

EIGHTEENTH ANNUAL REPORT

OF THE

STATE DAIRY COMMISSIONER

TO THE

GOVERNOR OF THE STATE OF IOWA

FOR THE YEAR 1904.

H. R. WRIGHT,

STATE DAIRY COMMISSIONER.

PRINTED BY ORDER OF THE GENERAL ASSEMBLY.

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1904.

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 Eighteenth Annual Report of the Dairy Commissioner.

Very Respectfully,

H. R. WRIGHT,
Dairy Commissioner.

DES MOINES, November 1, 1904.

EXPENSE OF OFFICE OF DAIRY COMMISSIONER FOR THE YEAR
ENDING NOVEMBER 1, 1904.

Dairy commissioner's salary	\$ 1,500.00	
Dairy commissioner's expense	584.70	
Total		\$ 2,084.70
Deputy dairy commissioner's salary	\$ 1,006.66	
Deputy dairy commissioner's expense	154.57	
Total		\$ 1,221.23
Assistant dairy commissioner's salary (P. H. Kieffer)	\$ 1,006.66	
Assistant dairy commissioner's expense	939.70	
Total		\$ 2,006.36
Assistant dairy commissioner's salary (W. S. Smarzo)	\$ 400.00	
Assistant dairy commissioner's expense	378.12	
Total		\$ 778.12
EXPENSE OF MILK INSPECTION IN FOURTEEN CITIES.		
Milk agents' fees	\$ 1,776.00	
Milk agents' expense	226.25	
Milk agents' special work	24.50	
Total		\$ 2,026.75
OFFICE EXPENSE.		
Legal expense	\$ 300.00	
Analyses	65.75	
Filing case and card index	59.50	
Miscellaneous	17.88	
Total		\$ 442.63
Express freight and cartage		104.37
Telegraph and Telephone		20.32
Total		\$ 8,084.48
* Less salaries		4,033.32
Total expenditures from appropriations		\$ 4,051.16
Average monthly expense		\$ 387.59

* Salaries are not paid from the specific appropriation. The amount appropriated for the biennial period extending from April 1, 1904, to July 1, 1906, 27 months, was \$12,325, of which has been expended in 7 months, \$2,906.47.

DAIRY COMMISSIONER'S REPORT.

The statistics of creameries and creamery butter, for renovated butter and cheese, in this report are for the year ending July 1, 1904. Statistics in regard to railway shipments of butter are for the year ending September 30, 1904. The creamery list is corrected down to November 1, 1904.

The uncertain and changing conditions of many of Iowa's creameries have made it more than usually difficult to secure anything like complete reports. It has never been possible to get an absolutely complete report from the creameries of the State, but the data given in the last seven reports of this office has been compiled in similar manner each year, so that comparisons may be made between figures for the several years with the assurance that the statistics are relatively correct. It is assumed that the averages derived from the reports of creameries that do report are the averages for all the creameries of the State.

The same accuracy can not be claimed for the statistics of the various counties. That is to say, the butter reported as manufactured in some of the counties is not produced in those counties, some of it, indeed, not in the State. The centralizing plants, and to some extent the makers of renovated butter, increase the totals for the counties in which the factory is located, when in fact, most of their product arises in other counties. Very large quantities of packing stock are shipped into the State to the renovators. It is true, also, that considerable cream is shipped into the State from Missouri, Wisconsin and Nebraska. It is also true that considerable cream is shipped out of the State to St. Joseph, Omaha, Sioux Falls, St. Paul and Minneapolis. All these things affect the statistics of creamery butter produced, or the statistics of railway butter shipments, or both.

The Thirtieth General Assembly amended the law in regard to the appointment and salaries of the assistant and deputy

dairy commissioners, increasing the salary to \$1,200 per year and increasing the number of assistant dairy commissioners from one to two. Under this law, Mr. W. S. Smarzo, of Masonville, was appointed on July 4th as Assistant Dairy Commissioner. Under the terms of the statute authorizing the employment of assistant dairy commissioners, they must be expert buttermakers. The work of Mr. Smarzo and Mr. Kieffer has been of two kinds: First, inspection of the creameries, to see that they are complying with the law in regard to cleanliness and general sanitary conditions. Second, assisting and instructing buttermakers so that their product may be of a higher grade, and so sell for a higher price. The creamery business is a cooperative business, whether called so or not, and any increase in price which the management may secure in the sale of their butter will directly benefit the farmers whose milk or cream was used in the production of that butter. Every year butter is more and more sold on its merits in the market, and if this department can do anything to increase the value of the butter by bettering its quality, the money which the State spends for the support of this department will be returned to the dairymen of the State many fold. The effect of the work of the assistant dairy commissioners among the creameries has been plainly shown in the high scores attained by a number of Iowa buttermakers at the various contests that have been held in the last year, especially when these scores are compared with the scores of the same buttermakers at previous times.

The law gives this department plenty of authority for compelling the creamery management to keep the plant in a clean and sanitary condition, but we can only advise and urge the use of better and more profitable methods. It is gratifying to be able to state that in nearly every case the buttermaker and the creamery management are very willing and anxious to adopt the suggestions of the experts of this office.

FARMERS' INSTITUTES.

Aside from the work of the agricultural colleges, the Farmers' Institute is still the chief means of bringing to the majority of the farmers that knowledge of modern and improved methods which is essential to their highest success. With this thought in mind the dairy commissioner has urged the farmers' institutes of the State to make the dairy topic one of the principal topics to be discussed at their meetings, a suggestion which

has been quite generally adopted, not only in those sections of the State where the dairy business is now of considerable importance, but also in other parts of the State in which but little butter is made. In addition to this work at farmers' institutes, the farmers of various localities and the patrons of a good many creameries have been induced to hold meetings for the discussion of dairy topics particularly. This office has furnished speakers for sixty-five meetings of farmers' institutes and similar gatherings in the last year.

CITY MILK INSPECTION.

The city milk inspection in fourteen cities costs the State of Iowa about two thousand dollars a year, as shown by the financial statement preceding. Almost all of the work consists of collecting samples from the city milk dealers as they make their rounds for the sale of milk and cream, and testing the same by the Babcock test in order to see that the milk sold is complying with the legal standard. More than one thousand samples of milk are tested each month by the Babcock test for butterfat, which readily shows whether the milk has been skimmed or watered. This same test will show with fair accuracy whether the milk has been adulterated by the addition of formaldehyde. Very little milk which comes under the notice of this department is really adulterated in any of these manners. Contrary to general belief, milk is not frequently adulterated. More objection can be raised to the milk sold in the State of Iowa from the standpoint of cleanliness than from any other point of view, but each year sees a gradual improvement in the method of handling the utensils used and the wagons and other paraphernalia or the business. There is also a growing tendency in most of the cities toward combination of the retail milk dealers for the purpose of establishing prices, so that now in most of the towns affected by this milk inspection, the price of milk is about six and one-quarter cents a quart for the winter months.

While it is true that a very small proportion of the milk offered for sale is adulterated, it is the policy of this office at present to enter complaint against any probable violator of the law, if the evidence appears sufficient so that a conviction is probable. Acting on this principle, prosecutions have been

undertaken in the cities of Ottumwa, Council Bluffs and Sioux City, the offense charged being the use of formaldehyde as preservative in the milk. In some of these cases, the defendant has plead guilty and paid his fine, and in others the cases have not yet come to trial. The detection in the use of preservative in milk is so easy that it is astonishing that any milkman will use a preservative. His self-interest, as well as his sense of honesty, ought to prevent his taking any chances.

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 they ears from 1894 to 1904. The years end in every case on the 4th of July :

1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904
359	491	566	620	574	676	714	784	821	783	780

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.	Inspectors.
Burlington.....	23,201	Dr. W. C. Hummell.
Cedar Rapids.....	25,656	Dr. J. W. Griffith.
Clinton.....	22,698	F. E. Bills.
Council Bluffs.....	25,802	H. A. Lennox.
Davenport.....	35,254	H. J. High.
Des Moines.....	62,139	G. L. Burdick.
Dubuque.....	36,297	Dr. Charles Palen.
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	J. E. Huffman.
Waterloo.....	12,580	Theo. Peek.
Total.....	347,355	

CONDITION OF THE CREAMERY AND DAIRY INDUSTRY.

The creamery and dairy industry in Iowa has a history during the last five or six years that amounts almost to a revolution. Not only has the number of creameries in the State in these years first increased and then decreased very materially, but these changes have not been uniform throughout the State by any means. There has been a general falling off in the practice of dairying in the State but this falling off has been very much more in the western and central parts of the State than in the so-called dairy district in the northeast quarter of the State. It is evident that the causes of the decreases have not affected all sections of the State alike. Six years ago there were still a few gathered cream creameries in the State, but no cream was sent more than a few miles from the farm on which it was produced and none was shipped by rail. At present none of the former gathered cream creameries have changed their manner of business; more than half the creameries of the State receive more or less cream; sixty-one of them, and among the largest ones, ship cream by rail; there are sixty-five creameries that are exclusive hand separator creameries, more than twenty-five thousand hand separator patrons in the State and 40 per cent of the butter made in the creameries is made otherwise than from whole milk.

Iowa's creameries have always made more butter to the creamery than those of other States and the average make has been heretofore about one hundred thousand pounds per annum. On account of the central plants making from a few hundred thousand pounds to a few million pounds this average this year is more than one hundred twenty thousand, and this notwithstanding the fact that there is more than the usual proportion of creameries with a make less than the average. The tendency toward larger creameries is unmistakable even aside from the central plants. The relatively high expense in the smaller

creamery makes it certain that they can not long continue to compete with the larger and more economically operated creameries, whether of the local or central variety. This tendency is further accentuated by the impossibility of employing the most expert butter makers in the small creameries because they can not pay wages sufficiently high to get them. Hence their butter is likely to be of poorer quality and bring a less price than that of the well-managed larger creamery.

While the creamery business has not had the smoothest pathway for the last few years from a business standpoint, it is also true that the creameries have suffered from a general decrease in the practice of dairying in this State. This decrease in dairying in the State is both an effect and a cause. It is the effect produced by high prices of other products of the farm. It is the cause of increased interest on the part of a considerable number of farmers in the scientific and modern methods of dairying. Indeed, there is a great increase in the interest shown by Iowa farmers in scientific and modern methods as applied to all lines of agriculture. Because the State of Iowa is adapted by climate and soil to the production of dairy products it is certain that the State will always be one of the great dairy states, but the increase of the immediate future will not be increase of butter production or of creamery building, but will be increases of profits that will accrue to the individual who continues in the business and adopts the best methods. The efforts of those who would advance and increase the importance of the dairy interests of this State must be in the line suggested. There was a time when the farmer milked his cows because he had to make money enough to live, but that situation was only temporary; now he will milk only when he can be persuaded that there is sufficient money in the business to make it worth while to practice it, and to submit himself to the confinement and regularity that goes with the dairy business. He will model his dairy and his dairy practice after the manner of those who are getting \$40 or \$50 or \$75 per year from their cows rather than the manner of the "average" dairyman who is lucky if he gets \$25 from each cow. There are a few men in almost every county of the State, and many of them in the older dairy counties that are already using a silo, feeding a balanced ration, selecting their poorest cows for sale, and gaining increased profits by so doing. The future will multiply this kind of dairymen for the reason that they will be the ones whose profits are such as to keep them in the business.

Something similar is true in regard to the creameries. The day when a "buttermaker" can be hired for a little more than farm laborers' wages is past, because the creameries are willing to pay good wages for satisfactory service, and because they can not afford to employ any but the best when the success of a business of \$20,000 to \$100,000 depends so largely upon the skill of the buttermaker. The changing conditions in dairy and creamery practice will certainly result in bringing both businesses to a stable and satisfactory and successful and profitable basis.

POSITIONS FOR BUTTERMAKERS.

During the past year there has been an increasing number of requests to this department from buttermakers seeking employment, as well as from creameries desiring to employ buttermakers. In a great many cases the department has not been able to serve either of the parties because of lack of knowledge of the needs of the various creameries. It has been determined, therefore, that, following the appearance of this report, the dairy commissioner will be glad to have buttermakers desiring employment list their names and qualifications at this office, and to have creameries who desire to be put in communication with such buttermakers also list their names and locations. The creameries should state the amount of product they are handling, the wages they will pay, and the time it is desired that a new man shall begin work. The average wages of buttermakers in this State is about sixty dollars a month, and an average man can not be secured for less than this amount. The buttermaker desiring employment should state his experience and former places of employment, and the wages that he will demand. This office will not recommend any buttermaker except on the personal knowledge of the commissioner or his assistants, but will stand ready to put the creamery and the buttermaker in communication with one another without expense to either party.

OLEOMARGARINE.

The dairy interests of Iowa are vitally interested in the successful enforcement of all proper laws regulating the sale of oleomargarine. This State produces ten per cent of all the butter made in the United States and any injury that may be done to the dairy business by the fraudulent sale of oleomargarine as butter will be felt largely by the butter producers of this State. The legislature of this State, taking this view of the matter, early put upon the statute books of Iowa a practical and efficient law in regard to the sale of oleomargarine, known in our statute as "imitation butter" or "substitute for butter" of which the following is the vital part.

Section 2516 of the Code, after defining imitation butter and cheese provides:

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.

A close reading of this sentence from the law shows it to be a complete prohibition of the sale of oleomargarine in this State, with the saving clause added, "except in the manner and subject to the regulations in this chapter provided."

Section 2517 reads in part:

A substitute for butter and cheese, *not having a yellow color*, nor colored in imitation of butter may be manufactured sold, etc.

The dairy commissioner believed that the clause, "not having a yellow color" was intended to prevent the sale of oleomargarine having any shade of yellow even though it could not be proved that it had been "colored in imitation of butter" by the addition of some material designed especially to give the substance a yellow color such as most butter has.

In January, 1903, there were in this State about two hundred licensed dealers in so-called uncolored oleomargarine. In the five or six years immediately before that time there had never been more than one or two licensed dealers at a time, but the new national law taxing colored oleomargarine ten cents a pound had gone into effect and had reduced the retailer's license from \$48 to \$6 a year and two hundred dealers were experimenting with uncolored oleomargarine and hoping to sell it in competition with butter because every pound of it had a slight shade of yellow. It was advertised in circular letters in the following language: "Our uncolored oleomargarine has the highest shade of yellow of any brand now on the market."

In January, 1903, the grand jury of Polk County, at the instance of the dairy commissioner, indicted the Armour Packing Co. for the sale of oleomargarine "having a yellow color" and this indictment resulted in the conviction of the Armour Packing Co. An appeal was taken to the Supreme Court of the State and the interpretation of the law outlined above and the conviction under it were sustained. The attorneys for the Armour Packing Co. filed a petition for a rehearing, which petition has been overruled.

The form of the Iowa statute is different from that of any other State and this decision becomes of greater importance for the reason that the decisions of other states have never touched the point made in this case and decision, namely, that a State legislature may prohibit the sale of oleomargarine that has a yellow color, no matter whether that yellow color arises from the addition of some coloring matter or whether it arises from the natural color of the ingredients used in its manufacture. The decision is given in full below:

APPEAL FROM DISTRICT COURT, POLK COUNTY; W. H. MCHENRY, *Judge*.

Indictment for the sale of a product in imitation of butter. Judgment of conviction, and the defendant appeals—*Affirmed*.

Carr, Hewitt, Parker & Wright, for appellant.

Charles W. Mullan, Attorney-General; *Lawrence DeGraff*, Assistant Attorney-General; *Jesse A. Miller*, and *J. J. Haloran*, for the State.

DEEMER, C. J.—The indictment charges a sale by the defendant of a substance or compound made in the semblance of,

designed for and intended to be used in the place of, and as a substitute for, butter, which said substance or compound was not produced from pure milk and cream, although bearing the yellow color in resemblance of true dairy products. The evidence showed a sale by the defendant of a tub or firkin of oleomargarine. The buyer knew what he was purchasing, and the tub was sealed, labeled and marked in every particular as required by statute with reference to the sales of substitutes for butter; but the product itself bore a yellow color in imitation of butter. The theory on which the case was tried is fully shown in one of the instructions given by the trial court, which we here reproduce: "You will observe that the charge in the indictment is not for coloring imitation butter, nor for selling it without it being marked as required, but it is for unlawfully selling it, it having a yellow color. The statute, as applied to this charge, prohibits the selling of imitation butter, or substitute for butter, having a yellow color. The words 'yellow color' here used, mean the natural yellow color of butter made from milk or cream from cows, without any coloring matter having been added thereto. If you find that the defendant is a corporation, and that it sold the firkin and contents introduced in evidence as 'Exhibit A' to H. R. Wright, and if you find the same is imitation butter, or substitute for butter, you will then determine whether or not it is of yellow color, as herein defined to you; and this you will determine from your own knowledge, experience or observation, whether the contents of the firkin of imitation butter or substitute for butter in evidence is of a yellow color—that is, of a natural color of butter made from milk or cream from cows. And if you so find, your verdict will be 'Guilty'; otherwise it will be 'Not guilty'."

The statutes material to our inquiry read as follows:

SEC. 2516. Every article, substitute or compound, save that produced from pure milk or cream from cows, made in the semblance of, or designed to be used for and in the place of butter, is imitation butter; . . . no one shall manufacture, have in possession, offer to sell or 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 such imitation butter, . . . except in the manner and subject to the regulations in this chapter provided.

SEC. 2517. A substitute for butter or 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 . . . if each tub, etc.

SEC. 2518. 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, anything of any kind or nature, for the purpose 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 or solicit orders for delivery, keep for sale, or sell, any such substance so colored, and designed as a substitute for butter or cheese.

The first contention made in argument is that these statutes must be construed together, and that, when so construed, it will be found that they do not apply to traffic in pure unadulterated oleomargarine, but should be held to prohibit the combining of any coloring matter or ingredient with the compound for the purpose of making it resemble butter made from pure milk or cream. Pursuant to this theory, the defendant offered to show that the compound sold by it contained nothing but ingredients which are used in making oleomargarine; that the coloration was due to the presence of natural ingredients necessarily used in the making of the product, and that nothing was placed therein for the purpose of coloring the compound and to give it the resemblance of yellow butter, and nothing added thereto except essential and necessary ingredients of the article known to commerce as "oleomargarine." Objections to this line of testimony offered by the State were sustained, and this necessarily presents the question of the true construction of these statutes. Defendant also offered to prove by an expert that the product sold by it did not bear the color of yellow butter. The State's objection to this was also sustained. A careful examination of the statute quoted, leads us to the conclusion that the legislature not only intended to prohibit the coloration of any substance intended as a substitute for butter, but also to prohibit the sale of any compound made in the semblance of, or designed to be used for and in the place of butter, which bore a yellow color in imitation of that produced from pure milk or cream of cows. But it permitted the sale of such an article of commerce or compound under certain restrictions, so long as it did not bear the color of, or was not colored in imitation of, pure butter. The sale of imitation butter bearing the yellow color of butter made from pure milk or cream is absolutely prohibited; and it is also made an offense for anyone to color any substance intended as a substitute for butter so as to cause it to resemble the true dairy product, or to solicit orders for,

keep for sale or sell any substance so colored. This is the only reasonable construction of these statutes. Any other convicts the legislature of an unnecessary use of words to define a very simple prohibition. Indeed, it is impossible to arrive at any other conclusion, without reading out of these statutes words and sentences which ordinarily would be very plain. There is little room for doubt as to the legislative intent. Moreover, we may well assume that the general assembly had in mind such a possible state of affairs as were here attempted to be shown. The books say that originally pure oleomargarine was almost white in color. Without the introduction of pure butter or coloring matter, the product would be almost white, as we understand it. It was entirely possible to introduce into the product innocuous coloring matter, which would give it the hue of butter, and then to claim, just as was here attempted to be proved, that this coloring matter or substance was a necessary ingredient of the compound, and essential to the product known to commerce as "oleomargarine," and this, in a sense, would doubtless be true. Under such a state of facts it might well be claimed that nothing was introduced into the substance for the purpose of giving it the color of butter. Were such a contention to receive judicial approval, it is manifest that many difficulties would arise in the enforcement of the law.

Looking to the history of this product as contained in standard works of well-recognized authority, it is apparent to our minds that, whatever the present purpose, the original thought was to make oleomargarine so closely resemble butter that the buyer or consumer could not tell the difference, and in the end to increase the sale of the product to the prejudice of pure butter. It may be that, if both were natural products, the legislature could not single out one at the expense of the other; but it surely had power to prevent the sale of a manufactured product, which is made to so resemble another as that the buyer or actual consumer might be deceived thereby, and induced to buy and eat a substance which he would not otherwise have bought or used. The primary object of all such legislation is to secure pure food, and to prevent fraud, deception, and deceit. The sale of oleomargarine is not wholly prohibited by these acts. The only prohibition is against its sale when made in imitation of butter. The manufacturer is not compelled to color it, as he was by the statutes construed in *Collins v. New Hampshire*, 171 U. S., 30, 18 Sup. Ct., 768, 43 L. E. D., 60. Our statutes differ

from those there construed in that they do not provide for adulteration, but simply say that the maker shall not so manufacture it as that it bears the yellow color of pure butter, or color with any matter whatsoever any substance intended as a substitute for butter so as to cause it to resemble the true dairy product. It does not provide for the introduction of any coloring matter, but prohibits it so long as that matter is introduced for the purpose of giving the compound the yellow color of true butter. Remembering that oleomargarine is a manufactured product, made of oleo oil, neutral lard, milk and cream, and pure butter, although true butter is not used in all grades, and that butter and milk and cream or other coloring matter is evidently used for the purpose of giving it the semblance of the true dairy product, it is manifest, we think, that the legislature may so control its manufacture and sale as to provide that no coloring matter shall be introduced for the purpose of securing a similitude of the true product. It was this which the legislature aimed at in enacting the law in question. This being true, there was no error in the instruction given, unless it offends against some constitutional provision; nor in the rulings on the rejection of evidence to which we have heretofore made reference.

The question propounded to the expert as to whether the substance sold bore the yellow color of true butter was not a matter of expert evidence. The law was not enacted for experts, but for the common people, who might be deceived by the appearance of the substitute, and led to purchase something they did not want. Moreover, the product itself was introduced in evidence, and was before the jury. Every one is presumed to know the color of an article which is in such general use as butter, and as to whether or not an article intended as a substitute therefor bears the yellow color of true butter. The case differs materially from *Williams v. Brooks*, 50 Conn., 285, 47 Am. Rep., 642, relied upon by the appellant. That was a copyright case, and there was no statute absolutely prohibiting the use of the article. The question there was one of actual fraud. Here there is no question of actual fraud. Liability to fraud and deceit was the fundamental thought in the mind of the legislature; but the question of deceit in the sale in controversy is not involved.

2. There is but one question left, and that the constitutionality of these statutes so construed. Defendant claims that, so

interpreted, they are unconstitutional, in that they amount to a virtual prohibition of the sale of a legitimate article of commerce and a wholesome article of food; such being an interference with the natural rights of man, and a violation of the privileges secured to him both by the State and Federal Constitutions. The propositions thus presented are not new to the courts. The Supreme Court of the United States, as well as the highest courts in other jurisdictions, have held statutes absolutely prohibiting the sale of oleomargarine constitutional. See *Powell v. Penn*, 127 U. S., 678, 8 Sup. Ct., 992, 1257, 32 L. Ed., 253; *State v. Addington*, 77 Mo., 118; *Powell v. Com.*, 7 Atl., 913, 60 Am. Rep., 350; *Com. v. Huntley*, 156 Mass., 236, 30 N. E., 1127, 15 L. R. A., 839; *Cook v. State*, 110 Ala., 40, 20 South., 360; *Palmer v. State*, 39 Ohio St., 236, 48 Am. Rep., 429; *People v. Arensburg*, 105 N. Y., 123, 11 N. E., 277, 59 Am. Rep., 483; *State of Ohio v. Capital City Co.*, 62 Ohio St., 350, 57 N. E., 62, 57 L. R. A., 181; *State v. Rockstruck* (Mo.), 38 S. W., 317; *Capital City Co. v. Ohio*, 183 U. S., 238, 22 Sup. Ct., 120, 46 L. Ed., 71. See, also, *State v. Schlenker*, 112 Iowa, 642, 84 N. W., 698, 51 L. R. A., 347; *Butler v. Chambers*, 36 Minn., 69, 30 N. W., 308, 1 Am. St. Rep., 638; *Weideman v. State* (Minn.), 56 N. W., 688. It will be observed that the statutes in question do not absolutely prohibit the sale of oleomargarine, or any other manufactured product, except it be made in the semblance of or having the yellow color of true butter; and no claim is made that oleomargarine can not be properly manufactured without introducing coloring material so that it will not bear this yellow hue. Indeed, as already suggested, we understand that the original product was nearly white. We may therefore leave out of consideration the thought, so diligently and ably argued, that the statutes in question absolutely prohibit the sale of oleomargarine. The idea which underlies the statute in question is the prevention of fraud or deceit; in other words, it is regulation, rather than prohibition. That the legislature has power to regulate the manufacture and sale of articles of food, even though the right to so manufacture and sell be called a natural right, is so well established as not to require the citation of authorities. But see *Jordan v. Dayton*, 4 Ohio, 295; *Gundling v. Chicago*, 177 U. S., 183, 20 Sup. Ct., 633, 44 L. Ed., 725; *State v. Rogers*, 95 Me., 94, 49 Atl., 564, 85 Am. St. Rep., 395. Such legislation is sustained on the theory that it is not practicable, by any ordinary inspection, for the purchaser or con-

sumer to distinguish the genuine from the artificial product; and the only effective means of protecting the public against deception is to be found in the absolute suppression of the business, or such regulation thereof as will secure practically the same results. The police power is very broad, and so elastic that no comprehensive definition has ever been attempted. Of necessity, this must be so, for it must ever respond to such social conditions "as an advancing civilization of a highly complex character requires." Anything which legitimately tends to promote public morals, health, or security is within its scope; and courts should not too closely scrutinize legislative acts, bottomed on this power. Primarily, it is for that department of government to determine what acts are or may be productive of fraud or deceit, and what inhibitions will best secure the public health and safety. But the question is not wholly legislative in character. Such acts are subject to review by the court, and the securities guaranteed by the Constitution must be preserved. Yet in all such controversies there is a broad presumption in favor of the exercise of the power, and courts should only interfere when the acts are palpably in contravention of some constitutional provision. We do not think the act in question offends against any constitutional guaranty. In an opinion written by Mr. Justice White, of the Supreme Court of the United States, which was concurred in by the entire court, an act of the State of Ohio, very similar to the one now before us, was sustained and previous cases from the same court were cited with approval. So much has been written on the subject, and the cases are so harmonious, that we need not attempt to add anything further to what has already been said. The only case which seems to support defendant's contention is *People v. Marx*, 99 N. Y., 377, 2 N. E. 29, 52 Am. Rep., 34. But in that case the statute absolutely prohibited the sale of oleomargarine. A statute somewhat like the one in question was afterward sustained by the same court in *People v. Arensburg, supra*. The commerce clause of the Federal Constitution is in no way involved in this controversy. That was eliminated by an act of Congress passed May 9, 1902, c. 748, 32 Stat., 193 (U. S. Comp. St. Supp., 1903, p. 265).

Some question is made regarding the sufficiency of the indictment, and one or two other points are made in argument which have not been separately considered. They are each and all

disposed of by what has already been said, and need not be further noticed.

It follows that there is no error in the record of which defendant may justly complain, and the judgment is affirmed.

EFFECT OF NEW OLEO LAW.

The new National law, putting a tax of ten cents a pound on oleomargarine colored in imitation of butter, and taxing a quarter of a cent a pound oleomargarine free from artificial coloration, has been in force a little over two years. For the year ending June 30, 1902, 126,316,472 pounds of oleomargarine were sold in the United States, and practically every pound of it was colored in imitation of butter and went into competition with the seven hundred or eight hundred million pounds of butter which actually went on the market that year. This was the last year under the old law taxing all oleomargarine two cents a pound.

For the year ending June 30, 1903, the first year under the new law, the output of oleomargarine was 71,804,102 pounds. During this year the manufacturers of oleomargarine were making every effort to push the sale of it and a very greatly increased number of retailers' licenses were taken out in all parts of the country, in an effort to popularize the so-called uncolored oleomargarine. At the same time every effort was made to devise means for avoiding the real intent of the new law and great quantities of oleomargarine were put out colored a light shade of yellow by the use of palm oil.

For the year ending June 30, 1904, the output of oleomargarine has been 48,071,480 pounds, a shrinkage of sixty-two per cent from the figures for 1902.

The manufacturers of oleomargarine have exercised their well known ingenuity and energy in their attacks upon the constitutionality and meaning of this statute. Four cases of extraordinary importance have reached the supreme court of the United States and been decided. The constitutionality of the law in every particular has been upheld, without reservation, by the highest court in the country. The use of palm oil in minute quantities has been declared by this same court to subject the oleomargarine so colored to the tax of ten cents a pound. That is to say, the passage of the law of 1902 was a very great victory for the dairy interests, and this victory has now been confirmed

and established by these decisions of the national supreme court.

Events of the last two years have clearly proved the assertion of the dairy people that while there is a legitimate demand for oleomargarine, most of it has been sold because it was yellow enough to look like butter, and hence, could be sold as butter. Continuously lower prices for butter have thoroughly disproved the assertion of the oleomargarine partisans that a decrease in the amount of oleomargarine on the market would result in greatly increased prices for butter. The dairy interests of the country seem to have at last secured a sufficient and efficient statute controlling the fraudulent sale of any substitute for butter.

It is idle to believe, however, that the fight has been permanently finished. It is a certainty that the manufacturers of oleomargarine will not give up their efforts to continue in the business to the detriment of the dairy business, without further efforts, and these efforts will take the direction of an attempt to repeal the law. There has already been formed an association of all manufacturers, wholesalers and retailers of oleomargarine, with considerable sums of money at their disposal, the object of which is the repeal of this law at the session of Congress which meets before this report can be in the hands of its readers, and doubtless no efforts will be spared to assure the success of their undertaking. If this law is repealed, the State of Iowa will feel its effects more than any other single State in the Union, for the reason that this State produces ten per cent of all the butter made in the United States and nearly twenty per cent of all the creamery butter. We are, therefore, vitally interested in preventing the repeal of this beneficent measure, and the one hundred thousand farmers and others in Iowa who are financially interested in the creamery and dairy business will consult their own interests by opposing in every proper and legitimate manner the repeal of this law. The only organization devoted to this particular matter is the National Dairy Union, well known to the dairymen of Iowa as the organization which is responsible for the passage of this law. The most effective work can be done through the officers of the National Dairy Union and any demands made by them upon the time and influence or money of the dairymen ought to be met. There is great danger that overconfidence will bring disaster. There is a strong possibility that the oleomargarine interests may be able this winter, or

later, to persuade Congress to repeal or modify the National oleo law.

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 Keokuk	Sigourney	Sigourney Produce Co	Sigourney.
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	James L. Humphrey, Jr.	Humeston.
12 Woodbury	Sioux City	N. R. Hathaway	Sioux City.

The foregoing is a list of all the factories in this State now engaged in the business of making renovated butter. The list shows one new factory established, and two reported last year are not now in operation. When creamery butter is very high in price there is an easy outlet for large quantities of renovated butter; but when prices of creamery butter are low, as has been the case for the last eighteen months, the demand for renovated butter is small and profits consequently very small. It is asserted by some of the makers of renovated butter that the hand separator has decreased the amount of the stock from which the renovated butter is made, for the reason that the farmer who formerly could not get his milk to a creamery is now easily able to ship his cream to a centralizing plant. This operates to reduce the amount of farm made butter collected by the local merchant.

The output of the renovated factories varies from 14,000 pounds to nearly 3,000,000 pounds, and 65 per cent of the total is made in three factories.

Renovated Butter.	Year ending July 1, 1902—reports from nine factories.	Year ending July 1, 1903—reports from thirteen factories	Year ending July 1, 1904—reports from twelve factories.
Pounds of renovated butter made	4,530,388	9,193,400	8,827,543
Average per factory	503,376	707,183	735,628
Sold for consumption in Iowa	991,333	2,168,270	958,626
Shipped outside the State	3,539,055	7,025,174	7,868,917

The prices of renovated butter for the year ending November 1, 1904, are shown in the table below and compared with the prices of creamery butter.

Renovated Butter.	Twelve months ending November 1, 1903.	Twelve months ending November 1, 1904.
November	21.0 c.	17.00c.
December	21.9 c.	18.37c.
January	21.5 c.	16.87c.
February	18.87c.	17.33c.
March	18.80c.	17.33c.
April	18.87c.	17.12c.
May	18.0 c.	16.62c.
June	18.40c.	15.00c.
July	17.75c.	15.00c.
August	17.0 c.	15.03c.
September	17.0 c.	15.85c.
October	17.0 c.	16.53c.
Average price per pound	17.17c.	16.55c.

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.	Twelve months ending Nov. 1, 1903.	Twelve months ending Nov. 1, 1904.
November	\$.2330	\$.2112	\$.2325	\$.2337	\$.2600	\$.2487	\$.2412	\$.2650	\$.23.17
December	.2500	.2250	.2290	.2160	.2720	.2540	.2510	.2920	.24.23
January	.2266	.1800	.2040	.1975	.2650	.2262	.2425	.2762	.22.70
February	.2000	.2450	.2042	.2100	.2400	.2250	.2862	.2600	.25.17
March	.2185	.1900	.1937	.2075	.2550	.2212	.2340	.2890	.24.52
April	.1650	.1880	.1980	.1962	.1940	.2099	.2825	.2725	.22.84
May	.1572	.1530	.1580	.1790	.2012	.1900	.2275	.2200	.20.12
June	.1530	.1500	.1687	.1881	.1950	.1825	.2185	.2160	.18.03
July	.1503	.1500	.1687	.1835	.1960	.1960	.2131	.2012	.17.67
August	.1571	.1675	.1890	.2000	.2100	.2050	.1990	.1940	.17.93
September	.1600	.1930	.2025	.2262	.2150	.2110	.2170	.2075	.19.47
October	.1850	.2290	.2235	.2400	.2190	.2200	.2362	.2100	.20.95
Average value per lb. for each year	\$.1882	\$.1885	\$.1971	\$.2065	\$.2278	\$.2165	\$.2416	\$.2417	\$.21.40

The increase in size of our creameries is shown by the following figures, taken from the foregoing tables:

	1900.	1901.	1902.	1903.	1904.
Average pounds of butter per creamery..	104,918	105,491	104,152	97,770	112,084
Total pounds of butter for all creameries.	84,965,062	82,704,941	77,885,696	64,505,970	98,017,476

The figures in the above comparison for the year 1904 are exclusive of 9 centralizing plants, which make 5,400,000 pounds of butter, including them, the average amount of butter made in each creamery is 120,538 pounds.

The estimated gross amount of butter, 98,017,476 pounds, includes all the creamery butter made in the state in plants of all kinds.

	1900.	1901.	1902.	1903.	1904.
Number of patrons of creameries	91,417	89,376	81,532	72,710	75,981
Average number of patrons per creamery	113	114	109	110	130
Total number of cows	631,829	627,984	579,700	569,782	587,822
Average number of cows per creamery	781	801	775	802	988
Average number of cows per patron	7	7	7	8	8

	1902.	1903.	1904.
Average pounds of butter produced by each patron	955	839	927

A large number of creameries have this year reported a very low average production per cow. This is especially noticeable in the returns from the centralizing plants and those creameries operating on the hand separator plan.

The nine largest centralizing plants in the State make 5,392,-557 pounds of butter; they have 6,847 patrons. Four of them make 3,422,247 pounds of butter, and report 42,680 cows. These figures will show an average make of butter for each patron of only 788 pounds, and for each cow of 80 pounds, both of which averages are away below the averages of the State, including plants of all kinds.

The following table shows the number of pounds of butter made by all the hand separator creameries reported, except the nine just mentioned above. It shows, also, the number of patrons and the number of cows:

Butter made.	Patrons.	Cows.	Butter made.	Patrons.	Cows.
70,000	107	800	110,448	85	.....
307,000	300	3000	84,373	175	800
243,742	220	1500	100,000	200	1,500
85,703	120	1000	51,780	60	600
82,404	120	1200	200,000	500	.....
148,353	20	.....	243,000	180	.....
89,600	90	600	120,000	70	940
61,981	53	550	72,511	86	800
537,764	600	.....	45,269	80	.....
43,648	50	270	128,800	250	.....
60,000	80	400	265,048	252	1,772
94,180	110	850	106,760	150	1,000
149,752	270	.....	75,000	110	1,200
618,792	750	.....	284,686	392	2,400
120,000	175	.....	197,120	180	1,200
74,634	60	.....	116,954	160	1,250
39,042	65	548	110,766	120	.....
159,693	150	800	124,000	200	1,500
219,696	388	.....		
Total			5,640,404	7,028	26,540

These 37 creameries, all hand separator plants, made an average of 152,443 pounds of butter, or an average to the patron of 802 pounds, which is 125 pounds less than the average for all the patrons of the State, including the above creameries.

The 26,540 cows here reported are credited with having produced 2,935,130 pounds of butter, an average of 110 pounds per cow.

Following are some comparisons showing the amount of butter per patron and per cow made in various counties. The figures given are the sum totals and averages for all the creameries in each county which report the three items of butter made, patrons and cows. Allamakee county makes about all her product from gathered cream. The others make their product from whole milk.

County.	Pounds of butter made.	Number of patrons.	Number of cows.	Average pounds of butter per patron.	Average pounds of butter per cow.
Allamakee	1,225,611	1,280	9,450	957	129
Bremer	1,838,099	747	9,373	1,781	142
Delaware	2,373,162	1,882	14,933	1,261	158
Dubuque	1,851,621	984	8,550	1,373	168
Pala Alto	1,309,551	1,019	8,508	1,287	159

Average 150.

The five counties given above will be recognized as some of the best dairy counties in the state. Similar figures for other counties will be less in the average butter produced by each patron and the average per cow, so that the total average for the State is less than the figures given above.

A study of all the foregoing tables seems to indicate conclusively that the patron who has a hand separator produces less butter on the average than other creamery patrons. Also, that the patron of the hand separator and the centralizing plant produce less butter per cow than other creamery patrons. These figures, of course, are for the amount that he sends to the creamery. He may make a lot of butter at home, which would bring up his average make, but the general result seems to be that the make of creamery butter is very greatly reduced.

It is possible that the changeable character of the patronage of the plants that receive their cream by rail may have caused

more than usual inaccuracy in the figures given above, and that the averages are not quite so low as given above.

The probably reason for this state of affairs is that the man sending cream from the hand separator will discontinue this phase of his dairy operations when the amount of milk to be separated becomes small. Under the same circumstances, a farmer would not discontinue sending milk to the creamery if the milk hauler passes his door every day.

Another table shows the number of hand separators in the State, so far as reported to be 25,887 and the amount of butter made from cream of all kinds, is about 25,000,000 pounds. It will be a very liberal assumption if we credit the 25,000,000 pounds of butter to the 25,000 separators, an average of 1,000 pounds each. This 1,000 pounds of butter represents not more than 25,000 pounds of milk, and assuming that the farmer operates his separator only eight months in the year, or 250 days, he will use it 500 times, and the average amount of milk will be only 50 pounds for each separation. It is easy to suppose that when the milk runs down to ten or fifteen pounds the operator of the separator gets discouraged and doesn't send cream from his separator to the creamery.

However, the question of the use of hand separator is one that the individual determines from the standpoint of his own self interest, and the fact that it reduces the make of creamery butter is not a vital point to him. The enormous increase in hand separators in the State for the last few years indicates that they are very popular, and this popularity could not continue if the farmer was not convinced that he secured an advantage from the use of it.

PRICES PAID FOR BUTTER FAT.

The following table shows the prices paid for butter fat for the several months of the year 1904 by plants all of whose product is made from cream received by rail. Most of these creameries advertise to pay one cent under New York butter prices for butter fat delivered at the creamery, but some of them also agree to meet all competition, so that in some cases the price actually paid is higher than one cent under New York. The cost of shipping cream is, according to the reports, from the managers of these creameries, one cent per pound of butter

fat, the cost varying, of course, with the distance. The railroad distance tariff on milk or cream in cans is as follows:

	5 Gallons.	8 Gallons.	10 Gallons.
Minimum.....	12 cents.	15 cents.	19 cents.
50 miles.....	15 cents.	18 cents.	22 cents.
100 miles.....	24 cents.	27 ce. ts.	31 cents.
150 miles.....	34 cents.	37 cents.	41 cents.

The plants whose prices are given below cover practically the whole State.

CENTRALIZING PLANTS SHIPPING CREAM BY RAIL.

Month.	N. Y. Price.	Cents.	Cents.	Cents.	Cents.	Cents.
January.....	22.70	22.50	22.10	21.75	22.00	20.50
February.....	25.17	25.00	23.40	24.00	24.00	21.40
March.....	24.52	23.50	24.00	23.55	23.00	21.50
April.....	22.84	22.00	22.00	22.00	22.00	22.00
May.....	20.12	19.00	17.25	19.12	18.20	19.00
June.....	18.03	17.00	17.00	17.10	17.20	17.00
July.....	17.67	16.00	16.50	16.75	17.00	16.00
August.....	17.93	16.50	17.00	16.90	17.20	16.25
September.....	19.47	18.00	18.85	18.50	18.20	18.50
October.....	20.95	.....	.....	19.40	.....	.....

Month.	Cents.	Cents.	Cents.	Cents.	Cents.
January.....	19.50	22.75	21.06	22.00	20.75
February.....	22.00	26.00	24.25	24.25	23.26
March.....	21.00	23.75	23.44	23.45	22.51
April.....	19.62	22.50	21.97	21.80	21.10
May.....	16.75	19.00	20.50	19.01	18.03
June.....	15.00	18.00	17.12	17.00	16.63
July.....	15.00	17.00	16.75	16.65	15.67
August.....	16.50	17.50	16.75	16.85	18.00
September.....	17.00	18.50	18.12	18.25	17.50
October.....	.....	19.50	19.12	.....	.....

In the following table are found the prices paid by creameries whose product is almost exclusively from milk. The number at the top of each column represents the number of pounds of butter made by these creameries, and the low prices paid in the winter time are accounted by the fact that their run was very small and expense correspondingly high.

WHOLE MILK PLANTS.

Month.	N. Y. Price.	Cents.	Cents.	Cents.	Cents.	Cents.	Cents.
January.....	22.70	109,114	266,298	158,996	41,074	208,443	105,121
February.....	25.17	22.00	23.00	22.00	19.00	23.00	20.00
March.....	24.52	20.00	23.50	25.00	15.00	25.00	22.00
April.....	22.84	20.00	23.00	24.00	15.00	23.00	20.00
May.....	20.12	17.00	22.00	23.00	16.00	22.00	20.00
June.....	18.03	16.10	19.00	14.00	14.00	18.50	16.00
July.....	17.67	17.00	17.75	17.00	15.00	18.00	17.00
August.....	17.93	17.00	18.75	16.00	15.00	18.00	17.50
September.....	19.47	18.00	19.10	16.00	16.00	19.50	18.00
October.....	20.95	20.00	21.25	19.00	17.00	21.50	19.00
.....	.....	21.00	.....	21.00	18.10	.....	.....

Month.	Cents.	Cents.	Month.	Cents.	Cents.
January	202.850	170.000	June	202.850	170.000
February	21.00	23.66	July	16.00	17.90
March	22.00	26.66	August	16.00	17.75
April	21.00	23.00	September	18.00	18.25
May	20.00	21.66	October	18.00	19.90
	18.00	18.75			22.00

The following are prices paid by creameries whose product is made from both milk and cream.

COMBINED PLANTS.

Month.	N. Y. Price.	Cents.	Cents.	Cents.	Cents.	Cents.	Cents.
January	22.70	252,084	57,814	44,563	104,000	118,420	67,984
February	25.17	21.00	23.00	24.50	20.00	21.00	22.00
March	24.52	23.00	21.00	24.60	23.00	24.00	21.00
April	22.84	22.00	20.00	22.70	20.00	21.00	2.00
May	20.12	20.00	19.00	19.70	20.00	17.00	19.00
June	18.03	19.00	18.00	18.80	18.00	16.50	18.00
July	17.67	19.00	18.00	17.70	18.00	15.50	17.00
August	17.93	19.00	18.00	19.00	17.00	16.50	16.00
September	19.47	21.00	20.00	20.60	17.40	17.50	16.00
October	20.95	22.00	23.50	19.00			18.00

In the following table are found prices paid by creameries whose product is exclusively from cream. These prices are for the inch of cream or practically for the pound of butter made.

OLD STYLE GATHERED CREAM, PAY BY THE INCH OF CREAM.

Month.	N. Y. Price.	Cents.	Cents.
January	22.70	212,000	208,392
February	25.17	20.00	18.52
March	24.52	2.00	20.67
April	22.84	20.00	18.64
May	20.12	19.00	17.66
June	18.03	16.00	14.48
July	17.67	15.00	14.32
August	17.93	15.00	14.53
September	19.47	15.00	15.67
October	20.95	16.00	16.46
		17.00	18.00

In comparing the foregoing prices, it should be remembered that the shipper pays practically one cent a pound on the butterfat as freight, and it will cost him as much time and trouble and expense to take his cream to the depot as it will to take it to the creamery in the same town. Also, that it costs from 2 cents to 2½ cents a pound on butterfat to deliver whole milk at the creamery.

WHY THE CREAMERIES CLOSE.

The last three years has seen the finish of a very large number of creameries in the State of Iowa. It is not difficult to tell, in a general way, why these have closed, but following will be found returns from twenty-five creameries giving some information about them and the reasons why they closed, as suggested by their former managers or operators, and this short table will repay considerable study.

Of the first nine on the list, two were burned and not rebuilt, and the reasons given for the closing of the others, seem to indicate that their managers found that they were very expensive to operate. These creameries were creameries with small patronage. In the best of creameries, about a thousand pounds of butter per patron is all that is made, so that the number of patrons here given as the highest that these creameries ever had may represent also the number of thousands of pounds of butter per year they were making at their very best. As has been pointed out in these reports before, the expense per pound for making butter increases very rapidly with the decrease of the number of pounds made. When creameries have no competition, the exact expense per pound for making will not be a very large factor in their success or failure, but when they must compete with creameries having a larger make, or with centralizing plants, to which the cream may be shipped, the expense per pound of making is one of two vital circumstances. The other, of course, is the quality of the butter and the price for which it sells. Those who urge the building of new creameries are fond of saying that a creamery can be successfully operated with 250 or 300 cows. The experience in Iowa the last two or three years, and indeed before the cream shipping system came into vogue, has been that a creamery starting with less than 500 cows is almost certain to fail. Experience also has shown that if the cows are not in the community when the creamery begins, they will not very largely increase in number for a good many years

after the creamery has shown itself to be a success. It is not at all astonishing that the first nine creameries in the following list have gone out of business.

Numbers 10 and 11 were evidently crowded out by the building of new creameries in their territory, or by superior management and energy in the creameries with which they competed locally.

Numbers 12 and 13 were evidently creameries that at one time were doing considerable business, but suffered, as many creameries have suffered, from lack of business ability on the part of the manager. One of the most astonishing things in creamery history in Iowa is that creamery management so many times has fallen into the hands of people who have never given any evidence of business ability of any kind. The fact is that the successful management of a creamery requires business ability of the highest order.

Numbers 14 to 17 were evidently average sized creameries, making, perhaps, a hundred thousand pounds of butter a year, at their best. Three of them closed because of the increased practice of shipping cream, and the other one reopened, as the manager states, because the farmers did not find it profitable to ship their cream. One is led to suspect that the statement that the centralizers are responsible for the closing of the creameries, has been overworked. In another part of this report are found prices paid for butterfat by various kinds of creameries in this State, from which it may be argued that the local creamery of sufficient size, under good management, can and does easily compete with the creamery that receives its supply of cream by rail.

The last eight creameries reported in the following table seem to indicate a general falling off in the interest of the dairy business, rather than a decrease in the number of cows or in a disastrous competition of any kind:

Number.	Number of years creamery was operated.	Greatest number of patrons at any one time.	Has there been a decrease in the practice of dairying?	Is there enough milk and cream in your territory to operate a creamery?	Is the milk sent to competing local creameries?	Is it shipped to a centralizing plant?	General Reasons for Closing.
1	1	65	Yes..	No..	No..	No	Farmers will not milk.
2	3	36	No..	Yes..	No..	Yes	Milk hauling too expensive.
3	4	65	No..	Yes..	No..	Yes	Milk hauling too expensive.
4	6	30	No..	Yes..	No..	Yes	Can not compete with centralizers.
5	3	60	No..	Yes..	No..	No..	Creamery built by creamery sharks.
6	3	60	No..	Yes..	No..	Yes	Creamery built by creamery sharks.
7	5	70	Yes..	Yes..	No..	Yes	Poor management
8	3	85	Yes..	Yes..	No..	Yes	Creamery burned and too little patronage to pay to rebuild.
9	15	72	Yes..	Yes..	Yes..	Yes	Local competition too great.
10	10	125	No..	Yes..	Yes..	No..	Five creameries surrounding. Can not compete.
11	10	130	Yes..	.....	Yes..	Yes..	Poor management by directors.
12	13	120	Yes..	Yes..	No..	Yes..	Poor management by owner.
13	5	150	Yes..	Yes..	Yes..	No..	Reopened. Not profitable to patronize centralizers.
14	9	100	No..	Yes..	No..	No..	Can not compete with centralizers.
15	10	100	Yes..	Yes..	No..	Yes..	Can not compete with centralizers.
16	6	105	Yes..	Yes..	Yes..	Yes..	Hand separators and cream shipping.
17	18	100	No..	Yes..	No..	Yes..	Hand separators and cream shipping.
18	3	102	Yes..	No..	.....	.....
19	2	91	No..	Yes..	Yes..	No	
20	23	200	Yes..	No..	Yes..	.....
21	12	192	Yes..	Yes..	No..	Yes	General decrease in milk production. Cattle high in price. Times too prosperous for milking cows.
22	20	400	Yes..	Yes..	No..	No	
23	3	350	Yes..	Yes..	Yes..	Yes	
24	5	98	No..	Yes..	No..	Yes	
25	8	200	Yes..	Yes..	.....	.....

COST OF MAKING POUND OF BUTTER.

The reports of this office show that the cost of making butter in the various creameries of the State are as follows:

Creamery making 40,000 lbs.	cost of making is 4. cents.
Creamery making 50,000 lbs.	cost of making is 3.4 cents.
Creamery making 60,000 lbs.	cost of making is 3. cents.
Creamery making 70,000 lbs.	cost of making is 2.88 cents.
Creamery making 80,000 lbs.	cost of making is 2.66 cents.
Creamery making 90,000 to 125,000	cost of making is 2. cents.
Creamery making 150,000 lbs.	cost of making is 1.85 cents.
Creamery making 175,000 lbs.	cost of making is 1.65 cents.
Creamery making 200,000 and above	cost of making is 1.44 cents.

It is evident from these figures that the smaller creamery can not long exist where there is competition of any kind. The possibility of making butter for a cent and a half a pound makes

the continued existence of a creamery whose expense is three or four cents a pound, impossible. The tendency is, and must be, under present conditions, toward increase in size of our creameries and we must look, in the future, for larger creameries and, naturally, not so many of them.

CREAM TEST BOTTLES.

The centrifugal test machines now on the market are very highly improved and do satisfactory work if run at a proper speed and are probably as good machines as are necessary. Originally the test machines were made on a ten-inch radius but since the standard bottle for either milk or cream is but six and one-half inches in length at the most, the modern machines are made on a radius of eight or eight and one-half inches. Any increase in the length of the test bottle used requires the use of a tester made on a ten-inch radius, and a depth about four inches more than the ordinary machines so that the bottles may stand upright. The twenty-inch machine for the use of the nine-inch bottles are found in practice to be quite expensive, both in first cost and in the cost of the larger and more fragile long bottles. They are the most suitable, however, for cream testing, for with them one can use a nine-inch bottle reading to 55 per cent and get fairly close reading, or the operator can use a nine-inch 30 per cent bottle with a half weight of cream and double the reading, and get a reading almost as close as that of the ordinary milk test bottle. But most creameries still have machines of smaller size and use the standard length bottle.

This bottle is not more than six and one-half inches long. The bottom of it to the zero mark is three inches long. The scale, whether it is a milk bottle, a 30, 40, or 50 per cent cream bottle, must be put in the other three or three and a quarter inches and is rarely more than two and three-quarters inches long. One of the curiosities of glassware in the possession of this department is a thirty per cent cream test bottle on which the scale reads to half per cents, and so has sixty marks on it, is but one and five-eighths inches long. This makes the lines on the scale a little more than one-fortieth of an inch apart. While this bottle may be, as advertised, accurately calibrated it is evident that accurate reading can not be done on a scale of this kind.

The ordinary milk bottle has a scale from two to two and three-quarters inches long and this gives about as small a diameter to the neck as can be used in a milk bottle. It does not seem to have occurred to the manufacturers of glassware that they could make a Babcock bottle that did not have a three inch bottom and a two and three-quarter inch scale, and so nine-tenths of our creameries are reading cream tests in 30 per cent or 50 per cent straight-necked bottles having the scale of this length, a length so short that an error in reading equal to the thickness of an ordinary blotter means an error of one-twentieth or one-twenty-fifth in the number of dollars they shall pay the patron. Testing with such apparatus is at best only a means of guessing at the real butterfat value of the cream.

The cuts herewith given illustrate some modifications of the cream test bottles designed in the office of this department. Bottles represented in Fig. A and Fig. B have about the standard length bottoms but the whole length of the neck, three and one-half inches, is utilized for the scale, making closer readings possible. Bulb neck bottles have never been popular for the reason that they are not easily read with the dividers for the reason that the bulb must always be kept inside the points of the dividers and the reading must sometimes be made from some other point than the zero mark. A thirty or forty per cent bulb would give a still smaller neck and closer reading for the rest of the scale but would not be practicable because one does not know before he begins whether he will have fat enough in the bottle to more than fill the bulb or not. Using a bottle having a 20 per cent bulb, cream that tests 20 per cent or less may be read in the part of the scale below the bulb, and cream that tests more than 20 per cent may be read by floating the fat higher so that it fills the bulb. This requires some care in filling the bottles but is entirely practicable.

A large number of operators of cream tests are using a 30 per cent bottle with a half weight of cream and doubling the reading. There are two modifications of the cream test bottle that may be used when this method is followed. The bottom of the bottle may be reduced in length, thus making the neck and scale so much the longer; and the scale may be doubled on the bottle so that the operator may not be required to perform the mental operation of multiplying his reading.

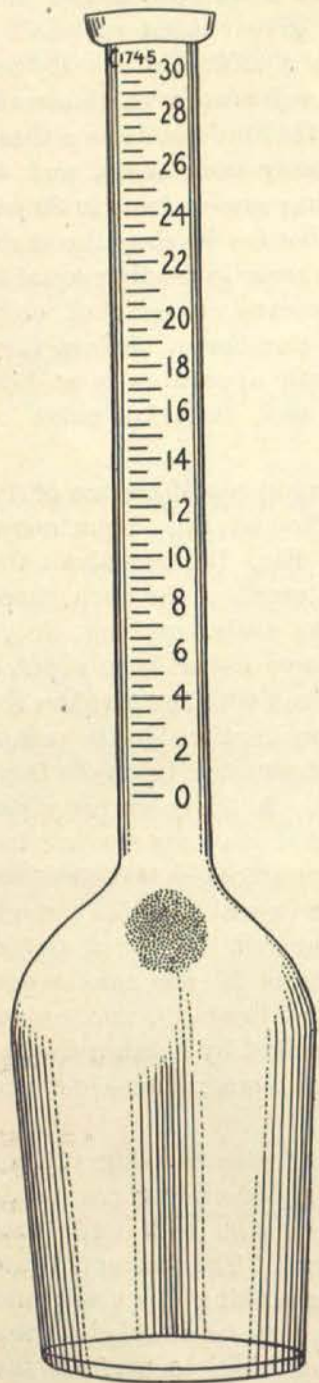


FIG. A.

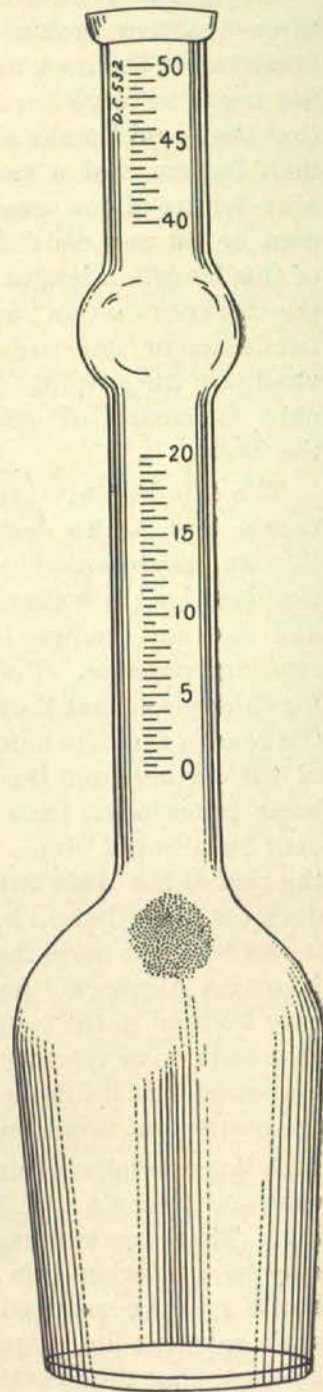


FIG. B.

The bottom of a standard bottle contains about fifty cubic centimeters, or about three pipettes full. Having in it the necessary eighteen grams of cream and sufficient acid, it is about two-thirds full. But if one is to use nine grams of cream and a half charge of acid the capacity may be reduced to thirty or thirty-five cubic centimeters and still give room to thoroughly mix the cream and acid. This will make the bottom a little more than two inches and the scale about four inches. If then the neck has a capacity sufficient for a 25 per cent bottle instead of something larger, and if the scale be written to 50 per cent the divisions will be one hundred in four inches or one twenty-fifth of an inch apart, which is practically what the divisions are on a short scale milk bottle. This scale will, therefore, read to one-half per cent as easily as the short scale milk bottles will to two-tenths. Closer readings are possible but not practicable. If the ordinary scale is put on the bottle and the reading doubled then the results will always be in whole per cents. But if the scale is doubled on the bottle the reading may be to half per cents and, hence, a more accurate result obtained. Such a bottle as here illustrated will have a narrow neck and errors arising from the meniscus will be small. Fig. C fully illustrates these modifications.

Still closer readings of butterfat may be had if the errors arising from the meniscus can be eliminated. In reading *milk* test we have been taught to read all the butterfat there is in sight, regardless of the fact that there is a curve at the top of the fat column, and reading to the top of the column gives too great a reading. This apparent error is more apparent than real for the reason that a small quantity of fat always remains in the liquid and compensates for the high reading. Experiments have shown that this apparent error amounts to about .2 on the milk bottlescale, but amounts to as much as one and a half per cent on a straight-necked 50 per cent bottle, and of course less on bottles of other sizes. These errors, if all the meniscus is read, are present in the bottles illustrated in Figs. A, B, and C. If the reading is taken immediately after the machine stops, before the fat has time to cool, the bottom of the fat column is a straight line, and if the top of the bottle be made smaller in diameter as shown in Fig. D, so that the meniscus shall be no more than in a milk bottle, the reading may be made as accurately as in a milk bottle. In using such a bottle, the fat column should be floated up as near to the zero

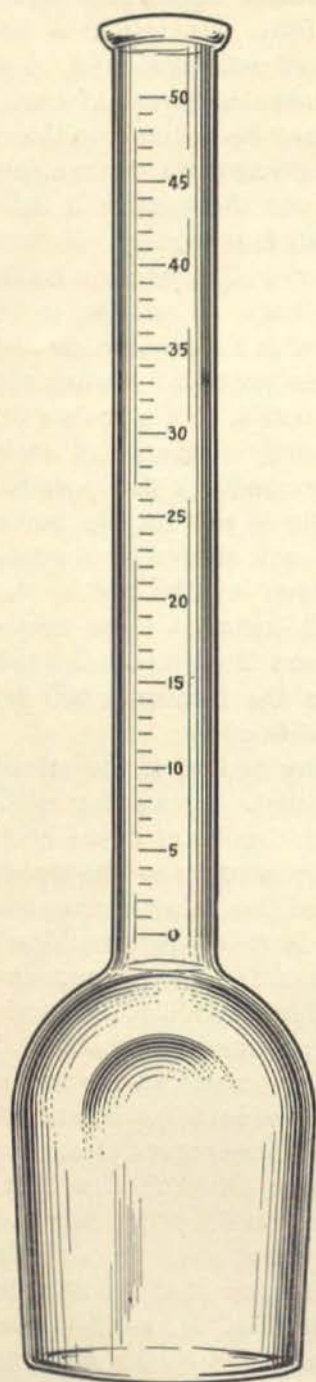


FIG. C.

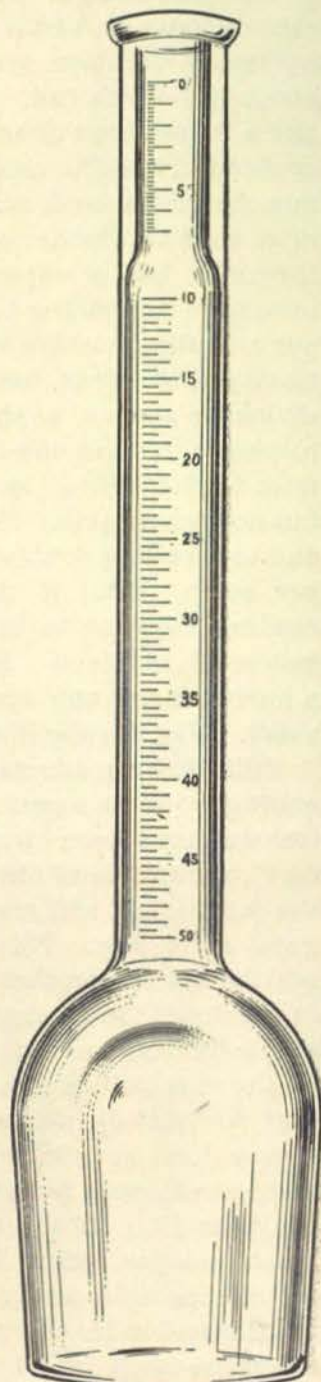


FIG. D.

mark as practicable. The reading at the top and that at the bottom must be taken and the one subtracted from the other to get the correct reading. The scale on the bottle, shown in the illustration, is doubled so that with nine grams of cream the reading may be taken direct, and may be as close as two-tenths of one per cent, the same as is shown on the scale of a milk bottle. By this means errors arising from the meniscus are entirely avoided. With such a bottle the dividers could not be used at all, and a mental calculation would be necessary with every test; otherwise the bottle will be entirely practicable.

In handling cream it is well to reverse the pipette, because the tapering point of the ordinary pipette will not admit the more solid portions of the cream and errors are thus made when the cream has not been made as smooth as it should have been. Or a pipette made on the model of Fig. E, and made to hold a little less than nine grams of cream, would be useful and easily handled.

TESTING BUTTER TO SHOW THE OVER RUN.

Butter may be tested with the Babcock test exactly as cream is tested and without extra apparatus if only approximate results are to be shown. But with ordinary test bottles reading to 50 per cent, the errors are usually considerable, and it is difficult to handle melted butter with the pipette and still get a fair sample for the reason that the water in melted butter separates very quickly. If after the butter is tested and the reading is made the overrun is figured still more serious errors may be made. An error of one or one and a half per cent may easily be made in the reading on account of the meniscus, and an error of one per cent in the reading will make a difference of nearly three per cent on the overrun when that is figured out. That is, with the ordinary bottle, with its possible and probable error of one or more per cent in reading, the operator would know what his overrun was only within the limit of three per cent, which is too great an error when the overrun probably varies only from 12 to 20 per cent at the most.

In order to eliminate from the operation of butter testing as much as possible the probable errors due to handling melted butter with a pipette, and the varying errors arising from the uncertain reading of a deep meniscus the following modification of the apparatus is suggested. Fig. F is a long-stemmed cup, some-



FIG. E.

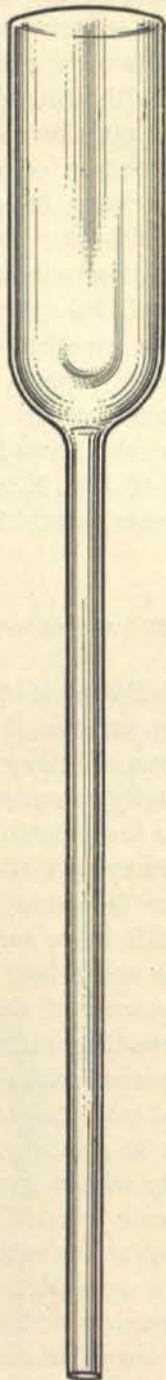


FIG. F.

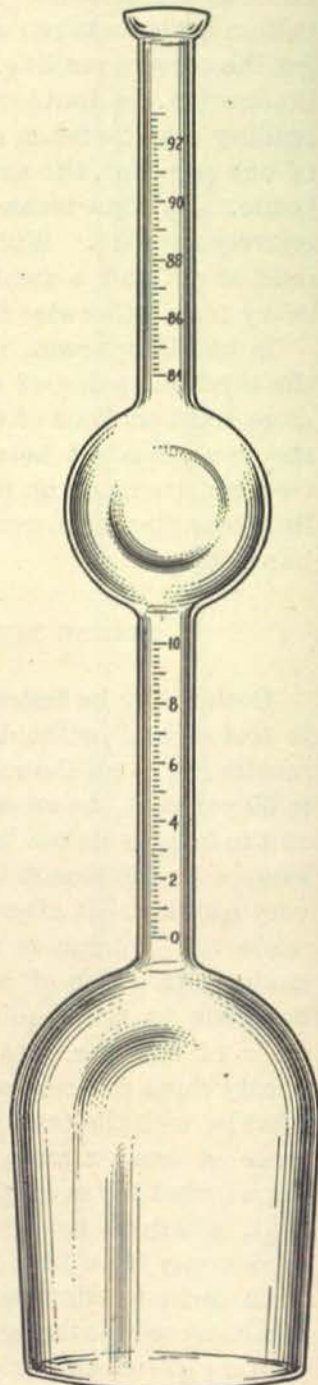


FIG. G.

thing like a pipette cut in two in the middle, of such a size as to hold about nine grams of butter. Having been balanced together with the bottle shown in Fig. G, upon a cream scale, it is then filled with butter by using it exactly in the manner of a butter trier. The stem of the cup is then placed in the neck of the bottle on the scale and by adding or subtracting a very little butter the exact weight of nine grams is easily secured. The whole apparatus is then placed in a tester. The heat of the steam soon melts the butter and it runs into the bottle. A small amount of acid should then be added and the test is completed as any cream test. The bottle shown in figure G, is so graduated that the per cent of butterfat may be read at once and read to two-tenths of one per cent. The neck of the bottle is the same size as that of a milk test bottle and the error in the meniscus will not be more than two-tenths of one per cent, which makes a possible error of about three-tenths of one per cent in the overrun when that is figured out. This form of apparatus will be found to be sufficiently accurate for work in the creamery and its use is so simple that it can be used every day in checking up the amount of overrun in the churning. Reports to this office show that the overrun varies as much as ten per cent. from one month to another in some of our creameries. The difference in prices paid, which results from this variation in the overrun will certainly create dissatisfaction among the patrons. If the overrun can be made about the same every day the prices will be more uniform and satisfactory. But the buttermaker can do little to make it uniform if he has to wait till the end of the month for the secretary to figure out the amount of butterfat before he can tell what his overrun is. If some apparatus for the determination of the overrun were in use in every creamery the results would be valuable.

THE PIPETTE IN CREAM TESTING.

CREAM SCALES.

Before the advent of the hand separator, the Babcock test for milk was in use in ninety per cent of the creameries of the state. The Babcock test for cream in the days when cream meant the hand skimmed product, was never popular and never in any large degree supplanted the old oil test churn, notwith-

standing the fact that with proper handling it is much simpler and much more accurate. The testing of cream by this system, if practiced at all, was only for the purpose of determining the richness of the cream approximately as it came from the factory separator. The use of the hand separator and the revolution which it has effected in the manner of the marketing the product of the cow, has very greatly increased the use of the Babcock test for ascertaining the butterfat value of cream.

It was long ago pointed out that testing milk and testing cream by the Babcock method were two vastly different operations. The cream, being a much more valuable product, would seem to require more careful and accurate testing than the milk, but it has been almost the universal practice to use methods in cream testing apparently without thinking or caring whether they were likely to produce accurate results.

The use of the pipette for measuring the cream in cream testing, and the use of short scale, wide-necked 50 per cent. bottles has resulted in very great inaccuracies. The Babcock test supposes that eighteen grams of milk or cream shall be put into the bottle. The 17.6 c.c. pipette will deliver eighteen grams of milk with as great accuracy as can be secured if the milk is weighed into the bottle for testing. The 17.6 c.c. pipette will deliver less than eighteen grams of cream, under the best of circumstances. If the cream is very rich, it will be so thick that a very large portion of it will stick to the inside of the pipette. If it is slightly sour, it will have in it gas bubbles, and if it be stirred or poured to make it smooth and uniform, it will carry air bubbles; or, if the cream is reasonably thin, free from air bubbles or gas bubbles arising from acidity, the pipette will still deliver less than eighteen grams of cream, for the reason that cream is lighter than milk, and since 17.6 cubic centimeters of milk will weigh eighteen grams, 17.6 cubic centimeters of cream of any degree of richness will weigh less than eighteen grams, and the richer the cream the less will be the weight of the pipette full, even supposing that all of it is delivered into the bottle. *Hence, the use of a 17.6 c.c. pipette results in tests which are too low.*

The 18 c.c. pipette was long ago suggested as the proper measure for cream for the Babcock test, and when the word "cream" meant hand skimmed cream, the 18 c.c. pipette was reasonably accurate, although not strictly so, because hand skimmed cream varied from 14 per cent to 20 per cent only, and

the 18 c.c. pipette would deliver very nearly eighteen grams of such cream. But it will not deliver eighteen grams of cream that tests 25 per cent, 35 per cent or 50 per cent and, as before, the richer the cream the less weight the 18 c.c. pipette will deliver, *and hence, the greater inaccuracy in the way of tests that are too low.*

If cream to be tested were uniformly free from air bubbles and gas bubbles, it would be possible to make a correction sheet, the use of which would correct the errors arising from the too small capacity of the 17.6 c.c. or 18 c.c. pipette, but this unfortunately is not the case, and so the correction tables which have been used to some slight extent, can not be relied upon, for the reason that the error to be corrected is not always the same. Thus, a sample of cream which is sweet and smooth and free from bubbles and which really tests 40 per cent butterfat, would show perhaps in the cream test bottle a test of 38 per cent if the cream were measured into the bottle by using the 17.6 c.c. pipette. The same sample of cream, if allowed to sour, or if poured or stirred violently to make it smooth, will show anywhere from 32 per cent to 36 per cent or 37 per cent in the test bottle, if it is measured into the bottle by means of the 17.6 c.c. pipette. That is to say, the use of any pipette in cream testing is not even a reliable method of guessing at the butterfat contents of the cream.

Under present conditions cream is purchased at local creameries, whose whole product is made from cream thus received and tested; it is purchased at local creameries, part of whose product is milk tested by the Babcock method; it is shipped by individual shippers from a few miles to seventy-five or one hundred miles to a centralizing plant, and in a great many cases it is sold to a local agent of the centralizing plant, who weighs and tests the cream in the presence of the seller. It thus comes about that cream is tested by a great many people who are far from experts in the use of the Babcock test, and as the use of the pipette in testing cream produces results which are uniformly too low, the one so purchasing cream has an unfair advantage over his competitor who makes an accurate test, for the reason that he does not pay for all he gets. The law of this State very properly covers a case of this kind. There is a general statute providing penalties for the use of any false weight or measure, and a specific statute in regard to the use of a

chemical test to determine the amount of butterfat in milk or cream received or purchased.

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 persons 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.

The attorney general states that the word "milk" in the above statute includes "cream" as well.

This statute refers to the use of a *chemical* milk test and as the Babcock test is the only chemical milk test in use in Iowa at present the practical application is to that test. The old oil test churn is not a chemical milk test and, hence, the statute does not apply to that. This section provides that every operator of the chemical milk test shall produce "correct measurements of butterfat." This will necessitate the use of a correct scale in cream testing and correct glassware. The dairy commissioner is required by law to furnish at cost to each operator a standard for testing the glassware for accuracy, so that there may be no excuse, except neglect, for the use of inaccurate bottles or pipettes of any kind for milk or cream testing.

This State has many dead creameries that would still be in operation if the patrons could have been made to believe that they were getting fair treatment in regard to the matter of the test. The importance of the test in buying either cream or milk is so great that self interest, as well as respect for the laws, should lead every operator of the test to provide himself with perfect and proper apparatus, and to so use the same that perfect and accurate results may be obtained. The importance of correct testing to the dairy business as a whole is so great that the law very properly provides a maximum penalty of six months' imprisonment or \$500 fine for violation of the statute quoted above. The dairy commissioner hopes to give wide pub-

licity to this statute so that prosecutions of offenders may not be necessary.

Some of the central plants discover that even when the pipette is used in testing they do not receive at the churning room as much butterfat as the receiving agent pays for, and so the farmer gets paid for more fat than he actually delivers. Hence it is argued that the pipette method ought to be satisfactory to the seller of the cream. These facts do not at all alter the statute requiring accurate testing nor affect what is required to make an accurate test. Doubtless the losses as outlined above occur because the sample is taken from the farmer's can in a slovenly manner. If the cream in the can is properly mixed, so that it is made uniform and smooth, the sampling is easily and accurately done.

Cream scales are at the best expensive and hard to keep in order. Most of them will do good work when new and in perfect order. None of them will do good work if the bearings are allowed to become rusty. A good cream scale should be so constructed that it may easily be taken apart and the bearings cleaned. It ought to be arranged to carry not more than one bottle on a side, and the cream ought to be weighed against the eighteen or nine gram weight and not against the weight of the cream that has just been put into the other bottle. The slide weights for balancing ought to be of small size. A scale that will weigh a drop or two of cream will not be found with balance weights that weigh a pound or two. A scale that will not act quickly will not weigh accurately and probably weighs too heavy. The operator having balanced the scale will continue to put cream in the bottle until that side goes down, which requires more weight than a sensitive scale will.

The following suggestions for cream testing are quoted from Bulletin 58, Bureau of Animal Industry, National Department of Agriculture:

CONDENSED DIRECTIONS FOR MAKING FAT TESTS OF CREAM.

SAMPLING:

- (1) Uniform composition and texture of cream is necessary.
- (2) This is obtained by pouring from one pail or can to another.
- (3) Frozen cream must be thawed before it can be sampled.
- (4) Churned cream can not be successfully sampled.
- (5) The tube sampler gives surest results.
- (6) The dipper sampler does well if the cream is thoroughly mixed.
- (7) Cream adhering to outside of tube should not get into sample jar.

- (8) The tube should be blown out with steam or rinsed with hot water before using each time.
- (9) Keep the top of the tube open while it goes down, so it may fill as fast as lowered.

KEEPING THE SAMPLES:

- (1) Sample jars must have tight-fitting covers and be kept tight.
- (2) If cream is dried in bottles it is evidence that covers are not tight enough to prevent escape of moisture.
- (3) Preservatives must be thoroughly mixed with cream; if too thick, heat the jars.
- (4) Do not shake the bottle to mix the cream; give it a rotary motion.
- (5) It is best to have samples protected from extreme heat or cold.
- (6) Churned cream gives only approximate results; dried cream gives too high results.
- (7) Extreme hot weather and lack of attention may cause separation of whey.
- (8) Do not take too large samples; it is a waste of cream.
- (9) Look after samples every day and see that they are in proper shape.

PREPARING SAMPLE FOR MEASURING INTO TEST BOTTLE:

- (1) Sample must be absolutely uniform throughout.
- (2) Heat sample to about 100° F., or until it is quite fluid.
- (3) If sample is weighed at a much higher temperature may be used.
- (4) Pour from one cup to another until uniform.
- (5) The hotter the sample the more fluid it will be and the easier to make uniform.
- (6) Take care that no cream remains in sample jar adhering to the sides.
- (7) If sample is lumpy, press lumps through a fine wire sieve (such as is used for a teapot strainer).
- (8) Melt any churned samples, mix, and sample quickly.
- (9) Make things convenient for this work and see that it is thoroughly done.

MEASURING INTO TEST BOTTLE:

- (1) Weighing the sample is the only method that will give correct results.
- (2) Use delicate balances and keep them in perfect order.
- (3) Test weights and scales for accuracy before using.
- (4) Torsion balances are very accurate; weigh one test at a time.
- (5) Less than 9 grams may be used, but 9 or 18 grams are more convenient.
- (6) Air and gas bubbles in cream cause pipette tests to be inaccurate.
- (7) Specific gravity of cream causes pipette tests of cream to be too low.
- (8) Tables for correcting specific gravity are in use, but they do not correct for error caused by air and gas.
- (9) Weighing corrects all difficulties due to specific gravity and air or gas in cream.
- (10) Use great care to get the weights exactly right.

MAKING THE TEST:

- (1) Use enough acid to make a clear fat column; determine by trial.
- (2) Use condensed steam or rainwater for filling bottles.
- (3) After adding acid, fill bottles at once to bottom of neck with water at about 120° F., and then whirl five minutes.
- (4) Then add water of same temperature to bring fat within scale, and whirl two minutes.
- (5) Keep the temperature down to 120° F. while whirling.
- (6) Have a hole drilled in top of tester to insert thermometer.
- (7) Run the tester at as high speed as bottles will stand.
- (8) For hand tester put in boiling water when beginning to test till it nearly reaches the bottles.
- (9) For steam tester raise the lid slightly while making the test.
- (10) When through whirling keep tester closed, so as to maintain heat even as possible.

READING THE TEST:

- (1) See that line between fat and water is straight, and read from bottom to extreme top of fat column.
- (2) Read the depth of meniscus and deduct four-fifths of it from previous reading. A careful operator can estimate this.
- (3) Add 0.2 per cent to the result.
- (4) For 9-gram sample, double reading before adding 0.2 per cent.
- (5) Read at a temperature close to 120° F.
- (6) If bottles are placed in bath to regulate temperature, allow them to stand for fifteen minutes before reading.

THE TEST BOTTLES:

- (1) Use as narrow-necked bottles as possible, to get wide divisions of scale.
- (2) The 30 per cent 9-inch bottles graduated to 0.2 per cent are most accurate.
- (3) Use 9-gram charge with these, doubling the reading.
- (4) The 50 per cent 9-inch bottles are next in accuracy, graduated to 0.5 per cent.
- (5) The 30 per cent, 40 per cent, and 50 per cent 6-inch bottles are too inaccurate in results.
- (6) In wide necks the scale divisions are too close together and errors are more probable.
- (7) All bottles should be tested for correctness of calibration.
- (8) With cheap bottles nearly half are not correct.
- (9) Bottles guaranteed correct can not all be depended upon.

CONCLUDING NOTES.

Little more need be said except that there is still much work to be done to make a perfect cream test, free from the objections noted in this bulletin. The subject of preservatives for composite samples of cream is one that needs the attention of the chemists. A test bottle that will overcome the objectionable features noted is a study for some genius to work upon. A bottle

of uniform diameter would greatly simplify matters as they stand, so that a uniform correction could be made for all tests. The great importance of careful work in all details should be urged upon every user of the test. The amount of butterfat that may adhere to the bottle and remain below the neck should be studied and a large number of experiments made to determine the facts in the case. The common defects observed in field work were improper sampling, poor sample jars, the pipette method used in measuring samples, the test read too high and at too high temperature, and carelessness all along the line.

CREAM SAMPLING.

The sampling of cream for testing is a very important factor for correct testing, it is impossible to obtain an accurate test of a batch of cream unless the sample to be tested is absolutely correct. It is a very much more difficult matter to obtain a correct sample of cream than it is to obtain a correct sample of milk owing to the fact that most of the creamery operators take the sample of cream direct out of the cream can instead of pouring the cream into a weighing can as is usually done with the milk which mixes the milk and makes it ready for sampling.

The more fat there is in cream, the more difficult it is to obtain a correct sample on account of the cream being thicker. After cream has stood a short time in a can it separates from what milk or water there might have been mixed in it. The richest cream is on top and on the bottom of the can the cream is very light in butterfat. I have seen nothing but water at the bottom of the cream, which is due to water being used to flush the separator bowl.

The way to obtain a correct sample of the cream is either to pour the cream from one can to another a few times to thoroughly mix it, or use a rod or a heavy wire with a disk fastened on one end. The disk to be a trifle smaller than the opening in a ten-gallon can. The disk should be put down into the cream and worked quite vigorously with an up and down motion, and then immediately a sample taken for testing. This way is practiced in several of the large creameries with good satisfaction.

The practice of stirring the cream with a short handled dipper should be condemned as it is not possible to obtain a correct sample. The tin tube sampler or what is called a milk thief is not satisfactory unless the cream is first thoroughly mixed before the sample is taken.

P. H. K.

THE HANDLING OF HAND SEPARATED OR GATHERED CREAM.

We have now a great many creameries in our State that are making butter from hand separated or gathered cream. The butter from these creameries is not, as a rule, of as good quality as the butter is from whole milk cream. There ought not to be such a great difference in the quality of the butter from these creameries as there is at the present time. A creamery that is receiving enough cream so that it will pay to operate it should put forth every effort to improve the quality of the cream and make the butter in a practical and up to day manner. They should not be satisfied until they make just as good butter as the whole milk creamery. It may be proper to offer some suggestion how best to handle this cream.

The first important point is that cream should be of good quality, as the better the cream the better the butter. The cream should be kept at a low temperature until delivered to the creamery and every creamery should have a fixed time in the day when the cream should arrive and not be allowed to string in during the whole day and evening as then it will be impossible to properly handle the cream at the creamery. As soon as the cream begins to arrive at the creamery, the pasturizer should be started and the cream pasturized at 170° to 180° and immediately cooled to 50° and from the cooler run into a cream vat in which there is a 20 per cent starter which was previously prepared. It should be then well mixed and after four hours it should be churned out. In case the cream comes in perfectly sweet it will be all right to allow it to remain in the vat over night. If, however, somewhat sour it should not be allowed to remain in the vat over four hours. The above method is followed in some of our best creameries with good success.

P. H. K.

HAND SEPARATORS.

In the following table are given some facts as reported by the creameries. It is not intended that this report is absolutely complete, but so far as hand separators are reported by the creameries that report at all, the figures are, of course, correct. Hence, the number of hand separators here given is less than the number of hand separators in actual use, because there must have been some,—probably a good many,—that are not reported at all. Another indication of the growth of the hand separator in the State is found in the number of creamery separators reported. In 1897, 514 creameries reported that they were using 1,316 separators. This year, 516 creameries show only 816 separators. About thirty-nine or forty per cent of Iowa's butter product is made from hand separator cream. Last year's report shows thirty-eight exclusive hand separator creameries, which number has increased to seventy this year. The number of creameries shipping cream by rail has increased also from forty-five to sixty-one.

TABLE No. 1.

Counties.	No. of creameries reporting hand separators.	Hand separators reported.	No. of exclusive hand separator creameries.	No. receiving cream by rail.
THE STATE	888	25,887	70	61
Adair	8	420		
Adams	5	592	3	
Allamakee	5	462	2	
Appanoose	2	100	1	1
Auburn	2	229	1	2
Benton	1	6		
Black Hawk	2	100	1	1
Boss	1	6		
Bremer	5	187		1
Buchanan	5	187		1

TABLE No. 1—CONTINUED.

Counties.	No. of creameries reporting hand separators.	Hand separators reported.	No. of exclusive hand separator creameries.	No. receiving cream by rail.
Buena Vista	3	386		
Butler	11	1,041		
Callison	1	209		
Carroll	1	683		
Cass	1	46		
Cedar	4	187		4
Cerro Gordo	4	81		
Cherokee	4	216		1
Chickasaw	10	777		1
Clarke				
Clay	5	208		1
Clayton	13	1,058		3
Clinton	6	120		
Crawford	1	1,028		2
Dallas	1	88		
Davis				
DeCATUR		100		1
Delaware	3	192		1
Des Moines				
Dickinson	3	111		1
Dubuque	8	1,061		2
Emmet	2	100		1
Fayette	2	324		2
Floyd		232		
Franklin	6	243		1
Fremont				
Greene		7		
Grundy	6	150		
Guthrie	7	320		
Hamilton	5	53		1
Hancock	7	302		1
Harda	1	351		1
Harrison	1	18		
Henry				
Howard	3	340		
Humboldt				
Ia	11	222		
Iowa	8	198		1
Jackson	11	675		2
Jasper	1	25		
Jefferson	1	60		
Johnson	11	365		
Jones				
Keeok	11	269		
Kossuth	17	628		2
Lee				
Linn	13	881		2
Louis				
Lucas				
Lyon	2	160		1
Madison				
Malhaska	1	175		1
Marion				
Marshall	3	220		1
Mills				

TABLE No. 1—CONTINUED.

County.	No. of creameries reporting hand separators.	Hand separators reported.	No. of exclusive hand separator creameries.	No. receiving cream by rail
Mitchell	6	367		1
Monona	1	37		
Monroe	1	32		
Montgomery				
Muscatine	1	18		
O'Brien	3	445	1	1
Osceola	2	340	1	1
Page	1	800	1	1
Palo Alto	8	95		
Plymouth	3	117		
Pocahontas	4	278	3	1
Polk	4	1,786	2	2
Pottawattamie	4	774	2	
Poweshiek	4	314	1	1
Ringgold				
Sac	8	427		2
Scott			1	
Shelby	6	531	3	
Sioux	6	998	5	2
Story	5	98		
Tama	3	252	1	1
Taylor	2	750	2	2
Union	1	49		
Van Buren				
Wapello	1	3		
Warren	1	3		
Washington	1	4		
Wayne	1	50	1	1
Webster	1	20	2	2
Winnebago	6	90		
Winneshiek	10	702		
Woodbury			2	2
Worth	8	97		
Wright	5	413	2	1
THE STATE	383	25,887	70	61

TABLE NO. 2.

In the following table is reported the number of patrons and the number of cows, together with the number of creameries reporting on these items, so that some idea may be gained of the relative size of the creameries, and from this table it appears that the average creamery of the State has 998 cows tributary to it, which are owned by 130 patrons. Creameries of Iowa have a larger average patronage and make a larger average amount of butter than the creameries of any other State.

The table also shows the number of creameries using a commercial starter. If there is one thing more certain than another in modern creamery operation, it is that the intelligent use of a commercial starter very greatly improves the quality of the butter and so increases its market value and the amount of money the patrons of that creamery shall receive. Only the most skillful expert can have success with a "home-made" or "buttermilk" starter. The most skillful expert can not make as good butter without a commercial starter as he can with it, and the same thing is true of every other buttermaker of reasonable skill in making butter. The entry blanks of the winners of all the contests that have occurred for a number of years have shown they were using a commercial starter, and the statements of those who score around 85 very generally show the lack of any starter. The neglect to use the best obtainable commercial starter is a penny wise, pound foolish policy. It costs the creamery and the creamery patrons money not to use the most improved methods.

The other items in this table do not lead one to suppose that the best methods are universal in Iowa creameries.

TABLE No. 2.

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 creameries using test for acidity of cream.	No. of creameries that pasteurize skimmed milk.	Using skimmed milk weigher.
THE STATE.....	516	66,798	381	380,557	160	180	194	223
Adair.....	8	1,187	5	7,281	4	4	2	4
Adams.....	1	220						
Allamakee.....	7	1,569	6	9,450	3	2		
Appanoose.....								
Audubon.....	9	1,060	9	8,200	3	5	7	3
Benton.....	3	404	1	860	1	2	1	
Black Hawk.....	15	2,074	11	8,913	6	6	8	11
Boone.....	2	185	2	1,500	2	2	2	1
Bremer.....	19	1,293	12	9,373	5	9	4	12
Buchanan.....	10	1,889	2	1,913	3	6	8	5
Buena Vista.....	3	414	3	3,300	2	1	1	
Butler.....	17	1,810	10	8,820	3	4	7	9
Calhoun.....	6	819	4	2,481	3	2	2	4
Carroll.....	8	985	4	1,330	4	3	2	6
Cass.....	2	130						
Cedar.....	5	510	4	2,790	1		1	1
Cerro Gordo.....	3	618	2	4,242				
Cherokee.....	3	210	2	700	1	1	1	
Chickasaw.....	16	2,461	10	10,715	3	4	6	6
Clarke.....								
Clay.....	6	565	3	1,400	3	3	5	2
Clayton.....	15	2,431	11	15,250	8	5	2	2
Clinton.....	8	537	8	3,815	6	7	7	3
Crawford.....	2	1,026			2	1		
Dallas.....	3	371	2	2,200	2	2	2	2
Davis.....								
Decatur.....	1	175				1		
Delaware.....	20	1,882	17	14,933	9	11	13	9
Des Moines.....								
Dickinson.....	4	313	3	1,550	1	2	2	2
Dubuque.....	17	984	17	8,550	3	3		7
Emmet.....	8	475	5	3,278	1		2	6
Fayette.....	17	2,380	14	16,467	6	8	11	7
Floyd.....	3	680	2	2,330	1			
Franklin.....	8	969	5	3,300	4	3	3	2
Fremont.....	1							
Greene.....	1	53	1	350		1	1	
Grundy.....	6	649	5	3,940	2	3	3	4
Guthrie.....	8	1,131	5	4,140		4	6	6
Hamilton.....	6	798	6	5,035	4	2	2	1
Hancock.....	8	682	7	4,848	2	2	2	3
Hardin.....	10	1,201	7	9,175	4	3	7	8
Harrison.....	2	141	2	960		2	1	2
Henry.....								
Howard.....	9	1,280	5	6,539	2	2	2	2

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 creameries using test for acidity of cream.	No. of creameries that pasteurize skimmed milk.	Using skimmed milk weigher.
Humboldt.....	10	646	10	5,730	2	4	5	9
Ida.....	2	215	2	1,450		1	1	
Iowa.....	6	643	6	5,040	5	2	1	6
Jackson.....	11	1,200	9	7,978	6	6	6	7
Jasper.....	2	175	1	800				
Jefferson.....	3	235	2	955	1	1		1
Johnson.....								
Jones.....	13	1,368	9	14,618	3	3	2	7
Keokuk.....								
Kossuth.....	20	1,348	15	8,183	4	7	10	16
Lee.....								
Linn.....	14	1,197	11	7,325	5	5	7	10
Louisa.....								
Lucas.....								
Lyon.....	2	240	2	1,200	1	1	1	1
Madison.....								
Mahaska.....	1	200	1	1,500	1	1	1	1
Marion.....								
Marshall.....	4	821	3	3,495	1	2		1
Mills.....								
Mitchell.....	8	1,614	8	11,746		1	1	1
Monona.....	1	46	1	450	1	1	1	
Monroe.....	1	113	1	650				1
Montgomery.....								
Muscataine.....	1	200	1	950				
O'Brien.....	4	442	3	2,100	2	2	1	3
Osceola.....	1	147	1	1,000				
Page.....	1	800						
Palo Alto.....	13	1,197	12	8,508	3	6	3	10
Plymouth.....	4	311	3	1,955	1			3
Pocahontas.....	4	232	3	1,850	1		1	2
Polk.....	4	898	3	6,150	1	1		
Pottawattamie.....	2	540	1	390	1	1	2	2
Poweshiek.....	4	425	2	1,050	3	4	3	
Ringgold.....								
Sac.....	9	849	6	4,238	3	2	3	1
Scott.....	2	220						
Shelby.....	8	842	3	2,190	2	2	2	
Sioux.....	5	994	5	8,132	4	2	1	1
Story.....	8	822	7	5,362	3	2	3	3
Tama.....	4	470	3	7,250	2		2	1
Taylor.....	1	625						
Union.....	1	854						
Van Buren.....								
Wapello.....	1	78	1	800				
Warren.....	2	95	1	275				2
Washington.....	1	140	1	1,200				
Wayne.....								
Webster.....	2	180	1	900				1
Winnebago.....	8	963	7	7,892				
Winneshiek.....	12	2,566	9	13,862	3	4	5	6
Woodbury.....	2	3,233	2	34,900	2	2		
Worth.....	9	820	9	6,257	4	4	5	3
Wright.....	6	596	4	2,960	1		1	
The State.....	516	66,798	381	380,557	160	180	194	223

COMPARISONS.

	1899.	1900.	1901.	1902.	1903.	1904.
Number of patrons of creameries.....	90,364	91,417	89,376	81,532	72,710	75,981
Average number of patrons per cream'ry	116	113	114	109	110	130
Total number of cows	625,512	631,829	627,984	579,700	569,782	587,822
Average number of cows per creamery	804	781	801	775	862	998
Average number of cows per patron....	7	7	7	7	8	8

TABLE No. 3.

The dairy commissioner very greatly regrets that it is impracticable to get an absolutely perfect report of the butter made in the State. The many changes in the management of creameries makes it impossible in some cases for the report to be given. It has been the policy of this department to secure as complete a report as possible and then to assume that the creameries that do report make up a fair average for all the creameries of the State. The following table will show the very great increase in the amount of butter made from cream, as well as an increase in the amount of butter made by each creamery, all of which, of course, was to be expected. The rapid growth of the use of the hand separator and the tendency towards concentration in the creamery business are both well known. About forty per cent of our butter is made from cream, mostly of the hand separator variety; the remainder is still made from whole milk.

As shown by previous reports of this office, and by the succeeding table as well, about ten per cent of the creamery butter is consumed in the State, and more than half of this amount by the patrons of the creameries themselves.

TABLE No. 3.

TABLE SHOWING NUMBER OF POUNDS OF MILK RECEIVED, NUMBER OF POUNDS OF CREAM RECEIVED, POUNDS OF BUTTER MADE, AMOUNT PAID TO PATRONS FOR MILK AND CREAM, 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, its Value and Market for Same.				
				Pounds of butter made.	Amount paid to patrons for milk and cream.	Pounds sold to patrons.	Pounds sold in Iowa.	Pounds shipped out of the State.
THE STATE.....	516	775,037,330	84,028,976	62,222,457	9,884,543	3,437,505	2,834,192	54,650,760
Adair.....	8	10,013,172	429,320	627,518	130,445	27,212	15,980	584,320
Adams.....	.....	.....	.....	.....	.....	.....	.....	.....
Allamakee.....	6	4,509,970	4,039,746	1,225,611	208,820	37,101	16,580	1,171,924
Appanoose.....	.....	.....	.....	.....	.....	.....	.....	.....
Audubon.....	9	17,044,387	829,437	1,053,550	157,626	88,193	8,747	1,433,610
Benton.....	1	58,819	90,088	60,093	3,883	2,037	7,247	20,809
Black Hawk.....	15	30,323,847	1,994,373	1,865,492	325,368	134,071	359,044	1,375,377
Boone.....	2	4,522,724	12,133	203,259	34,229	10,798	20,018	172,443
Bremer.....	19	47,152,141	.....	2,107,648	310,007	190,654	23,562	1,882,432
Buchanan.....	9	32,334,378	1,338,047	1,867,233	325,506	154,823	26,888	1,785,522
Buena Vista.....	3	1,981,204	1,071,222	339,078	54,054	16,956	6,500	315,622
Butler.....	15	32,163,000	1,053,121	1,508,785	210,458	124,765	52,656	1,331,364
Calhoun.....	5	2,906,626	617,189	782,736	43,471	6,606	3,743	772,327
Carroll.....	8	6,517,143	1,434,859	794,711	117,826	45,536	19,800	729,375
Cass.....	2	1,823,928	40,900	84,657	12,587	3,988	.....	80,609
Cedar.....	5	4,329,431	457,438	313,564	47,588	8,162	30,005	275,397
Cerro Gordo.....	4	.....	1,700,211	436,381	76,866	10,782	39,904	385,635
Cherokee.....	3	.....	1,038,480	273,394	49,085	3,536	19,480	255,312
Chickasaw.....	16	29,651,308	4,932,951	2,549,243	431,258	189,239	61,232	2,298,772
Clarke.....	.....	.....	.....	.....	.....	.....	.....	.....
Clay.....	6	6,038,260	238,525	365,462	64,254	70,592	17	294,853
Clayton.....	17	25,250,839	6,923,606	2,974,656	407,427	80,841	45,358	2,848,437
Clinton.....	8	10,302,629	310,315	549,168	73,400	13,336	21,763	514,069
Crawford.....	2	.....	2,890,347	768,544	109,620	1,117	.....	767,427
Dallas.....	3	3,966,626	238,490	294,694	45,552	6,145	45,096	242,853
Davis.....	.....	.....	.....	.....	.....	.....	.....	.....
Decatur.....	1	.....	390,000	120,000	20,000	2,000	118,000	.....
Delaware.....	20	59,030,588	413,513	2,719,790	470,808	227,640	66,124	2,405,236
Des Moines.....	.....	.....	.....	.....	.....	.....	.....	.....
Dickinson.....	3	3,470,315	117,551	202,070	19,639	17,797	1,114	188,159
Dubuque.....	19	30,362,054	171,356	1,467,054	243,689	83,501	40,246	1,352,307
Emmet.....	8	7,751,558	362,826	437,220	46,493	36,801	2,346	398,073
Fayette.....	17	49,301,212	984,458	2,507,727	421,025	206,833	56,733	2,244,141
Floyd.....	3	.....	1,980,000	501,214	93,799	29,899	1,500	469,815
Franklin.....	7	9,669,777	1,351,581	609,193	105,794	37,002	939	571,252
Fremont.....	.....	.....	.....	.....	.....	.....	.....	.....
Greene.....	1	1,231,460	8,460	90,000	10,000	1,050	3,230	55,690
Grundy.....	7	14,133,480	708,816	754,947	110,529	72,314	4,062	675,571
Guthrie.....	7	12,075,464	556,645	727,043	122,392	35,665	33,681	657,797
Hamilton.....	6	13,406,577	151,520	642,260	105,986	132,126	3,451	506,683

TABLE NO. 3.—CONTIUED.

Counties.	Number reporting.	Pounds of milk received.	Pounds of cream received.	Pounds of Butter Made, its value and Market for Same.				
				Pounds of butter made.	Amount paid to patrons for milk and cream.	Pounds sold to patrons.	Pounds sold in Iowa.	Pounds shipped out of the State.
Hancock.....	8	4,446,198	1,186,203	542,542	\$ 82,400	18,109	3,211	521,222
Hardin.....	11	17,708,819	1,079,833	791,990	164,800	81,867	32,970	677,163
Harrison.....	2	1,937,885	34,516	96,565	16,342	7,426	35,638	53,503
Henry.....	9	11,829,688	2,400,000	1,013,560	167,063	26,247	1,821	985,492
Howard.....	11	10,000,273	1,111,931	754,800	104,545	48,237	669	708,894
Humboldt.....	2	480,000	598,000	216,383	85,241	6,240	.....	20,093
Iowa.....	6	10,315,957	201,393	594,164	88,634	120,788	25,851	441,525
Jackson.....	12	19,311,412	1,553,716	1,286,345	205,043	18,401	3,875	1,264,089
Jasper.....	2	4,049,747	20,000	182,971	29,030	11,394	5,592	165,985
Jefferson.....	3	2,347,148	296,956	280,237	32,710	10,677	12,000	257,560
Johnson.....	18	43,236,994	1,570,940	2,655,799	410,701	103,761	86,165	1,465,873
Jones.....	21	32,070,908	1,037,548	1,698,905	232,917	155,980	23,384	1,519,535
Keokuk.....	14	18,991,427	600,464	1,030,987	171,050	51,979	233,558	740,400
Kossuth.....	2	1,143,524	491,689	178,065	31,451	5,400	1,500	171,165
Lee.....	1	.....	400,000	100,000	17,500	6,000	.....	94,000
Linn.....	4	2,144,155	1,079,000	494,916	90,423	10,916	32,488	451,511
Louisa.....	8	440,000	1,425,936	1,425,936	229,892	50,255	43,573	1,332,108
Lucas.....	1	58,000	81,592	25,800	3,914	396	1,491	2,918
Lyon.....	1	1,597,523	40,400	76,329	13,259	2,691	1,219	72,419
Madison.....	1	451	451,960	112,960	12,970	540	30,650	81,770
Mahaska.....	5	3,972,640	1,258,000	513,476	86,133	19,933	3,736	489,807
Marion.....	1	1,300,000	181,552	118,760	9,187	1,800	.....	.....
Marshall.....	1	2,000,000	588,000	117,600	.....	67,000	.....	521,000
Mills.....	13	29,805,473	167,328	1,414,671	227,277	137,856	46,680	1,230,135
Mitchell.....	4	5,546,449	237,084	302,811	54,939	18,512	9,800	273,999
Monona.....	4	960,000	305,160	73,280	20,390	3,680	1,000	74,594
Monroe.....	4	226,232	3,032,198	875,109	148,440	6,329	202,185	606,698
Montgomery.....	3	609,256	668,561	307,131	51,719	2,926	230,502	73,708
Muscatine.....	4	2,960,336	1,116,982	383,592	63,624	2,580	2,580	378,432
O'Brien.....	8	2,827,000	1,453,500	553,964	102,439	20,938	171,000	362,031
Osceola.....	8	6,578,540	1,270,909	637,946	98,822	36,743	10,858	590,345
Page.....	5	264,331	2,425,242	920,446	159,055	15,800	7,734	896,852
Palo Alto.....	8	16,503,104	350,460	807,296	144,680	87,594	15,45	704,251
Plymouth.....	3	2,423,958	93,064	208,640	38,601	1,086	1,000	206,554
Pocahontas.....	2	.....	3,050,000	724,897	111,715	1,000	3,700	720,197
Polk.....	1	689,052	102,160	54,512	9,512	2,219	854	52,293
Pottawattamie.....	1	1,010,000	7,025	47,500	8,048	2,100	30,859	14,541
Poweshiek.....	2	1,200,000	.....	53,732	9,678	2,850	15,832	35,700
Ringgold.....	2	.....	432,000	107,611	16,776	120	15,000	92,491
Sac.....	1	6,137,577	200,000	386,878	60,000	2,200	1,200	333,473
Scott.....	2	352,725	375,000	100,333	15,463	4,224	6,000	90,109
Shelby.....	8	19,158,014	1,214,885	925,010	147,402	103,885	30,053	791,072
St. Louis.....	2	.....	.....	.....	.....	.....	.....	.....
St. Paul.....	2	.....	.....	.....	.....	.....	.....	.....
Story.....	2	.....	.....	.....	.....	.....	.....	.....
Tama.....	2	.....	.....	.....	.....	.....	.....	.....
Taylor.....	2	.....	.....	.....	.....	.....	.....	.....
Union.....	2	.....	.....	.....	.....	.....	.....	.....
Van Buren.....	2	.....	.....	.....	.....	.....	.....	.....
Wapello.....	2	.....	.....	.....	.....	.....	.....	.....
Warren.....	2	.....	.....	.....	.....	.....	.....	.....
Washington.....	2	.....	.....	.....	.....	.....	.....	.....
Wayne.....	2	.....	.....	.....	.....	.....	.....	.....
Webster.....	2	.....	.....	.....	.....	.....	.....	.....
Winnebago.....	2	.....	.....	.....	.....	.....	.....	.....

TABLE No. 3—CONTINUED.

Counties.	Number reporting.	Pounds of milk received.	Pounds of cream received.	Pounds of Butter Made, Its Value and Market for Same.				
				Pounds of butter made.	Amount paid to patrons for milk and cream.	Pounds sold to patrons.	Pounds sold in Iowa.	Pounds shipped out of the State.
Winneshiek.....	12	7,350,000	1,920,015	1,920,015	\$ 316,209	16,547	18,514	1,894,959
Woodbury.....	2	.....	4,740,000	2,715,690	453,878	600	150,000	2,565,090
Worth.....	9	12,761,618	754,591	1,498,503	133,012	59,227	2,208	1,437,073
Wright.....	6	1,167,956	1,523,644	460,066	76,961	28,215	12,237	419,614
The State.....	516	775,087,330	84,028,976	62,222,457	\$9,884,543	3,437,505	2,834,192	54,650,700

CHEESE MAKING.

Cheese making in Iowa has never reached any great proportions, and the industry, though small, has been still further decreased by the general conditions that have decreased the make of butter. There are now forty-one cheese factories in the State, only a few of which are making more than fifty thousand pounds of cheese. The total cheese reported by thirty-six of these factories is 1,809,030, for which they have paid their patrons \$156,428. Most of the cheese factories of the State are making cheese principally for local and immediate consumption. The number of cheese factories in the State has been steadily decreasing for quite a number of years.

TABLE No. 4.

TABLE SHOWING NUMBER OF COWS FOR EACH COUNTY AND FOR THE STATE FOR THE YEARS 1900, 1901, 1902, 1903, 1904, AND VALUES FOR 1904.

Figures are from the reports of county auditors to the state auditor for the Years 1900, 1901, 1902, 1903 and 1904.

Table with 7 columns: Counties, Number (1904), Value (1904), Number (1903), Number (1902), Number (1901), Number (1900). Rows include THE STATE, Adair, Adams, Allamakee, Appanoose, Audubon, Benton, Black Hawk, Boone, Bremer, Buchanan, Buena Vista, Butler, Calhoun, Carroll, Cass, Cedar, Cerro Gordo, Cherokee, Chickasaw, Clarke, Clay, Clayton, Clinton, Crawford, Dallas, Davis, Decatur, Delaware, Des Moines, Dickinson, Dubuque, Emmet, Fayette, Floyd, Franklin, Fremont, Greene, Grundy, Guthrie, Hamilton, Hancock, Hardin, Harrison, Henry, Howard.

TABLE No. 4—CONTINUED.

Table with 7 columns: Counties, Number (1904), Value (1904), Number (1903), Number (1902), Number (1901), Number (1900). Rows include Humboldt, Ida, Iowa, Jackson, Jasper, Jefferson, Johnson, Jones, Keokuk, Kossuth, Lee, Linn, Louisa, Lucas, Lyon, Madison, Mahaska, Marion, Marshall, Mills, Mitchell, Monona, Monroe, Montgomery, Muscatine, O'Brien, Osceola, Page, Palo Alto, Plymouth, Pocahontas, Polk, Pottawattamie, Poweshiek, Ringgold, Sac, Scott, Shelby, Sioux, Story, Tama, Taylor, Union, Van Buren, Wapello, Warren, Washington, Wayne, Webster, Winnebago, Winneshek, Woodbury, Worth, Wright.

Average value of cows, \$22.33. The assessors classify as follows: Heifers one year old, 502,578, average value, \$12.46. Heifers two years old, 324,470, average value, \$17.44. Cows, 1,373,496.

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.	Method of receiving milk.
<i>Adair County—</i>								
1	Adair	Adair Co-op. Creamery Co.	Co-op.	W. F. Mason, Secretary	Adair	C. E. McIntire	Separator	Test.
2	Arbor Hill	Arbor Hill Co-op. Creamery Co.	Co-op.	C. C. Pease, Sec. & Mgr	Stuart	R. J. Erb	S. & G. C.	Test.
3	Fontanelle	Blue Grass Creamery	Indiv.	A. L. Stewart & Co.	Fontanelle	L. R. 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	Prussia	Blue Grass Creamery (s)	Indiv.	A. L. Stewart & Co.	Fontanelle		Separator	Test.
7	Greenfield	Blue Grass Creamery (s)	Indiv.	A. L. Stewart & Co.	Fontanelle		Separator	Test.
8	Greenfield	Greenfield Creamery company.	Stock	Jas. F. Laud, Secretary	Greenfield	F. L. Odell	Separator	Test.
9	Stuart	Howe Co-op. Creamery Co.	Co-op.	A. M. Frandsen, Secretary	Stuart	A. M. Frandsen	Separator	Test.
10	Bridgewater	Blue Grass Creamery	Indiv.	A. L. Stewart & Co.	Fontanelle	M. N. Bates	Separator	Test.
11	Hebron	Hebron Creamery	Indiv.	D. F. Hammers, Proprietor	Hebron	D. F. Hammers	C. & G. C.	Test.
<i>Adams County—</i>								
12	Prescott	Prescott Butter & Cheese Ass'n	Co-op.	G. W. Iden, Secretary	Prescott	F. Beal	Separator	Test.
13	Carl	Prescott Butter & Ch. Ass'n. (s)	Co-op.	G. W. Iden, Secretary	Prescott		Separator	Test.
14	Williamson	Prescott Butter & Ch. Ass'n. (s)	Co-op.	G. W. Iden, Secretary	Prescott		Separator	Test.
15	Williamson	Nebraska & Iowa Crm. Co. (s)	Co-op.	John J. King	Omaha, Neb.		Separator	Test.
16	Mount Etna		Co-op.				Separator	
17	Nevinville		Co-op.				Separator	
<i>Allamakee County—</i>								
18	Dorchester	Little Daisy Creamery	Indiv.	Ben. W. Schulte	Dorchester	Ben. W. Schulte	Hand Sep	Oil test.
19	Lansing	Calhoun Creamery Co.	Co-op.	David Hector, Secretary	Church	K. V. Ferris	Hand Sep	Oil test.
20	Postville	Postville Far. Co-op. Crm. Co.	Co-op.	F. H. Weisz, Secretary	Postville	James A. Gordon	Hand Sep	Test.
21	Waterville	Farmers' Co-op. Crm. & Com. Co.	Co-op.	Peter Arneson, Secretary	Waterville	F. W. Hessel	Gath Cr.	Oil test.
22	Ludlow	Ludlow Co-op. Creamery Co.	Co-op.	F. A. Sanderman, Sec.	Waukon	W. P. Muth	Separator	Test.
23	Quandahl	Arctic Spring Creamery	Indiv.	I. D. Johnson, Proprietor	Quandahl	I. O. Langlie	Gath Cr.	Oil test.
24	Waukon	Far. Waukon Co-op. Crm. Co.	Co-op.	Peter Bieber, Secretary	Waukon	Jackson Smith	Gath Cr.	Oil test.
<i>Audubon County—</i>								
25	Audubon	Sharon Creamery	Co-op.	C. C. Moller, Secretary	Audubon, R. 4	M. Anderson	S. & G. C.	Test.
26	Brayton	Oakfield Twp. Sep. Crm. Co.	Co-op.	Hans Nymand, Secretary	Brayton, R. 1	J. P. Nielson	Separator	Test.
27	Exira	Audubon Twp. Sep. Crm. Co.	Co-op.	P. Jensen, Secretary	Exira	P. Jensen	S. & G. C.	Test.
28	Exira	West Hamlin Co-op. Crm. Co.	Co-op.	C. W. Boysen, Secretary	Exira, R. 2	Peter Sorensen	Separator	Test.
29	Exira	Exira Creamery company	Co-op.	Chris C. Nelson, Secretary	Exira	Chris. C. Nelsen	S. & G. C.	Test.
30	Hamlin	Blue Grass Sep. Creamery Co.	Co-op.	C. V. Christensen, Sec.	Hamlin	F. Heleman	S. & G. C.	Test.
31	Kimballton	Danish Sep. Creamery Co.	Co-op.	Peter Lukke	Audubon, R. 4	C. Thomsen	Separator	Test.
32	Ross	Ross Creamery company	Co-op.	H. W. Stearns, Secretary	Audubon	B. Jensen	Hand Sep	Test.
33	Manning	Liberty Creamery company	Co-op.	George Nelson, Secretary	Irvin	Oscar Jensen	Hand Sep	Test.
<i>Benton County—</i>								
34	Blairstown	Blairstown Creamery	Indiv.	Charles Hanbold	Blairstown	Chas. Hanbold	Hand Sep	Test.
35	Vinton	The Vinton Creamery	Indiv.	A. M. Rowe, Sec. & Mgr	Vinton	Clarence W. Kowe	S. & G. C.	Test.
36	Norway	Norway Creamery	Indiv.	M. B. Hershey, Proprietor	Norway	M. B. Hershey	Gath Cr.	Test.
37	Van Horne	Van Horne Creamery	Indiv.	H. O. Dauchy, Proprietor	Van Horne	H. O. Dauchy	Separator	Test.
<i>Black Hawk County—</i>								
38	La Porte City	La Porte Creamery company	Co-op.	C. B. Gingrich, Secretary	La Porte City	George E. Jensen	S. & G. C.	Test.
39	Waterloo	The Palmer-Hubbard company	Stock	C. V. Rosenberger, Sec	Independence	G. O. Miller	Hand Sep	Test.
40	Benson	Benson Dairy company	Co-op.	W. Bozarth, Secretary	Cedar Falls R. 2	G. W. Wardell	Separator	Test.
41	Crain Creek	Crain Creek Creamery	Indiv.	Wm. Meier, Proprietor	Crain Creek	Wm. Meier	Separator	Test.
42	Dewar	Great Western Creamery	Indiv.	Wm. Widdel, Proprietor	Dewar	J. Tegetmeyer	Separator	Test.
43	Dunkerton	Farmers' Creamery company	Co-op.	G. S. Kleckner, Secretary	Dunkerton	O. G. Alexander	Separator	Test.
44	Eagle Center	Eagle Center Dairy Ass'n.	Co-op.	D. G. Lichty, Secretary	Waterloo R. 1	H. C. Konecke	Separator	Test.
45	Fairbank	East Lester Creamery Co.	Co-op.	Ira Finch, Secretary	Fairbank	C. E. Brandt	Separator	Test.
46	Finchford	Union Creamery company	Co-op.	C. A. George, Secretary	Winslow	I. R. Moon	Separator	Test.
47	Hudson	Hudson Co-op. Dairy Ass'n.	Co-op.	H. B. Elghmey, Secretary	Hudson	Wm. Hammel	Separator	Test.
48	Cedar Falls	Mt. Vernon Creamery	Co-op.	F. E. Rundles, Secretary	Jamesville	A. J. Frees	Separator	Test.
49	Jubilee	Jubilee Co-op. Creamery Co.	Co-op.	J. J. Orth, Secretary	Raymond R. 1	Byron Linius	Separator	Test.
50	Voorhies	Red Bird Creamery	Co-op.	E. Stevens, Secretary	Voorhies	Peter Peterson	Separator	Test.
51	Gilbertville	Gilbertville Dairy Association	Co-op.	H. B. Kascht, Secretary	Gilbertville	M. Enevoldsen	Separator	Test.
52	Waterloo	Edwards Creamery	Indiv.	J. O. Moxdorf, Proprietor	Waterloo	H. O. Moxdorf	Separator	Test.
53	Waterloo	Farmers Dairy Association	Co-op.	U. S. Blough, Secretary	Waterloo	R. W. Chadwick	Separator	Test.
<i>Boone County—</i>								
54	Boone	Dodge Far. Mut. Co-op. Crm. Co.	Co-op.	J. Richert, Secretary	Boone R. 5	August Drukker	Separator	Test.
55	Rosendale	Rosendale Co-op. Creamery Co.	Co-op.	M. P. Peterson, Secretary	Story City	L. C. Peterson	Separator	Test.
56	Bouton	Woodward Creamery (s)	Indiv.	H. P. Caloney	Woodward	A. B. Caloney	S. & G. C.	Test.
<i>Bremer County—</i>								
57	Bremer	Bremer Creamery company	Co-op.	F. C. Kohagen, Secretary	Waverly, R. 2	Wm. Kallenbach	Separator	Test.
58	Bremer	Western Douglas Creamery	Co-op.	A. G. Hoppeworth, Sec.	Tripoli, R. 1	A. F. Sadler	Separator	Test.
59	Sumner	Little Valley Creamery Co.	Co-op.	Fred Seehase, Secretary	Sumner, R. 7	H. C. Ladage	Separator	Test.
60	Denver	The Farrington Creamery Co.	Co-op.	Fred Garton, Secretary	Cedar Falls	B. O. Squires	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.
61	Denver	First Maxfield Creamery Co.	Co-op.	Wm. Millus, Secretary.	Denver	John Wedemeyer	Separator	Hund.
62	Frederika	Frederika Creamery company.	Co-op.	J. H. McDonald, Secretary	Frederika	Cecil E. Carr	Separator	Test.
63	Klinger	Klinger Creamery	Indiv.	C. H. Rohrsen Proprietor	Klinger	C. H. Rohrsen	Separator	Hund.
64	Knittel	Maxfield Creamery company	Co-op.	John Strotman, Secretary.	Knittel	F. H. Wehling	Separator	Hund.
65	Sumner	Olmax Cream ry company	Co-op.	Henry Specht, Secretary.	Sumner, R. 6	Richard Becker	Separator	Hund.
66	Sumner	Excelsior Creamery company.	Co-op.	H. E. Wuttke, Secretary.	Sumner	C. L. Mills	Separator	Test.
67	Sumner	Sumner Creamery com any	Co-op.	John Dawson, Secretary.	Sumner	Robert Maillie	Separator	Hund.
68	Tripoli	Fremont Creamery company	Co-op.	H. F. Braun, Secretary	Tripoli, R. 3.	Henry Hankner	Separator	Test.
69	Tripoli	Potters Sidine Creamery Co.	Stock	H. Willbrandt, Secretary	Tripoli, R. 2	W. Ambros	Separator	Hund.
70	Tripoli	Tripoli Creamery company	Co-op.	C. Jahnke, Secretary.	Tripoli	F. C. Oitrogge	Separator	Hund.
71	Denver	Artesian Creamery company	Co-op.	H. Graening, Secretary	Tripoli, R. 2	E. H. Homan	Separator	Test.
72	Waverly	LaFayette Creamery company.	Co-op.	Emil Walther, Secretary.	Waverly, R. 1.	Henry Piegors	Separator	Test.
73	Waverly	Washington Creamery Co.	Co-op.	S. M. Lehman, Secretary	Waverly, R. 5.	A. Bottermann	Separator	Test.
74	Tripoli	Sieg-1 Creamery company	Co-op.	H. J. Joens, Secretary	Tripoli, R. 1.	Wm. Lennius	Separator	Test.
75	Waverly	Waverly Cond. & Caramel Co.	Stock	Guy Van Devere, Secretary	Waverly	C. E. Patchin	Separator	Test.
76	Fairbank	Grove Hill Creamery company.	Co-op.	J. H. Kane, Secretary	Grove Hill	Frank Daniels	Separator	Hund.
77	Sumner	Spring Fountain Creamery Co.	Co-op.	Joe Volker, Secretary	Sumner	Fred Sammer	Separator	Hund.
<i>Buchanan County—</i>								
78	Aurora	Aurora Creamery	Indiv.	Geo. Weeks, Proprietor	Aurora	C. R. Fishtemier	Separator	Test.
79	Brandon	Brandon Creamery company.	Co-op.	W. W. Bain, Secretary	Brandon	M. E. Benson	Separator	Test.
80	Fairbank	Fairbank Farmers Creamery Co	Co-op.	E. Sanborn, Secretary	Fairbank	H. H. Opperman	Separator	Test.
81	Hazleton	Hazleton Farmers Creamery Co	Co-op.	L. Gerstenberger, Sec	Hazleton	E. M. Vargason	Separator	Test.
82	Independence	The Palmer-Hubbard company	Stock	C. V. Rosenberger, Sec	Independence	D. H. Macomber	S. & G. C.	Test.
83	Rowley	The Palmer-Hubbard Co. (s)	Stock	C. V. Rosenberger, Sec	Independence	S. & G. C.	Test.	
84	Jesup	Jesup Creamery company.	Co-op.	C. L. Bright, Secretary	Jesup	A. Christensen	S. & G. C.	Test.
85	Lamont	Lamont Creamery company	Co-op.	H. Avon, Secretary	Lamont	L. S. Hutton	Separator	Test.
86	Otterville	Otterville Creamery company	Co-op.	I. S. Hutton, Secretary	Independence	I. S. Hutton	Separator	Test.
87	Stanley	Stanley Creamery	Indiv.	Geo. Weeks, Proprietor	Aurora	Arthur Strong	Separator	Test.
88	Winthrop	The Palmer-Hubbard company.	Stock	C. V. Rosenberger, Sec	Independence	W. H. Plank	S. & G. C.	Test.
89	Quasqueton	The Palmer-Hubbard Co. (s)	Stock	C. V. Rosenberger, Sec	Independence	S. & G. C.	Test.	
90	Middlefield	The Palmer-Hubbard Co. (s)	Stock	C. V. Rosenberger, Sec	Independence	S. & G. C.	Test.	
91	Newtonville	The Palmer-Hubbard Co. (s)	Stock	C. V. Rosenberger, Sec	Independence	S. & G. C.	Test.	
<i>Buena Vista County—</i>								
92	Albert City	Fairfield Creamery company.	Co-op.	O. P. Peterson, Secretary.	Albert City	S. M. Yayer	Hand Sep	Test.
93	Newell	Coon River Co-op. Creamery Co.	Co-op.	E. P. Kruse, Secretary.	Newell	C. A. Allison	S. & G. C.	Test.
94	Newell	Newell Cheese Factory.	Co-op.	Wm. Huxtable, Secretary	Newell	Geo. Allard	S. & G. C.	Test.
95	Storm Lake	Grant Creamery company	Co-op.	George W. Cole, Secretary	Storm Lake, R. 2	A. H. Adams	Hand Sep	Test.
<i>Butler County—</i>								
96	Aplington	Aplington Co-op. Creamery Co.	Co-op.	R. B. Eckles, Secretary	Aplington	Wm. Gilbert	Separator	Test.
97	Austinville	White Rose Creamery	Indiv.	S. Patterson, Proprietor	Austinville	S. Patterson	Separator	Test.
98	Allison	Allison Creamery	Indiv.	W. S. Mead, Proprietor	Allison	W. H. Codne	Separator	Test.
99	Greene	Cold Water Creamery	Co-op.	Paul Devereux, Secretary	Greene	P. J. Hagarty	Gath Cr.	Oil test.
100	Clarksville	Clarksville Creamery company	Stock	H. Brokaw, Secretary.	Clarksville	W. S. Barkelew	Separator	Test.
101	Dumont	Dumont Creamery company	Indiv.	O. W. Ontjes, Proprietor	Aplington	A. W. Snyder	Separator	Test.
102	Aredale	Dumont Creamery company (s)	Indiv.	O. W. Ontjes, Proprietor	Aplington	A. W. Snyder	Separator	Test.
103	Eleanor	Monroe Central Creamery Assn	Co-op.	A. Ontjes, Secretary.	Aplington	Will Cornell	Separator	Test.
104	Kesley	Kesley Creamery	Indiv.	H. atterson, Proprietor.	Aplington	A. Whittney	Separator	Test.
105	New Hartford.	Crescent Creamery company.	Co-op.	W. F. Graham, Secretary.	New Hartford.	W. F. Graham	Separator	Test.
106	New Hartford.	Beaver Creamery company	Co-op.	W. D. Coperly, Secretary	New Hartford.	Peter Larson	Separator	Test.
107	Parkersburg.	Parkersburg Creamery Co	Stock	G. A. Palmer, Secretary.	Parkersburg.	G. A. Palmer	Separator	Test.
108	Sinclair	Parkersburg Creamery Co. (s)	Stock	G. A. Palmer, Secretary	Parkersburg.	G. A. Palmer	Separator	Test.
109	Shell Rock.	Shell Rock Creamery Assn.	Co-op.	E. E. Wilcox, Secretary	Parkersburg.	G. A. Palmer	Separator	Test.
110	Shell Rock.	Columbian Creamery	Co-op.	Hall & Olson, Proprietors.	Shell Rock.	M. J. Johnson	Separator	Test.
111	Shell Rock.	Victory Creamery	Co-op.	A. B. Shadbolt, Sec. & Mgr.	Shell Rock.	Adolph Olson	Separator	Test.
112	Shell Rock.	Walkers Creamery	Indiv.	A. B. Walker, Proprietor	Waverly	W. O. Cave	Separator	Test.
113	Greene	Northern West Point Crm. Co.	Co-op.	Herman Debner, Secretary	Shell Rock.	A. B. Walker	Hand Sep	Test.
114	New Hartford.	Albian Creamery	Co-op.	O. F. Courbat, Secretary	Greene, R. 2	F. Fisher	Separator	Test.
<i>Calhoun County—</i>								
115	Lytton	Blue Grass Creamery.	Indiv.	I. Hillmann, Proprietor	Lytton	Geo. Hillmann	Separator	Test.
116	Lake City	Farmers Co-op. Crm. company.	Co-op.	H. H. Ross, Secretary	Lake City, R. 3.	Carl Lessner	S. & G. C.	Test.
117	Lytton	Williams Creamery.	Co-op.	Henry Krukenberg, Sec	Fonda	Olin Olson	Separator	Test.
118	Manson	Manson Creamery	Indiv.	G. B. Moon, Proprietor	Manson	Chas G. Moon	S. & G. C.	Test.
119	Pomeroy	The Pomeroy Creamery	Stock	John Behrends, Secretary	Pomeroy	J. E. Lauridson	S. & G. C.	Test.
120	Rockwell City.	Andrew Wood company	Stock	T. H. Allen, Secretary	Rockwell City.	Henry Belfranc	S. & G. C.	Test.
	Rockwell City.	Andrew Wood company (s)	Stock	T. H. Allen, Secretary	Rockwell City.	Henry Belfranc	S. & G. C.	Test.
<i>Carroll County—</i>								
121	Arcadia	Golden Star Crm. company	Stock	C. Wiebers, Secretary	Arcadia	S. J. Jans	Separator	Test.
122	Breda	Viola Mutual Creamery Assn.	Co-op.	Paul Luckow, Secretary	Breda	John Stamen	Separator	Test.
123	Coon Rapids.	Coon Rapids Creamery	Indiv.	H. L. Fest, Proprietor	Coon Rapids.	H. L. Fest	Hand Sep	Test.
124	Lanesboro	Lanesboro Far. Co-op. Mut. Crm.	Co-op.	Henry Miller, Secretary	Glidden	L. R. Winn	S. & G. C.	Test.
125	Mount Carmel.	Mount Carmel Mut. Crm. Co.	Co-op.	Martin J. Berger, Secretary	Carroll, R. 2	Jos. A. Stamen	Separator	Test.
126	Roselle.	Rose Valley Creamery	Indiv.	C. Kohorst, Proprietor	Roselle, R. 4.	C. Kohorst	Separator	Hund.
127	Templeton.	Templeton Creamery company	Stock	Geo. Bierl	Templeton.	August Thieleke	Separator	Test.
128	Manning.	The Fairmont Crm. company.	Stock	J. H. Rushton, President	Fairmont, Neb.	O. P. Yant	Hand Sep	Test.
129	Breda	Hanford Produce company (s).	Indiv.	Hanford Produce company	Sioux City	Gath. Cr.	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>Cass County—</i>								
130	Cumberland	Farmers Mutual Crm. company	Co-op.	P. Pettinger, Secretary	Cumberland	Albert Heyn	S. & G. C.	Test.
131	Griswold	Lyman Co-op. Mut. Crm. Co.	Co-op.	W. C. Mueller	Griswold	W. R. Carol	Separator	Test.
132	Atlantic	Farmers Creamery company	Co-op.					
<i>Cedar County—</i>								
133	Bennett	Golden Star Creamery	Indiv.	W. H. Kroeger, Proprietor	Bennett	W. H. Kroeger	Separator	Test.
134	Clarence	Union Creamery	Indiv.	E. Huxoll, Proprietor	Clarence	E. Huxoll	Separator	Hund.
135	Clarence	Clarence Creamery	Indiv.	Henry Stuck, Proprietor	Clarence	Henry Struck	Gath. Cr.	Oil test.
136	Durant	Durant B. & C. Association	Stock	M. C. Bohstedt, Secretary	Durant	E. A. Kinsler	Gath. Cr.	Test.
137	Lowden	Home Creamery	Indiv.	G. F. Reinking, Proprietor	Lowden	Geo. Reinking	Gath. Cr.	Oil test.
138	Lowden	Yankee Run Creamery	Indiv.	Chas. C. Boettger, Proprietor	Lowden	Chas. C. Boettger	Separator	Test.
139	Lowden	Union Creamery (s)	Indiv.	E. Huxoll, Proprietor	Clarence		S. & G. C.	Hund.
140	West Branch	West Branch Creamery	Indiv.	Eves & Elliott, Proprietors	West Branch	L. Elliott	S. & G. C.	T st.
141	Springdale	West Branch Creamery (s)	Indiv.	Eves & Elliott, Proprietors	West Branch		S. & G. C.	Test.
<i>Cerro Gordo County—</i>								
142	Mason City	J. D. Bickel Produce company	Indiv.	M. V. Bickel, Secretary	Mason City	Nicholas Fisher	Gath. Cr.	Test.
143	Plymouth	Plymouth Creamery company	Co-op.	C. A. Molsberry, Secretary	Plymouth		Separator	Test.
144	Portland	Portland Creamery	Indiv.	C. E. Sweet, Proprietor	Portland	C. E. Sweet	Gath. Cr.	Test.
145	Rockwell	Rockwell Creamery	Indiv.	G. H. Gurler, Proprietor	DeKalb, Ill.	Charles Logan	Gath. Cr.	Test.
146	Thornton	Thornton Creamery	Indiv.	G. W. Kennedy, Proprietor	Thornton	Chris. Mortinsen	Gath. Cr.	Test.
147	Meservey	Meservey Creamery	Indiv.	M. J. Kernan, Proprietor	Meservey	M. J. Kernan	Gath. Cr.	Test.
148	Ventura	Fertile Co-operative Dairy Co (s)	Co-op.	J. T. Tallackson	Fertile		Separator	Test.
<i>Cherokee County—</i>								
149	Aurelia	Aurelia Creamery	Indiv.	McAdam & Todson & Co.	Elgin, Ill.	Alex. McAdam	Hand Sep	Test.
150	Larrabee	Larrabee Creamery	Indiv.	A. Younger, Proprietor	Larrabee	A. Younger	Hand Sep	Test.
151	Marcus	White Rose Creamery	Indiv.	C. E. Austin, Proprietor	Marcus	E. F. Julian	S. & G. C.	Test.
152	Washta	Washta Creamery	Indiv.	James Robertson, Jr., Sec.	Washta	E. I. Soper	Gath. Cr.	Test.

<i>Chickasaw County—</i>								
153	Boyd	Boyd Creamery Association	Co-op.	Wm. Denner, Secretary	Boyd	J. M. Zubrod	Separator	Test.
154	Alta Vista	Alta Vista Farmer's Crm. Assn.	Co-op.	J. Westenberger, Secretary	Alta Vista	Otto Buhner	Separator	Test.
155	Devon	Devon Farmer's Creamery	Co-op.	Alfred Larsen	Devon	Mr. Capper	Separator	Test.
156	Deerfield	Deerfield Creamery Co.	Co-op.	J. W. Kane, Secretary	Deerfield	F. W. Sargent	Separator	Test.
157	Fredericksburg	Fredericksburg Butter Factory	Co-op.	C. L. Whitcomb, Secretary	Fredericksburg	H. E. Forrester	Separator	Test.
158	Ionia	Ionia Farmer's Creamery Assn.	Co-op.	W. M. Bair, Secretary	Ionia	R. S. Cagley	Gath. Cr.	Oil Test
159	Jerico	Jerico Creamery Association	Co-op.	L. R. Williams, Secretary	Jerico	John Finnigan	S. & G. C.	Test.
160	Lawler	Lawler Creamery Association	Co-op.	H. M. Kout, Secretary	Lawler	Fred A. Zigler	Separator	Test.
161	Little Turkey	Little Turkey Creamery	Stock	H. R. Carpenter, Sec.	Elkader	Allen Gulbranson	S. & G. C.	Test.
162	New Hampton	New Hampton Creamery	Indiv.	J. L. Humphrey, Jr.	N. Bedford, Mass.	S. Peterson	S. & G. C.	Test.
163	New Hampton	New Hampton Creamery (s)	Indiv.	J. L. Humphrey, Jr.	N. Bedford, Mass.		S. & G. C.	Test.
164	New Hampton	New Hampton Creamery (s)	Indiv.	J. L. Humphrey, Jr.	N. Bedford, Mass.		S. & G. C.	Test.
165	Nashua	Nashua Co-op. Creamery Assn.	Co-op.	E. V. R. Hall, President	Nashua	J. W. Cagley	Gath. Cr.	Oil Test
166	Nashua	Charles Gurler Creamery	Indiv.	Chas. Gurler & Company	DeKalb, Ill.	W. H. Miller	Gath. Cr.	Oil Test
167	N. Washington	North Washington Cream. Co.	Co-op.	F. N. Gindorf, Secretary	N. Washington	Fred Schreiber	Separator	Test.
168	Republic	Republic Creamery (s)	Indiv.	Charles Gurler & Co.	DeKalb, Ill.		Gath. Cr.	Oil Test
169	Saude	Saude Co-op. Creamery Assn.	Co-op.	Wm. Sanderson, Sec.	Lawler, R. 2	G. F. Langquist	Separator	Test.
170	Williamstown	Williamstown Creamery	Co-op.	H. S. Kerssen, Secretary	Fredericksburg	Sam Binn	Separator	Test.
<i>Clay County—</i>								
171	Dickens	Farmers Creamery company	Co-op.	Wm. McCurdy, Secretary	Dickens	A. L. Remington	Separator	Test.
172	Fostoria	Fostoria Creamery company	Stock	B. D. Dunning	Fostoria	F. Riley	S. & G. C.	Test.
173	Royal	Royal Creamery company	Indiv.	Prof. G. L. McKay	Ames	B. R. Churchill	S. & G. C.	Test.
174	Langdon	Farmers Co-op. Creamery	Co-op.	H. R. Beck, Secretary	Langdon	Charles Johnson	Separator	Test.
175	Spencer	Spencer Creamery	Indiv.	J. W. Corey, Proprietor	Spencer	Frank L. Repke	S. & G. C.	Test.
176	Webb	Webb Creamery company	Indiv.	J. A. Reid, Proprietor	Webb	J. A. Reid	Hand Sep	Test.
<i>Clayton County—</i>								
177	Elkader	Highland Far. Creamery Assn.	Co-op.	G. Gregerson	Elgin	H. L. Michaelson	S. & G. C.	Oil test.
178	Elkader	Elkader Creamery	Stock	H. R. Carpenter	Elkader	Harvey Clough	Hand Sep	Test.
179	Edgewood	Fidelity Creamery	Indiv.	H. F. Beyer	Edgewood	Ed. Whipple	S. & G. C.	Test.
180	Elkport	Elkport Creamery (s)	Indiv.	H. F. Beyer	Edgewood		S. & G. C.	Test.
181	Farmersburg	Farmers Co-op. Creamery Co.	Co-op.	John Johnson, Secretary	St. Olaf R. 1.	I. Henderschott	Hand Sep	Test.
182	Garnaville	Garnaville Far. Co-op. Crm.	Co-op.	H. Kuhlman, Secretary	Garnaville	O. Schumacher	Gath. Cr.	Test.
183	Luana	Luana Far. Co-op. Crm. Co.	Co-op.	John H. Hanson	Luana	James A. Barker	S. & G. C.	Test.
184	Littleport	Littleport Creamery	Indiv.	H. F. Beyer	Edgewood	Don Whipple	S. & G. C.	Test.
185	Communia	Communia Creamery	Stock	H. R. Carpenter	Elkader	Peter Klink	S. & G. C.	Test.
186	Monona	Monona Creamery	Stock	H. R. Carpenter	Elkader	G. M. Miller	Hand Sep	Test.
187	Osterdock	Osterdock Creamery	Stock	H. R. Carpenter	Elkader	A. H. Peacock	Separator	Test.
188	Mederville	Mederville Creamery	Indiv.	Wm. Brinkhaus	Mederville	Wm. Brinkhaus	S. & G. C.	Test.
189	McGregor	J. D. Bickel Produce company	Stock	M. V. Bickel	McGregor	Geo. Heffron	Hand Sep	Test.
190	Strawberry Pt.	Strawberry Pt. Far. Crm. Assn.	Co-op.	O. O. Gladwin, Secretary	Strawberry Pt.	H. J. Evans	Separator	Test.
191	St. Olaf	St. Olaf Farmers Creamery Co.	Co-op.	G. R. Englehardt	St. Olaf R. 1.	J. Frisby	Gath. Cr.	Test.
192	Volga City	Farmers Co-op. Creamery Co.	Co-op.	Wm. Leal, Secretary	Volga City	Joe Jones	S. & G. C.	Test.
193	Watson	Blue Grass Creamery	Co-op.	John Geraghty, Secretary	McGregor	F. A. Fict	Hand Sep	Test.
194	Gunder	Clermont Valley Crm. Co. (s)	Co-op.	F. F. Ferguson, Secretary	Clermont		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.
195	East Elkport	Dubuque Butter & Milk Co. (s)	Stock	G. C. Hopkins, Secretary..	Oregon, Ill		Hand Sep	Test.
196	Guttenburg	Dubuque Butter & Milk Co. (s)	Stock	G. C. Hopkins, Secretary..	Oregon, Ill		Hand Sep	Test.
<i>Clinton County—</i>								
197	Delmar	Springbrook Creamery	Indiv.	John Newman Company..	Elgin, Ill	L. J. Spohn	S. & G. C.	Test.
198	Elwood	Springbrook Creamery	Indiv.	John Newman Company..	Elgin, Ill	Frank Leinbaugh	S. & G. C.	Test.
199	Lost Nation	Farmers Creamery	Co-op.	Hilden Kammer, Secretary	Lost Nation	Grant Adamson	S. & G. C.	Test.
200	Petersville	Springbrook Creamery	Indiv.	John Newman Company..	Elgin, Ill	J. G. Wheelock	S. & G. C.	Test.
201	Teeds Grove	Springbrook Creamery	Indiv.	John Newman Company..	Elgin, Ill	A. Anrex	S. & G. C.	Test.
202	Wilton	Springbrook Creamery	Indiv.	John Newman Company..	Elgin, Ill	C. B. Berst	S. & G. C.	Test.
203	Wheatland	Farmers' Co-op. Creamery Co.	Co-op.	Emil Lohmann, Secretary	Wheatland	A. E. Banta	S. & G. C.	Test.
204	Toronto	Farmers' Co-op. Creamery Co.	Co-op.	Edward Hart, Jr.	Toronto	W. L. Sloan	Separator	Test.
205	Lost Nation	Diamond Creamery Co. (s)	Indiv.	Andrew Nimmo, Manager.	Monticello		S. & G. C.	Test.
206	Lost Nation	Diamond Creamery company (s)	Indiv.	Andrew Nimmo, Manager.	Monticello		S. & G. C.	Test.
207	Smithtown	Diamond Creamery company (s)	Indiv.	Andrew Nimmo, Manager.	Monticello		S. & G. C.	Test.
208	Browns	Springbrook Creamery (s)	Indiv.	John Newman Company..	Elgin, Ill		S. & G. C.	Test.
<i>Crawford County—</i>								
209	Charter Oak	Charter Oak Creamery	Indiv.	John O. Keller, Proprietor.	Charter Oak	Will Craft	Hand Sep	Test.
210	Denison	Fairmont Creamery company.	Stock	E. T. Rector, Manager	Fairmount, Neb	A. F. Durkee	Hand Sep	Test.
<i>Dallas County—</i>								
211	Dexter	Farmers' Co-op. Creamery Ass'n	Co-op.	James L. Keachie, Sec.	Dexter	Jas. L. Keachie	S. & G. C.	Test.
212	Perry	J. Moody & Sons' Creamery.	Indiv.	J. Moody & Son	Perry	C. Sorenson	S. & G. C.	Test.
213	Woodward	Woodward Creamery	Indiv.	H. P. Calonkey, Proprietor	Woodward	A. B. Calonkey	S. & G. C.	Test.
214	Dallas Center	Beatrice Creamery company (s)	Stock				Hand Sep	Test.
215	Min'urn	Beatrice Creamery company (s)	Stock				Hand Sep	Test.
216	Panther	Beatrice Creamery company (s)	Stock				Hand Sep	Test.
217	Van Meter	Beatrice Creamery company (s)	Stock				Hand Sep	Test.
218	Redfield	Smith Produce company.	Stock				Separator	Test.
219	Blough	Iowa Dairy company (s)	Stock	W. H. Hall, Manager.	Yale		Separator	Test.
<i>Davis County—</i>								
220	Bloomfield	Yorkshire Creamery Co. (s)	Stock	R. N. Morrell, Secretary..	Ottumwa		S. & G. C.	Test.
221	Pulaski	Yorkshire Creamery Co. (s)	Stock	R. N. Morrell, Secretary..	Ottumwa		S. & G. C.	Test.
222	Drakeville	Yorkshire Creamery Co. (s)	Stock	R. N. Morrell, Secretary..	Ottumwa		S. & G. C.	Test.
223	Manville	Yorkshire Creamery Co. (s)	Stock	R. N. Morrell, Secretary..	Ottumwa		S. & G. C.	Test.
224	West Grove	Yorkshire Creamery Co. (s)	Stock	R. N. Morrell, Secretary..	Ottumwa		S. & G. C.	Test.
<i>Decatur County—</i>								
225	Leroy	Old Colony Creamery (s)	Indiv.	James L. Humphrey, Jr.	New Bedford, Mass.		S. & G. C.	Test.
226	Van Wert	Old Colony Creamery (s)	Indiv.	James L. Humphrey, Jr.	New Bedford, Mass.		S. & G. C.	Test.
227	Lamoni	Old Colony Creamery (s)	Indiv.	James L. Humphrey, Jr.	New Bedford, Mass.		S. & G. C.	Test.
228	Pleasanton	Old Colony Creamery (s)	Indiv.	James L. Humphrey, Jr.	New Bedford, Mass.		S. & G. C.	Test.
229	Leon	Leon Creamery	Stock	A. M. McCartney & Co.	Leon	A. McCartney	Hand Sep	Test.
<i>Delaware County—</i>								
230	Worthington	Central Co-op. Creamery	Co-op.	J. H. White, Secretary	Hopkinton, R. 2	Anton Neuhaus	Separator	Test.
231	Greeley	Greeley Farmers Creamery Co.	Co-op.	J. O. Matthews, Secretary	Greeley	W. R. Crabb	Separator	Test.
232	Colesburg	Colesburg Creamery company	Co-op.	Robert A. Gull, Secretary	Colesburg	A. L. Landis	S. & G. C.	Test.
233	Manchester	Berryville Co-op. Creamery	Co-op.	Michael Barr, Secretary	Ryan	Mr. Turner	Separator	Test.
234	Hopkinton	Hopkinton Co-op. Creamery	Co-op.	M. L. McGlade	Hopkinton	H. D. Wendt	S. & G. C.	Test.
235	Petersburg	Bear Grove Creamery	Co-op.	F. H. Klestermann	Dyersville, R. 22	Geo. Domayer	Separator	Test.
236	Delaware	Delaware Co-op. Creamery	Co-op.	Johann Yelden	Delaware	M. McDowell	Separator	Test.
237	Earlville	Earlville Creamery	Indiv.	J. M. Dunn	Earlville	J. M. Dunn	S. & G. C.	Test.
238	Earlville	Hilt Edge Creamery	Indiv.	J. M. Dunn	Earlville	J. E. McCaffrey	S. & G. C.	Test.
239	Manchester	Manchester Co-op. Creamery	Co-op.	Luther Schley	Manchester	C. D. Eider	Separator	Test.
240	Manchester	Dairy City Creamery	Indiv.	Morse & Son	Manchester	Mr. Pollard	Hand Sep	Test.
241	Masonville	Ma-onville Co-op. Crm. Co.	Co-op.	F. S. Harris, Secretary	Masonville	J. F. Dawson	Separator	Test.
242	Almoral	Almoral Creamery company	Co-op.	F. L. Carpenter, Secretary	Almoral	L. A. Pollard	S. & G. C.	Test.
243	Delhi	Silver Spring Crm. company	Co-op.	E. B. Porter, Secretary	Delhi	A. Bentz	Separator	Test.
244	Petersburg	Petersburg Creamery company	Co-op.	H. H. Scherbring, Secretary	Petersburg	E. E. Mittlestadt	Separator	Test.
245	Manchester	Spring Branch Crm. company	Stock	J. B. Higman	Manchester	B. C. Squires	Separator	Test.
246	Thorpe	Farmers Co-op. Crm. company	Co-op.	M. E. Blair	Manchester	G. Stuessi	Separator	Test.
247	Sand Spring	Sand Spring Crm. company	Co-op.	H. M. Carpenter	Monticello	Anton Smith	S. & G. C.	Test.
248	Ryan	Palmer-Hubbard company (s)	Stock	C. V. Rosenberger, Sec	Independence		S. & G. C.	Test.
249	Hazle Green	Hazle Green Co-op. Crm. Co.	Co-op.	C. V. Rosenberger, Sec	Independence	C. J. Rohde	S. & G. C.	Test.
250	Broadway	Palmer-Hubbard company (s)	Stock	C. V. Rosenberger, Sec	Independence		S. & G. C.	Test.
251	McAreevy	Palmer-Hubbard company (s)	Stock	C. V. Rosenberger, Sec	Independence		S. & G. C.	Test.
252	Ryan	Silver Creek Creamery	Indiv.	Geo. E. Packer	Ryan	Geo. E. Packer	Separator	Test.
253	Oneida	Oneida Creamery	Co-op.	F. M. Burbridge, Secretary	Oneida	Thomas Dickson	S. & G. C.	Test.
254	Dundee	Dundee Co-op. Crm. company.	Co-op.	F. C. Kleinsorge, Secretary	Dundee	F. W. Stephenson	Separator	Test.
255	Ehler	Ehler Creamery	Indiv.	Nathan Patton, Proprietor	Ehler	Don Babcock	S. & G. C.	Test.
<i>Dickinson County—</i>								
256	Lake Park	Lake Park Far. Co-op. Crm. Co.	Co-op.	J. G. Chrysler, Secretary..	Lake Park	E. E. Starr	S. & G. C.	Test.
257	Milford	Milford Far. But. and Crm. Co.	Stock	H. H. Shipman, Secretary.	Milford	J. C. Miller	S. & G. C.	Test.
258	Spirit Lake	Farmers Co-op. Crm. company	Co-op.	A. F. Bergman	Spirit Lake	George Williams	S. & G. C.	Test.
259	Terril	Terril Co-op. Creamery	Co-op.	T. H. Tveden, Secretary..	Terril	R. A. Burt	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>Dubuque County—</i>								
260	Balltown	Balltown Co-op. Creamery Co.	Co-op.	C. D. Herrington, Sec.	Specht's Ferry, R. 9	Henry Koehler..	S. & G. C.	Test.
261	Cascade	Spring Valley Co-op. Crm. Co.	Co-op.	J. N. Kremer, Sec.	Farley, R. 16	Wm. Thompson.	Separator	Test.
262	Cascade	Cascade Co-op. Creamery Co.	Co-op.	P. J. Conlin, Sec.	Cascade	C. T. Elliott.	Separator	Test.
263	Dyersville	Hickory Valley Creamery	Co-op.	John Ramm, Sec.	Farley, R. 17	Frank Ruby	Separator	Test.
264	Dyersville	Farmers' Golden Star Crm. Co.	Stock	F. P. Kern, Sec.	Dyersville.	John B. Feldman	Separator	Test.
265	Epworth	Epworth Co-op. Creamery Co.	Co-op.	J. D. Burrell, Sec.	Epworth.	E. L. Beers	Separator	Test.
266	Fillmore	Fillmore Co-op. Creamery	Co-op.	Wm. Craft, Sec.	Fillmore	John G. Stemmer	Separator	Test.
267	Farley	Johns Creek Creamery	Indiv.	A. K. Heald & Son	Farley	Robert Parrott.	S. & G. C.	Test.
268	Farley	Farley Creamery Co.	Co-op.	G. W. Cropp, Sec.	Farley	Thomas Landis.	S. & G. C.	Test.
269	Oneill	Oak Grove Creamery	Co-op.	Jonathan Paisley, Sec.	Waupeton, R. 36.	Harry Sylvester	Separator	Test.
270	Latimers	Lattners Spring Creamery Co.	Indiv.	Joe C. Breithach, Sec.	Epworth	Harry Williams.	Separator	Test.
271	Luxemburg	Globe Creamery Co.	Co-op.	Joe Freidman	N. Buena Vista	Peter Joetzing	Separator	Test.
272	New Vienna	New Vienna Central Creamery	Stock	Bernard Herbers, Sec.	New Vienna, R. 24	George Landis.	Separator	Hund.
273	Richardsville	Farni Creamery Co.	Stock	John Fisher, Sec.	Durango, R. 35.	Peter N. Schmitt	Separator	Test.
274	Sherrill	Riverside Creamery	Co-op.	Nic Semmert, Sec.	Dubuque, R. 1.	Nic Semmert	Separator	Test.
275	Sherrill	Sherrill Creamery Co.	Co-op.	J. C. Boleyn, Sec.	Specht's Ferry.	Jos. Stillmunkes	Separator	Test.
276	Worthington	Worthington Creamery	Indiv.	C. Baehler, Prop.	Worthington	C. Baehler.	S. & G. C.	Test.
277	Zwingle	Otter Creek Creamery (s)	Indiv.	Geo. Laible, Prop.	Zwingle		Separator	Test.
278	Holy Cross	Holy Cross Creamery Co.	Co-op.	Leo Sweeney, Sec.	N. Buena Vista.	John Farni	Separator	Test.
279	Dubuque	S. P. Wadley & Son	Indiv.	S. P. Wadley & Son	Dubuque	P. N. Jen	Hand Sep	Test.
280	Dubuque	Columbian Creamery	Indiv.	Laude Bros.	Dubuque	Geo. Werner.	S. & G. C.	Test.
281	Dubuque	Dubuque Butter & Milk Co.	Stock	G. C. Hopkins, Sec.	Oregon, Ill.	J. C. Coyle.	Hand Sep	Test.
<i>Emmet County—</i>								
282	Armstrong	Farmers' Co-op. Creamery	Co-op.	Peter H. Buft, Secretary.	Armstrong	Henry Kronholm	S. & G. C.	Test.
283	Estherville	Estherville Creamery Co.	Stock	J. A. Kronholm	Estherville	A. H. Fangen	S. & G. C.	Test.
284	Emmetsburg	Farmers' Creamery Co.	Stock	P. A. Gaarde, Secretary.	Halfa	C. M. Vohs	Separator	Test.
285	Huntington	Huntington Co-op. Crm. Ass'n	Co-op.	L. L. Druley, Secretary	Huntington	Geo. Graham	S. & G. C.	Test.
286	Hoprig	Hoprig Farmers' Crm. Co.	Co-op.	John A. Bosold, Secretary.	Hoprig	Julius Jensen	S. & G. C.	Test.
287	Ringsted	Denmark Creamery Co.	Co-op.	H. J. Fink, Secretary	Ringsted	Peter Kaudsen.	Separator	Test.
288	Ringsted	Forsythe Creamery	Co-op.	H. A. Gaarde, Secretary.	Armstrong	Ed. Kressin.	Separator	Test.
289	Wallingford	Wallingford Creamery Co.	Stock	C. O. Anderson, Secretary.	Wallingford	J. C. Jensen.	S. & G. C.	Test.
<i>Fayette County—</i>								
290	Arlington	Brush Creek Farmers Creamery	Stock	Guy L. Rawson, Secretary	Arlington	W. B. Johnson.	Separator	Test.
291	Clermont	Clermont Valley Creamery Co.	Co-op.	F. F. Ferguson, Secretary.	Clermont	A. Erickson	S. & G. C.	Test.
292	Elgin	Elgin Farmers' Dairy company	Co-op.	Melch'r Luchsinger, Sec	Elgin	Ed. Hanson	Hand Sep	Test.
293	Fayette	Fayette Creamery	Indiv.	H. F. Beyer	Edgewood	Frank Sherman	S. & G. C.	Test.
294	Hawkeye	Hawkeye Creamery company.	Co-op.	J. L. Adams, Secretary	West Union	Chris Russler	Separator	Test.
295	Maynard	Harlan Creamery company	Co-op.	J. C. Lewis, Secretary	Maynard	C. V. Brauer	Separator	Test.
296	Minkler	Oran Creamery company.	Co-op.	J. P. Schmit, Secretary	Minkler	G. H. Knief.	Separator	Hund.
297	Oelwein	Oelwein Farmers' Creamery Co	Co-op.	J. R. Ross, Secretary	Oelwein	Guy W. Borland	Separator	Test.
298	Oelwein	Jefferson Creamery.	Co-op.	J. H. Meyers.	Oelwein	A. H. Ford	Separator	Test.
299	Randalia	Randalia Creamery company.	Co-op.	A. E. Holmes.	Randalia	Robt. Wagner.	S. & G. C.	Test.
300	Sumner	Center Valley Creamery Co.	Stock	J. E. Fridley, Secretary	Sumner	E. B. Olds.	Separator	Hund.
301	St. Lucas	Farmers' Creamery company.	Co-op.	John J. Mihl, Secretary	Ft. Atkinson	B. H. Kuennen.	Separator	Test.
302	Westgate	Westgate Creamery company.	Co-op.	F. S. Coleman, Secretary.	Westgate	C. H. Capper.	Separator	Test.
303	Wadena	Riverside Creamery	Indiv.	F. J. Schoder, Proprietor	Wadena	F. J. Schroeder.	Hand Sep	Test.
304	West Union	West Union Creamery	Indiv.	Boe & Nelson, Proprietors	Calmar	J. A. Rye	Hand Sep	Test.
305	Waucoma	Waucoma Farmers' Crm. Co.	Co-op.	J. E. Scanlan, Secretary	Waucoma	L. J. Gibbs	S. & G. C.	Test.
306	Stanley	Scott Creamery Association	Co-op.	F. A. Sherman	Stanley	Frank Strong	S. & G. C.	Test.
307	Alpha	Alpha Farmers' Creamery Co.	Co-op.	F. J. McIntire, Secretary.	Alpha	C. N. Beach.	Separator	Test.
<i>Floyd County—</i>								
308	Powersville	Powersville Creamery	Indiv.	Chas. Gurler & Company	DeKalb, Ill.	Chas. Hern	Gath. Cr.	Oil Test
309	Rockford	Rockford Co-op. Dairy Ass'n.	Co-op.	G. A. Hillman, Secretary	Rockford	J. C. Larnham.	Gath. Cr.	Oil Test
310	Charles City	Flood Creek Creamery Co.	Co-op.	M. A. Hirsch, Secretary	Charles City.	W. W. Day	Gath. Cr.	Oil Test
311	Charles City	Niles Creamery	Indiv.	J. J. Brunner	Charles City.	Frank Brunner	Gath. Cr.	Oil Test
312	Charles City	Charles City Creamery.	Indiv.	J. J. Brunner	Charles City.		Gath. Cr.	Oil Test
<i>Franklin County—</i>								
313	Alexander	Alexander Creamery	Indiv.	C. H. Gurler	DeKalb, Ill	H. J. Kiepert	S. & G. C.	Test.
314	Ackley	Edna Creamery	Indiv.	Martin & Johnson	Ackley	Onas. Strasberg.	Separator	Test.
315	Coulter	Hamilton Co-operative Crm. Co	Co-op.	George Dohrman, Sec.	Hampton	Geo. Jorginson.	Gath. Cr.	Test.
316	Chapin	Chapin Creamery	Indiv.	G. H. Gurler	DeKalb, Ill	R. E. Shockey	Gath. Cr.	Test.
317	Dows	Farmers Co-operative Crm. Co.	Co-op.	C. A. Nicholson.	Dows	Frank Larson.	S. & G. C.	Test.
318	Hampton	Hampton Creamer	Indiv.	J. Juhl	Hampton	J. Juhl.	Gath. Cr.	Oil test.
319	Iowa Falls	Grant Center Creamery	Stock	J. J. Hensing, Secretary	Iowa Falls, R. 1.	W. E. Mittlestadt	Separator	Test.
320	Latimer	Latimer Co-operative Crm. Co.	Co-op.	A. W. Meyer, Secretary	Latimer	W. W. Meyer.	Gath. Cr.	Test.
321	Lee Center Twp.	Alden Creamery (s)	Co-op.	P. H. Schaub, Secretary.	Alden		Separator	Test.
321	Ackley	Edna Creamery (s)	Indiv.	Martin & Johnson	Ackley		Separator	Test.
<i>Greene County—</i>								
322	Grand Junction.	Grand June Co-op. Crm. Assn	Co-op.	J. Whalen	Grand Junction.	H. A. Sherk	Separator	Test.
322	Scranton	Scranton Creamery	Indiv.	J. C. Hayward	Scranton	J. C. Hayward	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>Grundy County—</i>								
324	Aplington	Buck Grove Creamery Co.	Co-op.	O. Neihaus	Aplington	W. I. Dillinger	S. & G. C.	Test.
325	Ackley	Johnson Creamery	Indiv.	Martin & Johnson	Ackley	Henry Schmitzer	Separator	Test.
326	Dike	Dike Co-operative Creamery Co.	Co-op.	E. B. Roush	Dike	A. Kindberg	S. & G. C.	Test.
327	Fredsville	Fredsville Co-operative Co.	Co-op.	Hans Lausen	Cedar Fall, R. 3.	Soren Jorgenson	Separator	Test.
328	Stout	Beaver Center Creamery Co.	Co-op.	Jacob A. Meyer	Stout	T. E. Bilger	Separator	Test.
329	Wellsburg	Wellsburg Farmers Creamery.	Co-op.	C. A. Murray, Secretary	Wellsburg	C. A. Murray	S. & G. C.	Test.
<i>Guthrie County—</i>								
330	Bayard	Bayard Creamery	Co-op.	M. J. Hallaman, Secretary.	Bayard	L. R. Winn	Gath. Cr.	Test.
331	Casey	Casey Creamery company	Co-op.	O. L. Knox, Secretary	Casey	O. H. Matravers	S. & G. C.	Test.
332	Guthrie Center	Guthrie Center Co-op. Crm. Co.	Co-op.	J. A. McLaughlin, Sec.	Guthrie Center	J. M. Taff	S. & G. C.	Test.
333	Glendon	Glendon Creamery company.	Co-op.	J. C. Hanes, Secretary	Glendon	J. Girard	Separator	Test.
334	Menlo	Menlo Creamery company	Stock.	A. C. Curtis, Secretary	Stuart	H. H. Colbert	S. & G. C.	Test.
335	Panora	Panora Creamery.	Indiv.	F. F. Wilcox	Panora	John Taff	Separator	Test.
336	Stuart	Stuart Co-operative Crm. Co.	Stock.	C. M. Cadv, Secretary	Stuart	R. Cochran	S. & G. C.	Test.
337	Yale	Iowa Dairy company	Stock.	W. H. Hall, Manager	Yale	D. C. Bathlow	Separator	Test.
338	Dale	Dale Mutual Co-operative Assn	Co-op.				S. & G. C.	Test.
339	North Branch	North Branch Co-op. Crm. Co.	Stock.	C. E. Spangler, Secretary	North Branch	J. L. Clark	Separator	Test.
340	Wichita	Co-operative Creamery.	Co-op.				S. & G. C.	Test.
<i>Hamilton County—</i>								
341	Blairsburg	Blairsburg Creamery	Indiv.	P. E. Saxer	Blairsburg	P. E. Saxer	S. & G. C.	Test.
342	Ellsworth	Ellsworth Co-op. Crm. Assn	Co-op.	S. Stenberg, Secretary	Ellsworth	M. J. Mansager	Separator	Test.
343	Williams	Ellsworth Co-op. Crm. Assn(s)	Co-op.	S. Stenberg, Secretary	Ellsworth		Separator	Test.
344	Radecliffe	Ellsworth Co-op. Crm. Assn (s)	Co-op.	S. Stenberg, Secretary	Ellsworth		Separator	Test.
345	Jewel Junction	Jewell Creamery	Indiv.	Gronbeck & Moreh	Jewell Junction	Chris Morek	Separator	Test.
346	Jewel	Jewell Creamery (s)	Indiv.	Gronbeck & Moreh	Jewell Junction		Separator	Test.
347	Randall	Randall Farmers Creamery	Co-op.	H. N. Miller, Secretary	Randall	H. N. Miller	Separator	Test.
348	Stratford	Stratford Creamery	Indiv.	S. O. Rice, Proprietor	Stratford	G. F. Hummel	S. & G. C.	Test.
349	Stanhope	Stanhope Creamery company	Indiv.	E. C. Brewer, Proprietor	Stanhope	G. E. Jackson	Separator	Test.

<i>Hancock County—</i>								
350	Britt	Britt Co-op. Creamery Co	Co-op.	John S. Fisk, Secretary	Britt	H. L. McNary	S. & G. C.	Test.
351	Duncombe	Britt Co-op. Creamery Co. (s)	Co-op.	John S. Fisk	Britt		S. & G. C.	Test.
352	Crystal Lake	Crystal Creamery.	Co-op.	Martin Larson, Secretary	Crystal Lake	L. A. Nelson	Separator	Test.
353	Goodell	Goodell Creamery	Co-op.	O. E. Wessenberg	Goodell	Guy Thomas	Gath. Cr.	Test.
354	Garner	Garner Creamery	Indiv.	H. C. Schultz	Garner	H. C. Schultz	Gath. Cr.	Test.
355	Garner	Concord Creamery	Co-op.	J. Klesel, Secretary	Garner	C. R. Conway	Separator	Test.
356	Kanawha	Kanawha Creamery	Co-op.	Ole T. Rikansrud	Kanawha	B. O. Brownlee	Hand Sep	Test.
357	Klemme	Klemme Creamery company.	Co-op.	E. P. Dow, Secretary	Klemme	G. N. Ejetland	Gath. Cr.	Test.
358	Woden	Woden Creamery	Indiv.	L. C. Peterson	Woden	L. C. Peterson	S. & G. C.	Test.
359	Forest City	Forest City Co-op. Crm. Assn(s)	Co-op.	John Carson, Secretary	Forest City		Separator	Test.
<i>Hardin County—</i>								
360	Alden	Alden Co-op. Creamery	Co-op.	P. H. Schaub, Secretary	Alden	N. H. Trimble	Separator	Test.
361	Buckeye	Cottage Creamery company	Stock.	Carl F. Sielaff, Secretary	Buckeye	R. Rogers	S. & G. C.	Test.
362	Cleves	Cleves Creamery	Indiv.	Martin & Johnson	Ackley	A. D. Gimer	Separator	Test.
363	Eldora	Eldora Creamery	Indiv.	Werder & Krause	Eldora	C. H. Werder	S. & G. C.	Test.
364	Hubbard	Spring Branch Co-op. Creamery	Co-op.	J. K. Towley, Secretary	Hubbard	D. Mohler	Separator	Test.
365	Hubbard	Hubbard Co-op. Creamery	Co-op.	Ernest Hilker, Secretary	Hubbard	J. W. Mohler	S. & G. C.	Test.
366	Iowa Falls	Iowa Falls Creamery company.	Co-op.	G. L. Whinnery, Secretary	Iowa Falls	J. J. Ross	S. & G. C.	Test.
367	New Providence	New Providence Creamery Co	Stock	W. T. Kersey, Secretary	New Providence	Chas. N. Hart	S. & G. C.	Test.
368	Garden City	Concord & Scott Co-op. Crm. Co	Co-op.	Oscar Sampson, Secretary	Garden City	H. R. Alcorn	Separator	Test.
369	Garden City	Concord & Scott Co-op. Cr. Co.(s)	Co-op.	Oscar Sampson, Secretary	Garden City		Separator	Test.
370	Radeliffe	Concord & Scott Co-op. Cr. Co.(s)	Co-op.	Oscar Sampson, Secretary	Garden City		Separator	Test.
371	Robinson	Robinson Creamery	Indiv.	Martin & Johnson	Ackley	Fred Fistler	Separator	Test.
372	Steamboat Rock	Steamboat Rock Creamery	Co-op.	F. L. Willis, Secretary	Steamboat Rock	Walter Peterson	Separator	Test.
373	Union	Union Creamery company	Co-op.	Thomas E. Culp, Secretary	Union	O. W. Dillon	S. & G. C.	Test.
<i>Harrison County—</i>								
374	Logan	Crisp Creamery	Co-op.	N. Danielson, Secretary	Logan	N. Danielson	Separator	Test.
375	Magnolia	Magnolia Creamery company	Co-op.	F. H. Caldwell, Secretary	Logan, R. 3.	H. D. Wendt	Separator	Test.
<i>Howard County—</i>								
376	Cresco	Cresco Creamery	Indiv.	C. W. Pierce, Proprietor	Cresco	C. W. Pierce	S. & G. C.	Test.
377	Chester	Farmers Co-op. Creamery Assn	Co-op.	Geo. C. Leslie, Secretary	Chester	E. A. Hoopman	Gath. Cr.	Oil Test
378	Elma	Elma Co-op. Creamery	Co-op.	Daniel Fallgatter, Secretary	Elma	John P. Whalen	S. & G. C.	Test.
379	Elma	Maple Leaf Creamery	Co-op.	D. Lane	Maple Leaf	A. J. Herman	Separator	Test.
380	Lourdes	Lourdes Creamery	Stock	H. R. Carpenter, Secretary	Elkader	J. F. Fisher	S. & G. C.	Test.
381	Lime Springs	Lime Springs Creamery	Stock	H. R. Carpenter, Secretary	Elkader	John Foss	Gath. Cr.	Oil Test
382	Protivin	Protivin Creamery	Co-op.	C. P. Pecnovsky	Protivin	J. A. Dostal	Gath. Cr.	Oil Test
383	Schley	Schley Creamery company.	Indiv.	C. A. Fosse	Schley	James M. Oudrsek	S. & G. C.	Test.
384	Saratoga	Saratoga Creamery	Stock	H. R. Carpenter, Secretary	Elkader	Henry Foss	Gath. Cr.	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>Humboldt County—</i>								
385	Arnold	Grove Co-op. Creamery	Co-op.	Charles J. Nelson, Secretary	Arnold	Ira O'Neill	S. & G. C.	Test.
386	Bradgate	Bradgate Co-op. Crm. company	Co-op.	J. L. Van Horne, Secretary	Bradgate	W. Evans	Separator	Test.
387	Bode	Bode Creamery association.	Co-op.	John Pederson, Secretary	Bode	M. H. Rawson	S. & G. C.	Test.
388	Goldfield	Owl Lake Creamery company	Co-op.	C. M. Claussen, Secretary	Goldfield	L. M. Tysvor	S. & G. C.	Test.
389	Hardy	Farmers Co-op. Crm. company	Co-op.	A. N. Ciancy, Secretary	Hardy	E. K. Junkins	Separator	Test.
390	Humboldt	Humboldt Creamery company	Co-op.	G. L. Cruickshank, Secretary	Humboldt	L. D. Hill	S. & G. C.	Test.
391	Otosen	Waucosta Creamery Assn.	Co-op.	N. J. Clave, Secretary	Otosen	Iver Shursen	S. & G. C.	Test.
392	Pioneer	Pioneer Creamery company	Indiv.	K. Stolberg	Pioneer	K. Stolberg	S. & G. C.	Test.
393	Renwick	Renwick Creamery company	Co-op.	W. M. Hoffman, Secretary	Renwick	C. A. Nurrell	Gath. Cr.	Test.
394	Rutland	Rutland Creamery association.	Co-op.	S. S. Barley	Rutland	T. M. Bo glum	S. & G. C.	Test.
395	Thor	Clover Creamery	Stock.	Lewis Olson, Secretary	Thor	Ben Lanning	S. & G. C.	Test.
<i>Ida County—</i>								
396	Arthur	Concklin Bros.' Creamery	Indiv.	M. J. Concklin, Proprietor.	Arthur	M. J. Concklin	S. & G. C.	Test.
397	Holstein	Holstein Creamery	Indiv.	A. W. Hubbard, Proprietor.	Correctionville	Arthur R. Meen	Hand Sep	Test.
<i>Iowa County—</i>								
398	Conroy	Shimer Creamery company	Co-op.	S. H. Stanerson, Secretary	Conroy	W. H. Woodcock	Separator	Test.
399	Ladora	Genoa Bluff Creamery Co.	Co-op.	M. W. Kelting, Secretary	Williamsburg R.4	Geo. Byrne	S. & G. C.	Test.
400	Ladora	Ladora Creamery company	Co-op.	L. W. Wilson, Secretary	Ladora	John Baitinger	S. & G. C.	Test.
401	Marengo	Marengo F. M. Co-op. Cr. Assn.	Co-op.	Dennis Sullivan, Sec.	Marengo	W. F. Ried	S. & G. C.	Test.
402	Victor	Victor Co-op. Creamery	Co-op.	H. Whitworth, Secretary	Victor	Geo. W. Baitinger	S. & G. C.	Test.
403	Williamsburg	Troy Creamery	Co-op.	Geo. C. House, Secretary	Williamsburg	E. E. Montgomery	Separator	Test.
404	Williamsburg	Troy Creamery (s)	Co-op.	Geo. C. House, Secretary	Williamsburg	Separator	Separator	Test.
405	Williamsburg	York Creamery company	Co-op.	H. W. Huedepohl, Sec	Williamsburg R.1	T. Winter	Separator	Test.
406	North English	Yorkshire Creamery Co. (s)	Stock.	R. N. Morrell, Secretary	Ottumwa	Separator	S. & G. C.	Test.
<i>Jackson County—</i>								
407	Fulton	Fulton Co-op. Creamery Co.	Co-op.	John Heide, Secretary	Fulton	Howard Coulson	Separator	Test.
408	Monmouth	Monmouth Creamery	Indiv.	J. P. Younger	40 Dearborn St. Chicago	Separator	S. & G. C.	Test.
409	Maquoketa	Farmers' Union Co-op. Crm. Co	Co-op.	W. N. Miller, Secretary	Maquoketa	C. Poast	S. & G. C.	Test.
<i>Jasper County</i>								
410	Miles	Spring Brook Creamery	Indiv.	John Newman Company	Elgin, Ill.	A. J. Spohn	Separator	Test.
411	Zwingle	Otter Creek Creamery	Indiv.	Geo. Laible, Proprietor	Zwingle	J. T. Mogle	S. & G. C.	Test.
412	Preston	Preston Creamery Association.	Co-op.	Samuel McNeil, Secretary	Preston	John Smith	Separator	Test.
413	Preston	Preston Creamery Ass'n (s)	Co-op.	Samuel McNeil, Secretary	Preston	Separator	Separator	Test.
414	Preston	Spring Brook Creamery	Indiv.	John Newman Company	Elgin, Ill.	A. J. Negus	Separator	Test.
415	Spragueville	Spring Brook Creamery (s)	Indiv.	John Newman Company	Elgin, Ill.	Separator	Separator	Test.
416	Union Center	Spring Brook Creamery	Indiv.	John Newman company	Elgin, Ill.	Separator	Separator	Test.
417	Lamotte	Sterling Separator Creamery	Indiv.	A. Hoffman, Proprietor	Lamotte	J. M. Hoffman	S. & G. C.	Test.
418	St. Donatus	St. Donatus Creamery	Indiv.	Kreier & Dupont	St. Donatus	P. J. Dupont	S. & G. C.	Test.
419	Baldwin	Diamond Creamery Co. (s)	Indiv.	Andrew Nimmo	Monticello	Separator	Separator	Test.
420	Maquoketa	Hansen Cold Storage company	Indiv.	E. D. Hansen	Maquoketa	C. C. Clifton	Hand Sep	Test.
421	Lamotte	Lamotte Creamery	Indiv.	B. Nemmers, Proprietor	Lamotte	J. C. Nemmers	S. & G. C.	Test.
422	Maquoketa	Spring Brook Creamery	Indiv.	John Newman Company	Elgin, Ill.	J. C. Danielson	S. & G. C.	Test.
<i>Jasper County</i>								
423	Baxter	Baxter Dairy company	Co-op.	H. Krampe, Jr., Secretary	Baxter	H. C. Schettler	Separator	Test.
424	Newton	Newton Co-op Creamery	Co-op.	D. A. Bohne, Secretary	Newton	A. B. Olson	Gath. Cr.	Test.
425	Newburg	Newburg Creamery company	Stock.	D. G. Alden, Secretary	Newburg	H. E. Webb	S. & G. C.	Test.
<i>Jefferson County—</i>								
426	Fairfield	Fairfield Creamery	Co-op.	Jacob Roth, Secretary	Fairfield	George Y. Ross	S. & G. C.	Test.
427	Four Corners	Four Corners Co-op. Crm. Co.	Co-op.	C. L. Schuber, Secretary	Lockridge, R. 1.	C. L. Schuber	Separator	Test.
428	Salina	Salina Creamery	Co-op.	J. Schillerstrom	Salina	H. S. Wood	Separator	Test.
429	Glendale	Yorkshire Creamery Co. (s)	Stock.	R. N. Morrell, Secretary	Ottumwa	Separator	Separator	Test.
<i>Johnson County—</i>								
430	Oxford	Oxford Creamery	Indiv.	Adam Floerelinger	Oxford	Separator	S. & G. C.	Test.
<i>Jones County</i>								
431	Anamosa	Fawn Creek Creamery	Indiv.	J. S. Condit	Anamosa	W. D. Romine	S. & G. C.	Test.
432	Monticello	Clover Leaf Creamery Co.	Co-op.	P. A. Stockwell, Secretary	Monticello	P. A. Stockwell	Separator	Test.
433	Amber	Amber Creamery	Indiv.	James P. Younger, Prop., 40 Dearborn Street	Chicago	H. W. Beilke	Separator	Test.
434	Center Junction	Center Junction Creamery	Indiv.	James P. Younger, 40 Dearborn Street	Chicago	A. E. Robertson	S. & G. C.	Test.
435	Hale	Hale Creamery	Stock.	C. E. Walston, Secretary	Hale	W. H. Brownell	Separator	Test.
436	Langworthy	Langworthy Co-op. Creamery	Co-op.	C. E. Bates, Secretary	Langworthy	J. H. Batchelder	Separator	Test.
437	Martelle	Martelle Creamery	Indiv.	Batchelder Bros.	Martelle	S. Batchelder	Separator	Test.
438	Mon icello	Klondike Creamery	Co-op.	R. Bohnen, Secretary	Mon icello	L. S. Kleckner	S. & G. C.	Test.
439	Monticello	Diamond Creamery	Indiv.	Andrew Nimmo	Monticello	Henry J. Rehorst	S. & G. C.	Test.
440	Monticello	Diamond Creamery (s)	Indiv.	Andrew Nimmo	Monticello	Separator	S. & G. C.	Test.
441	Monticello	Diamond Creamery (s)	Indiv.	Andrew Nimmo	Monticello	Separator	S. & G. C.	Test.
442	Monticello	Diamond Creamery (s)	Indiv.	Andrew Nimmo	Monticello	Separator	S. & G. C.	Test.
443	Monticello	Diamond Creamery (s)	Indiv.	Andrew Nimmo	Monticello	Separator	S. & G. C.	Test.
444	Monticello	Diamond Creamery (s)	Indiv.	Andrew Nimmo	Monticello	Separator	S. & G. C.	Test.
445	Monticello	Diamond Creamery (s)	Indiv.	Andrew Nimmo	Monticello	Separator	S. & 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 or gathered cream.	Method of receiving milk.
446	Monticello.....	Diamond Creamery (s)	Indiv.	Andrew Nimmo.....	Monticello.....	.....	S. & G. C.	Test.
447	Wyoming.....	Diamond Creamery (s)	Indiv.	Andrew Nimmo.....	Monticello.....	.....	S. & G. C.	Test.
448	Oxford Junction	Diamond Creamery (s)	Indiv.	Andrew Nimmo.....	Monticello.....	.....	S. & G. C.	Test.
449	Onslow.....	Clay Valley Co-op. Crm. Ass'n.	Co-op.	John D. Neelous, Secretary	Onslow.....	Fred Huyck.	Separator	Test.
450	Olin.....	Jackson Center Creamery.....	Indiv.	E. E. Snyder.....	Olin.....	E. E. Glick	Separator	Test.
451	Olin.....	Olin Creamery.....	Indiv.	Condit & Swanson.....	Olin.....	T. Swanson.....	Separator	Test.
452	Scotch Grove.....	Scotch Grove Co-op. Crm. Co.	Co-op.	J. H. Balster, Secretary..	Scotch Grove.....	H. C. Dice.....	Separator	Test.
453	Wyoming.....	Wyoming Co-op. Crm. Ass'n.	Co-op.	L. M. Barrett, Secretary..	Wyoming.....	S. M. Conley.....	S. & G. C.	Test.
<i>Keokuk County—</i>								
454	Delta.....	Delta Creamery.....	Indiv.	E. S. Sturdevant.....	Delta.....	.....	Separator	Test.
455	Webster.....	Yorkshire Creamery (s)	Indiv.	R. N. Morrell.....	Ottumwa.....	.....	Separator	Test.
456	Hayesville.....	Yorkshire Creamery (s)	Indiv.	R. N. Morrell.....	Ottumwa.....	.....	Separator	Test.
<i>Kossuth County—</i>								
457	Algona.....	Algona Co-op. Creamery.....	Co-op.	A. W. Sterzbach, Secretary	Algona.....	A. W. Sterzbach	Separator	Test.
458	Algona.....	Plum Creek Creamery.....	Co-op.	C. W. Hopkins.....	Algona.....	W. G. Sterzbach	Separator	Test.
459	Burt.....	Burt Co-op. Creamery company	Co-op.	August Dau, Secretary.....	Burt.....	D. L. Driver.....	S. & G. C.	Test.
460	Bancroft.....	Bancroft Co-op. Creamery.....	Co-op.	John Burnhardt, Secretary	Bancroft.....	A. J. Doleschal	Separator	Test.
461	Fenton.....	Fenton Creamery company	Co-op.	F. C. Newell, Secretary.....	Fenton.....	H. W. Pettibone	Separator	Test.
462	Germania.....	Germania Co-op. Creamery Co	Co-op.	Peter Graves, Secretary....	Germania.....	John Lundborg	S. & G. C.	Test.
463	Hobart.....	Hobart Creamery.....	Indiv.	R. Wester.....	Hobart.....	R. Wester.....	S. & G. C.	Test.
464	Irvington.....	Irvington Co-op. Creamery Co.	Co-op.	S. R. Roney, Secretary.....	Algona.....	L. P. Anderson.....	Separator	Test.
465	Lu Verne.....	Lu Verne Co-op. Crm. Assn....	Co-op.	R. W. Hanna, Secretary.....	Lu Verne.....	C. T. Junkins.....	S. & G. C.	Test.
466	Lone Rock.....	Lone Rock Co-op. Creamery Co	Co-op.	Howard McChesney, Sec.....	Lone Rock.....	L. O. Adams.....	Separator	Test.
467	Ledyard.....	Farmers Co-op. Crm. Assn....	Co-op.	E. J. Skinner, Secretary.....	Ledyard.....	H. N. Dyer.....	Separator	Test.
468	Ringsted.....	Seneca Co-op. Creamery.....	Co-op.	M. Jensen, Secretary.....	Seneca.....	A. J. Johnson.....	Separator	Test.
469	Sexton.....	Sexton Co-op. Creamery Co.....	Co-op.	Chas. A. Little, Secretary..	Sexton.....	Torkel Fatland.....	S. & G. C.	Test.
470	St. Benedict.....	Farmers Co-op. Creamery Co.....	Co-op.	Leo. J. Wegman, Secretary...	St. Benedict.....	M. M. Sorenson.....	Separator	Test.
471	St. Joseph.....	St. Joseph Co-op. Creamery Co	Co-op.	E. G. Clark, Sec.....	St. Joseph.....	Christ Bogh.....	Separator	Test.
472	Swea City.....	Swea City Co-op. Creamery Co	Co-op.	Olaf Pearson, Secretary.....	Swea City.....	Bengt S. Nelson.....	S. & G. C.	Test.
473	Titonka.....	German Valley Co-op. Crm. Co	Co-op.	Herman Nelson, Secretary...	Titonka.....	Ben Frank.....	Separator	Test.
474	Lotts Creek.....	Lotts Creek Co-op. Creamery..	Co-op.	August Boettcher.....	Lotts Creek.....	M. J. Dyer.....	Separator	Test.
475	Whittemore.....	Whittemore Creamery Co.....	Co-op.	Thomas Carmody, Sec.....	Whittemore.....	Ed Walsh.....	Separator	Test.
476	West Bend.....	Garfield Creamery company..	Stock.	J. M. Border, Secretary.....	West Bend.....	W. H. Cutshaw.....	Separator	Test.
477	Wesley.....	Wesley Creamery.....	Indiv.	R. Wester.....	Hobart.....	H. F. Hollenbach	Gath. Cr.	Test.

<i>Linn County—</i>								
478	Anamosa.....	Cold Spring Association.....	Indiv.	Vint Smith, Secretary.....	Anamosa.....	Vint Smith.....	Separator	Hund.
479	Central City.....	North Linn Creamery.....	Stock.	P. W. Sawyer, Secretary.....	Central City.....	R. R. Richardson	S. & G. C.	Test.
480	Central City.....	Ross Creamery.....	Indiv.	W. W. Ross, Proprietor....	Central City.....	W. W. Ross.....	S. & G. C.	Hund.
481	Central City.....	Valley Farm Creamery.....	Indiv.	P. G. Henderson.....	Central City.....	St. Elmo Wright	S. & G. C.	Test.
482	Coggon.....	Coggon Creamery.....	Indiv.	J. J. McAreavy.....	Coggon.....	J. J. McAreavy	Separator	Test.
483	Coggon.....	North Side Creamery.....	Co-op.	N. H. Trefz, Secretary.....	Coggon.....	Fred Lehman.....	Separator	Test.
484	Cedar Rapids.....	Capital City Creamery.....	Stock.	G. T. Benson, Manager.....	Cedar Rapids	Fred Lehman.....	Separator	Test.
485	Center Point.....	Center Point Creamery.....	Indiv.	Mrs. C. M. Fisher.....	Center Point.....	C. M. Fisher.....	Gath. Cr.	Test.
486	Ely.....	Ely & Western Creamery.....	Co-op.	Frank J. Dolezal, Secretary	Ely.....	Charles Troxell.....	S. & G. C.	Test.
487	Western.....	Ely & Western Creamery (s)...	Co-op.	Frank J. Dolezal, Secretary	Ely.....	Charles Troxell.....	Separator	Test.
488	Anamosa.....	Minehart Creamery.....	Indiv.	I. P. Minehart.....	Anamosa.....	Port Wilkinson	Separator	Test.
489	Rogers.....	North Linn Creamery.....	Stock.	P. W. Sawyer.....	Central City.....	A. C. Minehart.....	S. & G. C.	Test.
490	Springville.....	Springville Creamery.....	Indiv.	Batchelder Bros.....	Springville.....	O. E. Batchelder	S. & G. C.	Test.
491	Troy Mills.....	Troy Mills Creamery.....	Indiv.	J. M. Tupper, Proprietor...	Troy Mills.....	J. M. Tupper.....	S. & G. C.	Test.
492	Troy.....	Highland Creamery company..	Co-op.	John Iehl, Secretary.....	Walker.....	G. R. Batchelder	Separator	Hund.
493	Waubek.....	Waubek Creamery.....	Indiv.	.....	.....	.....	Separator	Test.
494	Walker.....	Walker Creamery.....	Indiv.	H. J. Nietert.....	Walker.....	S. W. Laird.....	S. & G. C.	Test.
495	Viola.....	Viola Creamery.....	Indiv.	C. N. Pollock.....	Viola.....	C. N. Pollock.....	Separator	Test.
496	Prairieburg.....	Diamond Creamery Co. (s).....	Indiv.	Andrew Nimmo.....	Monticello.....	.....	S. & G. C.	Test.
497	Cedar Rapids.....	Cedar Rapids Crm. & Butter Co	Indiv.	F. W. Beyer.....	Cedar Rapids.....	.....	Hand Sep	Test.
498	Paralta.....	Springville Creamery (s).....	Indiv.	Batchelder Bros.....	Springville.....	.....	S. & G. C.	Test.

<i>Lucas County—</i>								
499	Derby.....	Old Colony Creamery (s).....	Indiv.	T. G. Hyde, Manager.....	Humeston.....	.....	Separator	Test.

<i>Lyon County—</i>								
500	George.....	George Creamery.....	Indiv.	W. P. Jennings.....	George.....	J. E. Vogel.....	S. & G. C.	Test.
501	Little Rock.....	Little Rock Co-op. Crm. Assn..	Co-op.	R. E. Stenzel, Secretary...	Little Rock.....	O. W. Dubbs.....	S. & G. C.	Test.

<i>Madison County—</i>								
502	Maxburg.....	Hebron Creamery (s).....	Indiv.	D. F. Hammers.....	Hebron.....	.....	S. & G. C.	Test.

<i>Mahaska County—</i>								
503	New Sharon.....	New Sharon Creamery Co.....	Stock.	W. J. Nicholson, Secretary..	New Sharon.....	Henry Martin...	Hand Sep	Test.

<i>Marion County—</i>								
504	Pella.....	Pella Creamery.....	Indiv.	J. J. Bousquet.....	Pella.....	T. Smoronberg..	Gath. Cr.	Test.
505	Dallas.....	Beatrice Creamery Co. (s).....	Stock.	Beatrice Creamery Co.....	Des Moines.....	.....	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>Marshall County—</i>								
506	Clemons	Minerva Valley Creamery Co.	Co-op.	A. A. Bartine, Secretary.	Clemons	G. R. Jackman	Gath. Cr.	Oil Test
507	Dunbar	Dunbar Creamery company	Co-op.	O. J. Osen, Secretary.	Dunbar	Wm. Helgason.	Separator	Test.
508	Liscomb	Liscomb Cheese company	Stock.	Thomas E. Culp.	Liscomb	Thos. E. Culp.	Gath. Cr.	Test.
509	State Center	State Center Far. Cr. Assn.	Co-op.	C. Hansen	State Center.	N. E. Laurensen.	S. & G. C.	Oil Test
<i>Mills County—</i>								
510	Mineola	Waterloo Creamery Co. (s)	Stock.	Leroy Corlis.	Council Bluffs.		Separator	Test.
511	Silver Ity.	Waterloo Creamery Co. (s)	Stock.	Leroy Corlis.	Council Bluffs.		Separator	Test.
512	York Township.	Waterloo Creamery Co. (s)	Stock.	Leroy Corlis.	Council Bluffs.		Separator	Test.
<i>Mitchell County—</i>								
518	David	David Co-operative Creamery Co	Co-op.	F. N. Griffin, Secretary.	David	V. Fairbrother.	Gath. Cr.	Test.
514	Little Cedar	Little Cedar Creamery Co	Co-op.	C. Makepeace	Little Cedar	Chas. Woodiwiss	S. & G. C.	Test.
515	Osage	Rock Creek Co-op. Crm. Assn.	Co-op.	H. L. Johnson	Rudd, R. F. D.	S. Klemesrud.	Gath. Cr.	Oil test.
516	Orchard	Farmers Co-op. Crm. Assn.	Co-op.	J. W. Clay, Secretary	Orchard	M. M. Blanden.	Gath. Cr.	Oil test.
517	Riceville	Riceville Co-op. Crm. Assn.	Co-op.	F. J. Carpenter, Secretary	Riceville	A. B. Groves.	Gath. Cr.	Test.
518	Stacyville	Stacyville Creamery	Indiv.	J. B. Spensley & Co	Stacyville	J. B. Spensley	S. & G. C.	Test.
519	St. Ansgar	Farmers Creamery	Co-op.	J. M. Tollefson, Secretary	St. Ansgar	B. C. Hiff	Gath. Cr.	Test.
520	Toeterville	Toeterville Co-op. Creamery Co	Co-op.	L. C. Baker	Toeterville	A. N. Hoffland.	Hand Sep	Test.
521	New Haven	Farmers Co-op. Creamery	Co-op.	D. C. Thomas, Secretary	New Haven	D. C. Thomas.	Gath. Cr.	Oil test.
522	Osage	Osage Co-op. Creamery Assn.	Co-op.	John Torslef, Secretary	Mitchell	Geo. Helfter	Gath. Cr.	Test.
<i>Monona County—</i>								
523	Moorhead	Moorhead Creamery	Indiv.	P. D. Nelson	Moorhead	P. D. Nelson	S. & G. C.	Test.
<i>Monroe County—</i>								
524	Albia	Albia Creamery	Indiv.	S. D. Thompson	Albia	S. D. Thompson.	S. & G. C.	Test.

<i>Muscatine County—</i>								
525	Wilton	Nickel Plate Creamery	Indiv.	Geo. W. Kelley	Wilton Junction	E. E. Hesson	Gath. Cr.	Test.
526	West Liberty	Iowa Condensed Milk Factory	Indiv.				Separator	Test.
<i>O'Brien County—</i>								
527	Germantown	Caladonia Creamery	Stock.	Fred Hoeckman	Germantown	Wm. Gehrls.	Separator	Test.
528	Hartley	Hartley Creamery	Indiv.	A. D. Roseboom	Hartley	A. D. Roseboom.	Gath. Cr.	Test.
529	Paulina	Union Creamery company	Stock.	W. Strampe, Secretary	Paulina	W. S. Strampe.	Separator	Test.
530	Pringhar	Pringhar Creamery	Indiv.	A. H. Hubbard	Correctionville	G. A. Bristol	Hand Sep	Test.
531	Sheldon	Sheldon Creamery	Indiv.	D. A. Miller, Proprietor	Sheldon	F. L. Francisco.	S. & G. C.	Test.
<i>Osceola County—</i>								
532	Ashton	Ashton Creamery	Indiv.	Kramer & Davis, Prop.	Ashton	C. W. Davis.	S. & G. C.	Test.
533	Sibley	Sibley Creamery company	Indiv.	C. A. Smith	Sibley	Dick Cosgrove.	Hand Sep	Test.
<i>Page County—</i>								
534	Clarinda	Clarinda Poultry, Butter and Egg company	Stock.	W. T. S. White, Manager	Clarinda	J. C. Hall	Hand Sep	Test.
<i>Palo Alto County—</i>								
535	Ayrshire	Silver Creek Creamery Co.	Co-op.	C. H. Cookinham	Ayrshire	F. W. Shellman.	Separator	Test.
536	Cylinder	Cylinder B. & C. Ass'n.	Co-op.	Theo. DeMouth, Secretary.	Cylinder	E. P. Conway	Separator	Test.
537	Curlew	Curlew Creamery company	Co-op.	R. H. Glenn	Curlew		Separator	Test.
538	Curlew	Curlew Creamery company (s)	Co-op.	R. H. Glenn	Curlew		Separator	Test.
539	Emmetsburg	Emmetsburg Creamery Co.	Stock.	Lewis S. nehmer	Emmetsburg	N. H. Knudsen	Separator	Test.
540	Fairville	Fairville Creamery company.	Stock.	Joseph Kliegel	Cylinder, R. 2.	W. D. Kucker.	Separator	Test.
541	Graettinger	Lost Island Creamery company	Co-op.	Lars C. Christenson	Emmetsburg R. 3	J. N. Bruck	Separator	Test.
542	Graettinger	Farmers' Co-op. Creamery Co.	Co-op.	F. L. Lamb, Secretary	Graettinger	W. W. Bond	S. & G. C.	Test.
543	Mallard	Mallard B. & C. Ass'n	Co-op.	T. C. Truog, Secretary	Mallard	J. Finnell	S. & G. C.	Test.
544	Osgood	Osgood Creamery company	Co-op.	E. P. McEvoy, Secretary	Emmetsburg	E. Chadwick	S. & G. C.	Test.
545	Graettinger	Palo Alto Creamery company	Co-op.	S. A. Smith	Ruthven	W. A. Thayer.	S. & G. C.	Test.
546	Ruthven	Ruthven Farmers' Crm. Co.	Co-op.	Chas. E. Yocum	Ruthven	W. H. Anderson	Separator	Test.
547	Rodman	Rodman Co-op. Creamery Co.	Co-op.	C. J. Frye, Secretary	Rodman	Emil Anderson.	S. & G. C.	Test.
548	West Bend	West Bend Co-op. Crm. Co.	Co-op.	Geo. W. Brown, Secretary.	West Bend	T. A. Clarke	S. & G. C.	Test.
549	West Bend	Eureka Co-op. Creamery Co.	Co-op.	Wm. Reardon.	West Bend	Jas P. Larsen	S. & G. C.	Test.
<i>Plymouth County—</i>								
550	Kingsley	Paynes Creamery	Indiv.	Payne Bros.	Kingsley	Ira Stewart	Gath. Cr.	Test.
551	Mammen	Grant Twp. Creamery	Co-op.	H. F. Manst, Secretary	Ireton	J. Kennedy	S. & G. C.	Test.
552	Ruble	Johnson Tp. M. Co-op. C. Co.	Co-op.	E. Mann	Ruble	Wm. Anderson.	Separator	Test.
553	Merrill	Hanford Produce company (s).	Indiv.	Hanford Produce company.	Sioux City		Gath. Cr.	Test.
554	LeMars	Hanford Produce company (s).	Indiv.	Hanford Produce company.	Sioux City		Gath. Cr.	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 pasteurized cream.	Method of receiving milk.
Pocahontas County—								
555	Laurens	Laurens Creamery	Indiv.	W. & J. G. Hinn, Props	Laurens	F. W. Johnson	Hand Sep	Test.
555	Palmer	Harold Creamery	Stock	Geo. Stebbins, Secretary	Gilmore City	Ed Richards	Separator	Test.
557	Pomeroy	Bredhok Creamery	Indiv.	Wm. Bredhok	Pomeroy	Wm. Bredhok	S. & G. C.	Test.
559	Plover	Plover Mercantile company	Stock	H. Fitzg. rad, Manager	Plover	Geo. Heathman	Hand Sep	Test.
559	Pocahontas	Pocahontas Creamery	Indiv.	W. & J. G. Hinn	Laurens	R. S. Lybarger	Hand Sep	Test.
560	Holte	Gilt Edge Creamery	Indiv.	W. R. Rogers	Rolfe	W. R. Rogers	S. & G. C.	Test.
Polt County—								
561	Des Moines	Beatrice Creamery company	Stock				Gath. Cr.	Test.
562	Grimes	Grimes Butter and Cheese Co.	Stock	W. J. Stewart	Grimes	R. J. Stewart	S. & G. C.	Test.
563	Campbell	Grimes But. and Cheese Co. (2)	Stock	C. J. Stewart	Grimes		S. & G. C.	Test.
564	Mitchellville	Mitchellville Creamery Assn.	Co-op.	A. J. McHenry	Mitchellville	C. H. Phillips	Separator	Test.
565	Des Moines	Des Moines Creamery	Stock	B. S. Schermerhorn	Des Moines	W. S. Gould	S. & G. C.	Test.
566	Des Moines	Capital Creamery company	Stock	Keller J. Bell, Manager	Des Moines	P. G. Hanna	Hand Sep	Test.
567	Des Moines	Crystal Springs Creamery	Indiv.	MacInae Bros.	Des Moines		Gath. Cr.	Test.
Pottawattamie County—								
568	Avoca	Avoca Creamery	Indiv.	P. T. Hansen	Avoca	Ernest Hansen	Hand Sep	Test.
569	Walnut	Avoca Creamery (2)	Indiv.	P. T. Hansen	Avoca		Hand Sep	Test.
570	Council Bluffs	Waterloo Creamery company	Stock	Leroy Corlies, Secretary	Council Bluffs	Chas. Bomberger	Hand Sep	Test.
571	Underwood	Waterloo Creamery company (2)	Stock	Leroy Corlies, Secretary	Council Bluffs		Separator	Test.
572	Hancock	Hancock Creamery	Indiv.	Mrs. H. C. Brandes, Snd.	Hancock	Wm. Ray	S. & G. C.	Test.
573	Minden	York Creamery	Co-op.	B. E. suberger	Minden		Separator	Hand.
574	Minden	Minden Creamery	Indiv.	N. P. Joergensen	Minden	John Isaac	Gath. Cr.	Test.
575	Neola	Neola Creamery	Indiv.	E. B. Ryan	Neola		Separator	Test.
Poweshiek County—								
576	Deep River	Deep River Creamery	Indiv.	H. W. Hatter	Deep River		Gath. Cr.	Oil Test.
577	Guersey	Springbrook Creamery	Indiv.	John Newman Company.	Eglin, Ill.	O. W. Hicks	S. & G. C.	Test.
578	Fairmont	Springbrook Creamery (2)	Indiv.	John Newman Company.	Eglin, Ill.		S. & G. C.	Test.
Sec County—								
579	Grinnell	Grinnell Creamery	Indiv.	J. W. Fowler	Grinnell	M. J. Powers	Hand Sep	Test.
580	Hartwick	Springbrook Creamery	Indiv.	John Newman Company	Eglin, Ill.		S. & G. C.	Test.
581	Montezuma	Montezuma Co-op. Crm. Assn.	Co-op.	A. C. Heath, Secretary	Montezuma	E. B. Cole	S. & G. C.	Test.
Sioux County—								
582	Early	Early Creamery	Indiv.	C. A. Dermo	Early	C. A. Dermo	S. & G. C.	Test.
583	Herring	Herring	Indiv.	M. R. Wright	Herring	M. R. Wright	S. & G. C.	Test.
584	Lake View	Lake View Creamery	Indiv.	S. O. Ross	Lake View	O. S. Holladay	S. & G. C.	Test.
585	Nemala	Dalaware Center Creamery Co.	Co-op.	Clark N. Bess	Stratford	A. J. Grotland	S. & G. C.	Test.
586	Orchard	Farmers' Creamery company	Stock	J. A. Cranston	Nemala	Edw. McFarland	S. & G. C.	Test.
587	Schaller	Schaller Creamery	Indiv.	Perry Rubendall	Schaller	Perry Rubendall	Hand. Cr.	Test.
588	Storm Lake	Farmers' Creamery company	Co-op.				S. & G. C.	Test.
589	Wall Lake	Wall Lake Creamery	Indiv.	Thomas A. Hearn	Wall Lake	M. P. O'Grady	S. & G. C.	Test.
Scott County—								
590	Walcott	Amity Creamery	Indiv.	Wm. Koberg	Walcott, R. I.	Wm. Koberg	Hand Sep	Test.
591	Long Grove	Star Creamery	Indiv.	J. H. Marriott	Long Grove	J. E. Swartz	Gath. Cr.	Test.
Shelby County—								
592	Corley	Corley Creamery company	Co-op.	A. C. Danson	Avoca	W. F. Pottow	Hand Sep	Test.
593	Earling	Earling Creamery company	Stock	Alex. Anderson	Earling	Alex. Anderson	S. & G. C.	Test.
594	Harlan	Center Creamery company	Co-op.	W. M. Obrecht, Secretary	Harlan	M. Janssen	Hand Sep	Test.
595	Jacksonville	Back Valley Creamery	Co-op.	R. Rasmussen	Harlan	P. Nyman	Hand Sep	Test.
596	Kirkman	Desway Creamery company	Co-op.	C. Jensen	Kirkman	Julius Anderson	S. & G. C.	Test.
597	Marrs	Portsmouth Creamery	Co-op.	P. M. Peterson	Marrs	Peter Thorsen	S. & G. C.	Test.
598	Porktown	Clark Twp. Sep. Creamery Co.	Co-op.	M. A. Sorrenson	Portsmouth	M. Akerstrom	Hand Sep	Test.
599	Walnut	Patric Rose Creamery	Indiv.	J. D. Laurentzen	Walnut	Rudolph Weise	Separator	Test.
600	Shelby	Waterloo Creamery Co. (1)	Stock	Leroy Corlies	Council Bluffs		Separator	Test.
Sioux County—								
601	Alton	Alton Creamery	Indiv.	Geo. R. Mueller	Alton	Geo. R. Mueller	Hand Sep	Test.
602	Granville	Granville Creamery	Stock	Hanford Produce company.	Sioux City		Hand Sep	Test.
603	Hesper	Hesper Creamery	Indiv.	Stow & Rosterman	Hesper	John J. Marx	Hand Sep	Test.
604	Hawarden	Hawarden Creamery Assn.	Indiv.	L. M. Lynn	Hawarden	R. J. Hoeler	Hand Sep	Test.
605	Hull	Hull Creamery	Indiv.	Rud Stenevad	Hull	E. Dan. Hensler	Hand Sep	Test.
606	Rock Valley	Rock Valley Creamery	Indiv.	C. H. Day, Proprietor	Rock Valley	A. G. Paulson	Hand Sep	Test.
Story County—								
607	Ames	Iowa State College Creamery	State.	G. L. McKay, Manager	Ames	De La Sheldon	S. & G. C.	Test.
608	Cambridge	Farmers Co-op. Creamery Co.	Co-op.	M. F. King, Secretary	Cambridge	J. F. Burrets	S. & G. C.	Test.
609	Colo	Farmers Co-op. Creamery Co.	Co-op.	E. Yeager, Secretary	Colo	E. R. Mitchell	Gath. Cr.	Test.
610	Gilbert Station	Farmers Co-op. Creamery Co.	Co-op.	H. E. Sheppard	Gilbert Station	C. P. Lake	Separator	Test.
611	Huxley	Huxley Farmers Co-op. Crm. Co.	Co-op.		Huxley	P. J. Soveralde	Separator	Test.
612	Maxwell	Beatrice Creamery Co. (1)	Stock	Beatrice Creamery Co.	Des Moines		Separator	Test.
613	Etwell	Beatrice Creamery Co. (2)	Stock	Beatrice Creamery Co.	Des Moines		Separator	Test.

CREAMERY TEST—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.
614	Roland.....	Roland Farmers Creamery Co.	Co-op.	L. T. Olson, Secretary.	Roland.....	S. H. Jonbal....	Separator	Test.
615	Story City.....	Story City Farmers Co-op. Crm.	Co-op.	Alex Henderson.....	Story City.....	Geo. Wick.....	S. & G. C	Test.
616	Slater.....	Slater Farmers Creamery Co.	Co-op.	Andrew Mayland, Secretary	Slater.....	R. J. Severoid...	Separator	Test.
617	Zearing.....	Zearing Creamery company	Stock.	C. P. Bean.....	Zearing.....	R. R. Hadley....	S. & G. C	Test.
<i>Tama County—</i>								
618	Chelsea.....	Springbrook.....	Indiv.	John Newman Company	Elgin, Ill.	J. G. Bucher....	S. & G. C.	Test.
619	Elberon.....	Springbrook.....	Indiv.	John Newman Company	Elgin, Ill.	Chas. Bucher....	S. & G. C.	Test.
620	Tama.....	Tama Co-op. Creamery Co.	Stock.	L. O. Carson, Secretary	Tama.....	W. H. Graham...	Hand Sep	Test.
621	Clutier.....	Clutier Creamery company	Indiv.	E. D. Armstrong.....	Clutier.....	E. D. Armstrong	Gath. Cr.	Test.
<i>Taylor County</i>								
622	Clearfield.....	Clearfield Creamery company.	Stock.	Joe Doubet.....	Clearfield.....	Geo. McNair....	Hand Sep	Test.
623	Bedford.....	The Bedford Creamery.....	Indiv.	A. E. Lake, Manager.....	Bedford.....	Leslie C. Klopp..	Hand Sep	Test.
<i>Union County—</i>								
624	Afton.....	Afton Creamery.....	Indiv.	G. W. Kelly.....	Afton.....	V. O. Williams..	Hand Sep	Test.
625	Creston.....	Clarinda Poultry, But. & Egg Co	Indiv.	W. T. S. White, Manager..	Clarinda.....	.....	Hand Sep	Test.
<i>Van Buren County—</i>								
626	Bonaparte.....	Yorkshire Creamery (s).....	Indiv.	John Morrell Company.....	Ottumwa.....	.....	Separator	Test.
627	Milton.....	Yorkshire Creamery (s).....	Indiv.	John Morrell Company.....	Ottumwa.....	.....	Separator	Test.
628	Douds.....	Yorkshire Creamery (s).....	Indiv.	John Morrell Company.....	Ottumwa.....	.....	Separator	Test.
<i>Wapello County—</i>								
629	Blakesburg.....	Blakesburg Creamery.....	Indiv.	Foland Bros.....	Blakesburg.....	Foland Bros.....	Separator	Test.
630	Ottumwa.....	Yorkshire Creamery.....	Indiv.	R. N. Morrell, Secretary...	Ottumwa.....	J. H. Davis.....	S. & G. C.	Test.
<i>Warren County—</i>								
631	Carlisle.....	Carlisle Co-op. Crm. Company.	Co-op.	C. Beaucamp.....	Carlisle.....	H. Owens.....	Separator	Test.
632	Indianola.....	Warren County Creamery.....	Indiv.	Charley Taylor.....	Indianola.....	.....	Separator	Test.

<i>Washington County—</i>								
633	Kalona.....	Kalona Creamery.....	Indiv.	W. G. Brooks.....	Kalona.....	W. G. Brooke...	Gath. Cr.	Oil Test
634	Riverside.....	Riverside Creamery.....	Indiv.	Nelson & Son.....	Riverside.....	Ray Law.....	Gath. Cr.	Oil Test
<i>Wayne County</i>								
635	Humeston.....	Old Colony Creamery.....	Indiv.	Jas. L. Humphreys.....	New Bedford, Mass..	W. F. Beck.....	S. & G. C.	Test.
636	Lewisburg.....	Old Colony Creamery (s).....	Indiv.	Jas. L. Humphreys.....	New Bedford, Mass..	.....	S. & G. C.	Test.
637	Corydon.....	Old Colony Creamery (s).....	Indiv.	Jas. L. Humphreys.....	New Bedford, Mass..	.....	S. & G. C.	Test.
<i>Webster County—</i>								
638	Clare.....	Clare Creamery.....	Indiv.	J. A. Blakeman.....	Clare.....	J. A. Blakemen.	S. & G. C.	Test.
639	Duncombe.....	Duncombe Creamery.....	Indiv.	Samuel Smith.....	Duncombe.....	R. A. Clelland..	S. & G. C.	Oil Test
640	Fort Dodge.....	Palmer Hubbard Company.....	Stock.	C. V. Rosenberger.....	Independence....	S. H. Deuscher..	S. & G. C.	Test.
<i>Winneshiek County—</i>								
641	Buffalo Center..	Farmers' Co-op. Creamery Co.	Co-op.	Geo. J. Andrews, Sec.....	Buffalo Center..	A. Woolary....	S. & G. C.	Test.
642	Forest City.....	Forest City Co-op. Crm. Ass'n	Co-op.	John Carson, Secretary...	Forest City.....	Lewis Richards.	S. & G. C.	Test.
643	Leland.....	Forest City Co-op. Crm. Ass'n (s)	Co-op.	John Carson, Secretary...	Forest City.....	.....	S. & G. C.	Test.
644	Forrest City.....	Forest City Co-op. Crm. Ass'n (s)	Co-op.	John Carson, Secretary...	Forest City.....	.....	S. & G. C.	Test.
645	Lake Mills.....	Lake Mills Creamery company	Co-op.	J. A. Horvei.....	Lake Mills.....	T. A. Storvick..	Separator	Test.
646	Dahls Church..	Lake Mills Creamery Co., (s)	Co-op.	J. A. Horvei.....	Lake Mills.....	.....	Separator	Test.
647	Newton Twp.....	Lake Mills Creamery Co., (s)	Co-op.	J. H. Horvei.....	Lake Mills.....	.....	Separator	Test.
648	Rake.....	Lincoln Co-op. Crm. Company.	Co-op.	B. Quamme.....	Rake.....	P. N. Peterson..	S. & G. C.	Test.
649	Scarville.....	Scarville Creamery Ass'n	Co-op.	K. M. Larson, Manager.....	Scarville.....	W. J. Nagel....	S. & G. C.	Test.
650	Scarville.....	Vinje Creamery.....	Co-op.	Nels. Berg.....	Vinje.....	E. A. Gudvangen	Separator	Test.
651	Amund.....	Eden Creamery.....	Co-op.	I. I. Morck, Manager.....	Amund.....	Morris Erdal	S. & G. C.	Test.
652	Thompson.....	Thompson Co-op. Crm. Ass'n.	Stock.	J. H. Anderson, Secretary.	Thompson.....	Enos Albertson..	S. & G. C.	Test.
653	Thompson.....	Thompson Co-op. Crm. Ass'n(s)	Stock.	J. H. Anderson, Secretary.	Thompson.....	.....	S. & G. C.	Test.
654	Hollandale.....	Woden Creamery.....	Indiv.	L. C. Peterson.....	Woden.....	.....	S. & G. C.	Test.
655	Lake Mills.....	Fertile Co-op. Dairy Co. (s)	Co-op.	J. T. Tallackson.....	Fertile.....	.....	S. & G. C.	Test.
<i>Winneshiek County—</i>								
656	Burr Oak.....	Silver Creek Creamery.....	Co-op.	C. A. Reed.....	Burr Oak.....	V. V. Johnson..	Gath. Cr.	Oil Test
657	Calmar.....	Calmar Creamery.....	Indiv.	Boe & Nelson.....	Calmar.....	E. A. Hoopman..	Gath. Cr.	Oil Test
658	Decorah.....	Ice Cave Creamery.....	Indiv.	Johnson & Kjome.....	Decorah.....	T. W. Senn.....	Gath. Cr.	Oil Test
659	Fort Atkinson..	Ft. Atkinson Creamery.....	Stock.	H. R. Carpenter, Secretary	Elkader.....	H. B. Fortney..	Gath. Cr.	Oil Test
660	Festina.....	Festina Creamery company.....	Co-op.	W. A. Schrandt, Manager.	Calmar, R. 1....	Henry Hesse....	Gath. Cr.	Oil Test
661	Highlandville..	Highland Creamery.....	Indiv.	Bidne & Akre.....	Highlandville..	P. J. Bidne....	Gath. Cr.	Oil Test
662	Highlandville..	Rock Springs Creamery.....	Co-op.	P. M. Peterson.....	Spring Grove, Minn	P. M. Peterson..	Gath. Cr.	Oil Test
663	Hesper.....	Hesper Creamery.....	Indiv.	T. J. Meader, Supt.....	Hesper.....	J. H. Hiatt....	Gath. Cr.	Test.
664	Kendallville.....	Kendallville Creamery.....	Indiv.	Boe, Nelson & Co.....	Kendallville.....	Ed. Hoines.....	Gath. Cr.	Oil Test
665	Nordness.....	Nordness Creamery.....	Stock.	J. N. Badgestad, Sec.....	Nordness.....	Knud Hauge....	Gath. Cr.	Oil Test
666	Nordness.....	Red Oak Creamery Company	Co-op.	N. E. Ranney, Secretary..	Decorah, R. 1..	Hans Foss.....	Gath. Cr.	Oil Test
667	Ossian.....	Silver Spring Creamery Co	Stock.	N. J. Nicholson, Sec.....	Decorah, R. 2..	Ole Hauge.....	Gath. Cr.	Oil 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 cultured cream.	Method of separating milk.
668	Ridgeway	L. T. Fosse & Sons	Indiv.	L. T. Fosse	Ridgeway	O. A. Fosse	Gath. Cr.	Oil Test
669	Ridgeway	L. T. Fosse & Sons (s)	Indiv.	L. T. Fosse	Ridgeway	Gath. Cr.	Gath. Cr.	Oil Test
670	Ridgeway	Lincoln Farmers Co-op. Crm. Co-op.	Co-op.	A. W. Frann, Secretary	Ridgeway	G. A. Bakkin	Gath. Cr.	Oil Test
Woodbury County—								
671	Correctionville	Hopkins & Hubbard	Indiv.	A. W. Hubbard, Manager	Correctionville	M. J. Goodnow	Hand Sep.	Test.
672	Sioux City	Hanford Produce Company	Stock.	A. S. Hanford, President	Sioux City	M. O. Wheelock	Hand Sep.	Test.
Forth County—								
673	Fertile	Fertile Co-op. Dairy Company	Co-op.	J. T. Tallackson, Sec.	Fertile	J. A. Johnson	Separator	Test.
674	Joice	Norland Creamery	Co-op.	O. J. Krosse, Secretary	Joice	A. H. Nelson	Separator	Test.
675	Kensett	Danville Co-op. Cream'y Assn. Co-op.	Co-op.	H. K. Myll, Secretary	Kensett	Gilbert Olson	S. & G. C.	Test.
676	Manly	Farmers' Co-op. Cream'y Assn. Co-op.	Co-op.	E. R. Stock, Secretary	Manly	H. E. Ford	S. & G. C.	Test.
677	Miltonville	Lorenzen Bros' Creamery	Indiv.	P. Lorenzen	Miltonville	P. Lorenzen	Gath. Cr.	Test.
678	Northwood	Farmers' B. & C. Association	Co-op.	M. D. Johnson, Secretary	Northwood, R. 3	R. S. Bergsather	S. & G. C.	Test.
679	Northwood	Hartland Dairy Association	Stock.	E. L. Loberg, Manager	Northwood	A. M. Hanson	Separator	Test.
680	Northwood	Brookfield Creamery Assn. Co-op.	Co-op.	E. A. Tunold, Secretary	Northwood	A. C. Talle	S. & G. C.	Test.
681	Hristol	Lake Mills Creamery Co. (r)	Co-op.	J. A. Horvie, Manager	Lake Mills	Charles Heath	Separator	Test.
682	Kensett	Farmers' Co-op. Cream'y Assn. Co-op.	Co-op.	O. G. Anderson, Secretary	Kensett	W. O. Dahlen	Separator	Test.
683	Grafton	Grafton Creamery	Indiv.	Henry White	Grafton	Don White	S. & G. C.	Test.
Wright County—								
684	Belmond	Norway Co-op. Creamery Co. Co-op.	Co-op.	J. W. Baxter, Secretary	Belmond, R. 2	C. H. Vanderham	Hand Sep.	Oil Test
685	Clarion	Clarion Creamery	Co-op.	C. P. Morton, Secretary	Clarion	F. W. Umbriet	Gath. Cr.	Oil Test
686	Goldfield	Fountain Creamery	Indiv.	DelWitt Goodrich	Goldfield	DeWitt Goodrich	Hand Sep.	Test.
687	Galt	Galt Creamery Company	Stock.	A. K. Ke chum	Clarion R. 6	A. Fatland	S. & G. U.	Test.
688	Palsville	Palsville Creamery Company	Co-op.	F. O. Loiz, Secretary	Belmond	M. Greenfield	Separator	Test.
689	Rowan	Rowan Co-op. Creamery	Co-op.	J. H. Dix, Secretary	Rowan	Charles Heath	Separator	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 separating milk.
Adams County—							
1	Cumberland	Lincoln Center Cheese Factory	Indiv.	Henry Fleharty, Proprietor	Hayes	Henry Fleharty	Hundred.
Appanoose County—							
2	Hiattville	Hiattville Cheese Factory	Indiv.	W. O. Hiatt, Proprietor	Centerville, R. 2	W. O. Hiatt	Hundred.
Benton County—							
3	Atkins	Ideal Cheese Factory	Indiv.	A. C. Stewart, Proprietor	Atkins	J. W. Stewart	Hundred.
Black Hawk County—							
4	Waterloo	The Fowler Co	Stock.	The Fowler Co	Waterloo	F. E. Wightman	Test.
5	Waterloo	North Star Cheese Factory	Stock.	The Fowler Co	Waterloo	John St. John	Test.
Bremer County—							
6	Janesville	The Fowler Co	Stock.	The Fowler Co	Waterloo	J. McMurray	Test.
Cerro Gordo County—							
7	Burchinal	Burchinal Cheese Factory	Indiv.	T. R. Coates, Proprietor	Burchinal	T. R. Coates	Test.
Crawford County—							
8	Astor	Astor Cheese company	Co-op.	O. A. Olson, Secretary	Astor	Guy B. Teeple	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.
9	Clarke County Weldon	Weldon Cheese Factory	Indiv.	L. M. Parr, Proprietor.	Weldon	Mrs. L. M. Parr	Hundred.
10	Floyd County— Charles City	Elm Springs Factory	Indiv.	H. D. White, Proprietor ...	Charles City	Walter B. Pfeiffer	Hundred.
11	Greene County— Dana	Dana Mutual Co-op. Crm. Company.	Co-op ..	W. J. Elling, Secretary ...	Dana	W. J. Elling....	Test.
12	Guthrie County— Jamaica	Jamaica Cheese Factory	Co-op ..	Goreham Bros.	Jamaica	W. E. Goreham.	Hundred.
13	Hardin County— Iowa Falls	Ellis Cheese Factory	Stock ..	W. I. Clark	Iowa Falls, R. 3.	W. I. Clark	Hundred.
14	Howard County— Cresco	Cresco Cheese Factory	Indiv.	Wm. Kellow, Jr	Cresco	W. N. Lathrop..	Hund.
15	Cresco	Clover Leaf Cheese Factory	Indiv.	J. J. House	Cresco	J. J. House	Hund.
16	Humboldt County— Lu Verne	Pioneer Cheese Factory	Indiv.	Jacob Regez	Monroe, Wisconsin	Ben Roder	Test.
17	Henry County— Noble	The Christner Butter and Cheese Co	Indiv.	C. C. Christner	Wayland	Ralph Hood	Test.
18	Jefferson County— Brighton	Pleasant Plain Cheese Factory	Indiv.	J. H. Sasseen	Pleasant Plain	J. H. Sasseen ...	Test.
19	Veo	Veo Cheese Factory	Stock ..	E. A. Hoeler	Veo	H. W. Spencer..	Test.

20	Keokuk County— Talleyrand	Talleyrand Factory	Stock ..	Clif. on Tucker	Talleyrand	Clifton Tucker ..	Test.
21	Lee County— Franklin Station	Franklin Station Cheese Company ..	Stock ..	Henry G. Ort	Donnellson, R. 1.	A. W. Newell ..	Test.
22	Monroe County— Albia	Bone Cheese Factory	Indiv.	S. G. Bone	Albia	Joe Bone	Hund.
23	Marshall County— Liscomb	Liscomb Cheese Company	Stock ..	Thomas E. Culp	Liscomb	Thos. E. Culp ...	Test.
24	Muscatine County— Wilton Junction.	Muscatine French Cheese Company.	Co-op ..	Fritz Kolb, Secretary.	Wilton Junction	Homer Carson ..	Hund.
25	Poweshiek County— Grinnell	Bartell Cheese Factory	Indiv.	J. W. Fowler	Grinnell .....	.....	Test.
26	Jacobs	Jacob Cheese Factory	Indiv.	A. C. Payne	Jacobs	L. A. Wilson....	Test.
27	Scott County— Princeton	Wapsie Cheese Factory	Stock ..	Chas. A. Pope	Princeton	Geo. L. Ayers ..	Test.
28	Story County— Iowa Center	Iowa Center Cheese Factory	Indiv.	J. Q. Moore	Iowa Center	W. H. Moore	Test.
29	Ames	I. A. C. Cheese Factory	State ..	G. L. McKay, Manager ..	Ames .....	.....	Test.
30	Taylor County— Sharpsburg	Sharpsburg Cheese Company	Indiv.	G. S. Eastlack	Sharpsburg	G. S. Eastlack ..	Hund.
31	Blockton	Blockton Cheese Factory	Indiv.	Waldrip & Bonafield	Blockton	Waldrip & Bonafield ..	Hund.
32	Washington County— West Chester	Leet Cheese Factory	Indiv.	W. E. Leet	West Chester	W. E. Leet	Hund.
33	Clay	Clay Cheese Factory	Stock ..	O. Meachman	Richland, R. 2	O. W. Hake	Test.
34	Wayne County— Promise City	Promise City Cheese Factory	Co-op ..	C. R. Noble	Promise City	C. R. Noble	Hund.
35	Sewall	Sewall Cheese Manufacturing Co ..	Stock ..	R. N. Farnsworth	Sewall	Samuel Sander ..	Hund.
36	Lineville	Lineville Cheese Factory	Indiv.	Mathew De Haan	Lineville	Mathew De Haan	Hund.
37	Seymour	Seymour Cheese Company	Stock ..	K. A. Weagley, Secretary ..	Seymour	R. E. Spencer ..	Hund.

STATISTICS OF THE CREAMERIES.

In the following table will be found certain information in regard to the numbers and manner of operating the creameries of this State. The list this year shows a decrease from that of last year of 101 plants, of which 44 were skimming stations. The report for the year previous showed that 61 skimming stations were closed making a total number of stations closed for the last two years of 105, during which time there were 31 skimming stations built.

Creameries listed under the head of "individual" are those that are owned by one person or a partnership or firm. Those listed as "co-operative" and "stock company" are very nearly all creameries commonly called co-operative, from which it will be seen that about thirty-five per cent of the creameries of this State are operated on a plan other than the so-called co-operative system.

There are still almost 300 creameries in this State that receive practically nothing but milk. The eighty-five gathered cream creameries and the seventy hand separator creameries receive nothing but cream, the latter from hand separators only.

Of the six hundred seventy-two plants listed as buying milk or cream by the test, forty-one buy cream by the inch and use the oil test churn to determine how much butter must be paid for. Nineteen creameries still buy milk and pay a uniform price per hundred pounds.

A study of the location of the creameries that have closed in the last two or three years will show that, speaking generally, it has been the "individual" plants that have succumbed to the adverse conditions that have prevailed. The co-operatives have better been able to hold their own against the new forms of competition.

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. Exclusive hand sep- arator plant.	By test.	By cwt.	New creameries.	New skim stations.	Total.	Plants closed.	
THE STATE	589	102	243	335	113	293	85	243	70	672	19	10	9	19	120
Adair	7	4	7	3	1	9		2		11					2
Adams	3	3	1	5		6				6		2	1	3	
Allamakee	7		2	5		1	3		8	7					
Appanoose															
Audubon	9			9		3		4	2	9					2
Benton	4		4			1	1	1	1	4					5
Black Hawk	18		3	12	1	14		1	1	16					1
Boone	2	1	1	2		2		1		3					1
Bremer	21		1	18	2	21				12	9				
Buchanan	10	4	2	6	6	7		7		14					3
Buena Vista	4			4				2	2	4					3
Butler	17	2	7	9	3	17	1		1	19					1
Calhoun	6	1	2	3	3	3		4		7					1
Carroll	8	1	3	3	3	5	1	1	2	8	1		1	1	4
Cass	3			3		2		1		3					4
Cedar	8	1	8		1	4	3	2		7	2				
Cerro Gordo	6	1	5	2		2	5			7					
Cherokee	4		4				1	1	2	4					
Chickasaw	16	2	5	12	1	9	4	5		18					
Clarke															
Clay	6		3	2	1	3		2	1	6					2
Clayton	18	2	4	9	7	3	2		8	7			2	2	
Clinton	8	4	9	3		1		11		12					3
Crawford	2		1		1			2	2	2					1
Dallas	4	5	2	1	6	2		3	4	9		1			1
Davis			5			5		5		5			1	1	
Decatur	1	4	4		1			4	1	5					
Delaware	24	2	5	17	4	13		12	1	26					
Des Moines															
Dickinson	4			3	1	1		3		4					
Dubuque	21	1	6	12	4	15		5	2	21	1	1		1	
Emmet	8			5	3	3		5		8					1
Fayette	18		3	13	2	10		5	3	16	2				
Floyd	5		3	2			5								1
Franklin	8	2	5	4	1	4	4	2		10					
Fremont															
Greene	2		1	1		2				2					2
Grundy	6		1	5		3		3		6					4
Guthrie	11		1	6	4	4	1	6		11		2		2	5
Hamilton	6	3	5	4		7		2		9					4
Hancock	8	2	2	8		3	3	3	1	10					2
Hardin	12	2	3	9	2	8		6		14					2
Harrison	2			2		2		2		2					
Henry															1
Howard	9		2	4	3	1	4	4		9					
Humboldt	11		1	9	1	2	1	8		11					
Ia	2		2					1	1	2					
Iowa	7	2		8	1	4		5		9					
Jackson	13	3	12	4		8		7	1	16		1		1	
Jasper	3			2	1	1	1	1		3					

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

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.		Separator.	Gathered cream.	Combined plant. Exclusive hand separator plant.	By test.	By cwt.	New creameries.	New skim stations.	Total.	Plants closed.			
Jefferson.....	3	1	3	1	3	1	4					1			
Johnson.....	1	1	1			1	1					1			
Jones.....	14	9	16	6	1	9	23			14		2			
Keokuk.....	1	2	2		3		3				1	1			
Kossuth.....	21		18	1	14	1	21					1			
Lee.....															
Linn.....	18	3	14	4	3	9	1	18	3			1			
Louisa.....												1			
Lucas.....		1	1		1		1					1			
Lyon.....	2		1	1			2					3			
Madison.....		1	1			1	1			1	1				
Mahaska.....	1			1			1					1			
Marion.....	1	1	1		1	1	2					1			
Maahall.....	4		3		2	1	4					2			
Mill.....		3		3	3		3								
Mitchell.....	10		1	9		7	2	1	10						
Monona.....	1		1			1	1								
Monroe.....	1		1			1	1								
Montgomery.....					1	1						1			
Muscatine.....	2		2		1	1	2		1		1	1			
O'Brien.....	5		3		2	2	1	1	5						
Osceola.....	2		2			1	1	1				1			
Page.....	1				1		1					2			
Palo Alto.....	14	1	13	2	8		7		15			1			
Plymouth.....	3	2	2		1	3	1		5			1			
Pocahontas.....	6		4		2	1	3		6			2			
Polk.....	1	1	1		1	2	3		1	2		2			
Pottawattamie.....	6	2	5		3	1	3	1	7	1	1	1			
Poweshiek.....	5	1	5		1	4	1	6				1			
Ringold.....												2			
Sac.....	8		5	2	1	1	7		8			3			
Scott.....	2		2			1	1								
Shelby.....	2	1	1	6	2	3	3		9			1			
Sioux.....	6		5		1	1	5		6						
Story.....	9	2	1	7	3	5	1	11		1	1	4			
Tama.....	4		3		1	1	2		4			1			
Taylor.....	1		1		1		2		2						
Union.....	2		2				2		2			7			
Van Buren.....		3			3		3		3						
Wapello.....	2		2		1		2					1			
Warren.....	2		1	1		2			2			1			
Washington.....	2		2			2			2			1			
Wayne.....	1	2				3			3			2			
Webster.....	3		2		1		3		3			1			
Winnebago.....	8	7	1	12	2	4	11		15			3			
Winneshek.....	14	1	7	5	3		15								
Woodbury.....	2		1		1		2		2			2			
Worth.....	10	1	2	8	1	5	1		11			1			
Wright.....	6		1	4	1	2	1		6			1			
THE STATE.....	589	102	243	335	118	293	85	243	70	672	19	10	9	19	120

Of the creameries reported as paying by test, forty-one are using the oil test churn and the cream is bought by the inch instead of by weight. Of the plants closed forty-four were skimming stations only.

COMPARISONS.

	1897	1898	1899	1900	1901	1902	1903	1904
Total number of creameries and skim stations	801	954	967	994	960	910	792	691
OWNERSHIP.								
Individual.....	504	516	501	524	497	377	306	242
Co-operative.....	349	349	349	364	360	376	350	335
Stock company.....	37	88	116	105	102	165	185	113
State property.....	1	1	1	1	1	1	1	1
PLAN OF OPERATION.								
Separator.....			842	853	772	748	538	298
Gathered cream.....			71	85	92	105	119	85
Combined plant.....			60	56	96	65	135	243
* Exclusive hand separator.....								70
BASIS OF RECEIVING MILK OR CREAM.								
By the test.....			849	896	890	882	748	672
By weight or measure.....			110	98	70	57	44	19
CREAMERY CHANGES.								
Number of new creameries.....	133	90	56	87	35	34	25	10
Number of new skim stations.....	43	36	34	18	22	16	9	2
Number of plants closed.....	55	53	79	75	87	97	160	120

* Before 1904 hand separator creameries were included as gathered cream plants. In 1903 sixty-one skim stations closed; in 1904 forty-four skim stations closed.

RAILWAY BUTTER SHIPMENTS.

The following tables are made up from the statistics furnished by all the railroads of the state showing the amount of butter shipped from points in Iowa to points outside the state. Little or no butter is imported into the state in any form and the figures in the following tables practically represent the surplus production of the state. It is estimated that about 65,000,000 pounds of butter are made and consumed in the state, so that the total production is about 140,000,000 pounds, having an aggregate value of \$28,000,000.

In the following tables the numbers showing pounds of butter shipped from each county must not be understood as representing the amount of butter produced in the respective counties. For instance, the counties highest on the list—Woodbury, Polk and Lee—are not large producers of butter. Woodbury and Polk counties contain centralized creameries making large quantities of butter, and all of these counties have process butter factories making large quantities of butter, but none of them are the source of any great proportion of the butter which is manufactured and shipped in the county. The same thing is true, in less degree, in regard to other counties.

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

Counties.	Number of Creameries for 1903 and 1904.		Gross Pounds of Butter Shipped out of the State for the Years Ending September 30, 1903 and 1904, Showing Increase and Decrease by Counties.			
	1903	1904	1903	1904	Increase.	Decrease.
THE STATE.....	792	601	93,761,661	90,844,358		3,417,303
Adair.....	13	11	592,912	771,124	178,212	
Adams.....	8	6	171,643	61,810		109,833
Allamakee.....	7	7	1,489,747	1,460,583		29,164
Appanoosa.....			113,397	71,199		42,198
Audubon.....	11	9	990,537	1,070,759	80,222	
Benton.....	10	4	797,321	503,516		293,805
Black Hawk.....	17	16	1,494,874	1,292,185		202,709
Boone.....	4	3	71,617	85,359	13,742	
Bremer.....	21	21	2,496,880	2,511,439	14,559	
Buchanan.....	17	14	2,442,670	2,155,332		287,338
Buena Vista.....	7	4	1,094,565	1,004,419		90,176
Butler.....	20	19	1,827,671	1,880,634	52,963	
Calhoun.....	8	7	1,574,950	1,208,779		366,171
Carroll.....	12	9	1,520,613	1,515,303		5,310
Cass.....	7	3	226,102	86,541		139,561
Cedar.....	9	9	418,508	446,422	27,914	
Cerro Gordo.....	7	7	645,449	976,595	331,147	
Cherokee.....	4	4	171,463	216,275	44,812	
Cnicakasaw.....	18	18	2,619,271	2,289,708		329,563
Clarke.....			18,755	10,855		7,900
Clay.....	8	6	614,318	814,490	200,172	
Clayton.....	18	20	3,916,094	3,206,473		709,621
Clinton.....	15	12	660,676	1,077,206	416,530	
Crawford.....	3	2	958,798	1,041,830	83,032	
Dallas.....	8	9	731,682	475,697		255,985
Davis.....	4	5	47,157	100		47,057
Decatur.....	5	5	125,640	117,828		7,812
Delaware.....	26	26	2,967,206	2,403,235		563,971
Des Moines.....			301,670	317,520	15,850	
Dickinson.....	4	4	1,201,551	649,881		551,670
Dubuque.....	23	22	2,738,755	2,710,439		28,316
Emmet.....	8	8	854,436	539,439		314,997
Fayette.....	19	18	2,494,653	2,408,110		86,543
Floyd.....	6	5	924,553	951,574	27,021	
Franklin.....	10	10	372,920	538,959	166,039	
Fremont.....			3,868	181,421	177,553	
Greene.....	4	2	230,652	187,683		42,969
Grundy.....	10	6	703,698	737,997	34,299	
Guthrie.....	15	11	1,180,018	1,000,443		179,575
Hamilton.....	13	9	1,654,582	1,379,654		274,928
Hancock.....	12	10	461,166	599,880	138,714	
Hardin.....	16	14	1,629,760	1,644,631	14,871	
Harrison.....	2	2	340,375	337,619		2,756
Henry.....	1		84,423	63,785		20,638
Howard.....	9	9	1,360,360	1,199,978		160,382
Humboldt.....	11	11	794,480	896,333	71,853	
Ida.....	2	2	214,290	229,485	15,195	
Iowa.....	10	9	693,389	733,859	40,470	
Jackson.....	16	16	1,408,303	1,660,353	252	2,350
Jasper.....	6	3	297,360	276,000		21,360

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

Counties.	Number of Creameries for 1903 and 1904.		Gross Pounds of Butter Shipped out of the State for the Years Ending September 30, 1903 and 1904, Showing Increase and Decrease by Counties.			
	1903	1904	1903	1904	Increase.	Decrease.
Jefferson.....	4	4	110,752	116,792	6,040	
Johnson.....	2	1	124,706	323,419	198,713	
Jones.....	25	23	3,926,063	3,393,621		532,442
Keokuk.....	3	3	438,281	141,082		297,199
Kossuth.....	22	21	1,732,170	1,832,354	70,184	
Lee.....			2,234,066	2,980,166	746,100	
Linn.....	22	21	1,507,483	1,626,547	119,064	
Louisa.....	1	1	51,449	21,184		30,265
Lucas.....	2	1		99,711	99,711	
Lyon.....	5	2	234,374	264,053	29,679	
Madison.....		1	25,668	25,666	28	
Mahaska.....	2	1	692,563	115,780		576,783
Marion.....	3	2	67,550	101,285	33,735	
Marshall.....	6	4	526,492	633,609	107,117	
Mills.....	3	3	14,961	3,835		11,126
Mitchell.....	10	10	1,577,956	1,405,516		172,440
Monona.....	1	1	60,765	72,921	12,156	
Monroe.....	1	1	58,667	18,850		39,817
Montgomery.....	1	1	149,658	72,231		77,427
Muscatine.....	2	2	123,118	62,993		60,125
O'Brien.....	5	5	673,065	837,220	159,155	
Osceola.....	3	2	305,169	475,045	169,876	
Page.....	3	1	2,109,922	720,735		1,389,187
Palo Alto.....	15	15	1,524,245	1,280,836		293,409
Plymouth.....	6	5	464,980	533,031	118,051	
Pocahontas.....	8	6	644,998	453,821		188,177
Polk.....	5	7	3,224,270	4,012,752	788,482	
Potawattamie.....	8	8	324,894	353,347	28,453	
Poweshiek.....	7	6	407,818	1,012,113	604,295	
Ringgold.....	2		12,307			12,307
Sac.....	11	8	699,777	701,012	1,235	
Scott.....	2	2	326,831	306,443		20,388
Shelby.....	10	9	231,351	513,208	281,857	
Stout.....	6	6	944,766	1,194,390	249,624	
Story.....	14	11	1,388,206	1,064,669		323,537
Tama.....	5	4	545,905	687,049	141,144	
Taylor.....	2	2	518,096	930,027	411,931	
Union.....	9	2	688,011	581,482		106,529
Van Buren.....	3	3	96,813	6,620		90,193
Wapello.....	3	2	137,107	93,950		43,157
Warren.....	3	2		290	290	
Washington.....	5	2	403,126	260,979		142,147
Wayne.....	4	3	794,455	937,156	142,701	
Webster.....	5	3	650,325	715,596	65,271	
Winnebago.....	6	5	1,105,416	1,177,069	71,653	
Winneshie.....	7	15	2,156,992	1,931,392		225,600
Woodbury.....	2	2	7,320,139	6,283,583		1,036,556
Worth.....	12	11	861,033	844,902		16,131
Wright.....	7	6	791,216	1,027,332	236,116	
THE STATE.....	792	691	93,781,661	90,344,353		3,437,308

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, 1904.

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.....	75,889,260		55,475	1,385	
Adair.....	647,744	44	576	1,124	49
Adams.....	51,920	90	432	120	87
Allamakee.....	1,227,289	19	615	1,995	24
Appanoose.....	59,807	87	500	119	88
Audubon.....	899,438	29	432	2,082	22
Benton.....	422,953	59	720	587	65
Black Hawk.....	1,089,418	22	576	1,890	25
Boone.....	67,501	84	576	117	89
Bremer.....	2,109,607	7	432	4,767	5
Buchanan.....	1,810,479	11	576	3,149	10
Buena Vista.....	843,712	34	576	1,464	37
Butler.....	1,579,732	13	576	2,742	13
Calhoun.....	1,015,375	24	576	1,762	27
Carroll.....	1,272,854	18	576	2,209	21
Cass.....	72,696	83	576	126	84
Cedar.....	374,984	63	576	649	63
Cerro Gordo.....	820,550	37	576	1,424	39
Cherokee.....	181,671	73	576	315	74
Chickasaw.....	1,922,304	10	594	3,214	6
Clarke.....	9,118	94	432	21	94
Clay.....	688,174	43	576	1,194	46
Clayton.....	2,693,436	4	745	3,615	8
Clinton.....	904,853	28	680	1,330	41
Crawford.....	895,137	30	720	1,243	43
Dallas.....	339,585	60	576	593	60
Davis.....	84	98	500		98
Decatur.....	96,975	77	534	110	90
Delaware.....	2,021,238	9	576	3,509	9
Des Moines.....	2,671,6	67	400	667	62
Dickinson.....	545,900	51	408	1,338	40
Dubuque.....	2,276,778	6	604	3,769	7
Emmet.....	453,123	56	408	1,112	50
Fayette.....	2,022,812	8	720	2,809	11
Floyd.....	799,322	39	504	1,562	34
Franklin.....	451,735	57	576	784	57
Fremont.....	152,493	75	514	297	75
Greene.....	157,657	74	570	2,766	12
Grundy.....	619,833	45	504	1,229	44
Guthrie.....	840,372	35	576	1,459	38
Hamilton.....	1,159,969	21	573	2,011	23
Hancock.....	461,899	55	576	802	56
Hardin.....	1,331,490	16	576	2,328	15
Harrison.....	233,599	65	684	414	69
Henry.....	53,579	88	432	124	85
Howard.....	1,007,931	25	460	2,191	19

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

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	737,719	40	402	1,827	29
Ia	192,767	72	432	446	96
Iowa	810,641	45	375	1,060	51
Jackson	1,390,736	15	519	2,680	21
Jasper	231,000	69	720	321	73
Jefferson	98,105	77	432	229	76
Johnson	271,771	66	374	470	67
Jones	2,800,641	3	376	4,906	4
Kookuk	118,508	76	376	306	77
Kosuth	1,606,977	14	684	1,562	31
Lee	2,503,339	5	490	5,109	3
Linn	1,966,296	17	720	2,580	20
Louis	17,794	103	396	45	102
Lucas	83,737	81	432	194	78
Lyon	221,808	70	600	369	71
Madison	91,584	92	376	37	90
Mahaska	97,255	79	376	269	80
Marion	88,079	80	376	147	81
Marshall	286,351	58	376	694	54
Mills	3,221	98	445	7	96
Mitchell	1,180,683	20	480	2,251	17
Monona	61,253	85	432	142	82
Monroe	32,634	91	432	75	91
Montgomery	60,674	86	432	141	83
Muscatine	52,914	89	438	121	86
O'Brien	703,209	42	376	1,221	45
Oceola	350,627	61	438	678	53
Pago	493,417	47	528	1,146	47
Palo Alto	1,083,902	28	376	1,795	25
Plymouth	489,745	35	820	597	64
Pocahontas	383,729	62	376	605	61
Polk	3,271,425	2	576	5,679	2
Pottawattamie	295,811	64	876	338	72
Poweshiek	350,174	59	376	1,470	49
Ringgold	99	105	345	39	104
Sac	588,550	49	376	1,022	52
Scott	257,412	68	447	576	66
Shelby	431,094	56	376	1,146	57
Sioux	1,600,287	26	776	1,300	42
Story	664,621	31	576	1,560	31
Tama	377,121	50	720	710	59
Taylor	355,052	36	438	1,234	35
Union	488,402	54	432	1,130	48
Van Buren	5,590	95	302	11	95
Wapello	78,918	82	432	183	79
Warren	218	97	376	39	97
Washington	219,222	71	376	380	70
Wayne	803,960	38	438	1,321	33
Webster	601,150	48	720	836	55
Winnebago	988,737	27	408	2,424	14
Winnebiek	1,622,969	12	606	2,331	15
Woodbury	5,378,214	1	864	6,225	1
Worth	709,717	41	409	1,739	28
Wright	663,000	32	376	1,495	35
THE STATE	75,889,260		55,475	1,365	

TABLE SHOWING TOTAL NET BUTTER SHIPMENTS OF THE STATE FOR THE YEARS 1890 TO 1904, 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 or decrease from preceding year.	Decrease from preceding year.
1890	71,255,796		
1891	78,596,716		
1892	80,112,081		
1893	84,579,002		
1894	84,509,417		
1895	96,497,108	11,987,691	
1896	88,032,918	18,554,828	
1897	83,030,081	3,557,165	
1898	75,994,837		6,555,744
1899	70,620,520		744,011
1900	71,719,359		4,910,997
1901	74,862,053	3,144,695	
1902	72,714,584		2,149,411
1903	77,070,734	4,356,210	
1904	75,889,260		1,181,634

Counties shipping more than 1,000,000 pounds, net, of butter in the year ending September 30, 1904:

1904.	Counties.	1903.
3,507,214	Woodbury	6,148,916
3,271,425	Polk	2,708,086
2,850,641	Jones	2,597,892
2,600,436	Clayton	2,886,519
2,500,359	Lee	1,876,565
2,370,779	Dubuque	2,000,354
2,106,007	Bremser	1,397,979
2,032,812	Fayette	2,056,549
2,021,288	Delaware	2,492,453
1,923,804	Chickasaw	2,000,187
1,810,479	Buchanan	1,251,843
1,622,969	Winnebiek	1,811,878
1,559,732	Butler	1,555,243
1,399,736	Kosuth	1,497,022
1,361,490	Jackson	1,182,374
1,306,359	Hardin	1,068,186
1,272,864	Linn	1,260,380
1,237,289	Carroll	1,277,314
1,180,683	Alfonsa	1,251,080
1,158,909	Mitchell	1,205,493
1,080,418	Hamilton	1,049,849
1,059,002	Black Hawk	1,253,094
1,015,373	Calhoun	1,280,955
1,007,981	Howard	1,022,956
1,001,287	Sioux	1,142,703
	Totals	48,387,056

These twenty-six counties ship 60 per cent of the 75,889,260 net pounds of butter shipped from the state.

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NINETEENTH ANNUAL REPORT

OF THE

STATE DAIRY COMMISSIONER

TO THE

GOVERNOR OF THE STATE OF IOWA

FOR THE YEAR 1905

H. R. WRIGHT

STATE DAIRY COMMISSIONER

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