the errors that would arise in the use of a pipette upon a cream fresh from the separator. The ordinary pipette graduated to 17.6 c. c. is a milk pipette, and if used in testing cream at all must be used only as a convenient means of getting the cream into the test bottle, and not as a measure. A 17.6 c. c. pipette will deliver 18 grams of milk. It will not deliver 18 grams of cream, as shown by the sketch given herewith. This is true when the cream is sweet and free from air bubbles and churned particles. It is evident that when cream is sour and filled with air bubbles, as it is when mixed or poured, a still greater capacity is necessary than that shown in the sketch.

The experiment station, some years since, sent out correction tables which were thought to be useful in cream testing, but in practical use the results obtained varied greatly, and the use of the correction table has been discarded by up-to-date operators. The law of this state requires accurate testing, and accurate testing of cream can only be secured by *weighing* each sample of cream tested, and justice to your patrons, as well as to yourself, demands that the pipette should not be used as a measure for cream and that the scale and the greatest care in its use should be substituted.

The original form of cream bottles read only to 30 per cent and in the old days of the gathered cream system and hand-skimmed cream, such bottles were sufficient. With hand-separator cream the 30 per cent bottle is very often not sufficient for the needs of the creamery, and so the manufacturers of glassware have put out two forms of the 50 per cent bottle, both of standard length, one having a straight-neck and the other a bulb in the neck. The straight-necked bottles can not be read with sufficient accuracy to be at all useful to the creamery man who must test cream ranging from 30 per cent to 40 per cent or 45 per cent. The bulb-necked bottles are made on the right principle, but cannot be used in testing cream that tests less than 30 per cent for the reason that the bulb is a 30 per cent bulb. Probably 75 per cent of all separator cream tests somewhere near 25 per cent to 30 per cent butter fat.

If one could know beforehand whether the cream would test more than 30 per cent, or less, then he would know whether to put it into a 30 per cent bottle or into a 50 per cent bottle having a 30 per cent bulb. To obviate this difficulty, the dairy



Showing the height to which cream, *free from air bubbles*, must be raised in a pipette to get 18 grams of cream. Indicates that the use of a pipette is necessarily inaccurate in cream testing.

commissioner has had made a 50 per cent bottle with a 20 per cent bulb. This bottle has 20 per cent of the scale below the bulb and with it one can test cream of any degree of richness if it does not run any more than 50 per cent butter fat. This bottle is made a half inch longer than the usual cream bottle and will not run in a machine having a diameter less than sixteen inches. It is believed that this bottle will be very useful because it can be used in the place of either 30 per cent or 50 per cent bottles mentioned above.

Special forms of testers having a diameter of twenty inches and a proportionate depth have been made for the use of 50 per cent or 55 per cent straight-necked cream bottles having a total length of nine inches, instead of the usual length of six or six and one-half inches. This allows the diameter of the neck of the bottle to be considerably reduced and hence the reading of the column can be a little more close than is the case with any of the other bottles mentioned.

The scale on the neck of the ordinary straight-necked 50 per cent. bottles is entirely too coarse to admit of accurate reading, and the use of such a bottle in cream testing is not countenanced by this office. The operator should use either the nine-inch 50 per cent. bottles requiring special form of tester or some form of the 50 per cent bulb-necked bottles.

Some cream scales are sent out with a 9-gram weight, so that by using half the 18-gram weight and the ordinary 30 per cent bottle, cream of any richness up to 60 per cent may be tested. A little thought will show that any error in the weighing of the 9 grams of cream or in reading the column of fat after the test is complete will be multiplied by two. Any inaccuracy in weighing the 9 grams of cream or in reading the column of fat will be just as great as the probable inaccuracy in weighing 18 grams of cream and in reading the column of fat derived from the test, so that in the first case the probable error will be twice as much as the second. It is therefore earnestly recommended that cream shall be tested by weighing into a proper bottle the full 18 grams of cream.

In handling cream in the test it will be found convenient to reverse the pipette and to take the cream into the pipette and discharge it from the larger end. The larger end of the ordinary pipette is usually long enough so that it may be used to take out of the bottle any excess of cream that may be poured in. It is obvious, of course, that the pipette must be thoroughly

rinsed after each sample of cream has been put into the bottle so that there may be no mixture of successive samples. By reversing the pipette this can be much more easily accomplished. Or the same convenience may be secured in less degree if the point of the pipette is cut off, thus enlarging the caliber of the lower end of the pipette.

Another convenience in testing cream is the acid dipper, a small glass dipper which holds 17.8 c.c. of acid, and its use is much more convenient than of the acid measure or any of the forms of combined acid measures and bottles.

Cream tests which do not result in a column of fat with a clear golden color are probably not accurate, at least they should be the subject of very grave suspicion. By mixing the cream and the acid at a temperature not above seventy degrees the too frequent black tests will be avoided.

The rule for reading a milk test is to read the whole column of fat from the bottom of the curve to the top of the column. This rule will scarcely apply for cream. A moment's thought shows that such a method reads more fat than there is in sight. In the case of milk this is a correct method for the reason that there is always a small amount of fat left in the liquid below the fat which no amount of whirling will take out and this will compensate for the high reading of the fat. It is evident that an amount no larger will be left in the liquid in a cream test. It is also evident that the error in reading from the extreme limits of the fat column will be much greater in the cream test than in the milk test. It is in fact ten to fifteen times as much as the error in reading a milk test. If the loss in the liquid below the column of fat in a milk test compensates for this error in reading, it will compensate for only one-tenth to one-fifteenth of the error in the cream test reading, and hence such a reading would be incorrect to a degree not permissible.

The top of the column of butter fat in a test shows three distinct lines. One is the extreme limit of the column of fat. Another is the curve formed by the downward curvature of the surface of the fat. The third is a line that appears between the other two. If the fat column is measured from its extreme lower limits to the lowest point in this third or middle curve shown by the top of the fat column, the reading will be very nearly or quite correct. If it is read from the extreme lower limit to the extreme higher limit it will be too great a reading for reasons set out above. If it is read from the extreme lower

limit to the lower of the three lines shown at the top of the column the reading will be too low for the reason that the line used at the top of the column is a good deal more of a curve than the one at the bottom, as will be seen by measuring in the manner just mentioned and then measuring from the points on the side of the bottle where the curves meet it.

The importance of accuracy in testing cream, both from the standpoint of the patron and from the standpoint of the creamery operator, who must satisfy the patron, is so great that no reasonable expense should be spared either of money in procuring a good scale and accurate glassware or of time and labor in making a satisfactory and accurate test.

CHEESE FACTORIES IN IOWA.

The report for last year showed fifty-two cheese factories in operation in Iowa, and the list found in this report shows but forty-three cheese factories. Nine of the cheese factories have gone out of business and two new ones have been established.

Of the cheese factories now in operation in the state, thirty-one factories report 20,621,763 pounds of milk, from which was made 2,039,921 pounds of cheese, and the patrons of these factories received \$174,864, which is almost exactly 85 cents per hundred pounds for the milk. The largest factory in the state receives almost three million pounds of milk and pays for it an average of 90 cents per hundred. The most successful factory in the state receives two million pounds of milk and pays for it an average price of \$1.08. The difference between these factories is that the larger one is not in a dairy district and the other one is, hence, the cost of getting the milk to the factory is less in the one case than in the other. The prices paid by other cheese factories range down as low as 68 cents per hundred pounds.

The average production of these thirty-one cheese factories which have reported appears, therefore, to be about 65,800 pounds of cheese per annum, and on this basis the forty-three cheese factories now in operation in the state would make approximately three million pounds of cheese, worth perhaps \$300,000. From the foregoing figures, it will be seen at once that the cheese business in Iowa is not a very great amount, and proba-

bly so long as conditions remain the same as they are now, the cheese business will continue to be of little importance in the state. The relative prices paid per hundred pounds of milk by cheese factories and creameries may be a matter of some interest to those who are unable to account for the small number of cheese factories in the state. A certain Delaware county creamery, making 165,000 pounds of butter last year, paid its patrons \$1.01 per hundred pounds of milk. It is evident that a cheese factory which could only pay an average price of 85 cents per hundred pounds of milk could not exist in that community and successfully compete with the creamery. The creameries of Bremer county last year paid an average price of 82 cents per hundred pounds of milk. No cheese factory could compete with these creameries unless it were able to pay a considerable amount per hundred more than the creameries are paying. It is evident that the expense of getting the milk to the creamery will not be more than that of transporting the milk to a cheese factory, and that the skimmed milk will be of much greater value than the whey which the farmer gets back. It is true, however, that other creameries that are not so successfully operated as the one with which the above comparisons are made have not been able to pay as much as the creameries mentioned above, and in these localities a cheese factory could easily compete with the creameries.

The cheese business does not seem to be adapted to all localities where milk can be easily and cheaply produced. Every northern state, with the exception of those in the semi-arid district of the Middle West, is a large producer of butter, but the same is not at all true in regard to cheese production. Nearly all the cheese is made in the states of New York and Wisconsin, and Iowa with its small number of cheese factories is given sixth place in cheese production by the national census of 1900. There are communities in Iowa where large and successful cheese factories are in operation, so that it is conclusively proved by them that cheese can be profitably made in Iowa, but it is doubtless true that so long as the profits in butter making are equal to those of cheese making, the number of cheese factories in this state will be relatively small, for the reason that the making of butter and the utilization of the skimmed milk is more to the taste of the stock raising farmer than the making of cheese and the use of whey.

CREAMERY LIST.

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List of Creameries in the State, Alphabetically Arranged According to Counties and Towns near which Creameries are Located, Together with Information Pertaining to Each.

Office record number.	LOCATION.	NAME OF CREAMERY.	How operated.	NAME OF PROPRIETOR, SECRETARY OR MANAGER.	P. O. ADDRESS OF PROPRIETOR, SECRETARY OR MANAGER.	NAME OF BUTTER MAKER.	Separator or gathered cream.	Method of receiving milk.
<i>Adair County—</i>								
1	Adair	Adair Co-oper. Creamery Co.	Co-op.	A. C. Curtis, Secretary.	Adair	C. E. McIntire	S. & G. C.	Test.
2	Arbor Hill	Arbor Hill Co-op. Creamery Co.	Co-op.	C. C. Pease, Secretary	Stuart	R. J. Erb	Separator	Test.
3	Fontanelle	Blue Grass Creamery	Indiv.	A. L. Stewart & Co.	Fontanelle	W. F. Stewart	Separator	Test.
4	Canby	Blue Grass Creamery (s)	Indiv.	A. L. Stewart & Co.	Fontanelle		Separator	Test.
5	Fisk	Blue Grass Creamery (s)	Indiv.	A. L. Stewart & Co.	Fontanelle		Separator	Test.
6	Greenfield	Blue Grass Creamery (s)	Indiv.	A. L. Stewart	Greenfield	Albert He n	Separator	Test.
7	Prussia	Blue Grass Creamery (s)	Indiv.	A. L. Stewart	Greenfield		Separator	Test.
8	Greenfield	Greenfield Creamery Co.	Stock.	Jas. F. Laude, Sec. and Mgr	Greenfield	F. L. Odell	Separator	Test.
9	Stuart	Howe Co-oper. Creamery Co.	Co-op.	J. N. Campbell, Secretary.	Stuart	A. M. Frandsen	Separator	Test.
10	Orient	Tri-State Creamery Co. (s)	Stock.	R. T. McCall, Manager.	Chicago, Ill	A. W. McCall	Separator	Test.
11	Bridgewater	Blue Grass Creamery	Indiv.	A. L. Stewart & Co	Fontanelle	M. N. Bates	Separator	Test.
12	Berea	Blue Grass Creamery (s)	Indiv.	A. L. Stewart & Co	Fontanelle		Separator	Test.
13	Hebron	Hebron Creamery	Indiv.	D. F. Hammers, Proprietor	Hebron	D. F. Hammers	S. & G. C.	Test.
<i>Adams County—</i>								
14	Prescott	Prescott Butter & Cheese Ass'n.	Co-op.	G. W. Iden, Secretary	Prescott	Franklin Beal	Separator	Test.
15	Carl	Prescott But. & Cheese Ass'n (s)	Co-op.	G. W. Iden, Secretary	Prescott		Separator	Test.
16	Williamson	Prescott But. & Cheese Ass'n (s)	Co-op.	G. W. Iden, Secretary	Prescott		Separator	Test.
<i>Allamakee County—</i>								
17	Dorchester	Dorchester Creamery Co.	Stock.	T. C. Smith & Co.	Dorchester	Ben W. Schulte	Gath. Cr.	In. & T.
18	Lansing	Calhoun Creamery Co.	Co-op.	J. M. Leppert, Secretary	Church	K. V. Ferris	Gath. Cr.	Oil test.
19	Postville	Postville Far. Co-op. Crm. Co.	Co-op.	F. H. Welzell, Secretary	Postville	James A. Gordon	Separator	Test.
20	Waterville	The Far. Co-op. Crm. & Com. Co.	Co-op.	Peter Ameson, Secretary	Waterville	F. W. Hessel	Gath. Cr.	Oil test.
21	Waukon	Ludlow Co-oper. Creamery Co.	Co-op.	F. A. Landerson, Secretary	Waukon	W. P. Muth	Separator	Test.
22	Quandahl	Arctic Spring Creamery	Indiv.	I. D. Johnson, Proprietor	Quandahl	Ingret Langlie	Gath. Cr.	Oil test.
23	Waukon	Far. Waukon Co-op. Crm. Co.	Co-op.	H. G. Fisher, Secretary	Waukon	D. B. Olson	S. & G. C.	In. & T.

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<i>Audubon County—</i>								
24	Audubon	Sharon Separator Creamery Co.	Co-op.	C. C. Moller, Secretary	Audubon, R. F. D. 4	W. Anderson	Separator	Test.
25	Brayton	Oakfield Twp. Sep. Cream. Co.	Co-op.	Jesse Nymand, Secretary	Brayton	J. P. Neilson	Separator	Test.
26	Brayton	Troublesome Valley Cream. Co.	Stock.	J. C. Hardman, Secretary	Brayton	H. A. Sherk	Separator	Test.
27	Exira	Audubon Twp. Sep. Cream. Co.	Co-op.	P. Jensen, Secretary	Exira	P. Jensen	Separator	Test.
28	Exira	West Hamlin Creamery Co.	Stock	Lars Peter Peterson, Mgr.	Exira, R. F. D. 2	Lars Peter Peterson	Separator	Test.
29	Exira	Exira Creamery Co.	Co-op.	Chris C. Nelson, Secretary.	Exira	Chris C. Nelson	Separator	Test.
30	Gray	Gray Creamery Co.	Co-op.	L. Groteluschen, Secretary	Gray	W. J. Lancelot	Gath. Cr.	H. Sep.
31	Hamlin	Blue Grass Sep. Creamery Co.	Co-op.	Otto Larson, Secretary	Hamlin	Fred Heileman	Separator	Test.
32	Kimballton	Danish Sep. Creamery Co.	Co-op.	Peter Lykke, Secretary	Audubon, Route 4	Chr. Thomsen	Separator	Test.
33	Ross	Ross Creamery Co.	Co-op.	W. H. Stearns, Secretary	Audubon, Route 2	Bertel Jensen	S. & G. C.	Test.
34	Manning	Liberty Creamery Co.	Stock.	G. Nelson, Secretary	Irwin	Oscar Jensen	Separator	Test.
<i>Benton County—</i>								
35	Blairstown	LeRoy Creamery	Co-op.	T. H. Weil	Blairstown	F. W. Reid	Separator	Test.
36	Urbana	Urbana Creamery	Indiv.	Derfingier & Fisher	Center Point	Ben Hiff	Separator	Test.
37	Vinton	Benton Co. Crm. & Mfg. Co.	Stock.	Annie J. Hodge, Secretary.	Vinton	Chester A. Hodge	Separator	Test.
38	Vinton	The Vinton Creamery	Indiv.	A. M. Rowe, Secretary	Vinton	H. K. Bassett	S. & G. C.	Test.
39	Gillespie	La Porte Co-op. Cream. Co. (s)	Co-op.	C. B. Gingrich, Proprietor	La Porte City	W. R. Carol	Separator	Test.
40	Shellsburg	Shellsburg Creamery	Indiv.	Fred Walker, Proprietor	Shellsburg	M. B. Hershey	S. & G. C.	Test.
41	Norway	Norway Creamery	Indiv.	M. B. Hershey	Norway	H. O. Dauchy	Separator	Test.
42	Van Horne	Van Horne Creamery	Indiv.	H. O. Dauchy, Manager	Van Horne		Separator	Test.
43	Newhall	Shellsburg Creamery (s)	Indiv.	Fred Walker, Proprietor	Shellsburg		Separator	Test.
44	Belle Plaine	Springbrook Creamery	Indiv.	Jno. Newman & Co.	Elgin, Ill			
<i>Black Hawk County—</i>								
45	La Porte City	La Porte Co-op. Creamery Co.	Co-op.	C. B. Gingrich, Secretary	La Porte City	George Jensen	S. & G. C.	Test.
46	Waterloo	The Palmer-Hubbard Co.	Stock.	C. B. Hubbard, Manager	Independence	Myron Ashby	Separator	Test.
47	Benson	Benson Dairy Co.	Co-op.	W. Bozarth, Secretary	Cedar Falls, R. 2	Geo. T. Hummel	S. & G. C.	Test.
48	Cedar Falls	The Palmer-Hubbard Co.	Stock.	C. V. Rosenberg, Sec.	Independence	A. Slaughter	S. & G. C.	Test.
49	Crain Creek	Crain Creek Creamery	Indiv.	Wm. Meier, Proprietor	Crain Creek	Wm. Meier	Separator	Test.
50	Dewar	Great Western Creamery Co.	Stock.	W. McKeen, Secretary	Dewar	W. McKeen	Separator	Test.
51	Dunkerton	Farmers' Creamery Co.	Co-op.	G. S. Kleckner, Secretary	Dunkerton	O. G. Alexander	Separator	Test.
52	Eagle Center	Eagle Center Dairy Ass'n.	Co-op.	T. J. Humphrey, Secretary	Waterloo, 612 Grant Ave.	Oscar Harvey	Separator	Test.
53	Fairbank	East Lester Creamery Co.	Co-op.	Ira Finch, Secretary	Fairbank	C. E. Brant	Separator	Test.
54	Finchford	Union Creamery	Co-op.	C. A. George, Secretary	Winslow	I. B. Moon	Separator	Test.
55	Hudson	Hudson Co-op. Dairy Ass'n.	Co-op.	H. B. Eighmey, Secretary	Hudson	Wm. Hammel	Separator	Test.
56	Boies	Mt. Vernon Creamery	Co-op.	J. E. Rundles, Secretary	Janesville	A. J. Frees	S. & G. C.	Test.
57	Jubilee	Co-op. Crm. Ass'n of Jubilee	Co-op.	H. G. Koob, Secretary	Jesup	Byron Lentus	Separator	Test.
58	Voorhies	Red Bird Creamery	Co-op.	E. Stevens, Secretary	Trar	Henry White	Separator	Test.
59	Gilbertville	Gilbertville Dairy Ass'n	Co-op.	J. B. Kascht, Secretary	Gilbertville	M. Envaldsen	Separator	Test.
60	Edwards	Edwards Creamery	Indiv.	H. O. Moxdorf, Proprietor	Waterloo	H. O. Moxdorf	Separator	Test.
61	Waterloo	Farmers' Dairy Ass'n	Co-op.	U. S. Blough, Secretary	Waterloo	Roy Chadwick	Separator	Test.

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STATE DAIRY COMMISSIONER.

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CREAMERY LIST—CONTINUED.

Office record number.	LOCATION.	NAME OF CREAMERY.	How operated.	NAME OF PROPRIETOR, SECRETARY OR MANAGER.	P. O. ADDRESS OF PROPRIETOR, SECRETARY OR MANAGER.	NAME OF BUTTER MAKER.	Separator or gathered cream.	Method of receiving milk.
<i>Boone County—</i>								
62	Boone	Soenke Bros.	Indiv.	P. F. & G. F. Soenke.	Boone, Route 3.	P. F. & G. F. Soenke	Separator	Test.
63	Boxholm	Boxholm Co-op. Creamery Co.	Co-op.	Lawrence Johnson, Sec.	Boxholm	Joe Michel	Separator	Test.
64	Rosendale	Rosendale Co-op. Creamery Co.	Co-op.	M. P. Peterson, Secretary.	Stanhope.	L. C. Peterson.	Separator	Test.
65	Bouton	Woodward Creamery (s).	Indiv.	H. P. Calonkey, Proprietor.	Woodward		Separator	Test.
<i>Bremer County—</i>								
66	Bremer	Bremer Creamery Co.	Co-op.	F. C. Kohagen, Secretary.	Waverly	Wm. Kollenbach	Separator	Test.
67	Bremer	Western Douglas Creamery Co.	Co-op.	Aug. Hoppenworth, Sec.	Waverly, Route 1	Frank Finch.	Separator	Test.
68	Sumner	Little Valley Creamery Co.	Co-op.	Fred Seehase, Secretary.	Sumner, Route 7.	H. C. Ladage.	Separator	Test.
69	Denver	Farrington Creamery.	Co-op.	F. Garton, Secretary.	Cedar Falls, R. 1.	B. O. Squirs.	S. & G. C.	Test.
70	Denver	First Maxfield Co.	Co-op.	Wm. Milins, Secretary.	Denver.	John Wedemeyer	Separator	Hund.
71	Frederika	Frederika Creamery Ass'n.	Co-op.	J. H. McDonald, Secretary.	Frederika	Cecil E. Carr	Separator	Test.
72	Denver	Klinger Creamery.	Indiv.	C. H. Diekmann, Prop.	Klinger	C. H. Bohrssen.	Separator	Hund.
73	Knittel	Maxfield Creamery Co.	Co-op.	J. Strottmann, Secretary.	Knittel	F. Wills.	Separator	Hund.
74	Sumner	Climax Creamery Co.	Co-op.	Henry Specht, Secretary.	Sumner, Route 6	Fred Engel.	Separator	Hund.
75	Sumner	Excelior Creamery Co.	Co-op.	H. E. Wuttke, Secretary.	Sumner	C. L. Mills.	Separator	Test.
76	Sumner	Sumner Creamery Co.	Co-op.	John Dawson, Secretary.	Sumner	Robert Maillie.	Separator	Hund.
77	Tripoli	Fremont Creamery Co.	Co-op.	H. P. Braun, Secretary.	Tripoli	John E. Smith.	Separator	Test.
78	Tripoli	Potter's Siding Creamery Co.	Stock.	H. Willbrandt, Manager.	Tripoli	Wm. Ambros.	Separator	Hund.
79	Tripoli	Tripoli Creamery.	Co-op.	C. Jahnke, Secretary.	Tripoli	F. C. Oltrogge.	Separator	Hund.
80	Denver	Artesian Creamery Co.	Co-op.	H. Graening, Secretary.	Artesian	E. H. Homan.	Separator	Test.
81	Waverly	LaFayette Creamery Co.	Co-op.	L. C. Oberdorf, Secretary.	Waverly	Henry Piegors.	Separator	Test.
82	Waverly	Washington Co-op. Crm. Co.	Co-op.	S. M. Lehman, Secretary.	Waverly, Route 5	D. A. Bottermann	Separator	Test.
83	Tripoli	Siegel Creamery Co.	Co-op.	J. Joens, Secretary.	Plainfield, R. 1.	Wm. Lenius.	Separator	Hund.
84	Waverly	Wisconsin Condensed Milk Co.	Stock.	Wm. A. Douglas.	Waverly	C. E. Patchin.		Test.
85	Grove Hill	Grove Hill Creamery Co.	Co-op.	A. F. Schmeltzer, Secretary.	Grove Hill	F. D. Daniels.	Separator	Hund.
86	Sumner	Spring Fountain Creamery Co.	Co-op.	Joe Volker, Secretary.	Sumner	Fred Sumner.	Separator	Hund.
<i>Buchanan County—</i>								
87	Aurora	Aurora Creamery	Indiv.	Geo. L. Weeks, Proprietor.	Aurora.	C. R. Fishtemier.	Separator	Test.
88	Brandon	Brandon Creamery Co.	Co-op.	W. W. Bain, Secretary.	Brandon.	M. E. Benson.	Separator	Test.
89	Fairbank	Fairbank Farmers' Crm. Co.	Co-op.	E. Sanborn, Secretary.	Fairbank.	H. H. Opperman.	Separator	Test.
90	Hazleton	Hazleton Farmers' Creamery	Stock.	N. C. Peck, Secretary.	Hazleton	Frank Strong.	S. & G. C.	Test.
<i>Independence</i>								
91	Independence	The Palmer-Hubbard Co.	Stock.	C. B. Hubbard, Manager.	Independence.	D. H. Macomber.	Separator	Test.
92	Rowley	The Palmer-Hubbard Co. (s).	Stock.	C. B. Hubbard, Manager.	Independence		Separator	Test.
93	Littleton	The Palmer-Hubbard Co. (s).	Stock.	C. B. Hubbard, Manager.	Independence.		Separator	Test.
94	Vista	The Palmer-Hubbard Co. (s).	Stock.	C. B. Hubbard, Manager.	Independence		Separator	Test.
95	Jesup	Jesup Creamery Co.	Stock.	C. L. Bright, Secretary.	Jesup	E. M. Vargason.	Hand Sep.	Test.
96	Lamont	Lamont Creamery Co.	Co-op.	James C. Heaner, Secretary.	Lamont	F. S. Clackner.	Separator	Test.
97	Otterville	Otterville Creamery Co.	Co-op.	J. F. Booth, Secretary.	Independence, R. 3	Ira S. Hutton.	S. & G. C.	Test.
98	Rowley	Rowley Co-op. Creamery Co.	Co-op.	R. A. Lindsay, Secretary.	Rowley.	Herbert Brokaw.	Separator	Test.
99	Stanley	Stanley Creamery Co.	Indiv.	Geo. L. Weeks, Proprietor.	Aurora	Arthur Strong.	S. & G. C.	Test.
100	Winthrop	Winthrop Creamery	Stock.	J. J. Plank, Manager.	Winthrop	W. H. Plank.	Separator	Test.
101	Quasqueton	Winthrop Creamery (s).	Stock.	J. J. Plank, Manager.	Winthrop.		Separator	Test.
102	Newtonville	Winthrop Creamery (s).	Stock.	J. J. Plank, Manager.	Winthrop.		Separator	Test.
103	Middlefield	Winthrop Creamery (s).	Stock.	J. J. Plank, Manager.	Winthrop		Separator	Test.
<i>Buena Vista County—</i>								
104	Albert City	Fairfield Creamery Co.	Co-op.	A. J. Ryden, Secretary.	Albert City	S. M. Geyer.	S. & G. C.	Test.
105	Newell	Coon River Co-op. Creamery Co.	Co-op.	C. A. Allison, Secretary.	Newell.	C. A. Allison.	Separator	Test.
106	Newell	Newell Cheese Factory Co.	Co-op.	Wm. Huxtable, Secretary.	Newell.	Geo. Allard.	S. & G. C.	Test.
107	Varina	Newell Cheese Factory Co. (s).	Co-op.	Wm. Huxtable, Secretary.	Newell.		S. & G. C.	Test.
108	Storm Lake	Grant Creamery Co.	Stock.	Geo. W. Cole, Secretary.	Storm Lake.	P. C. Flakkegaard.	Gath. Cr.	Test.
109	Albert City	Fairfield Creamery Co. (s).	Co-op.	A. J. Ryden, Secretary.	Albert City		S. & G. C.	Test.
110	Alta	Alta Creamery	Indiv.	E. W. Geyer.	Storm Lake		Separator	Test.
<i>Butler County—</i>								
111	Aplington	Aplington Co-op. Creamery Co.	Co-op.	R. B. Eckles, Secretary.	Aplington.	Wm. Gilbert.	Separator	Test.
112	Austinville	White Rose Creamery	Indiv.	S. Patterson, Proprietor.	Austinville.	S. Patterson.	Separator	Test.
113	Allison	Allison Creamery	Indiv.	W. J. Daniels, Proprietor.	Allison.	C. Stevenson.	Separator	Test.
114	Greene	Cold Water Co-op. Dairy Assn.	Co-op.	Paul Devereaux, Secretary.	Greene.	P. J. Hagarty.	Gath. Cr.	Ch. Test.
115	Clarksville	Clarksville Creamery Co.	Stock.	E. D. Wilcox, Manager.	Clarksville.	W. D. Barkley.	Separator	Test.
116	Dumont	Dumont Creamery	Stock.	T. I. Laird, Secretary.	Dumont	A. W. Snyder.	Separator	Test.
117	Aredale	Dumont Creamery (s).	Stock.	T. I. Laird, Secretary.	Dumont		Separator	Test.
118	Eleanor	Monroe Central Creamery	Co-op.	A. Ontjes, Secretary.	Aplington.	C. Wisbar.	Separator	Test.
119	Parkersburg	Monroe Central Creamery (s).	Co-op.	A. Ontjes, Secretary.	Aplington.		Separator	Test.
120	Kesley	Kesley Creamery	Indiv.	J. F. Schudrman, Prop.	Aplington.	A. M. Whitmer.	Separator	Test.
121	New Hartford	Crescent Creamery	Co-op.	Ed. Fitch, Secretary.	New Hartford.	W. F. Graham.	Separator	Test.
122	New Hartford	Beaver Creamery Co.	Stock.	W. D. Cooperley, Manager.	New Hartford,			
					R. 2	Peter Larson.	Separator	Test.
123	Parkersburg	Parkersburg Creamery	Stock.	W. H. Codner, Secretary.	Parkersburg.	W. H. Codner.	Separator	Test.
124	Sinclair	Parkersburg Creamery (s).	Stock.	W. H. Codner, Secretary.	Parkersburg.		Separator	Test.
125	Shell Rock	Shell Rock Creamery	Stock.	M. J. Johnson, Manager.	Shell Rock.	M. J. Johnson.	S. & G. C.	Test.
126	Shell Rock	Columbian Creamery	Indiv.	Hall & Olson, Proprietors.	Shell Rock.	A. Olson.	S. & G. C.	Test.
127	Shell Rock	Victory Creamery.	Co-op.	A. B. Shadlock, Sec. & Mgr.	Waverly	Julius Ahlenstorf.	Hand Sep.	Test.
128	Shell Rock	Walker Creamery.	Indiv.	A. B. Walker, Proprietor.	Shell Rock.	A. B. Walker.	S. & G. C.	Test.
129	Almar	Northern West Point Crm. Co.	Co-op.	Herman, Debner, Secy.	Greene, R. 2.	Fred H. Fisher.	Separator	Test.
130	New Hartford	Albion Creamery Co.	Co-op.	O. F. Courbat, Secretary.	New Hartford,			
					R. 1	O. F. Courbat.	Separator	Test.

CREAMERY LIST-CONTINUED.

Office record number.	LOCATION.	NAME OF CREAMERY.	How operated.	NAME OF PROPRIETOR, SECRETARY OR MANAGER.	P. O. ADDRESS OF PROPRIETOR, SECRETARY OR MANAGER.	NAME OF BUTTER MAKER.	Separator or gathered cream.	Method of receiving milk.
<i>Calhoun County—</i>								
131	Knoke	Butler Center Co-op. Crm. Co.	Co-op.	H. A. Albright, Secretary.	Knoke	J. P. Cummings.	Separator	Test.
132	Lytton	Blue Grass Creamery	Indiv.	I. Hillmann	Lytton	Geo. Hillmann	Separator	Test.
133	Lake City	The Far. Co-op. Mut. Crm. Assn	Co-op.	H. B. Farmer, Secretary.	Lake City	Carl Lissner	S. & G. C.	Test.
134	Lyt on	William Co-op Creamery Co.	Co-op.	Henry Klukenberg, Sec.	Fonda	O. Olson	Separator	Test.
135	Manson	Manson Creamery	Indiv.	G. B. Moon	Manson	Chas. Moon	S. & G. C.	Test.
136	Pomeroy	Pomeroy Co-oper. Creamery	Co-op.	John Behrends, Secretary	Pomeroy	J. E. Lauridsen	S. & G. C.	Test.
137	Rockwell City	Andrew Wood Co.	Stock.	Andrew Wood, President.	Rockwell City	Henry Belfrance	S. & G. C.	T. & H.
138	Lytton	Andrew Wood Co (s)	Stock.	Andrew Wood, President.	Rockwell City		S. & G. C.	T. & H.
<i>Carroll County—</i>								
139	Arcadia	Golden Star Creamery Co.	Stock.	C. Wiebers, Secretary	Arcadia	S. J. Jans	Separator	Test.
140	Breda	Viola Mutual Creamery Ass'n	Co-op.	Paul Luckow, Secretary	Breda	Chris. Lorenson	Separator	Test.
141	Coon Rapids	Coon Rapids Creamery Co.	Indiv.	H. L. Fest, Proprietor	Coon Rapids	A. R. Wright	Separator	Test.
142	Dedham	Dedham Creamery	Indiv.	Reece Lewis, Proprietor	Dedham	Reece Lewis	S. & G. C.	Test.
143	Halbur	Halbur Creamery Co.	Indiv.	Koenig & Wagner	Halbur	M. J. Wagner	Separator	Hund.
144	Lanesboro	Lanesboro Farmers' Co-op. Mutual Creamery Co.	Co-op.	Henry Miller, Secretary	Glidden	L. R. Winn	S. & G. C.	Test.
145	Manning	Washington Twp. Creamery	Co op	John J. Kruse, Secretary	Manning	C. H. Ramsey	Separator	Test.
146	Mt. Carmel	Mt. Carmel Mut. Creamery Co.	Co-op.	Martin J. Berger, Secretary	Carroll, Route 2	Joseph A. Stamen	Separator	Test.
147	Roselle	Rose Valley Creamery	Indiv.	C. Kohorst, Proprietor	Roselle, Route 4	C. Kohorst	Separator	Hund.
148	Ralston	Ralston Creamery	Indiv.	Virgil Young, Proprietor	Ralston	Virgil Young	Separator	Test.
149	Templeton	Templeton Creamery Co.	Stock.	Geo. Bierl, Manager	Templeton	August Thielecke	Separator	Test.
150	Manning	Manning Creamery	Indiv.	H. A. Sweiger, Manager	Manning	O. P. Yant	Gath Cr.	Test.
<i>Cass County—</i>								
151	Atlantic	Tri-State Creamery Co.	Indiv.	Cabe & McKinnon, Props.	Chicago, 100 Wash'n St.	T. B. Russell	Separator	Test.
152	Marne	Tri-State Creamery Co. (s)	Indiv.	Cabe & McKinnon, Props.	Chicago, 100 Wash'n St.		Separator	Test.
153	Mossena	Tri-State Creamery Co. (s)	Indiv.	Cabe & McKinnon, Props.	Chicago, 100 Wash'n St.		Separator	Test.
154	Cumberland	The Far. Mut. Co-op. Crm. Co.	Stock.	Wm. J. Spies, Secretary	Cumberland	A. M. Christensen	Separator	Test.
155	Griswold	Lyman Co-op. Mut. Crm. Ass'n	Co-op	W. C. Mueller, Secretary	Griswold	W. R. Carol	Separator	Test.
156	Ostrus	Tri-State Creamery Co. (s)	Indiv.	Cabe & McKinnon, Props.			Separator	Test.
157	Wiota	Farmers' Co-oper. Creamery	Co-op.	E. W. Bowen			Separator	Test.
<i>Cedar County—</i>								
158	Bennett	Golden Star Creamery	Indiv.	W. H. Kroeger, Proprietor.	Bennett		Separator	Test.
159	Clarence	Union Creamery	Indiv.	E. Huxoll, Proprietor	Clarence	E. Huxoll	Separator	Hund.
160	Clarence	Clarence Creamery	Indiv.	Henry Struck	Clarence	Henry Struck	Gath. Cr.	Inch.
161	Durant	Durant Butter and Cheese Ass'n	Stock.	Chas. Sorgentrey, Secretary	Durant	Henry Puck	Gath. Cr.	1 & O T.
162	Lowden	Home Creamery	Indiv.	G. F. Reinking, Proprietor	Lowden	G. F. Reinking	Gath. Cr.	Inch.
163	Lowden	Yankee Run Creamery	Indiv.	Chas. C. Boettger, Prop.	Lowden	Chas. C. Boettger	Separator	Test.
164	Lowden	Yankee Run Creamery (s)	Indiv.	Chas. C. Boettger, Prop.	Lowden		Separator	Test.
165	West Branch	West Branch Creamery	Indiv.	Eves & Elliott, Proprietors.	West Branch	Lewis Elliott	Separator	Test.
166	Springdale	West Branch Creamery (s)	Indiv.	Eves & Elliott, Proprietors.	West Branch		Separator	Test.
<i>Cerro Gordo County—</i>								
167	Mason City	J. D. Bickel Produce Co.	Stock.	M. V. Bickel, Secretary	Mason City	W. Fisher	S. & G. C.	Test.
168	Plymouth	Plymouth Creamery Co.	Indiv.	Schurman & Ontjes, Props.	Aplington	O. R. Armstrong	Separator	Test.
169	Portland	Portland Creamery	Indiv.	C. E. Sweet, Proprietor	Portland	C. E. Sweet	Gath. Cr.	Test.
170	Rockwell	Rockwell Creamery	Indiv.	G. H. Gurler, Proprietor	DeKalb, Ill.	Chas. Gagan	Gath. Cr.	Test.
171	Thornton	Thornton Creamery	Indiv.	G. W. Kennedy, Proprietor	Thornton	Chris Mortinson	Gath. Cr.	Inch.
172	Meservey	Meservey Creamery	Indiv.	J. E. Hill, Proprietor	Meservey	M. J. Neman	Gath. Cr.	Test.
173	Veatura	Fertile Co-op. Dairy Co. (s)	Co-op.	J. T. Tallackson	Fertile		Separator	Test.
<i>Cherokee County—</i>								
174	Aurelia	Aurelia Creamery	Indiv.	McAdam & Lodson, Props.	Elgin, Ill.	Alex. McAdam	S. & G. C.	Test.
175	Larrabee	Larrabee Creamery	Indiv.	A. Younger, Proprietor.	Larrabee	A. Younger	Separator	Test.
176	Marcus	White Rose Creamery	Indiv.	C. E. Austin	Marcus	C. E. Austin	Separator	Test.
177	Washta	Washta Creamery	Indiv.	James Robertson, Jr., Prop.	Washta	J. H. Fuller	Gath. Cr.	Test.
<i>Chickasaw County—</i>								
178	Boyd	Boyd Creamery	Co-op.	Wm. Denner, Secretary	Boyd	J. M. Zubrod	Separator	Test.
179	Alta Vista	Alta Vista Farmers Crm. Ass'n	Co-op.	J. Wastenberger, Secretary	Alta Vista	O. H. Capper	Separator	Test.
180	Devon	Devon Farmers Creamery	Co-op.	Alfred Larson, Secretary	Devon	A. W. Kaerlicher	Separator	Test.
181	Deerfield	Deerfield Creamery	Co-op.	J. W. Kane, Secretary	Deerfield	R. E. Newberry	Separator	Test.
182	Fredericksburg	Fredericksburg Butter Factory	Co-op.	Wm. Bee, Secretary	Fredericksburg	H. E. Forrister	Separator	Test.
183	Ionla	Ionla Farmers Creamery Ass'n	Co-op.	P. L. Kenple, Secretary	Ionla	P. N. Williams	Gath. Cr.	Ch. & In.
184	Jerico	Jerico Creamery Association	Co-op.	Mike Kearney, Secretary	Jerico	John Finegan	Separator	Test.
185	Lawler	Lawler Creamery Association	Co-op.	H. M. Kout, Secretary	Lawler	Fred Zigler	Separator	Test.
186	Lawler	Little Turkey Creamery	Stock.	H. R. Carpenter, Secretary	Elkader	J. J. Boland	Separator	Test.
187	New Hampton	New Hampton Creamery	Indiv.	James L. Humphrey Jr., Prop	New Bedford, Mass.	S. Peterson	S. & G. C.	Test.
188	Oresden	New Hampton Creamery (s)	Indiv.	James L. Humphrey Jr., Prop	New Bedford, Mass.		S. & G. C.	Test.
189	Fredericksburg	New Hampton Creamery (s)	Indiv.	James L. Humphrey Jr., Prop	New Bedford, Mass.		S. & G. C.	Test.
190	Nashua	Farmers Co-op. Creamery Co.	Co-op.	S. W. Blinn, Secretary	Nashua	J. W. Cagley	Gath. Cr.	H & O.T.
191	Nashua	Nashua Creamery	Indiv.	C. L. Putney, Manager	Nashua	A. Bethke	Gath. Cr.	Oil.
192	North Washington	North Washington Creamery Co	Co-op.	F. N. Gindorff, Secretary	N. Washington	Fred Schreiber	Separator	Test.
193	Republic	Republic Creamery	Indiv.	Chas. Gurler & Co., C. L. Putney, Manager	Nashua	C. Herron	Hand Sep.	Oil.
194	Sande	Sande Co-op. Creamery	Co-op.	Wm. Sanderson, Secretary	Sande	G. F. Langquist	Separator	Test.
195	Williamstown	Williamstown Creamery Ass'n	Co-op.	H. S. Kerssen	Williamstown	M. J. Donovan	Separator	Test.

CREAMERY LIST-CONTINUED.

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SEVENTEENTH ANNUAL REPORT OF THE [No. 29]

Office record number.	LOCATION.	NAME OF CREAMERY.	How operated.	NAME OF PROPRIETOR, SECRETARY OR MANAGER.	P. O. ADDRESS OF PROPRIETOR, SECRETARY OR MANAGER.	NAME OF BUTTER MAKER.	Separator or method of creaming.	Time required to produce 100 lbs. of butter.
<i>Clay County-</i>								
196	Dickens	Farmers Co-oper. Creamery Co.	Co-op.	Wm. McCurdy Sec. and Mgr	Dickens	A. L. Remington	Separator	Test.
197	Fostoria	Fo-toria Creamery Co.	Stock	Frank Riley, Secretary	Fostoria	Frank Riley	Separator	Test.
198	Royal	Royal Creamery Co.	Indiv.	McKay and Soenke, Prop'rs	Royal	A. Christensen	Separator	Test.
199	Langdon	Langdon Co-oper. Creamery Co	Co-op.	E. Kingsley, Sec. and Mgr.	Langdon	Chas. Johnson	Separator	Test.
200	Spencer	Spencer Creamery	Indiv.	W. L. Kepler, Proprietor	Spencer	W. L. Kepler	Separator	Test.
201	Terrill	Trumbull Lake Creamery Co.	Stock	W. E. Copens	Ruthven	W. W. Bond	Separator	Test.
202	Webb	Webb Creamery	Indiv.	J. A. Reid, Proprietor	Webb	J. A. Reid	Separator	Test.
203	Gillett's Grove	Gillett's Grove Creamery	Indiv.	C. N. Parsons	Gillett's Grove		Separator	Test.
<i>Clayton County</i>								
204	Elkader	Highland Farmers Cr'y. Ass'n.	Co-op.	G. Gregerson, Secretary	Elgin, Iowa	H. L. Mickelson	S. & G. C.	Test.
205	Elkader	Elkader Creamery	Stock	H. R. Carpenter, Secretary	Elkader	Harvey Clough	Hand sep	Test.
206	Edgewood	Fidelity Creamery	Indiv.	H. F. Beyer, Proprietor	Edgewood	Ed. J. Whipple	S. & G. C.	Test.
207	Elkport	Elkport Creamery	Indiv.	H. F. Beyer, Proprietor	Edgewood	Hans J. Foss	S. & G. C.	Test.
208	Farmersburg	Farmersburg Co-oper. Cr'y Co.	Co-op.	John Johnson, Secretary	St. Olaf, R. I.	L. D. Hendershott	Gath. Cr.	H. & oil.
209	Garnavillo	Garnavillo Farm's Co-op. Cr'y Co	Co-op.	H. Kuhlman, Secretary	Garnavillo	C. B. Chandler	S. & G. C.	Test.
210	Luana	Luana Farmers Co-op. Cr'y Co	Co-op.	John H. Hanson, Secretary	Luana	James A. Barker	Gath. Cr.	Test.
211	Littleport	Littleport Creamery	Indiv.	H. F. Beyer, Proprietor	Edgewood	Darr Whipple	S. & G. C.	Test.
212	Littleport	Communia Creamery	Stock	H. R. Carpenter, Manager	Elkader	Peter Klink	Separator	Test.
213	Monona	Monona Creamery	Stock	H. R. Carpenter, Manager	Elkader	R. L. Cagley	Separator	Test.
214	Osterdock	Osterdock Creamery	Stock	H. R. Carpenter, Manager	Elkader	A. H. Peacock	S. & G. C.	Test.
215	Mederville	Mederville Creamery	Stock	H. R. Carpenter, Manager	Elkader	E. L. Schnerman	Separator	Test.
216	McGregor	J. D. Bickel Produce Co.	Stock	M. V. Bickel, Secretary	McGregor	C. C. Corlett	Gath. Cr.	Test.
217	Strawberry Point	Strawberry Pt. Fr. Co-op. Cr'y Ass	Co-op.	O. C. Gadin, Secretary	Strawberry Point	H. J. Evans	Separator	Test.
218	St. Olaf	St. Olaf Farmers Creamery Co.	Co-op.	G. R. Engelhardt, Sec.	St. Olaf	Jack Frisby	Gath. Cr.	Test.
219	Volga City	Farmers Co-oper. Creamery Co	Co-op.	Wm. Leue, Secretary	Volga City	Joe Jones	Separator	Test.
220	Watson	Blue Grass Creamery	Co-op.	John Gersaghty, Secretary	McGregor R I	F. A. Fiete	Gath. Cr.	Test.
221	Gunder	Clermont Valley Cr'y Co. (s)	Co-op.	F. F. Ferguson, Secretary	Clermont		Separator	Test.
<i>Clinton County-</i>								
222	Clinton	Clinton Creamery	Indiv.	J. Wright & Sons	Clinton	E. J. Wright	Gath. Cr.	O. & T.
223	Delmar Junction	Springbrook Creamery	Indiv.	John Newman Co.	Elgin, Ill	I. J. Spohn	Separator	Test.
224	Elwood	Springbrook Creamery	Indiv.	John Newman Co.	Elgin, Ill	F. W. Leinbaugh	Separator	Test.
<i>Grand Mound</i>								
225	Grand Mound	Grand Mound Creamery	Indiv.	Chas. Hanbold, Proprietor	Grand Mound	Chas. Hanbold	S. & G. C.	Test.
226	Blidorn	Grand Mound Creamery (s)	Indiv.	Chas. Hanbold, Proprietor	Grand Mound		S. & G. C.	Test.
227	Lost Nation	Farmers Co-op. Creamery Co.	Co-op.	A. L. Cook, Secretary	Lost Nation	L. A. Palmer	Separator	Test.
228	Petersville	Springbrook Creamery	Indiv.	John Newman Co.	Elgin, Ill	A. J. Spohn	Separator	Test.
229	Teeds Grove	Teeds Grove Creamery	Stock	John Newman Co.	Elgin, Ill	Alof Anrep	Separator	Test.
230	Weldon	Springbrook Creamery	Indiv.	John Newman Co.	Elgin, Ill	C. B. Berst	Separator	Oil test.
231	Wheatland	Farmers Co-op. Creamery Co.	Co-op.	Emil Lohmann, Secretary	Wheatland	A. E. Banta	Separator	Test.
232	Toronto	Farmers Co-op. Creamery Co.	Co-op.	Edward Hart, Jr., Secretary	Toronto	James Gallagher	Separator	Test.
233	Browns	Springbrook Creamery (s)	Indiv.	John Newman Co.	Elgin, Ill		Separator	Test.
234	Los. Nation	Diamond Creamery Co. (s)	Indiv.	Andrew Nemo, Treasurer	Monticello		S. & G. C.	Test.
235	Lost Nation	Diamond Creamery Co. (s)	Indiv.	Andrew Nemo, Treasurer	Monticello		S. & G. C.	Test.
236	Lost Nation	Diamond Creamery Co. (s)	Indiv.	Andrew Nemo, Treasurer	Monticello		S. & G. C.	Test.
<i>Crawford County</i>								
237	Charter Oak	Charter Oak Creamery	Indiv.	John C. Keller, Proprietor	Charter Oak	John C. Keller	Gath. Cr.	Test.
238	Denison	Fairmont Creamery Co.	Stock	J. H. Rushton, Secretary	Fairmont, Neb.	A. F. Durkee	Hand Sep	Test.
239	Kiron	Kiron Co-op Mut. Creamery Co	Co-op.	E. E. Williams, Secretary	Kiron	A. Tobler	S. & G. C.	Test.
<i>Dallas County-</i>								
240	Dexter	Farmers Co-op Creamery Assn.	Co-op.	James L. Keachie, Secretary	Dexter	James L. Keachie	Separator	Test.
241	Dallas Center	Dallas Center Butter & C. Co.	Stock	D. E. Hoff, Secretary	Dallas Center	W. H. Hall	Separator	Test.
242	Panther	Dallas Center Butter & C. Co.	Stock	D. E. Hoff, Secretary	Dallas Center		Separator	Test.
243	Perry	J. Moody & Son	Indiv.	J. Moody & Son	Perry	Fred French	Separator	Test.
244	Woodward	Woodward Creamery	Indiv.	H. P. Caloney, Proprietor	Woodward	A. B. Caloney	Separator	Test.
245	Van Meter	Waterloo Creamery Co. (s)	Stock	Burt B. Corliss, Treasurer	Des Moines		Separator	Test.
246	Minburn	Waterloo Creamery Co. (s)	Stock	Burt B. Corliss, Treasurer	Des Moines		Separator	Test.
247	Brough	Yale Creamery Co. (s)	Indiv.	Park & Sons	Yale		Separator	Test.
<i>Davis County-</i>								
248	Bloomfield	Yorkshire Creamery Co.	Stock	R. N. Morrell, Secretary	Ottumwa	T. J. McIntire	Separator	Test.
249	Pulaski	Yorkshire Creamery Co. (s)	Stock	R. N. Morrell, Secretary	Ottumwa		Separator	Test.
250	Drakeville	Yorkshire Creamery Co. (s)	Stock	R. N. Morrell, Secretary	Ottumwa		Separator	Test.
251	Dunville	Yorkshire Creamery Co. (s)	Stock	R. N. Morrell, Secretary	Ottumwa		Separator	Test.
<i>Decatur County</i>								
252	Leroy	Old Colony Creamery (s)	Indiv.	T. G. Hide, Manager	Humeston		Separator	Test.
253	Van Wert	Old Colony Creamery (s)	Indiv.	T. G. Hide, Manager	Humeston		Separator	Test.
254	Lamoni	Old Colony Creamery (s)	Indiv.	T. G. Hide, Manager	Humeston		Separator	Test.
255	Leansanton	Old Colony Creamery (s)	Indiv.	T. G. Hide, Manager	Humeston		Separator	Test.
256	Leon	Leon Creamery	Indiv.	A. McCartney & Co.	Leon		S. & G. C.	Test.
<i>Delaware County-</i>								
257	Worthington	Central Co-op Creamery	Co-op.	J. H. White, Secretary	Worthington	Anton Newhaus	Separator	Test.
258	Greeley	Greeley Farmers Creamery Co.	Co-op.	Nathan Griffith, Manager	Greeley	W. R. Crabb	Separator	Test.
259	Colesburg	Colesburg Creamery Co.	Co-op.	Paul Swantes, Sec. and Mgr	Colesburg	Abe Landis	Separator	Test.

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CREAMERY LIST—CONTINUED.

Office record number.	LOCATION.	NAME OF CREAMERY.	How operated.	NAME OF PROPRIETOR, SECRETARY OR MANAGER.	P. O. ADDRESS OF PROPRIETOR, SECRETARY OR MANAGER.	NAME OF BUTTERMAKER.	Separator or gath. ed cream.	Method of receiving milk.
260	Manchester	Barryville Creamery	Stock.	Michael Barr.	Ryan	James Back	Separator	Test.
261	Hopkinton	Hopkinton Co-op. Creamery	Co-op.	M. L. McGlade, Sec. & Mgr.	Hopkinton	J. H. Griffith	Separator	Test.
262	Petersburg	Beaver Grove Co-op. Crm. Co.	Co-op.	F. H. Klastermann, Sec.	Dyersville	Geo. Demayer	Separator	Hund.
263	Delaware	Delaware Creamery Co.	Stock.	C. H. Angell, Secretary	Delaware	M. McDowell	Separator	Test.
264	Earlville	Earlville Creamery	Indiv.	J. M. Dunn, Proprietor.	Earlville	F. B. Zeitler	Separator	Test.
265	Earlville	Gilt Edge Creamery	Indiv.	J. M. Dunn, Proprietor.	Earlville	E. J. McCaffery	Separator	Test.
266	Manchester	Manchester Co-op. Creamery	Co-op.	James Bishop, Secretary	Manchester	C. D. Elder	Separator	Test.
267	Masonville	Masonville Co-op. Creamery Co.	Co-op.	F. S. Harris, Secretary	Masonville	W. S. Smarzo	Separator	Test.
268	Almoral	Almoral Creamery Co.	Co-op.	F. L. Carpenter, Secretary	Almoral	J. J. Schmidt	Separator	Test.
269	Delhi	Silver Spring Creamery	Stock.	Chas. A. Howard, Manager	Delhi	Chas. A. Howard	Separator	Test.
270	Petersburg	Petersburg Co-op. Crm. Co.	Co-op.	H. H. Scherbring, Sec. & Mgr.	Petersburg	Ed. Budden	Separator	Hund.
271	Manchester	Spring Branch Creamery	Stock.	J. B. Higman, Sec. & Mgr.	Manchester	A. A. Palmer	Separator	Test.
272	Thorpe	Farmers Co-op. Creamery Co.	Co-op.	M. E. Blair, Secretary	Manchester	W. K. Pollard	Separator	Test.
273	Sand Spring	Sand Spring Co-op. Crm. Co.	Co-op.	T. E. Wood, Secretary	Sand Spring	Anton Smith	Separator	Test.
274	Ryan	The Palmer-Hubbard Co.	Co-op.	C. B. Hubbard, Manager	Independence	C. J. Rohde	Separator	Test.
275	Ryan	The Palmer-Hubbard Co. (s)	Co-op.	C. B. Hubbard, Manager	Independence		Separator	Test.
276	Broadway	The Palmer-Hubbard Co. (s)	Co-op.	C. B. Hubbard, Manager	Independence		Separator	Test.
277	Willow Grove	The Palmer-Hubbard Co. (s)	Co-op.	C. B. Hubbard, Manager	Independence		Separator	Test.
278	Ryan	Silver Creek Creamery	Indiv.	Geo. E. Packer, Proprietor.	Ryan	Geo. Packer	Separator	Test.
279	Ryan	Silver Creek Creamery (s)	Indiv.	Geo. E. Packer, Proprietor.	Ryan		Separator	Test.
280	Oneida	Oneida Creamery Station	Indiv.	F. M. Burbridge, Prop.	Oneida	Thos. Dickson	Separator	Test.
281	Dundee	Dundee Co-op. Creamery Co.	Co-op.	Nathan Patton, Proprietor.	Oneida	Dan Babcock	Separator	Test.
282	Ehler	Ehler Creamery	Indiv.		Ehler		S. & G. C.	Test.
<i>Dickinson County—</i>								
283	Lake Park	Lake Park Far. Co-op. Crm.	Co-op.	J. G. Cheysler, Secretary	Lake Park	Ed. Star	S. & G. C.	Test.
284	Milford	Milford Fars. But. & C. Ass'n.	Co-op.	H. H. Shipman, Secretary	Milford	J. O. Miller	Separator	Test.
285	Spirit Lake	Farmers Co-op. Crm. Ass'n.	Co-op.	A. F. Bergman, Secretary	Spirit Lake	Geo. Williams	S. & G. C.	Test.
286	Terrill	Terrill Co-op. Creamery Co.	Co-op.	Mrs. J. O. Woods, Secret'y.	Terrill	W. C. Frank	Separator	Test.
<i>Dubuque County—</i>								
287	Balltown	Balltown Co-op. Creamery Co.	Co-op.	C. D. Harrington, Secret'y.	Specht's Ferry	Henry Koehler	Separator	Hund.
288	Cascade	Spring Valley Co-op. Crm. Co.	Co-op.	John M. Kremer, Secretary	Farley, R. 16.	Wm. Thompson	Separator	Test.
289	Cascade	Cascade Co-op. Creamery Co.	Co-op.	P. J. Conlin, Secretary	Cascade	C. T. Elliott	Separator	Test.
290	Dyersville	Hickory Valley Creamery	Stock.	John Ramm, Secretary	Farley, R. 17	Frank Rubly	Separator	Test.
291	Dyersville	Farmers Golden Star Creamery	Co-op.	F. P. Kern	Dyersville	John B. Feldmann	Separator	Test.
292	Epworth	Epworth Creamery Co.	Co-op.	J. D. Burrell, Secretary	Epworth	E. L. Beers	Separator	Test.
293	Fillmore	Fillmore Co-op. Creamery Co.	Co-op.	Wm. Fagan, Secretary	Fillmore	J. G. Stemmer	Separator	Test.
294	Farley	Johns Creek Creamery	Indiv.	A. K. Heald & Son, Props.	Farley	Robt. Parrott	Separator	Test.
295	Farley	Farley Creamery Co.	Co-op.	G. W. Cropp, Manager	Farley	Thos. Landis	Separator	Test.
296	Oneill	Oak Grove Creamery	Co-op.	Jonathan Paisley, Secretary	Waupeton, R. 30	H. Sylvester	Separator	Hund.
297	Lattners	Lattner's Spring Creamery	Indiv.	Joe C. Breitbach, Secretary	Epworth, R. 14	Henry Williams	Separator	Hund.
298	Luxemburg	Globe Creamery Co.	Co-op.	Joe Friedman	North Buena Vista, R. 1	B. Goetzinger	Separator	Test.
299	New Vienna	New Vienna Central Crm. Co.	Stock.	Bernard Herbers, Secretary	New Vienna	Frank Tegler	Separator	Hund.
300	Richardsville	Farm Creamery Co.	Stock.	John Fisher, Secretary	Durango, R. 35	John W. Farm	Separator	Hund.
301	Specht's Ferry	Riverside Creamery	Co-op.	Edward Semmert, Secretary	Dubuque, R. 1	Nick Semmert	Separator	Test.
302	Sherrill	Sherrill Creamery Co.	Co-op.	J. C. Boleyn, Secretary	Specht's Ferry, R. 1	Jos. Stillmunkes	Separator	Test.
303	Worthington	Worthington Creamery	Indiv.	C. Baehler, Proprietor	Worthington	C. Baehler	Separator	Test.
304	Zwingle	Otter Creek Creamery (s)	Indiv.	Geo. Laible, Proprietor	Zwingle		Separator	Test.
305	Holy Cross	Pin Oak Creamery Co.	Stock.	N. Mueller, Secretary	Nor Buena Vista	John Crippes	Separator	Test.
306	Dubuque	S. P. Wadley & Son Creamery	Indiv.	S. P. Wadley & Son	Dubuque	A. O. Waller	Gath. Cr	Test.
307	Landeville	Columbian Creamery	Indiv.	Lande Bros.	Dubuque	Geo. Werner	Separator	Test.
308	Dubuque	Dubuque Butter and Milk Co.	Indiv.	Frank Woodring	Dubuque		Gath. Cr.	Test.
309	Dubuque	Love Co-op. Creamery Co.	Co-op.		Dubuque		Separator	Test.
<i>Emmet County—</i>								
310	Armstrong	Farmers Creamery Co.	Co-op.	P. H. Burt, Secretary	Armstrong	H. Chronholm	Separator	Test.
311	Eatherville	Eatherville Creamery	Indiv.	John B. Keachie, Proprietor	Eatherville	John B. Keachie	Separator	Test.
312	Halfa	Halfa Co-op. Creamery Co.	Co-op.	Daniel Booth, Sec. and Mgr	Halfa	E. A. Bacon	Separator	Test.
313	Huntington	Huntington Co-op. Crm. Ass'n.	Co-op.	L. L. Druley, Secretary	Huntington	Benj. E. Lanning	Separator	Test.
314	Hoprig	Hoprig Farmers Creamery Co.	Co-op.	Miss E. R. Boold, Secretary	Hoprig	Julius Jensen	Separator	Test.
315	Ringsted	Denmark Creamery Co.	Co-op.	H. J. Fink, Secretary	Ringsted	Peter Knudsen	Separator	Test.
316	Ringsted	Forsythe Creamery	Co-op.	H. A. Gaarde, Secretary	Armstrong	Ed. Kressin	Separator	Test.
317	Wallingford	Wallingford Creamery Co.	Stock.	O. O. Anderson, Secretary	Wallingford	J. C. Jensen	Separator	Test.
<i>Fayette County—</i>								
318	Arlington	Brush Creek Farmers Creamery	Stock.	Guy L. Rawson, Secretary	Arlington	W. D. Arnsberger	Separator	Test.
319	Alpha	Alpha Farmers Creamery Co.	Co-op.	J. B. Hathaway, Secretary	Alpha	C. N. Beach	Separator	Test.
320	Clermont	Clermont Valley Creamery Co.	Co-op.	F. E. Ferguson, Secretary	Clermont	Amon Erickson	Separator	Test.
321	Elgin	Elgin Farmers Dairy Co.	Co-op.	Melch'r Luchsinger, Sec.	Elgin, R. 1	Ed. Hanson	Gath. Cr.	Test.
322	Fayette	Fayette Creamery association	Co-op.	Peter E. Jubb, Secretary	Fayette	Frank Sherman	Separator	Test.
323	Hawkeye	Hawkeye Creamery Co.	Co-op.	J. Q. Adams, Secretary	Hawkeye	R. E. White	Separator	Test.
324	Maynard	Harlan Creamery	Co-op.	J. C. Lewis, Secretary	Maynard	C. B. Bracy	Separator	Test.
325	Minkler	Oran Creamery	Co-op.	J. P. Schmit, Secretary	Minkler	Geo. H. Kneif	Separator	Hund.
326	Ossian	Burr Oak Creamery	Stock.	A. Paulson, Secretary	Ossian	G. M. Miller	Separator	Test.
327	Oelwein	Oelwein Farmers Creamery	Co-op.	E. E. Day, Secretary	Oelwein	G. W. Borland	Separator	Test.
328	Oelwein	Jefferson Creamery	Co-op.	J. H. Meyer, Secretary	Oelwein	A. H. Fard	Separator	Test.
329	Randalia	Randalia Creamery Co.	Co-op.	B. A. Cave, Secretary	Randalia	Robt. Wagner	Separator	Test.
330	Sumner	Center Valley Creamery Co.	Stock.	A. E. Fridly, Secretary	Sumner	E. B. Olds	Separator	Hund.
331	St. Lucas	The Farmers Co-op. Creamery	Co-op.	John J. Mihm, Sec. and Mgr	St. Lucas	B. H. Ruennen	Separator	Test.
332	Westgate	Westgate Creamery Co.	Co-op.	Thos. Beeher, Secretary	Westgate	W. B. Johnson	Separator	Test.
333	Wadena	Riverside Creamery	Indiv.	F. J. Schroeder, Proprietor.	Wadena	F. J. Schroeder	S. & G. C.	Test.

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Office record number.	LOCATION.	NAME OF CREAMERY.	How operated.	NAME OF PROPRIETOR, SECRETARY OR MANAGER.	P. O. ADDRESS OF PROPRIETOR, SECRETARY OR MANAGER.	NAME OF BUTTER MAKER.	Separator or gathered cream.	Method of receiving milk.
884	West Union	West Union Farmers' Dairy Co.	Stock.	Geo. Swale, Secretary.	West Union	J. N. Gardner.	Separator	Test.
885	Waucoma	Waucoma Farmers' Crm. Co.	Co-op.	J. E. Scallan, Secretary.	Waucoma	L. J. Gibbs	Separator	Test.
886	Aurora	Scott Creamery	Stock.	Palmer Hubbard Co.	Independence	Jas. McDonald	Separator	Test.
Floyd County—								
887	Charles City	Niles Creamery	Indiv.	J. J. Brunner, Proprietor.	Charles City, R. 1.	J. J. Brunner	Gath. Cr.	T & H S
888	Charles City	Charles City Creamery Co.	Indiv.	J. C. Daly, Proprietor.	Charles City	Fred Jones	Gath. Cr.	Test.
889	Nora Springs	Nora Springs Creamery Co.	Stock.	E. Pufahl, Manager.	Nora Springs	Ed. Pufahl	Gath. Cr.	Test.
890	Powersville	Powersville Creamery	Indiv.	Charles Gurler & Co., Prop.				
891	Rockford	Rockford Co-op. Dairy Ass'n.	Co-op.	C. L. Putney, Manager.	Nashua	W. H. Miller	Gath. Cr.	Oil.
892	Charles City	Flood Creek Creamery	Co-op.	E. R. Franklin, Manager.	Rockford	J. C. Larnham	Gath. Cr.	Oil.
893				M. A. Hirsch, Secretary.	Charles City	W. W. Day	Gath. Cr.	In. & T.
Franklin County—								
894	Alexander	Alexander Creamery	Indiv.	G. H. Gurler	DeKalb, Ill.	H. J. Kiepert	S & G. C.	Test.
895	Ackley	Edna Creamery (s)	Indiv.	Martin & Johnson Co.	Ackley	Chas. Strasburg	Separat.	Test.
896	Faulkner	Edna Creamery (s)	Indiv.	Martin & Johnson Co.	Ackley	Chas. Strasburg	Separat.	Test.
897	Coulter	Hamilton Creamery Co-op. Co.	Co-op.	Geo. Dohrmann, Secretary.	Hampton	Geo. Jorgensen	Separator	Test.
898	Chapin	Chapin Creamery	Indiv.	G. H. Gurler, Proprietor.	DeKalb, Ill.	R. E. Shockley	S & G. C.	Test.
899	Dows	Farmers' Co-op. Creamery Co.	Co-op.	C. A. Nicholson, Secretary.	Hampton	Frank L. Larson	S & G. C.	Test.
900	Hampton	Hampton Creamery (s)	Indiv.	A. J. Juhl, Proprietor.	Dows	Jacob Juhl	S & G. C.	Test.
901	Iowa Falls	Grant Center Creamery	Stock.	J. J. Hensing, Secretary.	Hampton	John F. Dawson	Separator	In. & oil.
902	Latimer	Latimer Co-op. Creamery	Co-op.	Chris. Iblings, Secretary.	Iowa Falls, R. 1	L. C. Cochran	Gath. Cr.	Test.
903	Burdette	Alden Creamery (s)	Co-op.	N. J. Wheeler, Manager.	Latimer		Gath. Cr.	Test.
904					Alden			
Greene County—								
905	Grand Junction	Grand Junc. Co-op. Crm. Ass'n	Co-op.	L. F. Hillman, Secretary.	Grand Junction	Warren Adams	Separator	Test.
906	Paton	Paton Creamery	Indiv.	George E. White, Prop.	Paton	Ralph White	Separator	Test.
907	Scranton	Scranton Creamery	Indiv.	Lewis & Adams, Props.	Scranton	A. E. Adams	Separator	Test.
908	Coon Rapids	Coon Rapids Creamery (s)	Indiv.	H. L. Fest, Proprietor.	Coon Rapids		Gath. Cr.	Test.
Grundy County—								
909	Aplington	Bucks Grove Creamery	Co-op.	O. Nielsens, Secretary	Aplington	W. J. Dilger	Separator	Test.
910	Ackley	Johnson Creamery	Stock.	Martin & Johnson Co.	Ackley	Hank Schmitzer	Separator	Test.
911	Dike	Dike Co-op. Creamery	Co-op.	E. B. Roush, Secretary	Dike	A. Kindberg	S & G. C.	Test.
912	Fredsville	Fredsville Co-op. Co.	Co-op.	Hans Lausen, Secretary	Cedar Falls, R. 3	Soren Jorgensen	Separator	Test.
913	Grundy Center	Palemno Creamery Co.	Co-op.	T. C. Cushman, Secretary	Grundy Center	John H. Isden	Separator	Test.
914	Holland	Holland Creamery	Indiv.	J. Cutts, Proprietor	Grundy Center	H. J. Kieckhoff	Gath. Cr.	T. H. S.
915	Holland	Holland Creamery (s)	Indiv.	J. Cutts, Proprietor	Grundy Center		Gath. Cr.	T. H. S.
916	Stout	Grant Center Creamery Co.	Co-op.	Jacob A. Meyer, Secretary.	Stout	Theodore Dilger	Separator	Test.
917	Wellburg	Wellburg Farmers Cream. Co.	Co-op.	H. S. Meyer, Secretary	Wellburg	Chris. Vohs	S & G. C.	Test.
918	Zaneta	Zaneta Creamery Co.	Co-op.	George C. Terrall, Sec'y.	Zaneta	Wm. McFarlane	Separator	Test.
Guthrie County—								
919	Bayard	Bayard Creamery Co.	Co-op.	C. L. Knox, Secretary	Casey	C. H. Matavers	Separator	Test.
920	Casey	Casey Creamery Co.	Co-op.	Mac T. Moore, Secretary	Guthrie Center	J. L. Clarke	S & G. C.	Test.
921	Guthrie Center	Guthrie Center Co-op. Crm. Co.	Co-op.	J. C. Hane, Secretary	Glendon	J. T. Girard	Separator	Test.
922	Glendon	Glendon Creamery Co.	Co-op.	A. C. Curtis, Secretary	Adair	H. H. Colbert	Separator	Test.
923	Menlo	Menlo Creamery Co.	Stock.	F. F. Wilcox, Proprietor.	Panora	John Tuff	Separator	Test.
924	Panora	Panora Creamery	Indiv.	C. M. Cady, Secretary	Stuart	A. Cochrane	Separator	Test.
925	Stuart	Stuart Co-op. Creamery Co.	Co-op.	Park & Sons	Yale	D. C. Barthlow	Separator	Test.
926	Yale	Yale Creamery	Indiv.	Cabe & McKinnon	100 Washington St., Chicago	T. B. Russell	Separator	Test.
927	North Adair	Tri-State Creamery Co. (s)	Indiv.	Jno. J. King	Omaha, Neb.		Separator	Test.
928	Dale City	Nebraska and Iowa Crm. Co. (s)	Indiv.	Jno. J. King	Omaha, Neb.		Separator	Test.
929	Monteith	Nebraska and Iowa Crm. Co. (s)	Indiv.	Jno. J. King	Omaha, Neb.		Separator	Test.
930	North Branch	Nebraska and Iowa Crm. Co. (s)	Indiv.	Jno. J. King	Omaha, Neb.		Separator	Test.
931	Saunders	Nebraska and Iowa Crm. Co. (s)	Indiv.	Jno. J. King	Omaha, Neb.		Separator	Test.
932	Wichita	Nebraska and Iowa Crm. Co. (s)	Indiv.	Jno. J. King	Omaha, Neb.		Separator	Test.
933	Guthrie Center	Hygeia Creamery (s)	Indiv.	E. C. Sharpe, Manager	Guthrie Center		Separator	Test.
Hamilton County—								
934	Blairsburg	Blairsburg Creamery	Indiv.	P. E. Saxer, Proprietor.	Blairsburg	P. E. Saxer	Separator	Test.
935	Ellsworth	Ellsworth Co-op. Crm. Assn.	Co-op.	S. Sternberg, Secretary	Ellsworth	M. J. Mansager	Separator	Test.
936	Williams	Ellsworth Co-op. Crm. Assn. (s)	Co-op.	S. Sternberg, Secretary	Ellsworth	H. K. Gronbech	Separator	Test.
937	Jewell	Jewell Creamery	Indiv.	H. K. Gronbech, Proprietor	Jewell		Separator	Test.
938	Jewell	Jewell Creamery (s)	Indiv.	H. K. Gronbech, Proprietor	Jewell		Separator	Test.
939	Randall	Randall Farmers Creamery Co.	Co-op.	H. N. Miller, Secretary	Randall	H. N. Miller	Separator	Test.
940	Stratford	Rice & Soenke	Indiv.	S. O. Rice, Manager	Stratford	Oscar Holiday	S & G. C.	Test.
941	Webster City	Prairie Queen Creamery	Indiv.	J. L. Roy Hutchison	Webster City	J. L. Roy Hutchison	Separator	Test.
942	Woolstock	Prairie Queen Creamery (s)	Indiv.	J. L. Roy Hutchison	Webster City		Separator	Test.
943	Wilke	Prairie Queen Creamery (s)	Indiv.	J. L. Roy Hutchison	Webster City		Separator	Test.
944	Wilke	Wilke Creamery Co.	Indiv.	Wm. Wilke	Wilke	H. E. Ford	S & G. C.	Test.
945	Stanhope	The Stanhope Creamery	Indiv.	J. A. Chillquist, Proprietor	Stanhope	J. A. Chillquist	Separator	Test.
946	Radcliffe	Ellsworth Co-op. Crm. Assn. (s)	Co-op.	S. Sternberg, Secretary	Ellsworth		Separator	Test.

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STATE DAIRY COMMISSIONER.

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CREAMERY LIST—CONTINUED.

Office record number.	LOCATION.	NAME OF CREAMERY.	How operated.	NAME OF PROPRIETOR, SECRETARY OR MANAGER.	P. O. ADDRESS OF PROPRIETOR, SECRETARY OR MANAGER.	NAME OF BUTTER MAKER.	Separator or method of creaming.	Method of re-milking.
<i>Hancock County—</i>								
395	Britt	Britt Co-op. Creamery Co.	Co-op.	John S. Fisk, Secretary	Britt	H. L. McNary	Separator	Test
396	Duncan	Britt Co-op. Creamery Co. (s)	Co-op.	John S. Fisk, Secretary	Britt		Separator	Test
397	Crystal Lake	Crystal Lake Creamery Co.	Co-op.	Martin Larson, Secretary	Crystal Lake	L. A. Nelson	Separator	Test
398	Goodell	Goodell Creamery Co.	Stock	A. C. Carpenter, Secretary	Goodell	Guy Thomas	S. & G. C.	Test
399	Garner	Garner Creamery	Indiv.	H. C. Schultz, Proprietor	Garner	C. Nelson	Gath. Cr.	Test
400	Garner	Concord Creamery	Co-op.	J. Klesel, Secretary	Garner	C. H. Conway	Separator	Test
401	Kanawha	Kanawha Creamery Co.	Co-op.	O. T. Rikansrud, Secretary	Kanawha	J. D. Gift	Gath. Cr.	T. H. g.
402	Klemme	Klemme Creamery Co.	Co-op.	Louis Sampson, Secretary	Klemme	Myron Caskin	Gath. Cr.	I. & O.
403	Miller	Miller Creamery Co.	Stock	P. O. Peterson, Manager	Miller	A. J. Dolechal	Separator	Test
404	Woden	Woden Creamery	Indiv.	L. C. Peterson, Proprietor	Woden	L. C. Peterson	S. & G. C.	Test
405	Madison	Forest City Co-op. Crm. Assn. (s)	Co-op.	Peter Isaacson, Secretary	Forest City	L. Richards	Separator	Test
406	Hayfield	Hayfield Creamery	Co-op.				Separator	Test
<i>Hardin County—</i>								
407	Alden	Alden Creamery	Co-op.	T. E. Huston, Secretary	Alden	N. H. Trimble	S. & G. C.	Test
408	Buckeye	Buckeye Creamery	Indiv.	A. W. Schweppe, Proprietor	St. James, Minn.	Aug Landt	Separator	Test
409	Cottage	Cottage Creamery Co.	Co-op.	Carl T. Siciak, Secretary	Buckeye	G. H. Whitney & D. W. Mohlen	Separator	Test
410	Cleves	Cleves Creamery	Indiv.	Martin & Johnson Co.	Ackley	A. D. Gimer	Separator	Test
411	Eldora	Jensen & Krause Creamery	Indiv.	Jensen & Krause, Props.	Eldora	Jensen & Krause	Separator	Test
412	Owasa	Jensen & Krause Creamery (s)	Indiv.	Jensen & Krause, Props.	Eldora		Separator	Test
413	Hubbard	Spring Branch Co-op. Crm. Co.	Co-op.	J. K. Towley, Secretary	Hubbard	R. Nelson	Separator	Test
414	Hubbard	Hubbard Co-op. Creamery Co.	Co-op.	Ernest Hiker, Secretary	Hubbard	John Mahler	Separator	Test
415	Iowa Falls	Iowa Falls Creamery Co.	Co-op.	G. L. Whinery, Secretary	Iowa Falls	J. J. Ross	Separator	Test
416	New Providence	New Providence Creamery Co.	Stock	W. T. Kersey, Secretary	New Providence	Chas. N. Hart	Separator	Test
417	Radcliffe	Conrad & Scott Creamery Co.	Co-op.	Oscar Sampson, Secretary	Garden City	H. R. Alcorn	Separator	Test
418	Garden City	Conrad & Scott Creamery Co. (s)	Co-op.	Oscar Sampson, Secretary	Garden City		Separator	Test
419	Radcliffe	Conrad & Scott Creamery Co. (s)	Co-op.	Oscar Sampson, Secretary	Garden City		Separator	Test
420	Robertson	Robertson Creamery	Indiv.	Martin & Johnson Co.	Ackley	Fred Fidler	Separator	Test
421	Steamboat Rock	Steamboat Rock Creamery Co.	Co-op.	C. L. Turner, Secretary	Steamboat Rock	W. Peterson	Separator	Test
422	Union	Union Creamery Co.	Co-op.	O. W. Dillon, Sec. and Mgr.	Union	L. Hall	Gath. Cr.	Test
<i>Harrison County—</i>								
423	Logan	Crisp Creamery	Co-op.	N. Danielson, Secretary	Crisp	N. Danielson	S. & G. C.	Test.
424	Magnolia	Magnolia Creamery Co.	Co-op.	F. H. Cadwell, Secretary	Logan	H. D. Wendt	Separator	Test.
<i>Henry County—</i>								
425	Salem	Farmers Mutual Co-op. Cr'y Co	Co-op.	W. E. Simpkin, Secretary	Salem	Louis Nielson	Separator	Test.
<i>Howard County—</i>								
426	Cresco	Cresco Creamery	Indiv.	Geo. Bohnen, Proprietor	Cresco	Geo Bohnen	S & G. C.	Test.
427	Chester	Farmers Co-oper Creamery Co.	Co-op.	Magnus Leslie, Secretary	Chester	E. A. Hoopman	Gath. Cr.	I. & O. T.
428	Elma	Elma Co-oper Creamery Co.	Co-op.	Daniel Fallgatter, Secretary	Elma	John P. Whalen	Separator	Test.
429	Elma	Maple Leaf Creamery	Co-op.	Alex Hutton, Secretary	Maple Leaf	A. J. Herman	Separator	Test.
430	Elma	Louder Creamery	Stock	H. R. Carpenter, Secretary	Elkader	J. F. Fisher	Separator	Test.
431	Lime Springs	Lime Springs Creamery	Stock	H. R. Carpenter, Secretary	Elkader	John Foss	Gath. Cr.	O. & C.
432	Protivin	Protivin Creamery Ass'n.	Co-op.	J. A. Dostal, Secretary	Protivin	J. A. Dostal	Separator	I. & O. T.
433	Schley	Schley Creamery	Indiv.	Frank Pecinowsky, Prop'r.	Schley	F. Pecinowsky	Gath. Cr.	Test.
434	Saratoga	Saratoga Creamery	Stock	H. R. Carpenter, Sec.	Elkader	Henry Foss	Gath. Cr.	O. & C.
<i>Humboldt County—</i>								
435	Arnold	Grove Co-oper. Creamery Co.	Co-op.	Charles J. Nelson, Sec	Arnold	John Schultz	S. & G. C.	Test.
436	Bradgate	Bradgate Co-oper. Cr'y Ass'n	Co-op.	J. L. Van Horn, Sec. & Mgr	Bradgate	Wm. Evans	Separator	Test.
437	Bode	Bode Creamery Association	Co-op.	O. Peterson, Secretary	Bode	M. H. Rossing	Separator	Test.
438	Goldfield	Far's Mutual Co-op. Cr'y Ass'n	Co-op.	L. M. Michaelson, Secretary	Thor	G. M. Fietland	S. & G. C.	Test.
439	Hardy	Farmers Co-operative Creamery	Co-op.	A. N. Clancy, Secretary	Hardy	E. A. Junkins	Separator	Test.
440	Humboldt	Humboldt Creamery	Co-op.	G. L. Cruikshank, Sec. & Mgr	Humboldt	L. D. Hill	Separator	Test.
441	Ottosen	Waconsta Creamery Ass'n.	Co-op.	L. J. Olave, Secretary	Ottosen	I. J. Thorsen	Separator	Test.
442	Pioneer	Pioneer Creamery	Indiv.	Rasmus Stoltberg	Pioneer	Knud Stoltberg	Separator	Test.
443	Renwick	Renwick Creamery Co.	Co-op.	Ang. Griebel, Secretary	Renwick	W. G. Stultzbach	Separator	Test.
444	Rutland	Rutland Creamery Ass'n.	Co-op.	S. S. Bartley, Secretary	Rutland	T. M. Borglum	Separator	Test.
445	Thor	Clover Creamery	Stock	Lewis Olson, Secretary	Thor	P. O. Knutsen	Separator	Test.
<i>Ida County—</i>								
446	Arthur	Arthur Creamery	Indiv.	M. J. Concklin	Arthur	M. J. Concklin	Separator	Test.
447	Holstein	Holstein Creamery	Indiv.	A. M. Hubbard, Proprietor	Holstein	Arthur B. Meen	S. & G. C.	Test.
<i>Iowa County—</i>								
448	Conroy	Shimer Creamery Co.	Co-op.	S. H. Stanerson, Secretary	Conroy	W. H. Woodcock	Separator	Test.
449	Ladora	Genoa Bluff Co-oper. Cr'y Co.	Co-op.	W. L. Morse, Secretary	Genoa Bluff	Geo. P. Byrne	Separator	Test.
450	Ladora	Ladora Creamery Co.	Co-op.	L. W. Wilson, Secretary	Ladora	John Baitinger	Separator	Test.
451	Marengo	Marengo F'r's Mut Co-op. Cr'y Co	Co-op.	S. M. Heck, Secretary	Marengo	Geo. Straft	Separator	Test.
452	Marengo	Marengo Creamery	Indiv.	Shipton & Vette, Proprietors	Marengo	John Howard	Gath. Cr	O. & C.
453	Victor	Victor Co-operative Creamery	Co-op.	H. Whitworth, Secretary	Victor	Geo. Baitinger	Separator	Test.
454	Williamsburg	Troy Creamery Co.	Co-op.	Geo. C. House, Secretary	Williamsburg	E. E. Montgomery	Separator	Test.

CREAMERY LIST—CONTINUED.

Office record number.	LOCATION.	NAME OF CREAMERY.	How operated.	NAME OF PROPRIETOR, SECRETARY OR MANAGER.	P. O. ADDRESS OF PROPRIETOR, SECRETARY OR MANAGER.	NAME OF BUTTER MAKER.	Separator or gathered cream.	Method of re-culding milk.
455	Williamsburg	Troy Creamery Co. (s)	Co-op.	Geo. C. House, Secretary	Williamsburg		Separator	Test.
456	Williamsburg	York Creamery Co.	Co-op.	H. W. Huedefohl, Secretary	Williamsburg	T. Winter	Separator	Test.
457	North English	Yorkshire Creamery Co.	Stock.	R. N. Morrell, Secretary	Ottumwa		Separator	Test.
<i>Jackson County—</i>								
458	Andrew	Andrew Lily Creamery	Indiv.	H. L. Flagel, Proprietor	Andrew	H. L. Flagel	S. & G. C.	Test.
459	Fulton	Fulton Co-op. Creamery Co.	Co-op.	John Heide, Manager	Fulton	Howard Coulson	Separator	Test.
460	Monmouth	Monmouth Creamery	Indiv.	James P. Younger, Prop.	Chicago, 40 Dearborn St.	H. H. Sargent	Separator	Test.
461	Maquoketa	Fars. Union Co-op. Crm. Co.	Co-op.	Walter M. Miller, Sec.	Maquoketa	H. P. Bancroft	Separator	Test.
462	Miles	Springbrook Creamery	Indiv.	John Newman, Proprietor	Elgin, Ill.	A. M. Anderson	Separator	Test.
463	Otter Creek	Otter Creek Creamery	Indiv.	Geo. Laible, Proprietor	Zwingle	Geo. Turner	Separator	Test.
464	Preston	Preston Creamery Association	Co-op.	Samuel McNeil, Secretary	Preston	John Smith	S. & G. C.	Test.
465	Preston	Preston Creamery Ass'n. (s)	Co-op.	Samuel McNeil, Secretary	Preston		S. & G. C.	Test.
466	Preston	Springbrook Creamery	Indiv.	John Newman Co., Prop.	Elgin, Ill.	A. J. Negus	Separator	Test.
467	Spragueville	Springbrook Creamery (s)	Indiv.	John Newman Co., Prop.	Elgin, Ill.		Separator	Test.
468	Union Center	Springbrook Creamery (s)	Indiv.	John Newman Co., Prop.	Elgin, Ill.		Separator	Test.
469	Lamotte	Sterling Creamery Co.	Indiv.	N. A. Hoffman, Proprietor	Lamotte	John M. Hoffman	Separator	Test.
470	St. Donatus	St. Donatus Creamery	Indiv.	Krier & Dupont, Props	St. Donatus	P. J. Dupont	S. & G. C.	Test.
471	Baldwin	Diamond Creamery Co. (s)	Indiv.	Andrew Nimmo, Treasurer	Monticello		S. & G. C.	Test.
472	Maquoketa	Hansen's Creamery	Indiv.	E. D. Hansen, Proprietor	Maquoketa	C. C. Clifton	Gath. Cr.	Test.
473	Lamotte	Lamotte Creamery	Indiv.	John C. Nemmers, Mgr.	Lamotte	J. C. Nemmers	S. & G. C.	Test.
<i>Jasper County—</i>								
474	Baxter	Baxter Dairy Co.	Co-op.	H. Krumpke, Jr., Secretary	Baxter	A. E. McClune	Separator	Test.
475	Monroe	Monroe Creamery	Indiv.	M. C. Chase, Proprietor	Monroe	M. C. Chase	Separator	Test.
476	Newton	Newton Creamery Co.	Co-op.	Samuel Lester, Secretary	Newton	A. B. Olson	Gath. Cr.	Test.
477	Newberg	Newberg Creamery Co.	Stock.	G. D. Alden, Secretary	Newberg	H. E. Webb	Separator	Test.
478	Grinnell	J. W. Fowler Co. (s)	Stock.	J. W. Fowler	Grinnell		Separator	Test.
479	Sully	Sully Creamery	Indiv.	C. C. Bomberger, Prop.	Sully	W. E. Bomberger	Gath. Cr.	Oil.
<i>Jefferson County—</i>								
480	Fairfield	Fairfield Creamery	Co-op.	Jacob Rath, Secretary	Fairfield	G. Y. Ross	Separator	Test.
481	Four Corners	Four Corners Creamery Co.	Co-op.	C. L. Schreiber, Secretary	Four Corners	C. L. Schreiber	Separator	Test.
482	Salina	Salina Creamery Co.	Co-op.	Joe Schillerstrom, Sec.	Salina	H. S. Wood	Separator	Test.
483	Glendale	Yorkshire Creamery Co. (s)	Stock.	R. N. Morrell, Sec.	Ottumwa		Separator	Test.

<i>Johnson County—</i>								
484	Lone Tree	Jahnke Creamery	Indiv.	F. C. Jahnke	Lone Tree	F. C. Jahnke	Gath. Cr.	Test.
485	Oxford	Oxford Creamery	Indiv.	Howie & Smith	Brooklyn	Harvey Ambler	S. & G. C.	Test.
<i>Jones County—</i>								
486	Anamosa	Fawn Creek Creamery	Indiv.	J. S. Condit, Proprietor	Anamosa	W. D. Romine	Separator	Test.
487	Amber	Clover Leaf Creamery	Co-op.	Perry A. Stockwell, Sec'y	Monticello	Perry A. Stockwell	Separator	Test.
488	Amber	Amber Creamery	Indiv.	J. P. Younger, 40 Dearborn Street	Chicago, Ill.	Wm. Gearhart	Separator	Test.
489	Center Junction	Center Junction Creamery	Indiv.	J. P. Younger, 40 Dearborn Street	Chicago, Ill.	A. E. Robertson	Separator	Test.
490	Onslow	Center Junction Creamery (s)	Indiv.	J. P. Younger, 40 Dearborn Street	Chicago, Ill.		Separator	Test.
491	Hale	Hale Creamery Co.	Stock.	C. E. Walston, Secretary	Hale	W. H. Brownell	Separator	Test.
492	Langworthy	Langworthy Co-op. Creamery	Co-op.	L. Batchelder, Secretary	Langworthy	J. H. Batchelder	Separator	Test.
493	Martelle	Martelle Creamery	Stock.	Batchelder Bros.	Martelle	S. C. Batchelder	Separator	Test.
494	Monticello	Elondike Creamery	Co-op.	R. Bohren, Secretary	Monticello	A. F. Carrier	Separator	Test.
495	Monticello	Diamond Creamery	Indiv.	Andrew Nimmo, Treasurer	Monticello	C. E. Lee	S. & G. C.	Test.
496	Monticello	Diamond Creamery (s)	Indiv.	Andrew Nimmo, Treasurer	Monticello		S. & G. C.	Test.
497	Monticello	Diamond Creamery (s)	Indiv.	Andrew Nimmo, Treasurer	Monticello		S. & G. C.	Test.
498	Monticello	Diamond Creamery (s)	Indiv.	Andrew Nimmo, Treasurer	Monticello		S. & G. C.	Test.
499	Monticello	Diamond Creamery (s)	Indiv.	Andrew Nimmo, Treasurer	Monticello		S. & G. C.	Test.
500	Monticello	Diamond Creamery (s)	Indiv.	Andrew Nimmo, Treasurer	Monticello		S. & G. C.	Test.
501	Monticello	Diamond Creamery (s)	Indiv.	Andrew Nimmo, Treasurer	Monticello		S. & G. C.	Test.
502	Monticello	Diamond Creamery (s)	Indiv.	Andrew Nimmo, Treasurer	Monticello		S. & G. C.	Test.
503	Wyoming	Diamond Creamery (s)	Indiv.	Andrew Nimmo, Treasurer	Monticello		S. & G. C.	Test.
504	Oxford Junction	Diamond Creamery (s)	Indiv.	Andrew Nimmo, Treasurer	Monticello		S. & G. C.	Test.
505	Onslow	Clay Valley Co-op. Creamery	Co-op.	J. D. Neelans, Secretary	Onslow	A. Huck	Separator	Test.
506	Olin	Hazel Green Creamery	Indiv.	E. E. Snyder, Proprietor	Olin	E. E. Glick	Separator	Test.
507	Olin	Olin Creamery	Indiv.	Condit & Swanson	Olin	T. Swanson	Separator	Test.
508	Scotch Grove	Scotch Grove Creamery	Co-op.	H. R. Jacobs, Secretary	Scotch Grove	H. C. Dice	S. & G. C.	Test.
509	Wyoming	Wyoming Co-op. Creamery Assn	Co-op.	T. M. Bassett, Secretary	Wyoming	S. M. Conley	S. & G. C.	Test.
510	Onslow	Onslow Creamery	Indiv.	G. B. Hall, Proprietor	Onslow		Separator	Test.
<i>Keokuk County—</i>								
511	Delta	Delta Creamery	Indiv.	E. S. Sturdevant, Prop.	Delta	E. S. Sturdevant	Separator	Test.
512	Thornburg	Thornburg Creamery Co.	Co-op.	Fred Schott, Secretary	Thornburg	W. H. Woodcock	Separator	Test.
513	Webster	Webster Creamery	Indiv.	E. E. Gates, Proprietor	Webster	E. E. Gates	Gath. Cr.	In. Oil.
<i>Kossuth County—</i>								
514	Algona	Algona Creamery Co.	Co-op.	A. W. Sterzbach, Secretary	Algona	A. W. Sterzbach	Separator	Test.
515	Algona	Plum Creek Creamery	Co-op.	C. W. Hopkins, Secretary	Algona	G. R. Reese	Separator	Test.
516	Burt	Burt Co-op. Creamery Co.	Co-op.	C. H. Belknap, Secretary	Burt	D. L. Driver	Separator	Test.
517	Bancroft	Bancroft Co-op. Creamery Co.	Co-op.	John Haupt, Secretary	Bancroft	J. B. Deitering	Separator	Test.
518	Fenton	Fenton Creamery Co.	Co-op.	F. C. Newell, Secretary	Fenton	H. W. Pettibone	Separator	Test.
519	Germania	Germania Co-op. Creamery Co.	Co-op.	Peter Graves, Secretary	Germania	John Sundberg	S. & G. C.	Test.

CREAMERY LIST—CONTINUED.

Office record record.	LOCATION.	NAME OF CREAMERY.	How operated.	NAME OF PROPRIETOR, SECRETARY OR MANAGER.	P. O. ADDRESS OF PROPRIETOR, SECRETARY OR MANAGER.	NAME OF BUTTERMAKER.	Separator or gathered cream.	Method of receiving milk.
520	Hobart.....	Hobart Co-op. Creamery Co.	Co-op.	W. W. Annis, Secretary	Hobart.....	H. F. Hollenbeck	Separator	Test.
521	Irrington.....	Irrington Co-op. Creamery Co.	Co-op.	S. R. Raney, Secretary	Algona.....	L. P. Anderson	Separator	Test.
522	Luverne.....	Luverne Creamery Co.	Stock.	J. E. Miller, Secretary	Luverne.....	Geo. L. Minkler	Separator	Test.
523	Lone Rock.....	Lone Rock Co-op. Creamery Co.	Co-op.	H. J. McChesney, Secretary	Lone Rock.....	L. C. Adams	Separator	Test.
524	Ledyard.....	Farmers' Co-op. Crm. Ass'n.	Co-op.	E. J. Skinner, Secretary	Ledyard.....	Henry Dyer	Separator	Test.
525	Ringsted.....	Seneca Co-op. Creamery Co.	Co-op.	M. Jensen, Secretary	Seneca.....	August Johnson	Separator	Test.
526	Sexton.....	Sexton Co-op. Creamery Co.	Co-op.	Chas. A. Little, Secretary	Sexton.....	Bert O. Brownlee	Separator	Test.
527	St. Benedict.....	St. Benedict Co-op. Crm. Co.	Co-op.	Frank Van Erdewyk, Sec.	St. Benedict.....	C. A. Narell	Separator	Test.
528	St. Joseph.....	St. Joseph Creamery Co.	Co-op.	Peter Epling, Secretary	St. Joseph.....	Ed. T. Jones	Separator	Test.
529	Swea City.....	Swea City Co-op. Creamery Co.	Co-op.	Olof Pearson, Secretary	Swea City.....	Christ Morck	Separator	Test.
530	Titonka.....	German Valley Co-op. Crm. Co.	Co-op.	Herman Nelson, Secretary	Titonka.....	W. H. Haller	Separator	Hund.
531	Whittemore.....	Lotts Creek Co-op. Crm. Co.	Co-op.	Aug. Loetlicher, Secretary	Lotts Creek.....	M. J. Dyer	Separator	Test.
532	Whittemore.....	Whittemore Creamery Co.	Co-op.	Thos. Carnody, Secretary	Whittemore.....	Edw. Walsh	Separator	Test.
533	West Bend.....	Garfield Creamery	Co-op.	W. H. Cutshaw, Secretary	West Bend.....	W. H. Cutshaw	Separator	Test.
534	Wesley.....	Wesley Co-op. Crm. Co.	Co-op.	P. E. Skow, Secretary	Wesley.....	Christ Bogh	S. & G. C.	Test.
535	Woden.....	Woden Creamery (s)	Indiv.	L. C. Peterson, Secretary	Woden.....		S. & G. C.	Test.
Linn County—								
536	Alburnett.....	Alburnett Creamery	Indiv.	Henderson & Sawyer, Props.	Central City.....	W. C. Dubbs	Separator	Hund.
537	Anamosa.....	Birk Creamery	Indiv.	J. C. Hart, Secretary	Anamosa.....	J. P. Minchart	Separator	Hund.
538	Central City.....	Central City Creamery	Indiv.	Henderson & Sawyer, Props.	Central City.....	P. W. Sawyer	S. & G. C.	Test.
539	Central City.....	Ros- Creamery	Indiv.	W. W. Ross, Prop.	Central City.....	W. W. Ross	Separator	Hund.
540	Central City.....	Valley Farm Creamery	Indiv.	P. G. Henderson, Prop.	Central City.....	H. Elma Wright	S. & G. C.	Test.
541	Coggon.....	Coggon Creamery	Indiv.	J. J. McNary, Proprietor	Coggon.....	J. J. McNary	Separator	Test.
542	Coggon.....	North Side Creamery Co.	Co-op.	W. H. Fretz, Secretary	Coggon.....	Fred Lehman	Separator	Test.
543	Cedar Rapids.....	Cedar Valley Creamery	Stock.	G. L. Hubbell, Secretary	Cedar Rapids.....	A. C. Bender	Gath. Cr.	Test.
544	Center Point.....	Center Point Creamery	Indiv.	John Deerflinger, Prop.	Center Point.....	C. M. Fisher	Separator	Test.
545	Ely.....	Ely & Western Creamery	Co-op.	Frank J. Doleschal, Sec.	Ely.....	F. J. Adkins	Separator	Test.
546	Western College.....	Western Creamery (s)	Co-op.	Frank J. Doleschal, Sec.	Ely.....	F. J. Adkins	Separator	Test.
547	Prairieburg.....	Axtell Creamery	Indiv.	Minchart & Cook	Prairieburg.....	L. E. Minchart	Separator	Test.
548	Rogers.....	Minchart & Spitzer Bros.	Indiv.	Minchart & Spitzer Bros.	Rogers.....	A. L. Minchart	Separator	Hund.
549	Springville.....	Springville Creamery	Indiv.	C. E. Bachelder	Springfield.....	C. E. Batchelder	Separator	Test.
550	Troy Mills.....	Troy Mills Creamery Co.	Indiv.	J. M. Tupper, Prop.	Troy Mills.....	J. M. Tuppe	Separator	Hund.
551	Troy Mills.....	Highland Creamery	Co-op.	John Tehl, Mgr.	Walker.....	G. R. Batchelder	Separator	Hund.
552	Waubek.....	Waubek Creamery	Indiv.	Bates & Hemmenway, Props.	Waubek.....	H. C. Hemmenway	Separator	Hund.
553	Walker.....	Walker Creamery	Indiv.	H. J. Nietert, Proprietor	Walker.....	S. W. Laird	Separator	Test.
Louis County—								
554	Viola.....	Viola Creamery	Indiv.	C. N. Pollock, Proprietor	Viola.....	C. N. Pollock	Separator	Test.
555	Prairieburg.....	Diamond Creamery Co. (s)	Indiv.	Andrew Nimo, Treasurer	Monticello.....		S. & G. C.	Test.
556	Cedar Rapids.....	Cedar Rapids Crm. & Butter Co.	Indiv.	F. W. Beyer, Manager	Cedar Rapids.....	Gay Miller	Gath. Cr.	Test.
557	Paralta.....	Springville Creamery (s)	Indiv.	C. E. Batchelder	Springville.....		Separator	Test.
Lucas County—								
558	Letts.....	Letts Creamery	Indiv.	J. M. Hildebrand	Letts.....	J. M. Hildebrand	Gath. Cr.	Oil.
Lucas County—								
559	Russell.....	Russell Creamery Co.	Stock.	W. J. Marshall, Proprietor	Russell.....	W. J. Marshall	Separator	Test.
560	Derby.....	Old Colony Creamery (s)	Indiv.	T. G. Hyde, Manager	Humeston.....		Separator	Test.
Lyon County—								
561	George.....	George Creamery	Indiv.	H. P. Jennings	George.....	J. G. Vogel	S. & G. C.	Test.
562	Rock Rapids.....	Home Lawn Creamery	Indiv.	H. E. Morroe, Proprietor	Rock Rapids.....	Carl Morron	Gath. Cr.	T. H. S.
563	Little Rock.....	Little Rock Co-op. Creamery	Co-op.	R. E. Stenzel, Secretary	Little Rock.....	O. W. Dubbs	S. & G. C.	Test.
564	Larchwood.....	Larchwood Creamery	Indiv.	M. M. Lewis, Manager	Larchwood.....	M. M. Lewis	S. & G. C.	Test.
565	Lester.....	Lester Co-op. Creamery	Co-op.	T. J. Mains, Secretary	Lester.....	T. J. McMains	S. & G. C.	Hund.
Mahaska County—								
566	Peoria.....	Peoria Creamery Co.	Co-op.	W. S. Lindsley, Secretary	Peoria.....	J. N. Smith	Separator	Test.
567	New Sharon.....	New Sharon Creamery Co.	Stock.	W. J. Nicholson, Secretary	New Sharon.....	Harry E. Martin	Gath. Cr.	Test.
Marion County—								
568	Pella.....	Pella Creamery	Indiv.	J. J. Bousquet, Proprietor	Pella.....	T. Smorenburg	Gath. Cr.	In. & Oil.
569	Dallas.....	Waterloo Creamery Co. (s)	Stock.	Burt B. Corliss, Treasurer	Des Moines.....		Separator	Test.
570	Pleasantville.....	Waterloo Creamery Co. (s)	Stock.	Burt B. Corliss, Treasurer	Des Moines.....		Separator	Test.
Marshall County—								
571	Clemons.....	Minerva Valley Creamery Co.	Co-op.	T. J. Stanley, Secretary	Clemons.....	W. S. Cousins	Gath. Cr.	Inch.
572	Dunbar.....	Dunbar Creamery Co.	Co-op.	O. J. Olson, Sec and Mgr.	Dunbar.....	Wm. Helgason	Separator	Test.
573	Laurel.....	Laurel Creamery	Co-op.	H. Cavell, Secretary	Laurel.....	A. P. Buchanan	Separator	Test.
574	Liscomb.....	Liscomb Cheese Co.	Stock.	Thos. E. Culp, Secretary	Liscomb.....	Thos. E. Culp	Gath. Cr.	Test.
575	St. Anthony.....	St. Anthony Creamery Co.	Co-op.	D. H. Buck, Secretary	St. Anthony.....	H. C. Shetler	Separator	Test.
576	State Center.....	State Center Far. Crm. Ass'n.	Co-op.	C. Hansen, Manager	State Center.....	N. E. Lorenzen	Gath. Cr.	Oil.
Mills County—								
577	Mineola.....	Waterloo Creamery Co. (s)	Stock.	Leroy Corliss	Council Bluffs.....		Separator	Test.
578	Silver City.....	Waterloo Creamery Co. (s)	Stock.	Leroy Corliss	Council Bluffs.....		Separator	Test.
579	York Township.....	Waterloo Creamery Co. (s)	Stock.	Leroy Corliss	Council Bluffs.....		Separator	Test.

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Office record number.	LOCATION.	NAME OF CREAMERY.	How operated.	NAME OF PROPRIETOR, SECRETARY OR MANAGER.	P. O. ADDRESS OF PROPRIETOR, SECRETARY OR MANAGER.	NAME OF BUTTER MAKER.	Separator or gathered cream.	Method of receiving milk.
<i>Mitchell County</i> —								
580	David.	David Co-oper. Creamery Co.	Co-op.	Mrs. F. M. Griffin, Sec.	David	V. Fairbrother	Gath. Cr.	In. & O.
581	Little Cedar.	Little Cedar Creamery Co.	Co-op.	G. Hammond, Sec. and Mgr.	Little Cedar.	C. Widoness.	Gath. Cr.	Test.
582	Meroa.	Rock Creek Co-op. Cre'ry Ass'n	Co-op.	E. N. Nelson, Secretary	Meroa.	E. V. Cady	Gath. Cr.	Test.
583	Orchard.	Farmers Co-op. Creamery Ass'n	Co-op.	J. W. Clay, Sec. and Mgr.	Orchard.	Knute Hange	Gath. Cr.	Oil.
584	Riceville.	Riceville Co-op. Creamery Ass'n	Co-op.	F. J. Carpenter, Secretary	Riceville.	A. B. Grover	Gath. Cr.	In. & Ch
585	Stacyville.	Stacyville Creamery	Indiv.	J. B. Spensley, Prop.	Stacyville.	J. B. Spensley.	S. & G. C.	Test.
586	St. Ansgar.	Farmer Co-op. Creamery Co.	Co-op.	J. M. Tollefson, Sec. & Mgr.	St. Ansgar.	Eugene Mereness	Gath. Cr.	In. & O.
587	Toeterville.	Toeterville Co-op. Creamery Co.	Co-op.	L. C. Baker, Secretary	Toeterville.	A. M. Hofland.	Separator	Test.
588	New Haven.	Farmers Co-op. Creamery Ass'n	Co-op.	Fred C. Sheldon, Sec. & Mgr.	New Haven.	D. C. Thomas.	Gath. Cr.	Test.
589	Osage.	Osage Co-op. Creamery.	Co-op.	John Forsleff, Secretary	West Mitchell.	Geo. Heifter.	Gath. Cr.	Test.
<i>Monona County</i> —								
590	Moorhead.	Moorhead Creamery	Indiv.	P. D. Nelson, Proprietor.	Moorhead.	P. D. Nelson.	Gath. Cr.	Test.
<i>Monroe County</i> —								
591	Albia.	Albia Creamery	Indiv.	S. D. Thompson, Prop.	Albia.	S. D. Thompson.	Separator	Test.
<i>Montgomery County</i> —								
592	Elliott.	Tri-State Creamery Co.	Stock.	G. W. Bull, Chicago, Mgr.	100 Washingt'n St	E. E. Edwards.	Separator	Test.
<i>Muscatine County</i> —								
593	Wilton.	Nickel Plate Creamery.	Indiv.	Geo. W. Kelley, Prop.	Wilton Junction	E. G. Herring.	S. & G. C.	Oil & T.
594	Atalissa.	Atalissa Creamery & Produce Co	Indiv.	L. Pilkington, Prop.	Atalissa.	L. Pilkington.	Gath. Cr.	Oil & Ch
<i>O'Brien County</i> —								
595	Germantown.	Caledonia Creamery	Stock.	Wm. Gehrls, Manager	Germantown.	Wm. Gehrls.	Separator	Test.
596	Hartley.	Hartley Creamery.	Indiv.	A. D. Roseboom, Prop.	Hartley.	A. D. Roseboom.	S. & G. C.	Test.
597	Paullina.	The Union Creamery Co.	Stock.	Wm. Strampe, Sec. & Mgr.	Paullina.	W. Strampe.	Separator	Test.
598	Primghar.	Primghar Creamery Co.	Co-op.	Geo. Ward, Secretary	Primghar.	Henry Brummer.	Hand Sep	Test.
599	Sheldon.	Sheldon Creamery	Indiv.	D. A. Miller, Prop.	Sheldon.	John H. Busker.	S. & G. C.	Test.

<i>Osceola County</i> —								
600	Ashton.	Ashton Creamery	Indiv.	Perkins & Davis	Ashton	C. W. Davis	S. & G. C.	Test.
601	Sibley.	Sibley Creamery Co.	Indiv.	C. A. Smith Sec. and Treas	Sibley.	Dick Cosgrove	S. & G. C.	Test.
602	Mason City.	Hartley Creamery Co (s)	Indiv.	A. D. Rozebroom, Prop.	Hartley		S. & G. C.	Test.
<i>Page County</i> —								
603	Clarinda.	Clarinda Poultry But. & Egg Co	Stock.	E. B. Bailey, Supt.	Clarinda	Chas. Leibfarth.	Hand Sep	Test.
604	Clarinda.	Wall Street Creamery	Co-op.	B. J. Sunderman, Sec.	Clarinda	A. H. Gay.	Separator	Test.
605	Yorktown.	Yorktown Creamery	Indiv.	Wm. C. Kimble, Prop.	Yorktown.	Wm. C. Kimble	Separator	Test.
<i>Palo Alto County</i> —								
606	Ayrshire.	Silver Lake Creamery Co.	Co-op.	C. H. Cookinham.	Ayrshire	Ralph Hagey	Separator	Test.
607	Cylinder.	Cylinder Butter & Cheese Ass'n	Co-op.	Theo. DeMouth, Secretary	Cylinder	E. P. Conway	Separator	Test.
608	Curlew.	Curlew Creamery Co.	Co-op.	F. W. Shellman, Secretary	Curlew	F. W. Shellman	Separator	Test.
609	Curlew.	Curlew Creamery Co (s)	Co-op.	F. W. Shellman, Secretary	Curlew		Separator	Test.
610	Emmetsburg.	Emmetsburg Creamery Co	Stock.	Lewis Stuchmer, Secretary	Emmetsburg	N. H. Knudsen	Separator	Test.
611	Fairville.	Fairville Creamery Co.	Stock.	Jos. Kliegl, Secretary	Cylinder	A. D. Kocker	Separator	Test.
612	Graettinger.	Lost Island Creamery Co.	Co-op.	Lars C. Christensen, Sec.	Fallow	John N. Bruck	Separator	Test.
613	Graettinger.	Farmers Co-op. Creamery	Co-op.	F. L. Lambe, Secretary	Graettinger	A. J. Johnson	Separator	Test.
614	Mallard.	Mallard Butter & Cheese Ass'n	Co-op.	T. C. Truog, Secretary	Mallard	J. W. Fennell	Separator	Test.
615	Osgood.	Osgood Creamery	Co-op.	E. P. McEvoy, Secretary	Emmetsburg	E. Chadwick	Separator	Test.
616	Ruthven.	Palo Alto Creamery Co.	Stock.	S. A. Smith, Secretary	Ruthven	Martin Sorenson	Separator	Test.
617	Ruthven.	Farmers Co-op. Creamery Co	Co-op.	Chas. E. Yocum, Secretary	Ruthven	W. H. Anderson	Separator	Test.
618	Rodman.	Rodman Co-op. Creamery Co	Co-op.	C. J. Frue, Secretary	Rodman	Emil Anderson	Separator	Test.
619	West Bend.	West Bend Co-op. Creamery Co	Co-op.	Geo. W. Brown, Secretary	West Bend	T. A. Clarke	S. & G. C.	Test.
620	West Bend.	Eureka Co-op. Creamery Co.	Co-op.	Wm. Reardon	West Bend	James P. Larsen.	Separator	Test.
<i>Plymouth County</i> —								
621	Kingsley.	Payne's Creamery	Indiv.	R. Payne.	Kingsley	Ira Stewart	Gath. Cr.	Test.
622	Neptune.	Neptune Co-op. Creamery Co.	Co-op.	W. C. Dobbert, Secretary	Neptune	E. F. Julian	Separator	Test.
623	Mammen.	Grant Township Creamery Co	Co-op.	H. F. Maust, Secretary	Ireton	John Kennedy	Separator	Test.
624	Neptune.	Neptune Co-op. Creamery Co.	Co-op.	W. C. Dobbert, Secretary	Neptune	Elmer Julian	Separator	Test.
625	Ruble.	Johnson Tr. Far. M. Co-op. C. A.	Co-op.	Emanuel Mann, Secretary	Ruble	W. Anderson	Separator	Test.
626	Merrill.	Hanford Hazelwood Crm. Co(s)	Stock.	C. H. Mann, Sec. and Man	Sioux City		Gath. Cr.	Test.
<i>Pocahontas County</i> —								
627	Laurens.	Laurens Creamery	Indiv.	W. & J. G. Hinn, Props	Laurens.	F. W. Johnson	Separator	Test.
628	Palmer.	Lizard Creamery	Stock.	Geo. Siebels, Secretary	Gilmore City R. 4	Ed. Richards	Separator	Test.
629	Pomeroy.	Breiholz Creamery	Indiv.	Wm. Breiholz, Proprietor	Pomeroy	Wm. Breiholz	Separator	Test.
630	Plover.	Plover Creamery	Indiv.	F. J. Wodsky, Proprietor	Plover.	F. J. Wodsky	Separator	Test.
631	Pocahontas.	Pocahontas Creamery	Indiv.	W. & J. G. Hinn, Props	Laurens.	P. O. Lindstrom	Gath. Cr.	Test.
632	Rofe.	Gilt Edge Creamery	Indiv.	W. R. Rogers, Proprietor	Rofe	W. V. Rogers	S. & G. C.	Test.
633	Ware.	Ware Creamery	Indiv.	C. A. Vittum, Prop.	Ware	C. A. Vittum	Gath. Cr.	Test.
634	Palmer.	Lizard Creamery (s)	Stock.	Geo. Siebels, Secretary	Gilmore City R. 4	Ed. Richards	Separator	Test.

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Office record number.	LOCATION.	NAME OF CREAMERY.	How operated.	NAME OF PROPRIETOR, SECRETARY OR MANAGER.	P. O. ADDRESS OF PROPRIETOR, SECRETARY OR MANAGER.	NAME OF BUTTER MAKER.	Separator or gathered cream.	Method of receiving milk.
<i>Polk County—</i>								
635	Des Moines	Waterloo Creamery Co.	Stock.	Burt B. Corliss	Des Moines	L. S. Roberts	Separator	Test.
636	Grimes	Grimes Butter and Cheese Co.	Stock.	W. J. Stewart, Secretary	Grimes	G. A. Stewart	Separator	Test.
637	Campbell	Grimes Butter and Cheese Co.(s)	Stock.	W. J. Stewart, Secretary	Grimes		Separator	Test.
638	Mitchellville	Mitchellville Creamery Co	Co-op.	A. J. McCleary, Secretary	Mitchellville	C. H. Phillips	Separator	Test.
639	Des Moines	Des Moines Creamery Co.	Stock.	B. S. Schermerhorn, Prop.	Des Moines	Fred S. Remlee	Gath. Cr.	Test.
<i>Pottawattamie County—</i>								
640	Avoca	Avoca Creamery	Indiv.	Sorenson & Hansen, Props.	Avoca	Chris Sorenson	Separator	Test.
641	Council Bluffs	Waterloo Creamery Co.	Stock.	Leroy Corliss, Pres. & Sec.	Council Bluffs	Wm Ray & Jas. McKelsie	S. & G. C.	T. & H.
642	Underwood	Waterloo Creamery Co. (s)	Stock.	Leroy Corliss, Pres. & Sec.	Council Bluffs		S. & G. C.	T. & H.
643	Hancock	Hancock Creamery	Indiv.	H. C. Brandes, Proprietor	Hancock	Walter E. Brandes	Separator	Test.
644	Hancock	Hancock Creamery (s)	Indiv.	H. C. Brandes, Proprietor	Hancock		Separator	Test.
645	Minden	York Creamery Association	Co-op.	B. Etchenberger, Secretary	Minden	John Daehla	Separator	Hund.
646	Minden	Minden Creamery	Indiv.	N. P. Jorgenson, Prop.	Minden	John Queack	Gath. Cr.	Test.
647	Neola	Neola Creamery	Indiv.	E. B. Ryan, Proprietor	Neola	E. B. Ryan	Separator	Test.
<i>Poweshiek County—</i>								
648	Deep River	De p River Creamery	Indiv.	Hatter & Baird, Props.	Deep River	E. A. Kinsler	Gath. Cr.	In. & O.
649	Guernsey	Springbrook Creamery	Indiv.	John Newman Co.	Elgin, Ill.	O. W. Hicks	Separator	Test.
650	Brooklyn	Springbrook Creamery (s)	Indiv.	John Newman Co.	Elgin, Ill.		Separator	Test.
651	Grinnell	Grinnell Creamery	Indiv.	J. W. Fowler, Proprietor	Grinnell	Marion Powers	Separator	Test.
652	Turner	Grinnell Creamery (s)	Indiv.	J. W. Fowler, Proprietor	Grinnell		Separator	Test.
653	Hartwick	Hartwick Creamery	Co-op.	J. Newman Co	Elgin, Ill.	Wm. Thies	Separator	Test.
654	Montezuma	Montezuma Co-op. Cream. Co.	Co-op.	A. C. Heath, Secretary	Montezuma	P. J. Peterson	Separator	Test.
<i>Ringgold County—</i>								
655	Shannon City	Union Creamery Co.	Co-op.	Anna Vorhies, Secretary	Shannon City	L. C. Klopp	Separator	Test.
656	Diagonal	Tri-State Creamery (s)	Indiv.	Cabe & McKinnon, Props.	Chicago, Ill.		Gath. Cr.	Test.

<i>Sac County—</i>								
657	Early	Early Creamery	Indiv.	C. A. Dermo, Proprietor	Early	R. H. Sharp	Separator	Test.
658	Herring	Gold Crown Creamery	Indiv.	N. A. Wright, Proprietor	Herring	N. A. Wright	Separator	Test.
659	Lake View	Lake View Creamery	Indiv.	C. P. Irwin, Proprietor	Lake View	C. P. Irwin	Separator	Test.
660	Carnarvon	Lake View Creamery (s)	Indiv.	C. P. Irwin, Proprietor	Lake View		Separator	Test.
661	Lake View	Gold Medal Creamery	Indiv.	Wright & Ritter, Props.	Wall Lake	C. A. Ritter	S. & G. C.	Test.
662	Nemaha	Delaware Center Creamery	Co-op.	Clark N. Searle, Secretary	Nemaha	A. I. Gaotland	Separator	Test.
663	Od-bolt	Farmers Creamery Co.	Stock	J. A. Cranston, Secretary	Odebolt	Edw'd McFarlane	S. & G. C.	Test.
664	Sac City	Sac City Far. Creamery	Co-op.	Frank Wood, Secretary	Sac City	H. C. Best	Gath. Cr.	Test.
665	Schaller	Schaller Creamery	Indiv.	Perry Rubendall, Secretary	Schaller	Perry Rubendall	S. & G. C.	Test.
666	Storm Lake	Geyer Creamery Co.	Indiv.	E. W. Geyer, Manager	Storm Lake	M. P. O'Grady	Gath. Cr.	Test.
667	Wall Lake	Wall Lake Creamery	Indiv.	Thos Ahern, Proprietor	Wall Lake	Thos. Deacon	S. & G. C.	Test.
<i>Scott County—</i>								
668	Amity	Amity Creamery	Indiv.	Wm. Koberg, Proprietor	Walcott R. 1	Wm. Koberg	Separator	Test.
669	Long Grove	Star Creamery	Indiv.	J. H. Marriott, Proprietor	Long Grove	J. W. Blair	Gath. Cr.	Oil.
<i>Shelby County—</i>								
670	Corley	Corley Creamery	Co-op.	C. A. Dinesen, Secretary	Corley	W. F. Pettce	S. & G. C.	Test.
671	Earling	Earling Creamery Co.	Co-op.	Frank Theile, Secretary	Earling	Alex Anderson	Gath. Cr.	Test.
672	Harlan	Center Creamery Co.	Co-op.	W. M. Obrecht, Secretary	Harlan R. 2		Separator	Test.
673	Harlan	Harlan Creamery	Indiv.	M. D. Taof, Proprietor	Harlan	M. D. Taof	S. & G. C.	Test.
674	Jacksonville	Buck Valley Creamery	Co-op.	R. Rasmussen, Secretary	Harlan R. 2	J. Clemmensen	Separator	Test.
675	Kirkman	Danway Creamery Co.	Co-op.	W. R. Adams, Secretary	Kirkman	Julius Anderson	Separator	Test.
676	Marne	Clay Twp. Sep. Cry. Co.	Co-op.	P. M. Peterson, Secretary	Marne	Peter Peterson	S. & G. C.	Test.
677	Portsmouth	Portsmouth Creamery	Indiv.	M. A. Sorenson, Proprietor	Portsmouth	M. Ankersterne	Separator	Test.
678	Walnut	Prairie Rose Creamery	Indiv.	J. D. Lorentzen, Proprietor	Prairie Rose	Rudolph Wiese	Separator	Test.
679	Shelby	Waterloo Cry. Co. (s)	Stock	Leroy Carliss, Pres. & Sec.	Council Bluffs		S. & G. C.	T. & H.
<i>Sioux County—</i>								
680	Alton	The Alton Creamery	Indiv.	Geo. R. Mueller, Proprietor	Alton	Geo. R. Mueller	S. & G. C.	Test.
681	Granville	Granville Creamery	Indiv.	Ben Karhoff, Proprietor	Granville	Ben Karhoff	S. & G. C.	Test.
682	Hosper	Hosper Creamery	Indiv.	Stover & Boterman	Hosper	Wm. Stover	Separator	Test.
683	Hawarden	Hawarden Creamery Ass'n	Co-op.	J. M. Lynn, Secretary	Hawarden	R. J. Healer	S. & G. C.	Test.
684	Hull	Hull Creamery	Indiv.	Rud Stensvod, Proprietor	Hull	E. Deutberder	Gath. Cr.	Test.
685	Rock Valley	Rock Valley Creamery	Indiv.	C. H. Day, Proprietor	Rock Valley	C. H. Day	Gath. Cr.	Test.
<i>Story County—</i>								
686	Ames	Iowa State College Creamery	State	G. L. McKay, Manager	Ames	De La Shelden	Separator	Test.
687	Cambridge	Far. Co-op. Creamery Co.	Co-op.	M. F. King, Secretary	Cambridge	J. F. Burretts	Separator	Test.
688	Collins	Far. Co-op. Creamery Ass'n	Co-op.	A. J. Fawcett, Secretary	Collins	M. J. Goodnow	S. & G. C.	Test.
689	Colo	Farmers Co-op. Creamery Ass'n	Co-op.	Henry Yeager, Secretary	Colo	E. R. Mitchell	S. & G. C.	Test.
690	Gilbert Station	Farmers Co-op. Creamery Co.	Co-op.	C. F. Ruth, Secretary	Gilbert Station	C. P. Lake	Separator	Test.
691	Huxley	Huxley Farmers Co-op. Cry. Co.	Co-op.	A. H. Sheldahl, Secretary	Huxley	P. J. Severald	Separator	Test.
692	Kelley	Kelley Cream Co.	Indiv.	J. M. Johnston, Manager	Kelley, Box 43	K. T. Naa	Separator	Test.

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693	Maxwell.....	The Farmers Co-op. Crm. Co....	Co-op.	J. I. Fleming, Secretary.....	Maxwell.....	C. H. Russler.....	Separator	Test.
694	Roland.....	Roland Farmers Creamery Co....	Co-op.	L. T. Olson, Secretary.....	Roland.....	S. H. Jondal.....	Separator	Test.
695	Story City.....	Story City Far. Co-op. Crm. Co....	Co-op.	Alex Henderson, Secretary.....	Story City.....	Geo. Wick.....	Separator	Test.
696	Slater.....	Slater Farmers Creamery Co....	Co-op.	Andrew Maland, Secretary.....	Slater.....	R. J. Severoid.....	Separator	Test.
697	Zearing.....	Zearing Creamery Co.....	Stock	E. A. Allen, Secretary.....	Zearing.....	R. R. Hadley.....	Separator	Test.
698	Nevada.....	Nevada Creamery Co.....	Indiv.	W. O. Bates.....	McCallsburg.....	W. O. Bates.....	Separator	Test.
699	McCallsburg.....	Nevada Creamery Co. (s).....	Indiv.	W. O. Bates.....	McCallsburg.....		Separator	Test.
<i>Tama County—</i>								
700	Chelsea.....	Chelsea Creamery.....	Indiv.	John Newman Co.....	Elgin, Ill.....	J. G. Bucher.....	Separator	Test.
701	Elberon.....	Springbrook Creamery.....	Indiv.	John Newman Co.....	Elgin, Ill.....	Chas. Kucera.....	Separator	Test.
702	Gladbrook.....	Gladbrook Creamery.....	Indiv.	J. H. Boyd, Proprietor.....	Crookstown, Min	B. Owen.....	S. & G. C.	Test.
703	Tama.....	Tama Co-op. Creamery Co.....	Co-op.	L. I. Carson, Secretary.....	W. H. Graham.....	W. H. Graham.....	Gath. Cr.	Test.
704	Clutier.....	Clutier Creamery.....	Indiv.	Armstrong & Ryan.....	Clutier.....	Ed D. Armstrong.....	Gath. Cr.	Test.
<i>Taylor County—</i>								
705	Clearfield.....	Clearfield Creamery.....	Stock.	Joseph Doubet, Secretary ..	Clearfield.....	Geo W. McNair.....	Separator	Test.
706	Bedford.....	Bedford Creamery.....	Indiv.	W. A. Geithman, Secretary	Bedford.....	L. C. Klapp.....	Gath. Cr.	T. & H. S.
<i>Union County—</i>								
707	Afton.....	Afton Creamery.....	Stock.	G. W. Kelley, secretary.....	Afton.....	V. O. Williams.....	S. & G. C.	Test.
708	Arispe.....	Tri-State Creamery Co.....	Indiv.	Cabe & McKinnon, Props.....	Chicago, Ill.....	Geo. Beckman.....	Gath. Cr.	Test.
709	Creston.....	Tri State Creamery Co.....	Indiv.	Cabe & McKinnon, Props.....	Chicago, Ill.....	A. W. McCall.....	Gath. Cr.	Test.
710	Cromwell.....	Tri-State Creamery Co. (s).....	Indiv.	Cabe & McKinnon, Props.....	Chicago, Ill.....		Gath. Cr.	Test.
711	Talmage.....	Talmage Creamery Co.....	Stock.	W. F. Craig, Manager.....	Afton.....	Chas. Mostoller.....	Gath. Cr.	Test.
712	Talmage.....	Talmage Creamery Co. (s).....	Stock.	W. F. Craig, Manager.....	Afton.....		Gath. Cr.	Test.
713	Talmage.....	Talmage Creamery Co. (s).....	Stock.	W. F. Craig, Manager.....	Afton.....		Gath. Cr.	Test.
714	Talmage.....	Talmage Creamery Co. (s).....	Stock.	W. F. Craig, Manager.....	Afton.....		Gath. Cr.	Test.
715	Lorimor.....	Talmage Creamery Co. (s).....	Stock.	W. F. Craig, Manager.....	Afton.....		Gath. Cr.	Test.
<i>Van Buren County—</i>								
716	Bonaparte.....	Bonaparte Creamery Co.....	Stock.	C. S. Stebbins, Sec. and Mgr.	Bonaparte.....	Thos. Merrick.....	Gath. Cr.	Test.
717	Milton.....	Milton Creamery.....	Indiv.	V. S. Cooley, Proprietor.....	Milton.....	Richard Quirk.....	Gath. Cr.	Oil.

718	Douds.....	Yorkshire Creamery Co. (s).....	Stock.	R. N. Morrell, Secretary.....	Ottumwa.....		Separator	Test.
<i>Wapello County—</i>								
719	Blakesburg.....	Blakesburg Creamery.....	Indiv.	Foland Bros., Proprie ors..	Blakesburg.....	Foland Bros.....	Separator	Test.
720	Ottumwa.....	Yorkshire Creamery Co.....	Stock.	R. N. Morrell, Secretary.....	Ottumwa.....	Elmer Davis.....	Separator	Test.
721	Highland.....	Yorkshire Creamery Co. (s).....	Stock.	R. N. Morrell, Secretary.....	Ottumwa.....		Separat.or	Test.
<i>Warren County—</i>								
722	Carlisle.....	Carlisle Co-op. Creamery Co....	Co-op.	C. Beauchamp, Secretary.....	Carlisle.....	H. Owens.....	Separator	Test.
723	Indianola.....	Warren County Creamery.....	Indiv.	E. Haldeman, Proprietor.....	Indianola.....	E. Culbertson.....	Separator	Test.
724	St. Marys.....	Warren County Creamery (s).....	Indiv.	E. Haldeman, Proprietor.....	Indianola.....		Separator	Test.
<i>Washington County—</i>								
725	Kalona.....	Kalona Creamery.....	Indiv.	W. G. Brooke, Proprietor.....	Kalona.....	W. G. Brooke.....	Gath. Cr.	In. & Ch.
726	Noble.....	Oak Ridge Creamery.....	Indiv.	J. A. Eicher, Sec. and Mgr.....	Noble.....	John Widmer.....	Separator	Test.
727	Riverside.....	Riverside Creamery.....	Indiv.	E. Nicola & Co., Props.....	Rive side.....	Geo. Nicola.....	Gath. Cr.	Oil.
728	Washington.....	Washington Creamery.....	Indiv.	T. L. Emery & Sons.....	Washington.....	John McLane.....	Separator	Test.
729	Wellman.....	Wellman Creamery.....	Stock.	P. J. Greigg, Manager.....	Wellman.....		S. & G. C.	Test.
<i>Wayne County—</i>								
730	Humeston.....	Old Colony Creamery.....	Indiv.	T. G. Hyde, Manager.....	Humeston.....	Lester Winland.....	Separator	Test.
731	Lewisburg.....	Old Colony Creamery (s).....	Indiv.	T. G. Hyde, Manager.....	Humeston.....		Separator	Test.
732	Cambria.....	Old Colony Creamery (s).....	Indiv.	T. G. Hyde, Manager.....	Humeston.....		Separator	Test.
733	Corydon.....	Old Colony Creamery (s).....	Indiv.	T. G. Hyde, Manager.....	Humeston.....		Separator	Test.
<i>Webster County—</i>								
734	Badger.....	Badger Creamery.....	Indiv.	Rogers & Smith, Proprietors	Humboldt.....	C. F. Wendt.....	Separator	Test.
735	Clare.....	Clare Creamery.....	Indiv.	J. A. Blakeman, Pproprietor	Clare.....	Frank L. Repke.....	S. & G. C.	Test.
736	Duncombe.....	Duncombe Creamery.....	Indiv.	S. Smith, Proprietor.....	Duncombe.....	C. E. McBride.....	S. & G. C.	Test.
737	Ft. Dodge.....	Oakdale Dairy.....	Indiv.	Z. W. Thomas, Proprietor.....	Ft. Dodge.....	Frank Rogers.....	S. & G. C.	T. & H.
738	Industry.....	Oakdale Dairy (s).....	Indiv.	Z. W. Thomas, Proprietor.....	Ft. Dodge.....		S. & G. C.	T. & H.
<i>Winnebago County—</i>								
739	Buffalo Center.....	Farmers Co-op. Creamery Co....	Stock.	Geo. J. Andrews, Secretary	Buffalo Center...	A. Woolery.....	S. & G. C.	Test.
740	Forest City.....	Forest City Co-op. Cry. Ass'n...	Co-op.	Peter Isaacson, Secretary.....	Forest City.....	L. Richards.....	Separator	Test.
741	Leland.....	Forest City Co-op Cry. Ass'n (s)	Co-op.	Peter Isaacson, Secretary.....	Forest City.....		Separator	Test.
742	Mt. Valley.....	Forest City Co-op Cry. Ass'n (s)	Co-op.	Peter Isaacson, Secretary.....	Forest City.....		Separator	Test.
743	Lake Mills.....	Lake Mills Creamery Co.....	Co-op.	J. A. Horvel, Pres. and Mgr	Lake Mills.....	T. A. Storvick.....	Separator	Test.
744	Dahl's Church.....	Lake Mills Creamery Co.....	Co-op.	J. A. Horv i, Pres. and Mgr	Lake Mills.....		Separator	Test.
745	Newton Township.....	Lake Mills Creamery Co.....	Co-op.	J. A. Horvel, Pres. and Mgr	Lake Mills.....		Separator	Test.
746	Norman.....	Norman Creamery Co.....	Co-op.	Axel Arneson, President.....	Norman.....	A. O. Dahlen.....	Separator	Test.
747	Rake.....	Lincoln Co-op. Creamery.....	Co-op.	B. Quamme, Sec and Mgr.....	Rake.....	P. N. Peterson.....	Separator	Test.
748	Scarville.....	Scarville Creamery Ass'n.....	Co-op.	Isaac Larson, Pres. and Mgr	Scarville.....	W. J. Nagel.....	Separator	Test.
749	Scarville.....	Vinje Creamery Ass'n.....	Co-op.	Nels Berg, Secretary.....	Vinje.....	E. A. Gudvangen.....	Separator	Test.

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STATE DAIRY COMMISSIONER.

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CREAMERY LIST—CONTINUED.

Office record number.	LOCATION.	NAME OF CREAMERY.	How operated.	NAME OF PROPRIETOR, SECRETARY OR MANAGER.	P. O. ADDRESS OF PROPRIETOR, SECRETARY OR MANAGER.	NAME OF BUTTER MAKER.	Separator or cultured cream.	Method of re-coating milk.
750	Thompson	Eden Co-oper. Creamery Ass'n.	Co-op.	David Skutle, Secretary.	Amund.	M. J. Erdal.	Separator	Test.
751	Thompson	Thompson Co-oper. Crm. Ass'n	Co-op.	J. H. Anderson, Secretary.	Thompson.	L. M. Cleveland.	Separator	Test.
752	Thompson	Thompson Co-oper. Crm. Ass'n	Co-op.	J. H. Anderson, Secretary.	Thompson.		Separator	Test.
753	Hollandale	Woden Creamery (s).	Indiv.	L. C. Peterson, Proprietor.	Woden.		S. & G. C.	Test.
754	Lake Mills	Fertile Co-oper. Dairy Ass'n (s)	Co-op.	J. T. Tallackson.	Fertile.		Separator	Test.
<i>Winneshiek County—</i>								
755	Burr Oak	Silver Creek Creamery Co.	Co-op.	C. A. Reed, Sec. and Mgr.	Burr Oak.	Victor Johnson.	Gath. Cr.	Oil & Ch.
756	Calmar	Calmar Creamery.	Indiv.	Boe & Nelson, Proprietors.	Calmar.	Thos. Rasmuson.	Gath. Cr.	Churn.
757	Decorah	Ice Cave Creamery.	Indiv.	Johnson & Kjome, Props.	Decorah.	T. N. Seim.	Gath. Cr.	Oil Chn.
758	Decorah			R. Carpenter, Sec. & Tr.	Decorah.	H. B. Fortney.	Gath. Cr.	Oil Chn.
759	Ft. Atkinson	The Elvidge Creamery Co.	Co-op.	W. A. Schrandt, Secretary.	Calmar, R. 1.	Julius A. Bye.	Gath. Cr.	Test.
760	Festina	Festina Creamery Co.	Indiv.	Bidne, Akre & Bjorge, Props.	Highlandville.	P. J. Bidne.	Gath. Cr.	Oil.
761	Highlandville	Highlandville Creamery.	Indiv.	P. M. Peterson, Manager.	Spring Grove, Min.	P. M. Peterson.	Gath. Cr.	In. & O.
762	Hesper	Hesper Creamery.	Indiv.	T. G. Meader, Proprietor.	Hesper.	J. H. Hiatt.	Gath. Cr.	Test.
763	Jackson Junction.	Jackson Creamery.	Stock.	A. Webster, Sec. and Treas.	Waucoma.	L. J. Gibbs.	Separator	Test.
764	Kendallville	Kendallville Creamery.	Indiv.	Boe, Nelson & Co., Props.	Kendallville.	Edward Holmes.	Separator	Churn.
765	Nordness	Nordness Creamery.	Stock.	J. N. Bragestad, Sec. & Mgr.	Nordness.	N. O. Hippe.	Gath. Cr.	Oil.
766	Nordness	Red Oak Creamery.	Co-op.	N. E. Hanusey, Secretary.	Decorah, R. 1.	Nick Moe.	S. & G. C.	Oil Chn.
767	Ossian	Silver Spring Creamery Co.	Stock.	M. J. Nicholson, Sec. & Mgr.	Decorah, R. 2.	Geo. H. Thume.	Gath. Cr.	Oil test.
768	Ridgeway	L. T. Fosse & Sons.	Indiv.	C. A. Fosse, Secretary.	Ridgeway.	L. T. Fosse & Son.	S. & G. C.	Test.
769	Ridgeway	L. T. Fosse & Sons (s).	Indiv.	C. A. Fosse, Secretary.	Ridgeway.		S. & G. C.	Test.
770	Ridgeway	Lincoln Farmers Co-op. Crm. Co.	Co-op.	A. W. Prann, Secretary.	Ridgeway.	Ole Sjobakken.	Gath. Cr.	Oil test.
771	Spilville	Spilville Creamery Ass'n.	Indiv.	M. J. Nicholson, Proprietor.	Decorah, R. 2.	Wm. Spicher.	Gath. Cr.	Oil test.
<i>Woodbury County—</i>								
772	Correctionville ..	Hopkins and Hubbard.	Indiv.	Hopkins & Hubbard, Props.	Holstein.	Geo. A. Bintall.	Gath. Cr.	Test.
773	Sioux City	Hanford-Hazelwood Cream Co.	Stock.	C. H. Mann, Sec. and Mgr.	Sioux City.	M. Mortensen.	Gath. Cr.	Test.
<i>Worth County—</i>								
774	Bolan	Bolan Creamery.	Indiv.	Henry White, Proprietor.	Grafton.	Wm. Hasse.	Gath. Cr.	Test.
775	Fertile	Fertile Co-oper. Dairy Co.	Co-op.	J. T. Tallackson, Secretary.	Fertile.	P. A. Johnson.	Separator	Test.
776	Joice	Nordland Creamery.	Co-op.	C. A. Kittleson, Secretary.	Joice.	Andrew H. Nilson.	Separator	Test.
777	Kensett	Danville Co-oper. Creamery Co.	Co-op.	H. K. Myli, Sec. and Mgr.	Kensett.	Herman Stendel.	Separator	Test.
<i>Wright County—</i>								
778	Manly	Farmers Co-op. Creamery Ass'n	Co-op.	E. R. Stock, Sec. and Mgr.	Manly.	J. F. Cockonour.	Separator	Test.
779	Meltonville	Lorenzen Bros. Creamery Co.	Indiv.	P. Lorenzen, Jr., Manager.	Meltonville.	P. Lorenzen, Jr.	Gath. Cr.	O. C.
780	Northwood	Farmers Butter & Cheese Ass'n	Co-op.	M. D. Johnson, Secretary.	Northwood.	J. H. Jones.	Gath. Cr.	Test.
781	Northwood	Hartland Dairy Association.	Co-op.	A. F. Towne, Sec. and Mgr.	Silver Lake, bx 34.	A. M. Hanson.	Separator	Test.
782	Northwood	Brookfield Creamery Ass'n.	Co-op.	E. A. Tenold, Sec. and Mgr.	Northwood.	R. S. Bergsather.	S. & G. C.	Test.
783	Bristol	Lake Mills Creamery Co. (s).	Co-op.	J. A. Horvel, Pres. and Mgr.	Lake Mills.		Separator	Test.
784	Northwood	Farmers Co-op. Cr'y of Tenold.	Co-op.	O. G. Anderson, Secretary.	Tenold.	N. O. Dahlen.	Separator	Test.
785	Grafton	Grafton Creamery.	Indiv.	Henry White.	Grafton.		Separator	Test.
<i>Wright County—</i>								
786	Belmond	Norway Co-oper. Creamery Co.	Co-op.	C. J. Baxter, Secretary.	Belmond R. 2.	C. H. Vanderham.	Hand Sep.	Test.
787	Clarion	Clarion Creamery Association.	Co-op.	W. E. Hanley, Secretary.	Clarion.	B. W. Umbreit.	Gath. Cr.	Test.
788	Goldfield	Fountain Creamery.	Indiv.	DeWitt Goodrich, Prop'r.	Goldfield.	DeWitt Goodrich.	S. & G. C.	Test.
789	Galt	Galt Creamery.	Co-op.	A. K. Ketchum, Secretary.	Clarion.	A. Fatland.	S. & G. C.	Test.
790	Palsville	Palsville Creamery.	Co-op.	Herman Frohling, Secretary.	Belmond.	C. O. Way.	Separator	Test.
791	Rowen	Rowen Creamery Co.	Co-op.	J. H. Dix, Secretary.	Rowen.	Ben Fanselow.	Separator	Test.
792	Woolstock	Fountain Creamery.	Indiv.	Oren J. Page, Proprietor.	Woolstock.	O. J. Page.	S. & G. C.	Test.

IOWA CHEESE FACTORY LIST.

Alphabetically Arranged According to Counties and Towns near which Factory is Located, Together with Information Pertaining to Each.

Office record number.	LOCATED AT OR NEAR.	NAME OF CHEESE FACTORY.	How operated.	NAME OF PROPRIETOR, SECRETARY OR MANAGER.	P. O. ADDRESS OF PROPRIETOR, SECRETARY OR MANAGER.	NAME OF CHEESE MAKER.	Method of receiving milk.
<i>Adams County—</i>							
1	Cumberland.....	Lincoln Center Factory.....	Indiv..	Henry Fleharty.....	Hayes.....	Henry Fleharty.....	Hundred.
<i>Appanoose County—</i>							
2	Moulton.....	Moulton Cheese Factory.....	Indiv..	A. Dickson.....	Moulton.....	A. Dickson.....	Hundred.
3	Ray.....	Ray Cheese Factory.....	Stock	J. E. Hiatt, Secretary.....	Ray.....	J. F. Hiatt.....	Hundred.
4	Hiattsville.....	Hiatt Factory.....	Indiv..	W. O. Hiatt, Proprietor.....	Centerville, R. F. D. 2	W. O. Hiatt.....	Hundred.
<i>Benton County—</i>							
5	Atkins.....	Ideal Factory.....	Indiv..	A. C. Stewart, Proprietor.....	Atkins.....	J. W. Stewart.....	Hundred.
6	Newhall.....	Model Factory.....	Indiv..	C. B. Chenoweth, Proprietor.....	Newhall.....	Wm. Johnson.....	Hundred.
<i>Black Hawk County—</i>							
7	Waterloo.....	The Fowler Co.....	Stock	The Fowler Co.....	Waterloo.....	F. E. Wightman.....	Test.
8	Waterloo.....	North Star Cheese Factory.....	Stock	The Fowler Co.....	Waterloo.....	John St. John.....	Test.
<i>Bremer County—</i>							
9	Janesville.....	The Fowler Co.....	Stock	The Fowler Co.....	Waterloo.....	John McMurray.....	Test.
<i>Cerro Gordo County—</i>							
10	Burchinal.....	Burchinal Cheese Factory.....	Indiv..	T. R. Coates, Proprietor.....	Burchinal.....	T. R. Coates.....	Test.
11	Mason City.....	Lincoln Dairy Co.....	Co-op.	Jno. W. Smith, Sec. & Treas.	Mason City, R. F. D. 1	J. C. Schafer.....	Test.

<i>Crawford County—</i>							
12	Astor.....	Astor Cheese Co.....	Co-op.	Ed Theobald, Secretary.....	Astor.....	G. H. Foye.....	Hundred.
<i>Clarke County—</i>							
13	Weldon.....	Weldon Cheese Factory.....	Indiv..	L. M. Parr & Co.....	Weldon.....	Mrs. L. M. Parr.....	Hundred.
<i>Decatur County—</i>							
14	Bracewell.....	Snow's Cheese Factory.....	Indiv..	A. A. Snow.....	Bracewell.....		Hundred.
<i>Floyd County—</i>							
15	Charles City.....	Elm Spring Factory.....	Indiv..	H. D. White.....	Charles City.....	H. D. White.....	Hundred.
<i>Greene County—</i>							
16	Dana.....	Dana Mutual Co-op. Creamery Co.	Co-op.	W. J. Elling, Sec. & Treas.	Dana.....	W. J. Elling.....	Test.
<i>Guthrie County—</i>							
17	Jamaica.....	Jamaica Cheese Factory.....	Indiv..	A. H. Chadsey, Proprietor.....	Jamaica.....	A. H. Chadsey.....	Hundred.
<i>Hardin County—</i>							
18	Iowa Falls.....	Ellis Cheese Factory.....	Stock	W. J. Clark, Manager.....	Iowa Falls, R. F. D.	W. J. Clark.....	Hundred.
<i>Howard County—</i>							
19	Cresco.....	Cresco Cheese Factory.....	Indiv..	Wm. Kellow, Jr.....	Cresco.....	W. N. Lathrop.....	Hundred.
20	Cresco.....	Clover Leaf Cheese Factory.....	Indiv..	J. J. House, Proprietor.....	Cresco.....	J. J. House.....	Hundred.
<i>Humboldt County—</i>							
21	Renwick.....	Sunny Grove Cheese Factory.....		Conrad Elmer.....	Renwick.....	Fred Gugger.....	Hundred.
<i>Henry County—</i>							
22	Noble.....	Christner Butter & Cheese Factory	Indiv..	C. C. Christner, Proprietor	Wayland.....	C. C. Christner.....	Test.
<i>Jefferson County—</i>							
23	Pleasant Plain.....	Pleasant Plain Cheese Fact. Ass'n.	Stock	E. N. Crumley, Secretary.....	Pleasant Plain.....	James C. Halferly.....	Test.
24	Veo.....	Veo Cheese Factory.....	Stock	E. A. Hosler, Secretary.....	Veo.....	Fred Rynor.....	Test.
25	Woolson.....	Woolson Cheese Factory.....	Stock	Sanford Bray.....	Woolson.....		Test.
<i>Keokuk County—</i>							
26	Talleyrand.....	Talleyrand Cheese Factory.....	Stock	C. M. Tucker, Secretary.....	Talleyrand.....	Clifton Tucker.....	Test.

IOWA CHEESE FACTORY LIST—CONTINUED.

Office record number.	LOCATED AT OR NEAR.	NAME OF CHEESE FACTORY.	How operated.	NAME OF PROPRIETOR, SECRETARY OR MANAGER.	P. O. ADDRESS OF PROPRIETOR, SECRETARY OR MANAGER.	NAME OF CHEESE MAKER.	Method of receiving milk.
	<i>Kossuth County—</i>						
27	La Verne	Pioneer Cheese Factory	Stock...	S. B. Hefty, Secretary	Renwick .....	.....	Test.
	<i>Lee County—</i>						
28	Franklin Station ..	Franklin Station Cheese Co.	Stock...	H. G. Ort, President	Donnellson, R. F. D. No. 1	Austin Sassan	Hundred.
	<i>Monroe County—</i>						
29	Albia	Bone Cheese Factory	Indiv...	S. G. Bone, Proprietor	Albia	Merle Bone	Hundred.
30	Albia	Hinton Cheese Factory	Indiv...	Sam Hinton	Albia	Sam Hinton	Hundred.
	<i>Marshall County—</i>						
31	Liscomb	Liscomb Cheese Co.	Stock...	Thos. E. Culp, Manager	Liscomb	J. D. Mills	Test.
	<i>Muscatine County—</i>						
32	Wilton Junction ..	Muscatine French Cheese Co.	Co-op...	Fritz Kolb, Secretary	Wilton Junction, Box 83	Carl Las	Hundred.
	<i>Poweshick County—</i>						
33	Grinnell	Bartell Cheese Factory	Indiv...	J. W. Fowler, Manager	Grinnell .....	.....	Test.
34	Jacobs	Jacob Switch Cheese Factory	Indiv...	A. C. Payne, Proprietor	Jacobs	L. A. Wilson	Test.
	<i>Scott County—</i>						
35	Princeton	Wapsie Cheese Factory	Stock...	L. W. Pope & Son	Princeton	Chas. A. Pope	Test.
	<i>Story County—</i>						
36	Iowa Center	Iowa Center Cheese Factory	Indiv...	J. O. Moore	Iowa Center	W. H. Moore	Test.
37	Ames	I. A. C. Cheese Factory	State ..	G. L. McKay, Manager	Ames .....	.....	Test.

	<i>Taylor County—</i>						
38	Sharpeburg	Sharpeburg Cheese Co.	Indiv...	G. S. Eastlack, Manager	Sharpeburg	G. S. Eastlack	Hundred.
39	Blockton	Blockton Cheese Factory	Indiv...	Waldrip & Bonafield	Blockton	Waldrip & Bonafield	Hundred.
	<i>Washington County—</i>						
40	Westchester	The Leet Cheese Factory	Indiv...	W. E. Leet, Proprietor	Westchester	W. E. Leet	Hundred.
41	Clay	Clay Cheese Factory	Stock...	O. Meachman, Secretary	Richland, R. T. D. 2	O. W. Hake	Test.
	<i>Wayne County—</i>						
42	Promise City	Promise City Cheese Factory	Co-op...	C. R. Noble	Promise City	C. R. Noble	Hundred.
43	Sewall	Sewell Cheese Manufacturing Co.	Stock...	Ira Banta	Sewall	Samuel Sander	Hundred.
44	Lineville	Lineville Cheese Factory	Indiv...	Mathew DeHaan	Lineville	Mathew DeHaan	Hundred.
45	Seymour	Seymour Cheese Co.	Stock...	K. A. Weaglev, Secretary	Seymour	R. E. Spencer	Hundred.

RAILWAY BUTTER SHIPMENTS.

The tables of railway butter shipments represent the shipments of butter to points outside the state, and are for the year ending September 30, 1903. Creamery butter statistics printed in this report are for the year ending July 1, 1903. The creamery butter figures are partly estimated from the reports of creameries so far as received. The railway butter shipments are reports direct from the railroads of the state. The latter reports are, therefore, considered very accurate, and the former somewhat subject to inaccuracy. Particularly this year, the creamery butter figures are low on account of the closing of so large a number of creameries, which materially affects the estimate of the total product for the state.

Not all the butter here reported is made in Iowa. It is true that we do not import butter for consumption, but considerable quantities of low grade butter are annually imported to be made into renovated butter or resold outside the state. Sioux City, in Woodbury county, has a large renovated butter factory and is also a center for the collection of packing stock and renovated butter stock. Naturally, a large part of this butter comes from South Dakota and Nebraska. These facts and the fact that Sioux City also has the largest creamery in the state, account for the great increase in the total butter shipped from Woodbury county. A like thing is true in regard to Polk county, which has three renovated butter factories and two large creameries, located in the city of Des Moines. Clayton and Dickinson counties, showing large gains in butter shipments, each have renovated butter factories. The stock from which renovated butter is made comes largely from outside the state, and so the total shipments from these counties do not represent at all the amount of butter made in the counties.

The shipping of cream to the larger plants is accountable for some of the changes in county totals. It therefore happens that the figures in scarcely a single case represent even approximately the amount of butter produced in a county and shipped from it.

This department is under great obligations to the railways of the state that have made reports of butter shipments at considerable expense of time and effort.

TABLE SHOWING NUMBER OF CREAMERIES—GROSS POUNDS OF BUTTER SHIPPED OUT OF STATE.

COUNTIES.	NUMBER OF CREAMERIES FOR 1902 AND 1903.		GROSS POUNDS OF BUTTER SHIPPED OUT OF THE STATE FOR THE YEARS ENDING SEPTEMBER 30, 1902 AND 1903, SHOWING INCREASE AND DECREASE BY COUNTIES.			
	1902	1903	1902	1903	Increase.	Decrease.
THE STATE	919	661	*85,854,721	91,761,661	13,912,417	8,005,477
Adair	13	13	848,409	592,912		253,497
Adams	6	3	444,431	171,643		272,788
Allamakee	7	7	1,304,818	1,489,747	184,929	
Appanoose			70,787	113,367	42,630	
Audubon	11	11	1,060,121	990,537		99,584
Benton	13	10	600,097	797,321	197,224	
Black Hawk	20	17	1,847,781	1,494,874		352,907
Boone	7	4	103,517	71,617		31,900
Bremer	22	21	2,878,128	2,496,880		381,248
Buchanan	18	17	3,191,442	2,442,670		748,772
Buena Vista	10	7	1,026,794	1,094,565	67,801	
Butler	21	20	2,318,258	1,827,671		490,587
Calhoun	10	8	1,417,367	1,574,950	157,583	
Carroll	13	12	1,198,172	1,520,613	322,441	
Cass	10	7	370,228	226,102		144,126
Cedar	9	9	443,197	418,508		24,689
Cerro Gordo	6	7	788,244	645,440		142,735
Cherokee	7	4	129,246	171,463	42,217	
Chickasaw	19	18	2,715,724	2,619,271		96,453
Clarke	4		17,000	18,755	1,755	
Clay	13	8	665,572	614,818		51,254
Clayton	20	18	2,980,386	3,916,064	935,708	
Clinton	17	15	1,180,200	660,676		519,524
Crawford	5	3	1,079,005	958,798		120,207
Dallas	10	8	877,279	781,682		145,597
Davis	5	4	133,615	47,157		86,458
Decatur	4	5	22,787	125,640	102,853	
Delaware	25	20	2,672,244	2,967,208	294,963	
Des Moines			295,926	301,670	5,744	
Dickinson	5	4	641,590	1,301,551	559,961	
Dubuque	20	23	2,322,444	2,738,755	416,311	
Emmet	11	8	773,618	854,438	80,818	
Fayette	20	19	2,448,793	2,494,853	45,960	
Floyd	7	6	659,808	924,558		85,650
Franklin	12	10	834,164	372,920		161,244
Fremont	1		3,432	3,868	436	
Greene	6	4	284,813	290,652		54,161
Grundy	14	10	675,555	705,698	28,143	
Guthrie	17	15	1,218,177	1,130,018		88,159
Hamilton	11	13	1,170,630	1,054,582	483,952	
Hancock	12	12	548,176	461,155		87,020
Hardin	17	16	1,835,521	1,629,760		205,761
Harrison	5	2	411,383	340,375		71,008
Henry	3	1	71,568	84,423	12,855	
Howard	10	9	1,433,432	1,300,980		73,092
Humboldt	12	11	888,985	794,480		94,505
Ida	3	2	307,980	214,290		93,690
Iowa	12	10	616,428	683,399	76,961	
Jackson	20	16	1,141,627	1,408,303	296,676	
Jasper	8	6	256,717	297,390	41,643	

TABLE SHOWING NUMBER OF CREAMERIES—GROSS POUNDS OF BUTTER SHIPPED OUT OF STATE—CONTINUED.

COUNTIES.	NUMBER OF CREAMERIES FOR 1902 AND 1903.		GROSS POUNDS OF BUTTER SHIPPED OUT OF THE STATE FOR THE YEARS ENDING SEPTEMBER 30, 1902, AND 1903, SHOWING INCREASE AND DECREASE BY COUNTIES.			
	1902	1903	1902	1903	Increase.	Decrease.
Jefferson	5	4	97,947	110,752	12,815	
Johnson	3	2	211,461	124,706		86,755
Jones	30	25	4,034,175	3,929,063		105,112
Keokuk	7	3	292,602	438,281	145,289	
Kossuth	22	22	1,955,559	1,782,170		173,389
Lee			816,293	234,006		582,287
Linn	25	22	1,192,201	1,507,485	315,282	
Louisla	2	1	63,910	51,440		12,461
Lucas	2	2				
Lyon	6	5	378,184	234,374		143,810
Madison			11,435	25,098	14,233	
Malaska	2	2	90,319	692,593	503,244	
Marion	2	3	72,801	67,550		5,311
Marshall	8	6	605,221	528,492		78,729
Mills	4	3	6,310	14,061	8,651	
Mitchell	11	10	1,884,093	1,577,956		306,107
Monona		1	44,867	60,795	15,928	
Monroe	1	1	41,715	58,067	16,352	
Montgomery	4	1	115,707	149,658	33,861	
Muscantine	3	2	88,619	128,118	39,499	
O'Brien	5	5	628,465	678,065	51,600	
Osceola	5	3	231,160	305,169	74,009	
Page	4	3	672,674	2,103,922	1,431,248	
Palo Alto	20	15	1,068,391	1,524,245	444,146	
Plymouth	10	6	555,840	464,960		90,880
Pocahontas	12	8	802,024	644,998		157,026
Polk	4	5	2,073,365	3,224,270	1,150,905	
Pottawattamie	7	8	564,390	324,894		239,496
Poweshiek	6	7	406,335	407,818	1,483	
Ringgold	2	2	20,518	12,307		8,209
Sac	13	11	849,046	699,777		149,269
Scott	3	2	258,700	329,831	63,131	
Shelby	12	10	709,450	231,351		478,099
Sioux	7	6	614,462	944,706	330,244	
Story	14	14	1,355,452	1,388,206	32,754	
Tama	9	5	671,110	545,907		125,205
Taylor	4	2	200,203	518,096	317,893	
Union	14	9	695,700	693,011		57,689
Van Buren	5	3	36,350	96,813	60,463	
Wapello	1	3	177,359	137,107		40,252
Warren	5	3	13,400			13,400
Washington	5	5	270,575	409,129	138,554	
Wayne	4	4	638,732	794,455	155,723	
Webster	7	5	498,382	650,325	151,943	
Winnebago	15	16	1,298,302	1,106,416		191,886
Winneshek	15	17	1,508,568	2,156,992	648,429	
Woodbury	3	3	3,994,627	7,320,139	3,325,512	
Worth	12	12	958,250	801,036		157,214
Wright	8	7	728,671	791,216	62,545	
THE STATE	919	661	85,854,721	91,761,661	13,912,417	8,005,477

Net increase, gross pounds, 5,906,940.

* Error in statements from Woodbury county last year reduce the figures from that county and from the state by 210,261 pounds. The figures here given are correct.

TABLE SHOWING TOTAL NET BUTTER SHIPMENTS OF THE STATE FOR THE YEARS 1890 TO 1903, INCLUSIVE, FROM IOWA TO POINTS OUTSIDE THE STATE; ALSO INCREASE OR DECREASE AS COMPARED WITH THE YEAR PRECEDING.

Years Ending October 1.	No. pounds of butter shipped.	Increase over preceding year.	Decrease from preceding year.
1890	71,255,796		
1891	68,690,716		2,565,080
1892	90,112,561		8,577,785
1893	54,572,902		5,540,029
1894	54,509,417		63,485
1895	66,497,108	11,987,691	
1896	80,032,916	13,535,808	
1897	83,620,081	3,587,165	
1898	77,364,337		6,255,744
1899	78,620,326		744,011
1900	71,719,329		4,910,997
1901	74,893,965	3,144,636	
1902	72,714,584		2,149,411
1903	77,079,794	4,365,210	

Counties shipping more than 1,000,000 pounds, net, of butter in the year ending September 30, 1903:

1903.	Counties.	1902.
6,148,916	Woodbury	3,355,487
3,297,892	Jones	3,388,707
2,889,518	Clayton	2,503,524
2,708,386	Polk	1,741,626
2,492,453	Dalaware	2,224,884
2,300,551	Dubuque	1,950,853
2,200,187	Chickasaw	2,231,208
2,095,508	Fayette	2,096,066
1,811,873	Winneshek	1,237,195
1,767,294	Page	541,286
1,535,243	Butler	1,947,337
1,497,022	Kossuth	1,642,699
1,384,848	Hamilton	9,883
1,398,908	Hardin	1,541,897
1,325,489	Mitchell	1,582,612
1,322,958	Calhoun	1,190,589
1,297,370	Bremer	2,417,027
1,280,395	Palo Alto	1,401,448
1,277,314	Carroll	1,003,265
1,296,285	Linn	1,005,048
1,255,694	Black Hawk	1,552,136
1,251,842	Buchanan	2,680,811
1,251,887	Alamakee	1,096,047
1,182,974	Jackson	953,963
1,142,702	Howard	1,204,099
1,106,093	Story	1,138,590
1,009,302	Dickinson	588,995
40,833,470	Totals.	44,223,395

These twenty-seven counties ship 64 per cent of the 77,079,794 net pounds of butter shipped from the state.

NET BUTTER SHIPMENTS BY COUNTIES AND RANK—AREA OF COUNTIES.

Showing pounds of butter shipped per square mile and rank of counties; also total net butter shipments for the state and net pounds per square mile, for the year ending September 30, 1903.

Counties.	Total net shipments of butter for the year.	Rank by total lbs. shipped.	Area of square miles in counties.	Pounds per square mile.	Rank by lbs. per square mile.
THE STATE.....	77,079,794	50	56,025		
Adair.....	498,046	53	576	864	50
Adams.....	144,180	74	432	336	72
Allamakee.....	1,251,387	23	658	1,901	24
Appanoose.....	95,228	83	516	184	83
Audubon.....	832,051	31	443	1,878	25
Benton.....	669,743	37	720	930	48
Black Hawk.....	1,255,694	21	576	2,180	22
Boone.....	57,578	87	576	99	89
Bremer.....	1,297,379	17	432	3,003	8
Buchanan.....	1,251,842	22	576	2,173	23
Buena Vista.....	919,459	30	576	1,599	31
Butler.....	1,535,243	11	576	2,663	11
Calhoun.....	1,322,958	16	576	2,246	18
Carroll.....	1,277,314	19	576	2,217	20
Cass.....	189,925	76	576	329	74
Cedar.....	351,546	60	576	610	60
Cerro Gordo.....	542,177	49	576	941	46
Cherokee.....	143,945	77	576	249	79
Chickasaw.....	2,200,187	7	504	4,345	4
Clarke.....	15,754	94	432	36	94
Clay.....	516,027	52	576	895	49
Clayton.....	2,899,518	3	728	3,999	5
Clinton.....	554,997	47	696	792	52
Crawford.....	805,370	32	720	1,118	39
Dallas.....	614,612	41	568	1,045	40
Davis.....	39,911	92	508	79	92
Decatur.....	105,537	80	534	197	82
Delaware.....	2,492,453	5	576	427	67
Des Moines.....	255,402	68	413	613	59
Dickinson.....	1,009,302	27	406	2,492	13
Dubuque.....	2,800,554	6	601	3,827	6
Emmet.....	741,726	36	404	1,835	28
Fayette.....	2,046,908	8	720	2,910	9
Floyd.....	776,828	34	504	1,540	32
Franklin.....	313,262	63	576	543	64
Fremont.....	3,249	97	509	6	97
Greene.....	193,747	73	576	336	71
Grundy.....	591,106	42	504	1,172	37
Guthrie.....	891,215	28	593	1,671	30
Hamilton.....	1,889,848	13	576	2,412	14
Hancock.....	387,371	58	576	672	55
Hardin.....	1,868,998	14	576	2,376	16
Harrison.....	285,915	64	695	468	65
Henry.....	70,915	86	432	163	86
Howard.....	1,142,702	25	476	2,400	15

NET BUTTER SHIPMENTS BY COUNTIES AND RANK—AREA OF COUNTIES—CON.

Counties.	Total net shipments of butter for the year.	Rank by total lbs. shipped.	Area of square miles in counties.	Pounds per square mile.	Rank by lbs. per square mile.
Humboldt.....	657,363	40	432	1,521	34
Ida.....	180,003	75	432	415	68
Iowa.....	582,446	44	584	967	44
Jackson.....	1,182,974	24	638	1,854	26
Jasper.....	249,782	69	730	342	70
Jefferson.....	93,031	84	432	215	81
Johnson.....	104,753	81	618	169	84
Jones.....	3,297,892	2	576	5,725	2
Keokuk.....	368,156	59	576	639	57
Kossuth.....	1,497,022	12	977	1,532	33
Lee.....	196,565	71	512	389	69
Linn.....	1,266,285	20	720	1,758	29
Louisia.....	43,217	91	407	106	88
Lucas.....	98	98	432	23	98
Lyon.....	196,874	70	587	335	73
Madison.....	21,595	93	576	37	93
Mahaska.....	531,752	45	576	1,009	43
Marion.....	56,742	88	576	98	90
Marshall.....	442,253	55	576	767	54
Mills.....	12,397	95	444	27	95
Mitchell.....	1,825,483	15	473	2,892	10
Monona.....	51,067	89	556	96	91
Monroe.....	49,280	90	432	114	87
Montgomery.....	125,712	78	432	291	76
Muscataine.....	103,419	82	437	236	80
O'Brien.....	599,574	46	576	958	45
Osceola.....	256,341	61	400	640	56
Page.....	1,767,394	10	557	3,172	7
Palo Alto.....	1,280,365	18	576	2,222	19
Plymouth.....	300,583	57	860	454	66
Pocahontas.....	541,798	50	576	940	47
Polk.....	2,708,386	4	585	4,629	3
Pottawattamie.....	212,894	66	900	284	77
Poweshiek.....	342,567	61	582	588	63
Ringold.....	10,337	96	542	19	96
Sac.....	587,812	43	576	1,020	42
Scott.....	274,534	65	455	603	61
Shelby.....	794,334	38	500	829	75
Sioux.....	793,753	33	789	1,032	41
Story.....	1,106,063	28	576	2,024	21
Tama.....	458,560	54	720	638	58
Taylor.....	455,300	56	548	794	51
Union.....	635,929	51	432	1,240	36
Van Buren.....	81,222	85	484	167	85
Wapello.....	115,169	79	432	266	78
Warren.....	90	99	590	15	99
Washington.....	338,025	62	596	568	62
Wayne.....	967,342	39	523	1,274	35
Wester.....	553,833	48	730	769	53
Winnebago.....	928,549	29	403	2,304	17
Winnebuck.....	1,811,873	9	694	2,610	12
Woodbury.....	6,148,916	1	873	7,043	1
Worth.....	743,270	35	402	1,848	27
Wright.....	664,621	39	576	1,153	38
THE STATE.....	77,079,794	50	56,025		

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