travel expenses of the trip were paid by the college. The writer was elected fourth vice-president and chairman of the section on apiculture.

Mr. Atkins attended the meeting of the National Beekeepers' Association held in Buffalo in March. The customary expense arrangement was made by the college for the trip.

Following is a summary of the work to November 1, 1920, as required by section 2, chapter 289, Thirty-seventh General Assembly:

Number of apiaries visited	118
Number of demonstrations held	24
Number of lectures given	43
Number of apiaries examined on request	94

OFFICERS OF THE IOWA BEEKEEPERS' ASSOCIATION FOR THE YEAR 1921,

A. F. Bonney, President	Buck Grove
J. H. Paarmann, Vice-President	Davenport
F. B. Paddock, Secretary-Treasurer	Ames

DIRECTORS

George D. Nelson	Osage
J. D. Leaman	Des Moines
Mrs. R. J. Keller	Council Bluffs

STATE OF IOWA
1919

REPORT OF THE

DAIRY AND FOOD COMMISSIONER

FOR THE

YEAR ENDING OCTOBER 31, 1919

W. B. BARNEY
STATE DAIRY AND FOOD COMMISSIONER
DES MOINES, IOWA

Published By
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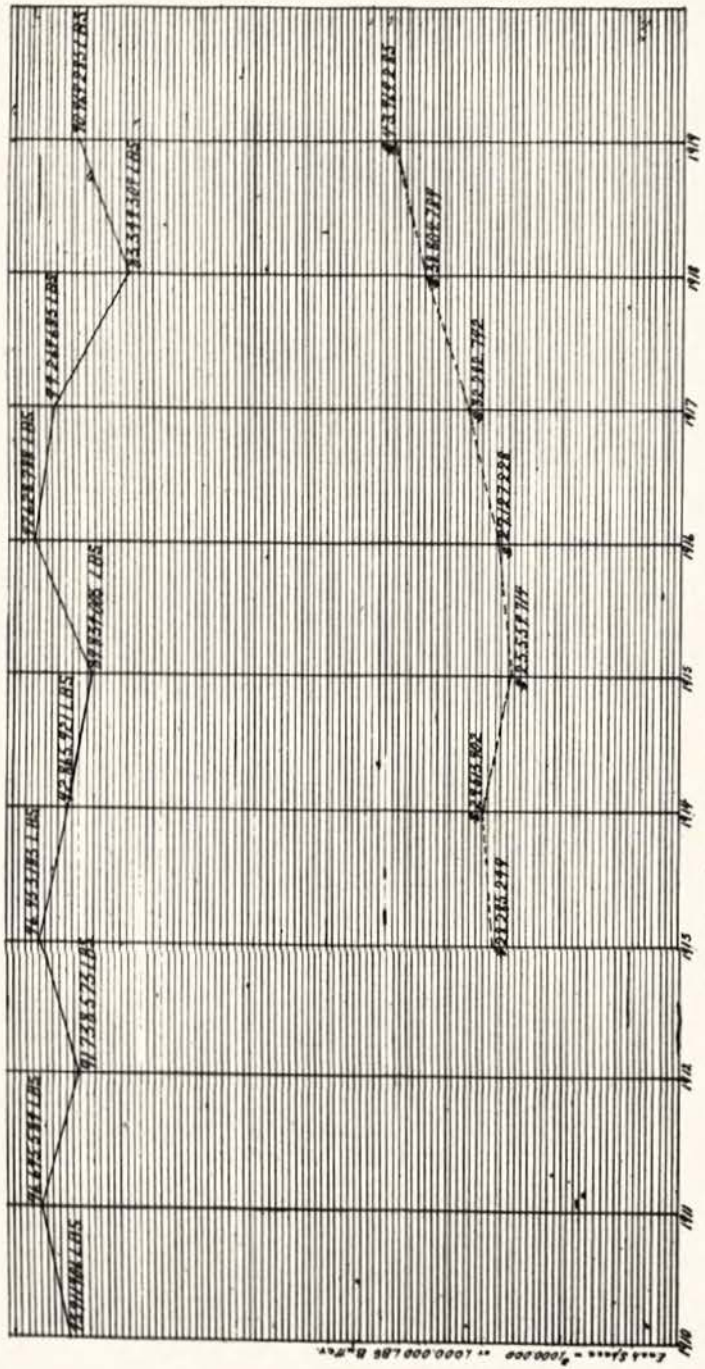


Chart Showing Production of Iowa Butter 1910 to 1919.

LETTER OF TRANSMITTAL

HON. W. L. HARDING, *Governor.*

SIR: In compliance with the law, I have the honor to submit herewith the Thirty-third Annual Report of the Dairy and Food Commissioner.

W. B. BARNEY,
Dairy and Food Commissioner.

Des Moines, November 15, 1919.

FOOD DEPARTMENT

OFFICERS AND EMPLOYES OF THE DAIRY AND

Commissioner	W. B. Barney	Des Moines
Deputy	W. A. Gordon	Des Moines
Chief Weights and Measure Insp.	C. S. Bogle	Des Moines
Assistant Commissioner	B. O. Brownlee	Atlantic
Assistant Commissioner	Guy M. Lambert	Newton
Assistant Commissioner	H. E. Ritter	Des Moines
Assistant Commissioner	R. E. Clemons	Waterloo
Assistant Commissioner	T. A. Clarke	West Bend
Assistant Commissioner	F. W. Stephenson	Oelwein
Chief Chemist	E. L. Redfern	Des Moines
Assistant Chemist	W. G. Jordan	Des Moines
Dairy Inspector	O. P. Thompson	Waterloo
Dairy and Food Inspector	L. P. Anderson	Spencer
Dairy and Food Inspector	L. P. Shaffer	Cedar Falls
Food Inspector	Chris Ottosen	Ottosen
Food Inspector	M. E. Flynn	Burlington
Food Inspector	S. O. Van De Bogart	Des Moines
Food Inspector	J. W. Milnes	Creston
Food Inspector	J. S. Bittner	Cedar Rapids
Food Inspector	J. M. Morrow	Douds
Food Inspector	E. A. Countryman	Council Bluffs
Food Inspector	H. A. Stearns	Cedar Rapids
Inspector Weights and Measures	A. B. Briggs	Ottumwa
Inspector Weights and Measures	E. J. Nolan	Des Moines
Inspector Weights and Measures	F. C. Gilmore	Atlantic
Chief Clerk	A. W. Day	Des Moines
License Clerk and Seed Analyst	R. V. Murphy	Des Moines
Stenographer	Elma Schnack	Des Moines
Stenographer	Rene Thorson	Des Moines
Stenographer	Bess McCoy	Des Moines

LAWS ENFORCED BY THE COMMISSIONER

Dairy Law	Turpentine Law
Pure Food Law	Weight and Measure Law
Agricultural Seed Law	Sanitary Law
Concentrated Feeding Stuffs Law	Cold Storage Law
Condimental Stock Food Law	Commercial Fertilizer Law
Paint and Linseed Oil Law	Calcium Carbide Law
Insecticide and Fungicide Law	Egg Law

REPORT OF COMMISSIONER

Post war conditions have affected our national life almost as acutely as did those of war times. High prices, restlessness, speculation and disturbed economic conditions, in general, have been the after-math of every great war and it is not at all surprising that they should be experienced after the greatest of all wars. As a matter of fact, the reconstruction period, to date, has not seen crises as far reaching in their effects as might have been anticipated after such a titanic struggle, involving as it did, the entire world. This country renewed its normal life with surprisingly little friction and even now, one year from the time when the whole energies of the country were absorbed in the task of making war, evidences of the shadow which overhung the world, are rapidly disappearing. The country, as a whole, has mobilized itself for peace with the same energy and determination with which it mobilized for war. The task of absorbing an army of 5,000,000 men into our economic life and changing our industry to fit the suddenly changed conditions has been a tremendous one but one which patience and the will to do right has practically succeeded in accomplishing. The task is not finished, but the most critical period has passed.

This department, has from the very nature of its work, felt keenly the stress of the times and various situations, particularly that of increased living costs, have arisen which have demanded time and attention. Because of the critical situation brought about by the stress of high prices, it was necessary for the men in the field to devote a large amount of time to various situations which arose, and this at a time when routine inspection work was heaviest. Complaints of hoarding, discrimination and like illegalities were frequent and while many of these, on the face, appeared exaggerated, if not entirely without foundation, it was necessary to trace every complaint and report to the complainant before the incident could be considered closed. In connection with this work, hundreds of establishments

were visited by the department inspectors for the purpose of obtaining information regarding the buying and selling costs of hundreds of commodities in order that some idea might be obtained as to the profits being made by merchants of the state.

An effort to equalize distribution was also made and the department was successful in putting producers and distributors in touch in a number of instances, with advantage to them not only, but to the consumer as well. I might say here that I believe that there is a big place for work of this kind and that the time has arrived when the establishment of a State Marketing Bureau would be decidedly advantageous. Even with our modern facilities for rapid transportation and the rapid dissemination of news, surprising inequalities of distribution exist, and shortages of certain commodities in one place and over abundance in others, were found to be frequent. Obviously, if some agency was created to eliminate this condition all would be benefited. Lacking such an agency, this department has attempted to exercise its functions to a certain extent and, all things considered, has been very successful. All of this work has entailed a huge amount of detailed investigation and the resources of the department have been frequently taxed.

FAIR PRICE COMMITTEE

In view of the large number of complaints being made and because of the fact that some merchants appear to be tempted by public extravagance to unduly increase their prices, I believe that the establishment of a Fair Price Committee would prove of invaluable assistance to the citizens of the state. Inasmuch as I have outlined this proposal at length in another part of the report, under the living cost investigation, I will not take it up further at this time.

The work of the department, particularly the work of the laboratory, was badly disorganized for nearly a month early last fall because of the necessity of changing our quarters. Our former quarters were torn down in accordance with the capitol extension plan, and our offices moved to their present location, on the third floor of the old Bryant school house. While the present quarters will do as a make-shift, we are badly crowded, and it is to be hoped that we will not be forced to remain longer than absolutely necessary.

The routine work of the department has greatly increased during the past year, particularly the work of scale inspection, and it appears that the number of men engaged in this work should be increased.

Of invaluable assistance were a number of important changes in the laws enforced by this department, enacted by the Thirty-eighth General Assembly. Changes were made in the food law, sanitary law, dairy law and weights and measures law. One new law, the egg law, was given to this department to enforce. These changes will be discussed elsewhere.

The same General Assembly also provided for a revision of the salaries of the employes of this department, and I am frank to say that I believe that none of the numerous changes in the laws enforced by this department were of more benefit. There had been no increases granted for a number of years. The cost of living had advanced 65 to 75 per cent. Commercial and other concerns had given their help increases somewhere near in proportion to the increased cost of living. The department lost eleven men during 1918 on account of these conditions. The plan I offered putting inspectors on a graduated basis increasing their salaries $100.00 per year, after they became familiar with the work, reaching a maximum after five years' service, was adopted by the legislature, as presented, except that they made the maximum four years. I am pleased to say that it is working out in a most satisfactory way and has helped to eliminate, to a great extent, the putting in service of inexperienced men every few months.

Another effort will be made this winter to stimulate the interest of farmers in the southern part of Iowa in dairying. The high prices which dairy products have been bringing during the past year will prove a big talking point to farmers who have been subjected to wide fluctuations in the prices of other farm produce. Then, too, the value of the dairy cow as the yielder of a cash crop is becoming more appreciated. Interest in thoroughbred dairy cattle is also increasing. This is a very hopeful sign, indeed.

If, as brought out elsewhere in this report, the production in southern Iowa can be brought up to the same basis as that of northern Iowa, the value to the state will be enormous. During

the past year conservative figures show that an income of $143,064,933.17 was returned to the state of Iowa from its dairy products alone, and since practically all of our dairying is done in the northern part of the state, it is safe to say that when southern Iowa does as much as northern Iowa, this income will be at least doubled.

One of the principal causes of uneasiness prior to the demobilization of the army was the fear that the farm boys who had entered the service, particularly those who had served abroad, would not be satisfied to return to the farm after their discharge from the army. The general sentiment expressive of this uneasiness might be considered to have been summed up in the words of the popular song, "How are you going to keep them down on the farm after they have seen Paree?" That these fears were groundless is proved by the eagerness with which the boys returned to their pre-war tasks. If accurate data could be secured, it would probably be shown that a comparatively small percentage of the boys who entered the army from the farms have not returned. Not only is this true, but I even believe that the normal drift from the farm to the city has been largely checked. Better home conditions, modern machinery and the automobile are, in my opinion, largely responsible for the willingness of the young man and young woman to remain at home. Probably no single factor has been more important in making the farm boy contented than has the automobile. It has brought the advantages of the city to his door and enabled him to escape its disadvantages. It has broadened his viewpoint and made him more appreciative of the better things of life.

The stimulation of interest in the good roads movement means that it will not be many years before the city's advantages will be accessible even to the remotest farm home. Leaving aside the value of good roads to the farmer in marketing his crop, the importance of keeping the farm boys and girls contented, can not be over-estimated.

THE SUPRESSION OF TUBERCULOSIS

In my opinion there was no act of the 38th General Assembly of more importance to the people of our great Commonwealth than the law controlling and suppressing diseases of domestic animals. In the cattle industry, Iowa admittedly, taking all

things into consideration, surpasses all other states because of the number of pure bred herds within her borders. Besides this, she stands almost alone in the production of hogs.

This measure is sure to have a great influence on the production of both cattle and hogs in the future, as it will be reasonably easy to eradicate tuberculosis in our swine when our bovine kind are free of this dread disease.

Neighboring states have enacted similar laws and profited by their foresight. I have always felt that, since the public would be benefited, it was right and reasonable that they should, in a measure, share any loss that would come to the owner of the herd. This is especially true as it applies to breeding and dairy cattle, as it is reasonable to assume that the law as it was drafted contemplated caring for this class of cattle and bringing them within its scope, and it is perfectly right that it should.

I have never thought that the dairyman or breeder should be compensated in full for reactors as that would perhaps encourage carelessness and in some instances trickery and dishonest methods.

While the state and federal indemnity is a great inducement to the cattle man to clean up, when you take the present value of cattle into consideration, it is not as large as it should be. This is especially true as it applies to the better class of registered or pure bred cattle.

After an experience of over 35 years in breeding cattle, I can draw but one conclusion; that a great share of our troubles with this disease would be eliminated by the use of clean, well lighted and well ventilated barns. I do not wish to be understood as saying that the disease can be eliminated under conditions of this kind without the use of the tuberculin test and doing away with the reactors I do feel sure, however, that the percentage of loss on the first federal and state test and tests thereafter will be much less under such conditions. It is surprising to me, that in this day and age, there are still many breeders who do not recognize the value of light and ventilation. The old filthy plank floor, poorly lighted, ill-ventilated barn, is the harbinger of disease, especially tuberculosis. There is nothing cheaper and better than sunlight. It is my opinion that the Almighty would not have supplied it in such generous quanti-

ties, had He known that the stockman and farmer had so small an appreciation of its value.

It is my judgment that it will be a difficult matter within a few years for the owner of a herd of pure bred, registered cattle to do any considerable amount of business, unless the herd is under federal supervision or in the accredited list. I feel sure that cow's milk has saved a thousand children, where one has been made to suffer by its use. The bare possibility of one child in a thousand becoming affected by its use, is a good and sufficient reason why our dairy herds should be cleaned up.

The breeder who ignores right methods and up-to-date practices is like the child playing with fire—you can't tell when either will be burned. We have had too many examples of this kind within the last year. I call to mind a breeder who was about to hold a sale. The date was fixed, and quite an amount had been spent for advertising. Just to put on the finishing touch, he called in a veterinarian and applied the test. About sixty percent of the lot reacted. No one wanted the balance, so the sale had to be declared off. Had a test been made a few years earlier the probabilities are a few reactors would have been found and if they had been taken out and a follow up test made, the percentage of loss at time of sale would have been so small as to be of no consequence.

The tuberculin test measure may really be considered as an insurance. It helps care for a part of the loss that is sustained by the breeder or owner who is unfortunate enough to get his herd infected. It encourages the young breeder to go into the industry. It says to him, "If you will do so, the state and Government jointly will stand between you and a total loss if your herd becomes infected." The older breeder who does not take advantage of the law has a rather narrow vision and in my way of thinking, will find the business unsatisfactory and not at all profitable.

Though we are a little late in taking hold of a good thing, let us show our neighbors in Minnesota and Wisconsin that we are none the less in earnest than they have been, and we will soon have in Iowa a long list of accredited herds.

Dairy Products.

As stated elsewhere, a conservative estimate of the income

received by the State from its dairy products, places the figure at $143,064,933.17, derived from the following sources:

Creamery Butter	$43,969,285.47
Ice Cream	6,600,000.00
Market Milk	27,700,000.00
Cheese	330,000.00
Farm Dairy Butter	18,000,000.00
Condensed Milk	965,647.70
Skim & Butter Milk	15,500,000.00
Fertilizer	30,000,000.00

If the campaign in southern Iowa is productive of results, a rapid increase in this total may be expected within the next few years.

In every instance except one, the figures given above show an increase over last year—the exception being farm dairy butter. I regard the decrease of revenue from this source as being a hopeful sign rather than something to be regreted. I believe that the time has come when it is far more profitable for the farmer to sell his cream to the creamery than to manufacture it into butter himself. For this reason I am pleased, rather than disappointed, to note that the tendency is to sell the cream and purchase butter from the creamery.

In this connection, I note with regret the increased use of oleomargarine among the farmers in the state. It is not my purpose at this time to give a long discussion of the merits or demerits of oleomargarine, but I do feel that the production of butter is of far more value to the state than is the manufacture of oleomargarine and I have little patience with the farmer who sells his birthright for a mess of pottage by selling his cream to the creamery and then using part of his cream check to buy oleomargarine for his own use.

One dangerous practice which we are making every effort to eliminate is the custom of a number of dairy farmers to castrate pure bred sires. Considering the prices being paid for pure bred stock, it would seem almost impossible that a practice of this kind could be indulged in, but it is unfortunately true. However, by taking prompt measures, we believe that this evil will be very shortly corrected. Paradoxical as it may seem, we have a situation wherein some farmers are castrating pure bred bulls

while others are begging to be supplied with them. The numerous educational campaigns and frequent experiments designed to prove the value of a pure bred sire at the head of the herd, are having an effect, and the demand for sires of this kind of every dairy breed has been greatly stimulated. An effort is being made to interest the various dairy breed organizations in a movement to replace grade sires, particularly those of the scrub variety, with good, pure bred stock. While it is too early to make any predictions as to the success of this plan, a large number of the more prominent breeders have displayed considerable interest in it, and I feel confident that a good working plan to bring this movement about will be formulated very soon.

Probably never before in our history has the export situation played as prominent a part in the prices of our dairy products as during the last few years. While rapid recuperation on the part of European dairy countries is looked for, the export situation has not as yet been greatly affected, and dairy products continue to clear our ports in large quantities. I would take this occassion, however, to warn the dairy manufacturers of this state against being lulled into a sense of security by the belief that present prices will continue. Despite the fact that many European dairy countries are in crying need of cattle, it is my solemn belief that foreign competition will again be met within a very short time not only on our export but on our home markets. Only by producing dairy products of a high grade can we hope to be able to compete with foreign made goods, when that time comes.

While dwelling upon this subject, I wish again to call the attention of the manufacturers of our dairy products, particularly manufacturers of creamery butter, to the fact that too little attention is being paid to our local Iowa markets. Particularly is this true of our smaller creameries. The incongruous situation of seeing butter shipped from a creamery located in one town to be sold in another, and from a creamery located in the second town to be sold in the first, is frequently encountered. Frequent conjectures as to the effect of prohibition on the sale of dairy products are heard. While no exact figures are available, reports reaching this office tend to show that the sale of dairy products, especially of ice cream and butter-milk, has

been greatly stimulated by the prohibition of alcoholic drinks.

At the present time I know of no recommendation which I could make which would be of greater importance, than that a separate dairy building be erected upon the State Fair grounds. As stated, dairying is a $140,000,000 industry in the state of Iowa. The casual visitor at the State Fair would receive the impression that it did not aggregate that many thousands. Where many industries of far less importance to the state are given ample space, the dairy industry is represented by two 10 by 12 booths and an ice cream stand. The dairy industry of Iowa should have a separate building which should be second to none in the country. Provision should be made for the manufacture and sale of dairy products upon the grounds, in view of any one who cared to watch. I feel no hesitation in saying that if these facts were brought to the attention of our legislators, no difficulty would be experienced in obtaining the representation which is due the industry.

Probably the most promising dairy movement which has taken place in the state for a long time has been the organization of the Iowa Dairy Council. This organization is designed to further the interest of the dairy industry, and while hard work was necessary to give it a proper start, its success now seems assured. The Council is certain to fill a long felt want and will prove of invaluable aid to the dairymen of the state.

CREAMERY BUTTER

Despite the fact that the number of creameries in the state has decreased from 421 to 393 active plants during the past year, the amount of creamery butter manufactured totaled 90,915,938 pounds, as compared to 83,349,309 pounds for 1918. Owing to this increase and to the high prices prevailing, the net returns to the creameries reporting this year was $43,969,285.47 as compared to $38,806,989 for last year—a gain of more than $5,000,000. Perhaps it would be more correct to add a third reason for this increase, i. e., the improvement in quality of the butter going on the markets of the country from this state. Due to several improvement campaigns carried on by this Department acting in cooperation with the Iowa State Dairy Association and the Iowa State College the quality of Iowa's creamery butter is gradually improving and before many years will have

elapsed it is my hope that a large percentage of the butter leaving this state will go on the markets grading very nearly creamery extras.

While the various improvement campaigns waged have all had their part in bringing about improvements, the campaign to bring about the installation of cream cooling tanks on the dairy farm was perhaps the most important. According to the creamery reports, the butter-maker, manager, or some other official of 141 Iowa Creameries have been working with their patrons during the past year, to have these cooling tanks installed. Of the 141 reporting, but 40 reported the number of tanks installed, and the reports of these 40 showed that 853 tanks had been purchased and were being used by patrons. That these numbers are very conservative is shown by the fact that the report of Mr. Frank L. Odell, who, with Mr. A. W. Rudnick, has been instrumental in the success of this movement, showed that last year approximately 200 creameries had been interested in the movement and that 1200 cream cooling tanks had been installed and 100 milk houses built. It is very probable, indeed, that the report of Mr. Odell and Mr. Rudnick will show a very great increase for the present year. While the greatest credit for this work is due, of course, to Mr. Odell and Mr. Rudnick for their untiring efforts, the generous interest of the Iowa Buttermakers Association and a number of commercial firms aided greatly in the success of the movement, because of the interest which they added to it by their offer of cash prizes which greatly stimulated interest in the contest.

Perhaps an example of what this movement is doing for the creamery will be of interest. According to the report of one Iowa creamery less than 10 percent of the cream received from patrons was sweet prior to the installation of the tanks. The following year, 1918, 100 cream cooling tanks were installed and the amount of sweet cream received was increased to 40 percent. This year the number of tanks installed was greatly increased and the amount of sweet cream received was likewise increased. By the end of another year this creamery hopes to have a tank on every patron's farm and firmly anticipates that when this is brought about the amount of sweet cream received will be very nearly one hundred percent. During the present year

this creamery has been receiving 3 cents per pound more for the butter manufactured from sweet cream than that made from sour cream, and by next year expects to receive a 5 cent premium on all the butter which it manufactures.

In this connection it might be well to briefly state here a few of the possibilities wherein the income received by the state through its creameries can be greatly increased. The average price of extra creamery butter for the first nine months of the present year (New York Market) was 57.49 cents. As stated, the income from the 90,915,938 pounds of butter sold by the creameries of the state for the past year was $43,969,285.47. This means, of course, that the butter manufactured by Iowa creameries did not go on the market scoring an average of extra. Had it done so, the return would have been nearly $52,300,000, the actual loss through failure to obtain this grade being slightly less than $8,300,000, if the figures given are used as a basis. Obviously, then, any movement which will tend to improve the quality of the butter going from the creameries of this state, will mean a huge increase in the amount of money coming into Iowa for its creamery butter.

There are other sources of losses which may also be well mentioned. While the majority of butter-makers of Iowa have demonstrated their capability for the work which they are doing, a few others have proved their unfitness by their carelessness and inefficiency. From a survey conducted by this department I find that failure to obtain a fair amount of over-run has cost the creameries of Iowa more than $150,000 for the year included in this report. Excessive manufacturing costs have been the cause of additional losses. In most cases where losses are being sustained, lack of knowledge or unfitness on the part of the butter-maker is apparently responsible; as a matter of fact, the underlying cause lies at the door of the creamery patron himself. He has attempted to secure the services of a man as cheaply as possible and ordinarily he is successful in his aim—he gets a "cheap" man.

This department has been attempting to demonstrate to the creamery management that "A good servant is worthy of his hire," and that low wages are not always an indication of economic management. It is not alone in their failure to secure a

good butter-maker that the creamery management is guilty of unbusiness-like methods. In several instances we have found butter-makers, whom we have known from past experience to be capable, obtaining low over-runs and manufacturing butter at excessive cost. Investigation showed that the losses sustained were due, not to the inability of the butter-maker, but to the poor equipment of the creamery. In practically every case of this kind the butter-maker had repeatedly urged the owners to install new apparatus but without success. In general the owners of these creameries have been more inclined to listen to inspectors of this department than they have been to their butter-makers and I believe that most of the conditions mentioned can be remedied during the coming year.

There have been numerous instances of the cases cited and others of a like nature, and the men of our dairy inspection staff have been called upon to attend hundreds of evening meetings of creamery boards. I am pleased to state that the inspectors have always shown a keen interest in this work and have devoted many hours to it outside of the time taken up by their regular daily work, without complaint.

In view of the interest attached to high living costs during the past year or two, it may be interesting to note the average price of creamery butter during the past few years as compared with the price of the first nine months of the present year. The prices quoted here are for creamery extras on the New York market.

1919	57.49
1918	51.58
1917	42.89
1909	28.48

Despite the increase of one hundred percent in the cost of butter, a comparison of it and other food stuffs will show that food value considered, the price is by no means exorbitant. Further, as the following table will show, the increased price of butter is justified by the increase in feed prices.

	December 1914	December 1919
Bran, per ton	$24.90	$45.50
Cottonseed meal, per ton	31.30	80.80
Corn, per bu.	.50	1.20
Oats, per bu.	.41	.64
Hay, per ton	10.10	17.40
Labor, without board	40.50	72.00
Labor, with board	30.10	55.65

Owing to the necessity of supplying sweet cream butter for the use of the Navy last year but little was done toward bringing about a wider use of the State Brand in the manufacture of creamery butter. This year, however, increased activity has been displayed and as a result several more creameries are expected to qualify for the use of the Brand this winter. A noticeable increase in the demand for this butter by buyers on the New York market has been manifested during the past three months and the price premiums offered to the creameries manufacturing it have been very liberal. This increased demand is certain to have its effects among the butter plants and should serve as an impetus to the movement.

Even though the use of the brand should not become general in this state its value cannot be over-estimated. It will not only serve to bring added prestige and high financial returns to the creameries actually using it, but bring about a keener inquiry into the merits of Iowa butter as a whole. The task involved in inducing the creameries to take up the State Brand is by no means a small one. The exacting provisions of the regulations governing its use, necessitates the use of the best quality of raw material and creamery apparatus and the employment of skilled men, and it is sometimes difficult, therefore, to convince creamery patrons to undertake the added expense which is frequently involved unless they can be assured a good return for this financial investment. Fortunately, the buyers on the market now appear willing to pay for this additional cost, and our task should not be so difficult in the future, but it is mainly to the creameries who first commenced to use this brand that the credit for this situation is due. Their courageous refusal to discontinue the use of the brand when its use apparently meant nothing in the way of financial reward, kept the project from being an ignominious failure and, if as is to be hoped, the trade-

mark ever becomes one of Iowa's big assets, it will be due in no small measure to their firm stand in continuing to recognize its value.

It has been briefly stated that there are many poorly paid butter-makers in the state, a fact to which is largely attributed the heavy losses sustained by a number of creameries. As a matter of fact, the wages paid these men is in general far too little considering the class of work they are called upon to do. For example the average monthly salary of Iowa butter-makers is a few cents less than $130. When it is considered that this includes a number of high salaried men, it is not difficult to conclude that there are far too many men receiving less than this sum, a fact which is certainly not conducive to the expenditure of any unecessary time or labor in the interest of the creamery. When the enormous increases in living costs are considered, it will be seen that many of them are hard put to eke out a mere existence.

An examination of the reports sent in by the creameries shows very plainly that great opportunities are being overlooked and that the responsibility for failure to take advantage of them lies about equally on the butter-maker and his employers. A well paid butter-maker will usually save the creamery his salary several times over while, as stated, a "cheap" butter-maker is usually cheap at any price A point which may be of interest in this connection was well brought out in the reports compiled from the creameries. In practically every instance where the butter-maker was assisting in the formation of calf clubs, cow test associations, pure bred sire movements and the installation of cream cooling tanks upon patrons' farms, it was discovered that he was receiving a salary considerably higher than the average.

That the work of the various organizations having to do with the betterment of dairy conditions in the state is beginning to bring results is shown by the fact that not only is the average production of the dairy cows in Iowa being increased but that the average number of cows per creamery patron has also increased.

In past reports I have repeatedly stated my belief that southern Iowa offered a great field for dairying. I still hold to this

belief. This year we are planning to continue work in this part of the state with increased activity and, with the assistance of the Iowa State Dairy Association, will hold a number of meetings and demonstrations in an attempt to widen Iowa's dairy field. The fact that the past year has been a very profitable one for the creameries of northern Iowa, will greatly simplify this work, and I believe that next spring and summer will see the awakening of the southern counties to the possibilities of dairying. Needless to state, the success of this movement will be a tremendous thing for Iowa for with dairying on the same plane in southern Iowa as it is in northern Iowa, the return to the state will mean something over $300,000,000 per year—a sum which will well make Iowa's famous corn crop a jealous rival.

MARKET MILK

No material change in our system of inspection of market milk has been made during the past year. A method outlined by Dr. O. P. Thompson, State Dairy Inspector, has remained in vogue, and local milk inspectors have continued to handle the work in their respective towns under his direction. Samples have been sent from the various cities from time to time to our laboratory for bacteriological analysis. Despite the fact that market milk prices are high when compared to prices existing a few yars ago, there has been comparatively little complaint. The educational campaigns conducted by this department and various dairy organizations have awakened people to the value of milk as a food and its low cost, when compared to many other food stuffs commonly appearing upon our tables. That the profits derived from milk production are not large was recently brought out by the careful compilation of a large amount of data by Prof. Erf, of Ohio. His figures show that on the average farm it costs $4.33 to produce 100 lbs. of milk and that the selling price is $4.66, leaving a profit of 33 cents per hundred pounds. It is extremely difficult to make any exact statement as to milk production costs, and the figures given do not apply, of course, to all cities, but the percentage of profit will, I think, be found fairly accurate.

Other data regarding market milk prices, which may prove of interest, will be found in another part of this report dealing with an investigation of living costs.

Considerable interest in milk as an indispensable article of diet was aroused in Des Moines as an outcome of the recent Dairy Products Campaign. The matter of increasing the amount of milk in the diet of school children was taken up by the Women's Committee of the Council of National Defense. A Milk Committee of the Council of Defense was finally formed, and through the Council, the Public Welfare Bureau agreed to furnish $500 to finance the experiment.

Franklin School was chosen for the experiment as it is located in a district fairly representative of the wage-earning class of Des Moines. The second and third grades were chosen for the experiment, the children ranging from 7 to 12 years of age. Of the 59 children who had complete records 28 were colored. The average daily attendance in the two rooms was approximately 80, but due to the shifting of families, absences, etc., during the period, there were complete records for only 59 children.

The Home Demonstration Agent made a careful survey of the families whose children were included in the experiment. The mothers were advised in regard to diet for the children and a history of the child's health in infancy, whether artificially fed or otherwise, its present diet and the general family history was secured, as well as a record of the home in relation to sanitation and general housing conditions. Among other things the survey showed that about two-thirds of the children had some milk at home with more or less regularity. The other one-third had little or no milk. An effort was made to divide the homes into three classes; fair, medium and poor on the basis of the score card presented later in this report. An accurate platform scale was purchased for weighing the children. A refrigerating tank for the bottled milk was made in the manual training department of the city schools. Straws were provided for use in serving the milk. Before the feeding was begun the children were weighed and measured and given a thorough physical examination by Dr. Fred Moore. The table of weight in relation to height and age, prepared by Dr. Thomas D. Wood, was used in determining the approach to average normal weight.

The children were given one pint of milk each school day for approximately three months. One-half pint bottle was given at the close of the morning recess and another bottle at the close of the afternoon recess. The milk was taken from the bottle with a straw. Every child in the group took the milk with evident relish in spite of the fact that many of the mothers told Miss Campbell that their children did not care for milk and had refused to drink it. At the close of three months the children were again weighed, measured, and examined by Dr. Moore, assisted by the school nurse. Of the 59 children having complete record, 54 gained weight. The average normal gain was computed from the chart furnished by the Bureau of Education.

Average Normal Boys: Of the twenty-one boys in this group, 19 gained weight. One boy gained 6 pounds and three others gained 4 pounds each. Average normal gain 1½ pounds. Average actual gain 2 1-3 pounds. Excess over normal per individual 5-6 pounds.

Minus 10 percent Boys: There were eleven boys in this group. Nine gained weight. One gained 4 pounds and four gained 3 pounds each. Average normal gain 1½ pounds. Average actual gain 2¼ pounds. Excess over normal per individual ¾ pounds.

Average Normal Girls: The nine girls in this group all gained but one. One girl gained 9 pounds, one 6 and another 4. Average normal gain 1½ pounds. Average actual gain 3½ pounds. Excess over normal per individual 2 pounds.

Minus 10 percent Girls: The eighteen girls in this group all gained weight. One gained 4 pounds and another 3½. None gained less than one pound. Average normal gain 1½ pounds. Average actual gain 1 5-6 pounds. Excess over normal individual 1-3 pound.

The failure of some children to gain was readily accounted for. One boy suffered a broken arm, some had chicken pox, others suffered from bad tonsils or nasal obstructions. The physician and nurse were agreed that the physical condition of the group was decidedly improved. All the children gained in height, some over an inch.

The teachers reported improvement in the mentality of the children, a very decided improvement being noticeable in several cases. The work in both grades improved and the application given the work of the later afternoon was greatly improved.

This department published a leaflet, "Milk, Nature's Ideal Food" and 1785 copies were distributed in Franklin school district and some adjoining territory by the Block Sergeant organization. A meeting of the mothers of the district was called for June 2. The attendance was only fair, due to heavy rain. The mothers present expressed their satisfaction with the milk feeding and announced their determination to give their children more milk in the future. Dr. Moore spoke to them on the necessity of milk in the diet, and the Home Demonstration Agent discussed methods of introducing milk in the diet by means of soups, custards, etc.

The experiment attracted considerable attention throughout the state and it is safe to say that to this one source alone can be attributed a large increase in milk consumption. I believe that the people of Iowa are now aroused to the food value of milk and that the average expenditure of money for this product will greatly increase within the next few years.

ICE CREAM

Despite the fact that the ice cream manufacturer has had many difficulties with which to contend, the past year has been on the whole a very successful one for those engaged in this branch of the dairy industry. A conservative estimate of the income received from ice cream manufacture during the past year places the figures at about $6,600,000.

Prices of every commodity entering into the manufacture of ice cream increased rapidly during the past year, and the ice cream dealer was forced to raise the price of his product accordingly. Conditions were such that manufacturers were forced to set a fairly standard price and abide by this figure in order to continue to do business. Had the old cut-throat methods of doing business prevailed, results would have been extremely serious for the industry.

The shortage of sugar has been extremely serious, and manufacturers have been forced to pay unheard of prices in order to keep supplied. Indications point to the fact that the situation next summer will be grave. The feeling is general that unless something is done to bring about a reduction of sugar prices, the ice cream industry will be greatly menaced. The action of the Federal Government in failing to take over the Cuban sugar crop early in the year, has been the cause of severe criticism by ice cream dealers.

CONDENSED MILK

The condensed milk manufacture in Iowa has been slightly under $1,000,000 the past year. Considering the heavy export demand for this article I believe that Iowa is not producing as much of this product as it should. In fact, Iowa is not producing enough condensed milk to supply its own demand. If the farmers of Southern Iowa, in particular, could be induced to go into dairying on a large scale, I believe that a large number of condensaries could be profitably started in that field. The domestic demand for condensed milk is growing larger each year, while the export demand is certain to continue heavy for a long time.

CHEESE

With the exception of northeastern Iowa, cheese manufacturing continues to be an almost negligible proposition in this state. That section, however, has seen a steady increase in output—a total of $330,000 worth of cheese being manufactured in the state during the past year. Practically all of this is produced in Allamakee County. Here, again, appears to be a good opening for farmers in southern Iowa. The manufacture of cheese does not entail a large investment and the market is unquestioned, for as is true of condensed milk, Iowa does not begin to produce milk cheese to supply its consumptive demand.

Food and Sanitary Inspection.

Because of the high cost of staple articles of food, a rigid examination on the part of our food inspectors was especially important this year. High prices compelled the housewife to buy more carefully and attempt in every possible way to keep the grocery and meat bills at a minimum. As a result, a large number of substitutes appeared on the market and this fact combined with the necessity of saving every ounce of perishable foods reaching the market, made it imperative that a thorough system of inspection be carried out.

The enactment of the Egg Law by the 38th General Assembly added to the duties of the inspectors but we believe that the results obtained fully repay any expenditure of time or labor.

During the past year the local slaughtering of beef and hogs

has greatly increased and, where conditions justified, we have encouraged the movement. It has always seemed to me to be poor economy to have Iowa meat going to Chicago to be slaughtered and dressed, and then returned to this state to be sold. Here again, however, the growth of the movement has meant a considerable expenditure of time and labor in assisting men engaging in this business to commence operations in conformity with the requirements of the Sanitary Law.

Despite the rapidly growing number of food establishments in the state, we believe that the high standard of sanitation has been maintained. Frequent inspections have been made through out the state and no insanitary condition coming to the attention of the department has been permitted to exist.

The acute sugar shortage has also absorbed considerable attention from our inspectors. Not only have substitutes appeared which required attention but numerous complaints of hoarding and profiteering were received which necessitated frequent investigations. This subject is taken up more fully elsewhere in the report.

The substitution of saccharine in place of sugar, a measure to which many housewives are being tempted to resort in these days of shortage and high sugar prices, may involve menace to the health, and its use is condemned. Saccharine is a harmful drug and should not be used in foods. It has no food value, while sugar is a very highly concentrated food. The laws of Iowa forbid the sale of foods containing saccharine as does also a Federal law. The manufacturers of this product have exploited its use as a substitute for sugar through extensive advertising and the Federal Government is prosecuting one of these firms for labeling its product as harmless and shipping it into interstate commerce.

Egg Inspection.

The Egg Law is a measure designed to regulate the traffic in eggs in such a manner as to prevent bad eggs entering the market channels and thus lower the market price of good eggs.

Early this year an egg-conference was called by representatives of the United States Department of Agriculture. This meeting was held at St. Louis and most of the Dairy and Food Commissioners from the leading egg shipping states were present. This conference drew up what is called the uniform egg bill and presented it to the legislatures of the mid-western states. This bill in an amended form has been passed in Iowa, Missouri, South Dakota and Illinois. The Iowa law differs from the uniform bill only as regards the amount of the license fee which in the uniform bill is two dollars.

Iowa is among the leading, if not the leading, state in the number of eggs produced, and the value of the egg crop. No reliable information is available showing the number of eggs produced in Iowa last year, or the value of this cash crop. However, the Iowa Census (1915) for the 1914 crop places the figure for production at 120,930,552 dozen, valued at $20,593,720. This figure for production must have been greatly exceeded during the past year During the months of March, April, May, June and July 1914, the Iowa farmer received 16 cents a dozen for his eggs while this season the farmer has averaged over 36 cents for them. Based on this 36 cent price, 120,930,552 dozen (production for 1914) would be worth $43,534,999.72.

The present high prices being received by the producer for his eggs calls to mind, by contrast, the prices received by him a few years ago. The following tabulation is of value to those interested:

AVERAGE PRICE PAID TO IOWA FARMERS FOR EGGS ON THE FIRST DAY OF EACH MONTH OF THE YEARS SHOWN

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1910	28	28	21	18	18	17	16	14	17	20	22	25
1911	26	21	14	13	14	13	12	12	14	17	20	25
1912	27	28	23	17	17	16	15	16	17	19	22	25
1913	23	20	17	15	15	16	15	14	16	19	23	29
1914	27	26	22	16	16	16	16	16	20	21	21	26
1915	28	30	22	16	17	16	15	15	16	20	23	27
1916	28	27	22	17	18	19	19	20	21	26	30	34
1917	35	36	33	25	30	31	27	28	32	34	35	39
1918	42	47	38	30	31	28	28	33	33	39	42	51
1919	56	45	30	34	37	38						

If the above table included prices for a few years previous to 1910 it would show that it has not been very long since the farmer received but eight to ten cents a dozen for this important staple. While this is all past history, these facts are interest-

ing in that they throw light upon some of the reasons for the present high prices of other food commodities.

Iowa has also a reputation for the quality of eggs produced, but there is still room for considerable improvement in our methods of handling. In commenting on these subjects, a well known Chicago buyer says, "I consider the eggs produced in Iowa where the principle feed of hens is corn, are better when originally produced than any eggs in this country, for in those sections where the hens are fed largely on wheat, barley and oats, or the Southern cotton seed meal, the eggs do not have the body and flavor that the eggs from Iowa have, for the reason given. The thing that has always been lacking has been the way eggs have been handled before leaving the state. This law of yours will certainly stimulate better handling by the farmer dealers, and more prompt shipment.

"The next great question in my mind in connection with the egg industry in your state is that there should be a greater production from the number of hens you have. This is a matter, however, that cannot be handled by legislation, but it is one of education. Most of your farmers never realize the possibilities of egg production, and usually when it is shown them they exclaim in the language of a noted cartoonist, 'I NEVER THOUGHT OF THAT.'"

Both the Food Law and the Egg Law make it a misdemeanor to sell eggs which are decomposed. The logical assumption is, therefore, that all eggs offered for sale either to egg buyers, to storage houses, or to the consumer are free from eggs which are decomposed. To one acquainted with the detail of egg grades and the demands of buyers of eggs for storage, it would seem that under the Iowa laws buying case count might be considered a good business method. There are, however, many classes of eggs, which while they cannot be considered decomposed within the meaning of the law, are not saleable except at a reduced price. Among these classes are "hatch spots," "stale eggs," "weak eggs," eggs with movable air cell, etc., and the "dirties," "under-sized eggs," "double yolks," etc., which likewise command a lower market value. These eggs must be candled out by buyers who ship to the markets consuming the bulk of Iowa eggs. Such buyers must also recandle,

grade and repack all lots of eggs bought from country merchants before they are shipped, as the large eastern receivers buy on a quality basis only. It naturally follows, that good business methods demand that buyers buy on a "loss off" basis and deductions for losses made on a basis of market value of the lots bought.

It has been fitly said: "an egg is no better than its shell." An egg with a dirty shell, no matter how good its contents is graded as a "second" or a "dirty" before being sent to market and as such commands the price of a second or dirty only. This spring there has been an excessive number of "dirties" produced and the resultant losses to producers have been heavy. With but little care and attention, proper nests can be provided; the saving in value of the eggs produced will adequately repay the producer for the small additional expense incurred incidental to producing cleaner eggs. Merchants receiving an excessive number of dirties can help secure a better market for the eggs produced in their vicinity as well as confer a favor on their patrons if they will see that the bulletins on eggs issued by the Iowa State College at Ames are widely circulated in their communities.

For the purpose of securing a wider distribution of the new egg law, and the rules and regulations issued pursuant to it they have been reprinted in this bulletin.

WHO MUST BE LICENSED?

The law requires the following classes of dealers to take out egg dealers' licenses:

1. All merchants, hucksters and others buying eggs from producers unless such producers are also licensed egg dealers.
2. All dealers, regardless of the nature of their business, who sell eggs in quantities in excess of one case at a time.

The following are not required to take out a license.

1. Merchants who buy all their eggs from licensed dealers and who do not sell in lots greater than one case.
2. Farmers and other producers of eggs who do not sell or trade in eggs other than those produced by them or their tenants.
3. Bakeries, restaurants, etc., buying eggs for their consumption only are not classed as engaged in the business of

dealing in eggs and are, therefore, not required to secure a license to buy the eggs consumed by them.

The licenses now being issued expire March 1, 1920, at which time a new license must be taken out. A suitable blank for applying for the license will be sent to each dealer having a license expiring on that date, before it expires.

EGG CANDLING

There is only one method for distinguishing good eggs from bad ones or which can be used for the purpose of grading eggs, and the method is candling. Numerous candling devices have been invented and sold but none but the single hole candle operated in a darkened room has proven satisfactory as regard accuracy of candling.

An egg must be turned before the light before the character of its contents can be determined. For this reason candling devices designed for handling more than one egg at a time can not be used for accurately distinguishing good eggs from those the purchase and sale of which is prohibited under the egg law. Owing to the fact that there were numerous multiple hole candlers, such as the "three dozen candler," etc., in use at the time the egg law went into effect, it was considered that notice should be given before the use of these candling devices be prohibited. For this reason multiple hole candlers have been approved for use this year under certain conditions.

RULES AND REGULATIONS GOVERNING ISSUANCE OF LICENSE

1. After May 25th, it is necessary that all dealers engaged in the business of buying, selling, dealing in or trading in eggs, except those retailers who buy direct from dealers having an Iowa license and who do not sell in lots greater than one case, obtain an egg dealer's license.

2. The license fee is $1.00 for the period ending March 1st each year.

3. A separate license must be obtained for each place of business where eggs are bought.

4. Each license is numbered and numbers are usually assigned in the same order as applications are received.

5. Farmers and other producers of eggs are not required to secure a license for the purpose of selling or trading in eggs produced by them.

6. Buying, selling, dealing in or trading in eggs in violation of the egg law, by any person, firm or corporation is an offense and renders the offender subject to a fine of not less than $10.00 nor more than $50.00.

RULES AND REGULATIONS GOVERNING LICENSED EGG DEALERS

1. The first licensed buyer of eggs (the huckster, the local retail merchant, or others) shall candle every lot of eggs that he buys (this should be done before settlement is made).

2. The licensee shall discard all eggs known as "addled," "moldy," "black-rots," "white-rots," "blood rings," "adherent yolks," eggs with bloody or green whites, eggs incubated beyond "blood ring" stage and all other eggs commonly classed as inedible.

3. The licensee shall pay only for good, edible eggs.

4. The licensee shall return to the producer, if requested or if possible, the "rejects" for the producer's own examination.

5. The good eggs shall be kept in a cool, dry place until sold or shipped.

6. Eggs should be shipped to cold storage within forty-eight hours. If held longer than forty-eight hours they must be recandled before shipping unless they are kept at a temperature of less than sixty degrees Fahrenheit. If kept at a temperature of from forty to sixty they must be recandled if held more than seven days. If kept below forty degrees no recandling is necessary.

7. Eggs known as "large hatch spots," "heavily shrunken eggs," "settled yolks," and "leaking eggs," are fit for consumption but will not stand transportation. They should be used only by the home community.

8. All "checks" and "cracks" shell eggs should be shipped in cases stenciled that they contain crack or check shell eggs.

9. All receivers of eggs should use care and intelligence in handling them, always keeping in mind that it is a waste of eggs, fillers, flats, and valuable transportation space to ship "rejects" or other eggs of doubtful character.

10. "Rejects" shall not be sold for human consumption.

11. Eggs unfit for food must not be held in possession unless they are broken into a suitable container and denatured so they cannot be used for human food.

The following denaturants are approved for general use; carbolic acid, creosote and crude oil.

Special denaturants for special purposes shall not be used unless approved by this office.

12. Dirty eggs and washed eggs should be used where produced. They must not be accepted except at a reduction in price equivalent to their market value.

13. All merchants, dealers and hucksters shall after candling eggs place on the top layer of every case of candled eggs a certificate stating the date of candling, by whom candled, and license number of licensee. This certificate shall be of the following form: (Note—this form should not be smaller than 2⅝ by 4¼ inches).

> This case of eggs is packed and candled in compliance with the Iowa Egg Law and regulations provided for therein.
>
> Candled .... by ....
> DATE NAME OF CANDLER
>
> Iowa Egg License Number.....
>
> HENERY PRODUCE CO.
> Nester, Iowa.

Weights and Measures.

The special and routine work of the Weights and Measures department continues to constitute a large portion of our work. I have found it necessary to assign the entire time of three men to the duties of heavy scale inspection and to use such time of our Food and Dairy inspectors as they could spare to the inspection of counter and cream scales in retail establishments and cream stations. With the prevailing high prices for all commodities, the necessity of accurate scales and weights is apparent. Demands from grain and stock buyers, farmers, and merchants for emergency and periodical inspection of their scales have been exceedingly heavy. Mine owners and miners have also made frequent demands for this work. Dealers, consumers and workmen have all learned to have confidence in the accuracy of the scales approved by this department, and insist on frequent inspection to insure fair dealing. The department is also called upon to make a large number of special trips for inspections for which private companies are willing to defray the expense.

As competition has grown keener and prices have risen higher, the number of requests for scale inspections has doubled and trebled. The department, with the number of inspectors at its disposal, has been unable to answer requests as promptly as should be done. There is also a great deal of correspondence resulting from daily reports of inspectors, shortage reports from various sources, warning reports, requests for scale inspection, prosecutions, complaints and reports of similar nature, which demand a large amount of attention from the Chief Inspector of Weights and Measures.

The department has nothing but the highest praise for its employes for their earnest, conscientious and efficient efforts. They have put in many hours outside of their regular time without complaint. They have been compelled to work long hours because of the fact that the force has been inadequate to handle the material increase which has taken place from year to year.

During the year ending November 1, 1919, the department inspected 2,850 "heavy" scales, that is, scales used by grain elevators, coal mines, retail coal dealers, railroad stock scales, etc. The revenue received by the State for the inspection of these scales amounted to $8,549.45. The average charge for the inspection of wagon scales is $3.00. The revenue received by the state for scale licenses is $4,821. Of the number of scales inspected, 407 have been condemned for repairs; more than 350 were adjusted or their operators were instructed to make changes that would render them accurate.

Since the Law became operative, hundreds of scales and measures of various types have been confiscated and condemned. The use of the auto truck has been the cause of many new wagon scales being installed as the capacity and construction of a great many scales is such that they are too light for the loads which are now being hauled. The department records show that there has been 5,000 platform scales, 10,219 counter scales, 3,760 creamery scales inspected. These items do not include the number of weights submitted by cities, firms and individuals for verification as to their accuracy.

IMPORTANCE OF WORK

The Weights and Measures departments throughout the United States, during the period of the world war, put forth every effort to do their bit, by checking more closely than ever before the weights and measures of the thousands of commodities so sold. The prices of commodities since the close of the war have soared even higher and hence it is necessary to increase our activities. Few people realize the importance and wide scope of the Weight and Measure inspector's field. Iowa's billion dollar crop must be weighed. Her thousands of cattle, hogs, and sheep must all be driven over the scales before being sent in to the market. The dairy and poultry products, garden truck, orchard crops, wool and the numerous other such products of Iowa are sold by the pound. Seven million tons or more of coal, and thousands of tons of gypsum rock mined in Iowa are weighed over scales whose accuracy is determined by the State Weight and Measure Inspectors, and still we have not mentioned the many millions of dollars worth of groceries and dry goods purchased by Iowa citizens annually, nearly all of which are sold by weight or measure.

High prices have resulted in a noticeable tendency toward short weighing on the part of a number of dishonest merchants. The fact that selling 15 ounces to the pound has proved a profitable source of income at present prices, was too big a temptation for some merchants to with-stand. This department has attempted to impress upon the housewife and the public in general the necessity of buying by weight. The necessity of being especially careful in purchasing from street venders has been impressed upon the consuming public, but despite all of our efforts,

frequent cases of short weights continue to appear. To carry on this work effectively, more men should be added to our force. A common source of dishonest practice on the part of some merchants, generally considered reputable, was found to be the advertising of a certain commodity at an unusually low price and then making up the difference by short weighing on this particular commodity. In every instance where short weighing was found to be in vogue, the department inspectors were instructed to prosecute relentlessly, heavy fines usually resulting.

One important phase of this work which is necessarily neglected because of an insufficiently large force of inspectors is the work of cream scale inspection. With butter fat selling at its present high figures, it is easy to see that a faulty scale can mean considerable financial loss to either the buyer or the seller. This work, as stated, has been greatly neglected inasmuch as we have been forced to depend upon our Dairy and Food inspectors to make these inspections in addition to their routine work—something which they really have not time to do.

The department has done some work in checking gasoline pumps and measuring devices and we have recently purchased a practical standard for this purpose with the result that during the coming year we will make a thorough survey of these pumps. Our investigations show that a considerable number of these pumps are inaccurate and we feel that, in the interest of the consumer, more attention should be given to this part of the work.

Feeding Stuffs.

Medicated stock foods appeared in the state this year in larger numbers and greater quantities than ever before. The department has been called upon to analyze a large number of these preparations for feeders throughout the state. In many instances, complaint was made that the stock food either caused the animals (usually hogs) to become sick or, in some cases actually killed them. A remarkable similarity in the composition of these preparations was found, and we are unable to tell the exact cause of the trouble from the information furnished. However, we doubt the advisability of promiscuous medication of farm animals.

In the past Iowa stock and hog raisers have been exploited by manufacturers of inferior and frequently worthless medicinal stock food. However, with the changes in the laws which we hope to see adopted very soon, we believe that the situation can be effectively curbed.

Good authorities tell us that six and eight-tenths pounds of corn fed to a good beef steer will produce one pound of live weight worth 16 cents.

This same feed or its equivalent in cost will produce a pound of butterfat worth 60 cents when fed to a good dairy cow.

You must sell the steer before you get the 16 cents and you have nothing left. After receiving 60 cents for the butterfat you have the cow left to go on and produce her like and continue to act as a source of income.

The difference between the price that the steer returns for the feed and what is received for the butterfat is 44 cents. We think this fair compensation for your labor.

LIVING COST INVESTIGATION

By your direction, I started late last summer to make an inquiry into cost of commodities in common usage with a view of attempting to fix the responsibility for the high prices which have been prevailing for some time past.

With this end in view I formulated a series of questionnaires asking the buying and selling prices of a large number of articles commonly utilized by residents of this state, and distributed several hundred of them to the department inspectors. Independent investigations were also conducted by the Deputy Commissioner, the Chief Inspector of Weights and Measures and myself, at the same time.

The facts contained in the returned questionnaires were carefully tabulated and compared with a large amount of other data which had been collected. Where evidences of unusual or unfair profits were apparent, the matter was taken up with the responsible merchants. The fact that he was aware that he was under surveillance usually sufficed to cause the merchant to revise his prices.

In considering the situation it was found that there were a number of reasons entering in to bring it about.

1st. The drain on the resources of the world by a long period of under production due to war conditions.

2nd. The extravagance of the public.

3rd. Too wide a spread between the price received by the producer and that by the consumer.

(a) High cost of doing business.
(b) Cumbersome methods of marketing and delivering.
(c) Profiteering.
(d) Speculation.

Regarding the first point, little need be said. Everyone, of course, realizes that with war as the world's industry for practically four years and a half, there was a great decrease in the amount of energy devoted to the production of things which we require as civilians, and that whatever surplus existed in these

commodities, would soon be exhausted. Such, indeed, has been the case, and we ended the war with an acute shortage staring us in the face.

Things will never be as cheap as they were before the war; to make them so, the cost of all raw materials must come down, and labor must prepare itself to receive lower wages. Most of the relief to be secured will come from the education of the public, the rest from legislation.

In conducting this investigation an attempt was made to avoid the mistake of starting it with too much publicity and too many promises, for we of the department realized that too many investigations of like nature had started as thunderous sounds and ended as faint hollow echoes, while a patient public waited in vain for results. We knew from the beginning that our laws as they stand at present are inadequate to bring about any great relief through legal measures, and we determined that this investigation should be more in the nature of an attempt to obtain a fair knowledge of the underlying causes of the present high level of prices and to make some recommendations for the alleviation of the evil rather than to defeat the very purpose for which the investigation was started by the recommendation of unsound, uneconomic laws. For this reason an attempt was made to obtain a clear understanding of the problems confronting not only the consumer, but the producer and distributor as well.

Realizing that the merchants selling prices depended not alone upon the price which he had to pay for his merchandise, but upon certain other factors entering into their scale as well, we attempted to make as good an estimate of these factors as our limited resources and the nature of the work would permit. Chief of these factors in importance are the cost of doing business and the "turnover," the latter being, in reality, a mere subdivision of the former, but treated during our investigation as a separate factor for a special purpose which will be apparent later. But whether taken separately or as one factor, their part in the consumer's buying cost is, of course, highly important.

The consumer who sees an article priced at a certain sum at one store and then discovers that the same article can be obtained at a considerably lower price at another store, is apt

to jump to the conclusion that the first merchant is profiteering, unless he or she stops to consider the difference in the cost of doing business between the two. It is, of course, easy to see that the merchant who conducts an elaborate establishment, gives elaborate selling and delivery service, and does his business on a credit basis must, of necessity, obtain more for his goods than the merchant whose establishment is simply appointed, who does business on a cash basis and who makes no deliveries—who, in other words, operates on a "cash and carry" basis.

That there is a great difference in the cost of doing business, may be seen from the following brief summary of an investigation conducted in one Iowa city.

Figures from thirty merchants, (grocers and butchers), doing an aggregate business of $589,448—an average of $19,981.60 were compiled. The average cost of doing business was 18.26 percent the lowest 6.82 percent, and the highest 35.9 percent. Obviously, if the merchant whose "cost" was lowest and the one whose "cost" was highest were handling the same kind and quality of goods, the patrons of the second merchant were paying extra for something, this "something" is this, as in most similar cases, being elaborate service.

There is a place for elaborately appointed stores and expensive service in our economic life or they would cease to exist. There is no reason why these shops should not be patronized if the consumer is willing to pay the price and feels that he is justified in so doing. The point is this:—extravagance is a relative matter; what may be extravagance for one man may not be for another. Obviously, the purchase of a $5,000 automobile would not be a source of serious inconvenience to a man with an income of ten times that amount, but for a man with an income of $2,500, it would be the height of folly. The same thing holds in the purchase of clothing and other commodities. The wife of a man in only moderate circumstances is doing herself and her family a great injustice by attempting to vie with the wife of a wealthy man, in making purchases. Unfortunately, there appears to be a strong tendency toward this very thing, and this competition is encountered in all strata of our social system.

Labor for the most part, is receiving more money than ever before, but it is also spending more—and this increased expenditure does not appear to be entirely a matter of increased living costs. The wives of laboring men are spending money freely for things which they, themselves, would have considered undreamed of luxuries a few years ago. It is not my desire to appear to favor any lowering of the standard of living in the country. I fully believe that the working man is entitled to a good living and a decent amount of recreation, but I believe just as firmly that the amount he or anyone else spends for his living and this recreation, should be in accordance with the income he now receives and may reasonably expect to continue to receive. In other words, I believe that before any man should raise a cry against high prices, he should make an examination of his income and out-go. If an addition of $10 a week to his wage means to him only an additional $10 to be spent for the theatre, motion picture show, clothing, etc., he has little cause to protest against the "high cost of living" when just such procedures as this is one of the important contributing factors to increased living costs. I firmly believe that if every wage earner would keep a careful record of his expenditures he would be disagreeably surprised at the large amount of money he is spending for things other than necessities—and at the comparatively small percentage of his salary he is saving .

I do not condone high prices nor do I wish to intimate that all of the financial difficulties which the wage earner is today encountering are matters over which he has control, but, as stated, I do believe that we are now witnessing a time when extravagance is running riot. That money is being spent freely for articles which border perilously near the line of the non-essential is evidenced by the flourishing business being done by fashionable shops for women, (and men), jewelry stores, and food dealers handling expensive delicacies, to say nothing of motion picture theatres, de luxe restaurants, etc., and a surprisingly large share of the money being spent in these establishments is being spent by people who work on a per diem basis.

Old time practices of economy will be a big factor in relieving the situation. The empty garbage can in the city, and the

empty swill pail on the farm helped win the war, and they will both help in the battle of the high cost of living. As long as we indulge in our present extravagant tastes, it ill-behooves us to wail about high costs. The wearing of half-soled shoes and patched or threadbare clothes should not be considered a disgrace. But the casting aside of half worn clothes is not the only foolish thing we do; we buy the most expensive things we can find to replace them. Brown or chocolate colored shoes cost about $1.50 more per pair than black shoes of the same make, materials and workmanship. How many pairs of black shoes do we see people wearing today? Two suits equal in quality of material and workmanship, vary from $5 to $10, and more in price and yet people pay the higher price for the privilege of buying in a "smart" place—and must pay for the higher overhead charges. And these are but few of many similar instances.

Just as long as the buying public insists on giving merchants to understand that they want nothing but the best and highest priced wares and goods; just as long as they will take on credit or pay for any foolish little fancy luxury which attracts their eyes; just as long as they continue to refuse to consider the prices asked for goods, will high prices continue. The merchant is keenly responsive to the pulse of public buying; if the fever of buying expensive luxuries is epidemic it is not difficult to understand why he would increase prices. The larger responsibility rests upon the buying public; if people would refuse to buy, prices would soon drop. The attitude of many merchants was well expressed in a recent cartoon when a representative of this class is made to say: "Profiteer? Of course I'm a profiteer. I've never seen so many boobs who are trying to get rid of their money. We can't mark up prices fast enough to keep them from buying. The more expensive an article is, the more determined they are to buy it. If they want to throw their money away, that's their business; we can't turn 'em out of the store."

It would be amusing if it were not so serious to hear men or women, every time two or more get together, rant and rave of high costs, "grafting," "profiteering," "crooked officials," "inefficient public servants," etc., and to listen to their furious demand that "the government do something to put a stop to

it." The fact that these women were setting a furious pace in their attempt to out strip each other for the honors of being the best dressed, the fact that they were buying $12.00 silk shirts and $45.00 to $75.00 leather coats for their 13 year old boys, the fact that 15 year old daughter has not worn a pair of stockings other than silk to school for the past three years, never seem to occur to them as having any bearing on the high costs at which they so vehemently protest. And father, probably following son's example, buys $3 or $5 neckwear when he could get a neat tie, which would serve his purpose just as well, for 85 cents if he would step around the corner to another store. If one were to call the attention of these people to the fact that they were not a little responsible for present inflated values, they would probably answer that this expenditure was necessary to "maintain one's social position." This is the root of one of the chief reasons for this present orgy of buying—a desire to "Keep up with the Jones." Mother must not be outclassed by "Mrs. Smith;" son must have expensive "nobby clothes" like all the other fellers;" daughter must wear silk stockings because wool or cotton stockings "look frightful, and Sadie Smith or none of the other girls wear anything but silk, and even Stella Brown whose father drives a coal wagon, wears them;" and father feels that his business success warrants purchasing clothes in keeping with "his position." You meet it in every stratum of our social life, this desire to out-do the other; even those who realize the foolish extravagance of it all have not the moral courage to combat the movement, but continue to "put up a bluff." Verily, it is a case of too much front and too little backbone.

To the wide extension of credit on the part of merchants no small share of the blame is due. It is this granting of credit which enables the stenographer who earns $14 a week to wear two or three hundred dollar fur coats, $16 shoes and $3 to $5 silk stockings.

Only a few people appear to understand that every article manufactured and sold has only a certain set value to the consumer or user. Any mark above this value is inflated, and comes to the tradesman only when a buying public grows reckless and pays any price asked. Unfortunately, in general, it is only people who can best afford to pay, who appear to understand this fact. It is not the wealthy families who are spending money freely; it is mainly people who have but recently tasted comparative prosperity.

For example, there is a banker in northern Iowa who, in the course of a recent conversation, said that his wife had refused to pay $25 for a hat at the local millinery store. Imagine her surprise when a week later her maid of all work, who received $8 a week, arrived at the house one afternoon with the $25 hat. The banker's wife had bought an $8 hat, feeling that the $25 hat was too expensive. This banker can write a check for $100,000 any day. However, his wife's maid is the only one who can afford a $25 hat in his house. The banker's wife knows that a hat is worth just so much to her, and no more. The maid has yet to learn that lesson.

Another woman called me on the telephone recently and said that she was the victim of a profiteer. I asked her what she had purchased, and where. She told me she had purchased a silk shirt for $12 and that now the shirt was at her house, and she had inspected it, she felt that she was a profiteer victim. I asked her if she had priced other shirts in the store in question, and if any were lower in price. She said "yes" to both questions. I asked if the shirt was for her husband. She said, "no, it is for my boy, he's 13." And we talk of the high cost of living.

Scarcely a man or woman buys clothes today without complaining of their cost, yet, if a casual observer would take note of their purchases, he would discover that, in many cases, they will not even consider low priced merchandise.

The insistence of the public upon cloth made from fine wools is a large factor in the high prices of clothing, according to William M. Wood, president of the American Woolen Company, as related by the daily press. "If our people would consent," was his conclusion, "to wear good, substantial, durable clothes made of the coarser wools, clothing could be purchased at considerably lower prices than those which now prevail."

His statement in part follows: "It is generally thought that the cost of cloth is the controlling factor in the cost of clothing, but the fact is that the cloth cost is less than half the cost of the completed suit, and other factors contribute quite as much to the price of clothing.

"In the last five years the price of cloth in the ordinary suit of clothes has advanced no more, indeed has advanced a little less, than the cost of labor and other materials that go into the making of the suit. The following figures show this, which I have from a manufacturer and merchant of clothing of the highest prominence in Boston.

"The cost of the cloth in 1919 for a suit of clothes of a particular grade is $13.67. The corresponding cost in 1914 was $4.58, showing an increase in the cost of cloth of $9.09. The 1919 cost of making this suit is $14.47. The corresponding cost in 1914 was $4.98, showing an increase in the cost of making of $9.49.

"These figures show that cloth contributes slightly less than labor and other materials to the increased cost of clothing. Therefore, to your question why prices of clothing continue so high thru-out the country, the reply is because the cost of labor and cloth and other materials that go into clothing continue so high."

After pointing out that there is a shortage of cloth and clothing in the markets of the world, which "always means high prices," and that "almost every material and every process involved in the manufacture of clothing" has to pay a heavy tax, both state and federal, Mr. Wood continued:

"In a measure during the war, and to a greater extent since, there has developed a curiously insistent demand for cloth made from the finer and more expensive wools. People will no longer buy cloth made of the coarser and consequently cheaper grades, although clothing made from these wools is both serviceable and sound.

"Before the war, the demand for these finer grades of cloth was chiefly—indeed almost exclusively—from the more fastidious in taste, but now everybody demands the finer cloths and nobody will take anything else.

"We recently made up a sample of cloth in which coarse wool was used in the warp only. The appearance of the sample was but slightly different from that made of finer wools. It had in a marked degree, the smooth, soft texture of fine wool.

"Its cost was considerably less than the fabric made of the finer grades. As a cloth it was good, strong and serviceable. Before the war it would have sold readily, but we were absolutely unable to put it on the market. Our selling agencies told us that there was no demand for it; people would not buy it; that customers insisted on fine, smooth, soft fabrics and that, accordingly, the manufacturers of clothing would not buy this cloth if we made it up in quantity, because they could not sell clothes made from it."

"To our suggestion that when people were complaining of so high prices this cloth that would make a difference of $5 in the cost of a suit, ought to sell readily, the reply was that $5 in the cost of the cloth for a suit of clothes did not count at all these days; that the people demanded the best and would put up with no other.

"Nor is this all. While during the war the supply of coarse wools has remained about stationary, there is now a shortage in the world's supply of finer wools of about 200,000,000 pounds.

The action of our own government has still further contributed to keep prices up. "During the war, agents of our government purchased from the British Government some 100,000,000 pounds of Australian wool. When the armistice came they released or transferred two-thirds of this wool back to the British Government. The one-third which our government held they offered only in limited quantities, the keen competition for which carried it to tremendously high prices. Recently the government sold some of this wool in Boston at $2.75 a pound.

"I am not criticising government officials. They doubtless felt justified both in returning this fine wool to England and in getting the highest price possible for the wools they have on hand. They are selling these wools at prices far in excess of what they paid and therefore making a profit for the government—which I assume they think highly creditable to themselves.

"But when you put the question, why do our people have to pay such high prices for fine clothing which they insist on having, you must not forget that one of the reasons for it is that the government is holding the wool which it bought at war prices for a profit."

But the complaints heard against the high prices of wearing apparel are as nothing compared to the dissatisfaction created by food prices. While there are some instances where prices of certain food products appear to be unwarranted, in general

much of the criticism is unjust. Food is dear because it is scarce; there is a world shortage. The war in Europe reduced the production of farm products to such an extent that it is doubtful if European countries will be able to supply their own needs for another year at least. In other words, a large percentage of the normal supply of this country is being diverted from domestic to foreign consumption. While the supply of food in this country has been somewhat increased, this increase by no means equals the normal production of the world. Prices in this country, then are simply following a law of supply and demand. The demand greatly exceeds the supply with the logical result that bidding for the visible supply is keen and to the highest bidder goes the product.

One danger in conducting investigations of living costs is the likelihood that unfairness will be shown towards the producer of food stuffs—in other words, the farmer. The idea is prevalent in this country that the average farmer has amassed a fortune during the past few years. The relating of exaggerated incidents wherein the farmer has profited, the oft-repeated statement that "the farmer is the only independent man in the world," combined with the high market value of his products, suffice to place him in the profiteering class in popular imagination. I hold no brief for the farmer. I believe that the intelligent, industrious farmer of today is prosperous and that he neither asks nor deserves maudlin sympathy, but I do believe that many of the charges made against him are decidedly unjust. His income is the result of his own intelligent effort and hard work. Where he has acquired wealth, it is mainly due to increased land values, and not to enormous profits derived from the sale of his products.

If a survey of commodities in common usage was to be made, I have no doubt but that it would be found that in practically every instance the profits of the producer and distributor of food stuffs would show a considerably smaller percentage than that received by manufacturers and merchants dealing with other commodities. Nevertheless, consumers who pay large sums for manufactured commodities yielding large profits, protest bitterly against an article of food which, although high priced it is true, is sold on a comparatively small margin of profit.

The point is this: Prices of food are high but in general they are high because everything entering into their production, distribution and sale are high and the margin of profit is usually small when compared to manufactured goods. In the latter case, although materials may be high, the corresponding costs are usually increased to a far greater extent than is true of food products.

During the month of December, 1919, the price of eggs soared to an unprecedented figure. Immediately a clamor arose which left no doubt as to the attitude of the housewife toward the producer and distributor of this product. Yet the answer to the question as to why eggs were high is not difficult to find. Hens were not producing eggs at that time and, compared to the demand, fresh eggs simply did not exist. The cold storage variety was also high, and since the government storage reports showed holdings of forty percent more eggs on September 1st, 1919, than on the same date the previous year, criticism was bitter. We have made a conscientious endeavor to secure the best information possible regarding the storage situation. Dealers on the New York Market and trade papers interested in this product, were unanimous in expressing their belief that a large proportion of the excess supply was the property of foreign merchants who were simply holding the eggs here because of a lack of shipping space and cold storage facilities abroad. These statements appear to be substantiated by the rapid movement from storage which followed the release of a large amount of ocean tonnage for commercial purposes by American and European army transportation authorities.

The price of butter has also been a source of complaint. Apparently users of butter believe that the farmer is making enormous profits from its sale. Yet, we have thousands of farmers threatening to sell their cows because they find butter unprofitable. Neither statement is true. Dairying is a profitable type of agriculture, but to make it profitable, skill, hard work and intelligent thought are necessary, and, even then, the profits do not compare with that of the manufacturer of many articles of common usage. Everything which goes into the manufacture of butter is high. Labor is hard to obtain at any price. Equipment costs have increased enormously during the last four years.

Europe is conducting a campaign to purchase 300,000 dairy cows in this country, and this and other factors have made dairy animals, even poor ones, expensive. The part played by the increased cost of feeding stuffs in high prices, may be illustrated by the following comparison of feed prices in 1919 with those of 1914.

	December 1914.	December 1919.
Bran per ton	$24.90	$45.50
Cottonseed meal, per ton	31.30	80.80
Corn, per bu.	.50	1.20
Oats, per bu.	.41	.64
Hay, per ton	10.10	17.40
Labor, with board	30.10	55.65
Labor, without board	40.50	72.00

Milk, too, is generally considered too high priced. Compared to a few years ago milk is high at the present time, but instead of complaining about the present prices, the consumer should remember that for many years he has been purchasing milk at far less than the cost of production. Few farmers find the sale of milk profitable even today, as the following table will show the price he receives per hundred pounds is low.

City	Distribution pays Producer	Wt. by Weight or Measure	Pd. on Fat%	Retail Price	% Below	Price	% Above	Price	% Bulk Milk Sold	Are Products Organized
Waterloo	3.25	Weight	Yes	14¢	10	12&13¢	30	15 to 20	5	Yes
Des Moines	3.50	Weight	Yes	15¢	..	...	2	17 to 25	..	Yes
Davenport	28 to 32	Measure	No	14¢	5	12¢	10	16 to 20	..	Yes
Dubuque	3.50	Weight	Yes	13¢	10	10¢	..	..	10	No
Sioux City	4.00	Both	Yes	15¢	1	...	..	..	15	Yes
Cedar Rapids	3.60	Weight	Yes	14¢	30	10¢	2	15	10	Yes
Burlington	3.00	Weight	Yes	12½¢	10	10¢	..	..	30	No
Keokuk	4.00	Weight	No	15¢	..	...	..	..	5	No
Council Bluffs	2.75	Measure	No	15¢	5	13¢	..	..	..	No
Ottumwa	2.90	Weight	Yes	13¢	..	...	..	..	small	No
Marshalltown	....	Weight	Yes	12¢	..	...	..	..	33	No
Mason City	3.25	Weight	Yes	...	..	...	..	..	none	Yes
Iowa City	28 to 50	Weight	Both	12½&15¢	..	...	..	..	.	No
Muscatine	3.75	Measure	No	15¢	..	...	..	..	5	No

The prices mentioned in the foregoing table were those in effect August 5, 1919. Apparently there is a great spread existing between the price paid producer and that paid by the consumer. It must be remembered, however, that for a good part of the year the price paid by the distributor is considerably higher than on the date mentioned, while the retail price remains fairly constant. Then too, the expenses of the distributor are very high per unit; the cost of collection, transportation, pasteurization, bottling and distribution is high. Milk is a highly perishable product and the risks incurred, particularly in the summer, are great. I cannot conscientiously make any criticism of present milk prices, particularly in view of the fact that from a standpoint of food value, milk is far cheaper than a large number of other staples, even at the high prices being paid for it in this state.

The shortage of sugar also has been the source of constant annoyance to both the housewife and the manufacturer of products in which sugar is used. Here are a few facts concerning this situation:

The United States Food Administration has had a sugar adjunct known as the United States Sugar Equalization Board. This board, under the authorities of the United States government, and jointly with representatives of France, England and Italy, was formed for the purpose of handling the sugar productions of Cuba, Porto Rico, the Islands of the West Indies, the Philippine Islands, Hawaii Islands, the Island of Java. From these sources comes practically all of the world's supply of sugar. The price of raw sugar is regulated: so is the price of raw sugar to wholesalers also standardized at nine cents per pound, and not subject to fluctuation. Wholesale grocers must pay their own freight; they are regulated so that their profit cannot exceed 35 cents per cwt., plus 15 cents for handling. The President of the Board has made the statement that a gross profit of 68 cents per cwt., would be the maximum amount that any jobber could take without liability of prosecution.

Furthermore, the sugar bins of the country have been entirely empty. The consumers have been without an appreciable quantity; the retailers have been buying from hand to mouth, and the wholesale grocers could not force sales as it

was generally understood that the speculative feature of this commodity had been eliminated. What is the consequence? That practically all of the sugar was held in stock by wholesale grocers, who were unable to move any quantity of it until the demand caused by a good sized crop was upon us.

Speculators in large centers like New York, Chicago, and St. Louis, have been successful in getting a large supply for the reason that they have been in a position to receive inside information several weeks ahead of the other fellow. An extreme shortage would not have occurred had it not been for the Marine strike which continued for almost two months last summer. During that period but few cargoes of raw sugar arrived at our shores, and no vessels departed to the sugar producing countries during that strike.

Furthermore, the beet sugar crop of 1918, which is under the same control, as above mentioned, became exhausted about that time, which radically increased the shortage. Most people have the idea that the United States produces all of the sugar that it uses. The fact is, that the United States, (including beet sugar production of the country, the cane sugar of Louisiana and Texas, the Hawaiian and Philippine Island cane sugar crop) produces but one-third of the sugar used which means that we must buy more than two-thirds of our gross consumption elsewhere. The sugar consumed per capita in the United States is about 85 lbs.—this means candy, canning and household purposes.

The statement that candy men have had plenty of sugar is true. They bought this year the same as they have done in years prior to the war, during the months of March, April and May, and for summer and fall delivery. Certain others have also apparently been able to get all the sugar required by buying from brokers.

Numerous efforts were made by this department to bring about measures which would relieve the situation, but I frankly admit that I doubt whether any results were obtained.

I ask, however, that those who may be inclined to criticise will remember that the sugar situation is a matter lying without the jurisdiction of the state, and that there was very little open for us to do. We made many very careful investigations

of complaints of hoarding, but in no instance did they materialize. In general, I found the conduct of the merchants of the state above reproach; as a matter of fact, comparatively few of them were able to profiteer even if they were so minded owing to the fact that they could not obtain sugar. A number of wholesale grocers in the state did open themselves to a certain amount of criticism by taking advantage of an opportunity to make a profit without the expense of handling the goods by disposing of their sugar contracts early in the year, thus failing to protect their customers. I do not believe that they would have done this had they known that a shortage was impending. Apparently they sold the sugar believing that they could buy more later. That this proved to be a mistake on their part was very evident this fall.

It is extremely difficult to make a comparison of food prices because of the many factors which enter in the consideration of various edible commodities. I believe that after all facts are considered, food stuffs coming from the same class of stores will in general, costs considered, be found to be both reasonable and uniform in price. Perhaps a few illustrations will suffice to show that the percentage of profits in food stuffs is not so great as to be unwarranted. It should be said in explanation, however, that percentages only should be considered in studying the tables as the figures will vary greatly on different dates. The following table will show the prices charged and paid, and the profits received by a certain butcher on a certain date:

Cost of cattle $11.00 per cwt.						
18	per	cent	loin	sells at	21¢ lb.	$3.78
6	"	"	flank & kid	"	10¢ "	.60
24	"	"	round	"	16¢ "	3.84
17	"	"	plate & shank		6¢ "	1.12
10	"	"	rib	"	12¢ "	1.20
25	"	"	chuck	"	13¢ "	3.25
						$13.79
			Less 5% shrinkage			.70
						$13.09
			Cost of cattle			11.00
			Profit			$ 2.09

The books of another butcher give the following figures regarding the sale of various kinds of meats:

Pure lard	Cost	33¢	Sold	for	38¢	Percentage profit	13%
Bacon	"	35¢	"	"	43¢	" "	18⅜%
Hams	"	35¢	"	"	38¢	" "	7¾%
Salt smoked bacon	"	28¢	"	"	38¢	" "	12½%
Salt pork sides	"	29¢	"	"	32¢	" "	17%
Pork loins	"	31¢	"	"	36¢	" "	11½%
Hamburg meat	"	12½¢	"	"	15¢	" "	16¾%

Cost of doing business 18½%. The biggest value is in beef, which gives a good percentage on beef and enables the butcher to sell other articles cheaper.

That prices may vary greatly is shown in the table on the following page.

ADVANTAGES OF DAIRYING

Dairying maintains the fertility of the soil.
Dairying furnishes a steady income.
Dairying furnishes a steady employment of labor.
The market for dairy products is steady.
Dairying utilizes unsalable roughage.
Dairying affords opportunity for increased income.
Dairying utilizes waste land.

RETAILERS' COSTS, SELLING PRICES, AND PROFITS ON MEATS AND MEAT PRODUCTS.

	RETAILERS' COST				SELLING PRICE				AVERAGE PROFIT DEALER	
	Average Cost	Prevailing Cost	Lowest	Highest	Average Selling Price	Prevailing Selling Price	Lowest	Highest	Profit on Each Unit	Percent of Spread on Sales
Beef	18.45	18	12½	33	23.63	18, 20, 35	10	45	5.18	21.9
Pork Loin	35.5		30	39	41.8		32	50	6.3	15.1
Veal Dressed	20.75	18—22	14	25	29	18, 28, 35	14	50	8.25	28.4
Ham, Good Grade	39.1	36—40	34	53	48.2	50	38	60	9.1	18.8
Bacon, Sugar Cured	40.48	36—40	34	53	47.48	45-50	40	65	7	14.7
Boiled Ham	53.1	54—55	40	58	64-5	60-70	45	70	11.2	17.3
Chickens Old, Alive	23.2		22	25	26		24	29	2.8	10.7
Hamburger Fresh	19.6		14	24	25.65		17½	35	6.05	23.6
Bologna	16.84	16—18	14½	25	22.95	22-25	19	30	6.1	26.5
Frankfurts	18.54	18—19	16½	25	24.68	25	20	30	6.1	25
Lard	32.97	33—34	31	41	40.9	40	35	45	6.07	15.1
Lard Compound	29.22	29—30	24	33	34.5	35	30	38	5.3	15.4

Regarding the sale of groceries the following data tabulated from information gathered over a four day period, may prove of interest:

RETAILERS' COSTS, SELLING PRICES, AND PROFITS ON GROCERIES

	RETAILERS' COST				SELLING PRICE				PROFIT	
	Average Cost	Prevailing Cost	Lowest Cost	Highest Cost	Average Selling Price	Mean Selling Price	Lowest	Highest	Profit On Each Unit	Percent of Spread On Sales
Milk	10.6	.11	.09	.12	12.59	12.13	.08	.15	1.99	15.01
Butter	56.6	.57	.54	.58	61.7	.62	.56	.68	5.1	8.2
Ice Cream	112.2	1.10	1.05	1.10	122.7	1.80	1.30	2.00	60.5	35.3
Eggs	42.9	.45	.40	.46	47.35	.48	.42	.55	4.4	9.4
Sugar	10.13	10.10	9.90	10.60	11.30	11.	10.4	11.75	1.07	9.5
Raisins	16.85	.....	10.	25.	20.55	.....	12.	30.	3.7	18.0 %
Soda Crackers	18.2	.18	.16	.18	20.6	.20	.18	25.	2.4	11.6 %
Calumet B. Pdr.	21.6	24—¼	.....	.....	29.3	.30	.22	40.	8.5 %	27.3—19.4
Price B. Pdr.	35.5	38.	.32	.42	49.3	.50	.45	50.	13.8—12	28. —24
Salt	2.17	2—¼	1.	3.75	2.78	3—½	1.5	5.	.61	22 —25
Laundry Soap	6.07	4—8	3.75	8.	7.5	5—10	5.	10.	1.43	19 —20
Toilet Soap	7 .43	7½—8	4.	9.	9.35	10.	6.	10.	1.92	20.05
Rice—lb	12.9	13	7.	15.	15.6	15.	9.	20.	2.7	17.3
Salmon—2 lb	27.07	.....	18.	40.	32.45	35.35	24.	50.	5.38	16.6
Dist. Vinegar Gal	26.18	25—35	18.	35.	37.7	35—40	30.	50.	11.5	30.6
Cider Vinegar Gal	38.4	30—40	31.	45.	51.2	50.	45.	60.	12.8	25.
Cocoa—lb	41.3	40—44	25.	72.	55.	50.	35.	1.00	13.7	24.9
Navy Beans, Dry	10.2	10	9.5	12.	12.47	12.5	10.	15.	2.27	18.2
Dry Peaches lb	22.6	20	15.	32.	28.4	25.	18.	40.	5.8	20.4
Corn Meal Cwt	5.16	.....	4.90	5.85	6.50	7.00	5.00	7.00	1.34	20.6
Corn Starch lb	9.1	.8.	7.5	12.5	11.5	10.	10.	15.	2.4	20.9
White Flour bbl	12.67	12.50	11.80	14.30	13.81¼	13.80	13.	15.40	1.15	8.3
Condensed Milk Lg	15.16	15.	.14	.16	17.43	.17	.16	.18	2.27	13.08%
Condensed Milk Small	7.06	7.2	6.5	7.5	8.26	8.	8.	9.	1.2	14.6
Cheese, Full Cr. lb	36.9	35½—37	.34	.40	44.9	.45	.40	.50	.08	17.8
Oatmeal, Cwt	5.84	5.50	5.15	6.50	6.97	7.00	6.30	7.50	1.43	20.3
Coffee, Pkg. lb	50.08	50.	.35	.54	54.3	.55	.45	.65	3.05	6.4
Coffee, Bulk lb	39.05	.40	.31	45.5	47.2	45—50	.35	.57	7.07	16.3
Uncolored Japan Tea lb	48.5	.50	.38	.72	64.2	.60	.45	1.00	15.7	24.4
Pork & Beans 2 lb., Doz.	1.43	1.40	.50	1.80	1.80	1.80	1.20	2.16	.37	20.5
String Beans, 2 lb	1.71	1.60—1.65	1.35	2.64	2.12	1.80	1.50	3.00	.41	19.3
Potatoes, Cwt	3.59	3.50	3.25	5.00	4.62	4.50	4.00	6.00	1.03	21.4
Onions, Cwt	4.62	5.00	3.18	6.50	6.53	7.00	4.50	8.33	1.90	29.1
Oranges, 216 Per Case	6.52	6.75	4.50	8.00	8.65	9.00	6.00	10.80	2.13	24.8
Lemons, 360 "	8.36	8.50	7.00	10.80	11.65	11—12.00	9.00	15.00	3.10	26.6
Bananas, Per lb	8.06	.08	7.5	.09	11.08	10—12.00	10.00	12.50	.06	26.5
Peanut Butter, 1 lb. Jar	27.04	25.30	.21	.45	34.4	.25	.25	60.	.07	22.
Bulk Peanut Butter, lb.	20.4	22.	.17	.24	.27	.20	.22	30.	6.3	33.3
Mazola Oil, Per Qt	67.4	66—⅔	.60	.76	.78½	75—80	.70	85.	11.01	14.5
Douglas Oil " "	.60	66—⅔	.30	.72	70.9	75 .40	.40	65.	10.09	15.3
Butterine Animal Fat, lb	37.8	40.	.31	.40	43.2	45 .35	.35	46.	5.04	12.5
Nut Butterine, lb	30.3	30.75	.3	.31	34.8	35	.32	37.	4.05	12.9
Peaches, Fresh Bu	3.18	3.25	3.00	3.25	3.58	3.50	3.35	3.60	.40	11.1

See preceding page for figures.

These figures have been prepared from the detailed information submitted by dealers, and is designed to show the cost prices of the various commodities, the selling prices and the profits. Costs are shown by an average cost, a prevailing or usual cost, a highest and a lowest cost. Selling prices are also shown by these four headings. Profits are shown in cents per unit and also by percentages. Mistakes of various kinds are certain to occur in filling out questionnaires of this nature, and, insofar as they were detected, the errors were eliminated. However, it is possible that there are many errors that remain, yet they tend to correct themselves if it may be assumed that an equal number of prices are quoted too low as well as too high. It is probable that the percentage of profits are fairly accurate for the different commodities. From these percentages it is not possible to determine accurately the average mark-up of dealers as an arithmetical average would mean very little. If the percentages were weighted in proportion to the sales of the average retailer, it is probable that the mark-up would be found somewhere between 16% and 20% of sales.

HUMAN FOOD PRODUCED BY FARM ANIMALS FROM 100 POUNDS OF DIGESTIBLE MATTER CONSUMED

Animal	Edible Solids Produced
Cow (milk)	18.0 pounds
Pig (dressed)	15.6 pounds
Calf (dressed)	8.1 pounds
Poultry (eggs)	5.1 pounds
Poultry (dressed)	4.2 pounds
Lamb (dressed)	3.2 pounds
Steer (dressed)	2.8 pounds
Sheep (dressed)	2.6 pounds

In a number of instances, I have referred in this report to the part played by the cost of doing business in the selling price of various commodities. The various items entering into this factor and the variation in the prices of the different items tell an interesting story. The following table, (page 55) gives the figures for twelve of the thirty merchants from whom information was collected.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	Average for 30 merchants
Gross Sales	$48,750.00	64,727.68	9,600.00	18,559.60	15,022.31	6,240.00	3,812.95	4,554.71	19,946.99	49,340.44	14,000.00	25,771.94	
Rent	.47	.83	2.50	2.70	1.00	2.84	5.50	3.95	1.50	1.20	2.78	1.20	2.25
Salaries	4.01	1.21	20.50	6.40	3.72	22.41	7.87	13.17	10.29	10.60	9.61	8.88	10.15
Advertising	.23	1.81	....	.97	....	.40	.....	.....	.02	.26	.....	.24	.20
Rent—Light	.09	.06	.30	.65	.24	1.79	1.10	.13	.08	1.20	.43	.24	.79
Delivery	.94	.03	1.30	....	.70	3.54	.....	.11	2.07	2.59	4.29	2.02	1.83
Supplies	.03	.10	.10	.10	....	1.42	.26	.45	.08	1.00	1.43	.88	.45
Insurance—Taxes	.36	.16	.37	.27	.36	.58	.88	1.10	.31	.27	.19	.15	.49
General Expense	.28	.98	4.03	1.10	.60	1.28	.90	.22	.61	1.16	1.28	.14	1.06
Depreciation—													
Shrinkage	.47	.19	.90	.20	.02	.80	.65	.....	.38	.40	.....	1.11	.68
Bad Debts	.05	.03	2.00	....	....	.80	4.11	.45	1.25	.50	1.07	.85	.65
Total	8.44	7.24	32.00	12.39	6.82	35.90	21.27	19.58	16.54	18.98	21.11	15.74	18.25

In general the cost of doing business was considerably higher for the stores doing a small business than for those doing a large amount.

Salaries were found, of course, to be the chief item in the cost of doing business. They ranged from 1.21% (in a store whose cost amounted to 7.24%), to 22.41% (in a store whose cost totaled 35.9%), and averaged 10.15%. Rents ranged from .47% (total cost 8.44%) to 6.15% (total cost 32.61%), and averaged 2.25%. Advertising ranged from nothing to 1.81%, total cost 7.24%), the average being .2%. It does not appear from this survey that advertising added materially to the cost of doing business; in fact, by the creation of sales which would bring about a more rapid turn-over, with no increase in fixed charges. It would seem, in some cases at least, that it actually decreased the cost.

Bad debts ranged from nothing to 4.11%, the average for the 30 stores being .65%. In every case where a store was doing business at a cost of less than 10% this item of "bad debts" was at a minimum—in fact in no instance was it higher than a half of one percent; certainly this would appear to be a strong argument for those who wish to economize to do business on a cash basis.

The investigation brought out with startling clearness one fact, which every banker probably knows:—there are entirely too many men operating small stores in the state (particularly grocery stores), where bad business methods are being used. As an example, in conducting the investigation, many of these men did not know what it was costing them to do business, nor even what percent of their receipts were being absorbed by the various items which make up that total. Some of those who were actually losing money were not aware of the fact until the investigation pointed it out; by failing to charge a salary for their own labor their accounts were showing an apparent profit, which disappeared rapidly when a fair sum for their own labor was charged against the books. It appears to me that here is an opportunity for a big work to be done by the Retail Grocers' Association, in the establishing of a usable system of accounting for the small grocer. Inefficient business methods are costly not

only to the merchant himself but to the consuming public as well.

In commencing this report I stated that turn-over would be considered as a factor separate from the cost of doing business. I made the statement chiefly in order to dispel the popular illusion that a merchant who advertised extensively or did a large volume of business must necessarily charge more for his products than a merchant who did not advertise or who did business on a small scale. As a matter of fact, no set rule can be established. Even in our modern business, the personal equation plays too important a part to do so. Many small merchants, with or without advertising, possess business ability which enable them to sell cheaply but profitably. On the other hand, of course, it is only logical to expect a merchant doing a large business to be able to sell cheaper than one doing a small volume of business. It would be more exact to say that his cost per unit should be less and that he should, therefore, be able to exact a smaller percentage of profit per unit. In using the term "large volume of business," I refer not particularly to the size of the store, but rather to the volume of business per capital invested—in other words, to the amount of turn-over.

The following chart illustrating some of the possibilities of turn-over, will perhaps make this more clear.

CHART ILLUSTRATING SOME OF THE POSSIBILITIES OF TURNOVER

	1 TURNOVER		2 TURNOVERS		8 TURNOVERS		20 TURNOVERS	
	Total	Per Unit	Total	Per Unit	Total	Per Unit	Total	Per unit
Cost of goods sold	$ 6,500	$ .65	$13,000	$ .65	$02.000	$ .05	130,000	$ .65
Overhead expense	1,000	.10	1,000	.05	1,000	1.25	2,000	1.00
Direct expense	1,500	.15	1,500	.50	4,700	5.875	10,700	5.35
Net profit	1,000	.10	3,200	.16	6,300	7.875	7,300	3.65
Net sales	10,000	1.00	19,000	.95	64,000	80.	150,000	75.00

PERCENTAGES	Total Expense		Total Expense		Total Expense		Total Expense	
Overhead	10	.25	5.26	14.73	1.56	8.90%	1.33	8.40%
Direct expense	15		9.47		7.34		7.13	
Net profit	10		16.84		9.85		4.87	
Mark-up	35		$1.57		18.75		13.33	

I have only one purpose in quoting these figures, i. e., to show that the consumer may buy at almost any price he wishes and that the general public would complain less if it studied price lists more closely and was less inclined to make a "bluff".

From the foregoing it will not be difficult to see where I place most of the responsibility for the present high prices and for this reason it is easy to see that I am none too sanguine of any permanent beneficial effects being brought about through legislation. Prices will be lowered only by (1) reducing consumption, (2) increasing production and (3) reducing the quantity of money in circulation, and any legislation not affecting one or more of these remedies will be wasted. Perhaps it might be well to qualify this statement by saying that legislation intended to bring about a more equitable distribution, especially of food products, through the establishment of a State Marketing Bureau, would undoubtedly prove of great benefit to all concerned.

It is not my purpose at this time to outline any definite working plan for such a bureau. I wish merely to point out the fact that, even with our modern facilities for rapid transportation and the rapid dissemination of news, surprising inequalities of distribution exist and shortages of certain commodities in one place and over-abundance in others are found to be frequent. Obviously, if some agency such as a State Marketing Bureau was created to eliminate this condition, all would be benefited. I believe that the establishment of this Bureau would be of material assistance in curbing high prices.

More than any other factor in lowering price, however, will be the action of the consumer himself. In entering a store where he believes the prices to be exorbitant, if instead of paying the price demanded, he would state firmly, "I won't pay it" and seek another and perhaps less pretentious establishment, he would be benefiting not only himself but everyone else. If the housewife, instead of demanding elaborate service and instead of telephoning her food orders, would go to the stores and do her buying carefully, she would be less inclined to wail about the high living cost. If she will make some effort to discover what prices are being charged at various stores and will show a willingness to substitute cheaper but equally nutritious meats for the more expensive cuts, inexpensive, high nutritive ratio groceries for expensive delicacies, and simple goods of lasting quality for elaborate, modish gowns, etc., she will have taken a big step toward the reduction of the high cost of living

insofar as it applies to her. Credit wisely used is a valuable business medium, but it is a weakness of human nature to buy more extravagantly on a credit basis than when it is the habit to deposit actual money; in other words, buying on a cash basis will assist materially in curbing reckless buying.

As stated, I am not at all confident of any permanent benefits being affected through legislation which does not seek to bring about one or more of the economic remedies outlined above, but at the same time, I do believe that some beneficial results may be obtained through the establishment of a Fair Price Committee. A measure of this kind will not, of course, check reckless buying, but it will at least have a tendency to prevent the merchants taking advantage of this present day extravagance.

Such a committee might be composed of the following: one member of the Dairy and Food Commission, one member of the Attorney General's staff, neither of whom shall receive compensation, and three qualified disinterested representatives of the public, who shall receive a stated remuneration per diem and whatever expenses may be incurred, for their services.

Obviously, the question of what would constitute a fair price for a given commodity would be largely a question affecting not only that commodity, but the conditions confronting the individual merchant as well, and for this reason an enormous amount of time and labor would be involved in attempting to set prices which would be fair to both the buyer and seller. In fact, it would be impossible for a single committee, constituted in the manner outlined, to do their work, even though the members of this committee devoted their entire time to it. It is for this reason that I advocate a Fair Price Committee, the distinction being that instead of attempting to fix prices, the Committee should act as a board sitting in judgment on the prices set by the merchants themselves. In other words, it would be a board whose function it would be to hear complaints of unfairness and take all the facts involved in the case into consideration before rendering a decision. Roughly, its procedure would be as follows: Upon receipt of a complaint of unfair prices, an inspector of this department would be detailed to inquire into the merits of the case. The inspector would have

no power to render decisions nor to order the merchant to make a price revision; he would simply report to the Fair Price Board whether or not, in his estimation, the complaint was justified and submit the facts as he saw them. In this way, many unfounded complaints would be eliminated and only those which appear to have merit be brought to the attention of the board. Since there is little doubt but that many groundless complaints will be made, it is obvious that some method must be adopted which will enable the board to eliminate those which have no merit, otherwise, the board will be buried under a mass of complaints of every kind and description—a condition which would render such a board inpractical, if, indeed, it could function at all. Since the inspector would be given no power to render decisions but would simply be called upon to state what complaints were, in his judgment, unfounded, it appears to me that there would be no grave danger that the intention for which the board was created would be frustrated by any abuse of power. Provision could be made to eliminate the entering in of the personal equation as far as the inspector was concerned if it is deemed wise.

Where the inspector found a complaint which he believed worthy of investigation, he could report that fact, with all the data which he had secured, to the board. By meeting at definite intervals these complaints could be taken up by the board, and a decision rendered. Needless to say, the appointment of a Fair Price Committee, would be useless if legislation was not enacted, giving it power to enforce its rulings. With such legislation, however, the board could not only determine what a fair price would be, in taking up complaints, but it could also set that price definitely upon the commodity in question and perhaps even force the seller to make reparation for any overcharges.

I will not at this time make any lengthy explanation for my suggestions as to the personnel of this board as I believe the reasons must be apparent. Suffice it to say, I feel that this department is in a position to be fairly well informed regarding commodities entering into ordinary commerce and for this reason should be represented. Since legal questions are almost certain to vex the board constantly, it will be wise perhaps to have

someone familiar with State and Federal laws also serving on the board. The advisability of having a producing, buying, and selling public represented is obvious.

I am keenly aware that the proposal to establish a board of this kind may meet with considerable opposition on the part of the merchants of the state. Nor am I less aware of the difficulties which will confront such a board in its attempt to function intelligently.

Regarding the first objection, I believe that merchants will take a sensible view of the matter and not only cease to oppose the establishing of a Fair Price Committee, but will even advocate it when their attention is called to the fact that legislators are constantly receiving complaints (many of them without foundation) of high living costs and pleas for the enactment of legislation which "will put a stop to profiteering," and that unless some such measure as here advocated is adopted, they may face a large amount of radical legislation. I believe further, that the appointment of men whose honesty, intelligence and ability are unquestioned, will give any honest merchant little cause to fear, for men of this type will recognize every seller's right to a fair profit, as well as every buyer's right to be protected.

While not entirely relevant, I would like, at this time, to call attention to the glowing opportunity offered to debtors by the present abundance of cheap money. Perhaps, never in the history of our country was a man burdened with long-time debts able to pay these debts so easily as at the present time. For example, a man who had contracted a debt of $1,000, ten years ago can now repay that debt with a dollar whose purchasing power is about 50 cents. If, in some way, the wage earner could be induced to spend these "fifty cent dollars" in payment of his debts instead of for the indulgence of extravagant whims, he would be in a far better position to face any reverses which the future might bring to him.

BUTTER OR OLEOMARGARINE

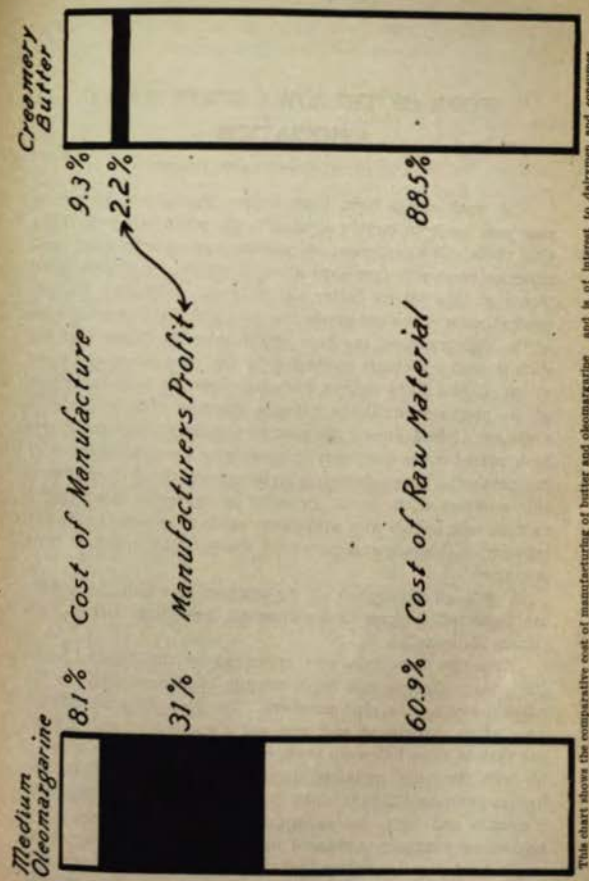
Aside from their vastly different nutritive values, butter and oleomargarine have to Iowans an economic significance not generally appreciated.

During the last ten years Iowa has produced an average of 93,326,820 lbs., of creamery butter of which about 15% was consumed in the state and 85% shipped to eastern markets. These figures are exclusive of the farm dairy butter almost all of which is consumed locally.

Butter is an Iowa product. The raw material, butterfat, is a continuous cash "crop" from nearly every Iowa farm. Butter is made by Iowa labor, in Iowa factories which are made of Iowa building-materials and equipped with Iowa owned and Iowa made machinery operated by Iowa coal. Most of the manufacturer's profit remains in Iowa where it is spent with Iowa merchants.

Last year there was made in Iowa 90,915,938 lbs. of creamery butter which the creameries sold for $43,969,285. What became of this money may be seen from the accompanying cut. Eighty-eight and one-half per cent or $38,912,817 was paid to Iowa farmers for the cream and milk containing the butter-fat; 9.3% or $4,059,143 was spent by the creameries for Iowa labor and power, and most of the remaining $987,325 was distributed among Iowa farmers in the form of dividends from their creameries.

Oleomargarine is not an Iowa product nor does Iowa business derive any benefit from its manufacture. Some hog and beef fat is used as a raw material but by far the larger part of the raw material is either cottonseed oil, from the southern states or cocoanut oil from the Islands of the Pacific. Most of the oleo reaching Iowa is made in factories located in Illinois, Ohio and Missouri. The stock in these factories is owned there, labor employed there and the laborer's salary and the stockholder's dividends spent there.



This chart shows the comparative cost of manufacturing of butter and oleomargarine and is of interest to dairymen and consumer alike, as it shows what becomes of the consumers dollars.

WORK OF THE IOWA STATE DAIRY ASSOCIATION

BY E. S. ESTEL, STATE DAIRY EXPERT.

The work of the Iowa State Dairy Association during the past year has been largely devoted to the organization of Dairy Calf Clubs. This movement has proven popular with many communities because it furnished a quick, efficient, and economical means of establishing better dairy herds. Although the unprofitableness of the low-producing cows and the increased value of the high producer has been urged upon the farmers of the state at many meetings conducted by the Association the realization of these facts was not forcefully brought to the attention of the producers until the extreme shortage of labor and the high cost of feed during the past two years. These conditions have caused many dairymen to investigate the profitableness of their cows and have resulted in an increased sale of the unprofitable members of the herd. In order to replace as many of the animals sold in this way with dairy cattle of greater producing capacity, high grade and pure bred Dairy Calf Clubs have been organized.

A detailed description of the manner in which these clubs are organized is given in the attached Iowa State Dairy Association Bulletin No. 7.

Since the first clubs were organized by the Association in 1917 many changes and improvements have been made to the rules governing the club members. The first clubs were somewhat of an experiment and were not organized in such a manner that as close follow-up work could be conducted as is possible with the clubs organized during the past year. The grade heifers purchased for the clubs in 1917 ranged in age from 6 to 8 months and their cost as approximately $48 per head. The heifers were largely purchased in Wisconsin and in the shows which have been held since that time the results in growth and development are very satisfactory. It was found, however, that

heifers of this age were rather difficult to purchase in large numbers and that the boys and girls who owned them did not become attached to them as much as they would to younger calves which require more attention.

Due to these conditions the grade calves purchased during 1918 and 1919 have been from 3 to 6 weeks of age. They have been shipped in individual crates by express and, barring a few accidents, have been delivered to members in good condition. We have been fortunate in getting calves from high grade cows and pure bred sires. They have come from the dairy sections of Wisconsin and are good straight growthy calves. The Association, since the spring of 1917, has placed 1,312 high grade heifer calves through calf club organizations. Through this movement dairy herds have been started on more than 700 farms where dairy cattle were not kept before. Realizing that it is best for a community to develop one breed of dairy cattle, most of the clubs have been organized to include one breed only. No partiality has been shown any breed and every community has chosen by vote the breed they should get. In a number of instances mixed clubs have been organized where there was a desire to have more than one breed.

The grade clubs that have been organized thus far are as follows:

Organized by	Location	No. of calves
1917		
Farmers Savings Bank	Barnes City	40
Central Savings Bank	What Cheer	42
First Savings Bank	Sutherland	61
Brighton State Bank	Brighton	45
Leavitt & Johnson Bank	Waterloo	189
First National Bank	New Sharon	28
Iowa Savings Bank	Wellman	65
1918		
Farmers Co-operative Creamery	Britt	32
National Bank of Decorah	Decorah	169
Farmers Co-operative Creamery	Exira	34
Merchants National Bank	Grinnell	25
First National Bank	Iowa City	52

Farmers Co-operative Creamery	Klemme	38
Farmers Co-operative Creamery	Leland	46
All Banks Co-operating	Milford	64
Riceville Creamery Co.	Riceville	20
Saratoga Co-operative Creamery	Cresco	32
Supt. of Schools	Strawberry Pt.	22
Farmers Co-operative Creamery	Victor	10
Bank of Woden	Woden	28
Farmers Co-operative Creamery	Clear Lake	12
1919		
Earlville Creamery Co.	Earlville	39
Perry Packing Co.	Perry	43
Farmers Co-operative Creamery	Templeton	13
Farmers Co-operative Creamery	Britt	17
Farmers Co-operative Creamery	Guthrie Center	61
Farmers Co-operative Creamery	West Bend	26
Farmers Co-operative Creamery	Worthington	27
Farmers Co-operative Creamery	Volga City	10
Gladbrook Creamery Co.	Gladbrook	16
Wadena Creamery Co.	Wadena	6

Pure Bred Clubs.

The demand for pure bred cattle in some of the older dairy sections of the state led to the organization of a number of pure bred dairy heifer clubs this spring and summer. The manner of organizing these clubs is also explained in Bulletin No. 7 which is attached. Due to the increased amount of work required to organize such clubs the number of grade dairy calves introduced this year was not as large as during 1918. It is thought, however, that the added results of the pure bred club will more than offset the decrease in the number of grade calves brought into the state. Information regarding the pure bred clubs is given in the following table:

Organized by	Location	No. of Calves
Fayette County Farm Bureau	Maynard	17
Buchanan County Farm Bureau	Jesup	32
Buchanan County Farm Bureau	Independence	17
Bremer County Farm Bureau	Waverly	24

The heifers supplied to the Fayette Club were all pure bred Holsteins purchased in Iowa. These were placed in the hands of the members at $150 per head and were from 8 to 12 months of age.

Pure bred Jersey heifers, approximately 12 months of age, were supplied to the Jesup Club. These were all purchased in the northern part of Missouri and cost the members $168. The Independence Club is composed of pure bred Holsteins 8 to 12 months of age which were purchased in Wisconsin and which cost $150 per head to the members. Bred Holstein heifers from 18 to 26 months were supplied to the Waverly Club. These were also purchased in Wisconsin and cost the members $270 per head.

The work as outlined requires the members of the clubs to make regular reports to the Association office. Report books similar to the attached are furnished each member for his or her own record. Bi-monthly reports are required to be sent to the Association by each member.

OTHER WORK.

Due to the shortage of funds available for traveling expenses it was necessary for the organizations conducting the meetings to pay the expenses of representatives of the Association at such gatherings. This tended to greatly reduce the number of meetings held and did not enable the representatives to get into the communities where work of this nature was most needed. However, from November 1st, 1918 to the present date 103 meetings were attended. These were creamery meetings, farmers' institutes, and farm tour meetings. During the past summer and fall many of the calf clubs which were organized a year ago held their calf shows which proved an excellent means of arousing a greater interest in dairying in the community.

Community Dairy Shows have been conducted in connection with most of the Association meetings.

During the spring and fall months when the work is urgent on the farm and it is therefore difficult to hold meetings, bulletins are sent to the local newspapers. These contain timely suggestions which assist the farmers in solving the problems which confront him with reference to his dairy herd. They are written with the idea of assisting the creameries in improving the qual-

ity and quantity of raw product. The newspapers are lending their assistance by giving the information a prominent place in their columns.

A service department to assist the man just entering the dairy business to locate and purchase foundation animals for his herd was also conducted. The object of this department is to bring the man who has dairy cattle for sale in contact with the man who wishes to buy. A large number of farmers have taken advantage of this service and many of them have been enabled to purchase the animals they desired at a much smaller expense than if they had attempted to locate stock themselves. It has been a means of encouraging the purchase of pure bred dairy sires to head herds of ordinary type in many sections of the state.

The Dairy Cattle Congress which was originally started by the Association and still actively assisted by it has developed into one of the two great national dairy expositions of the country. The 1919 show held Sept. 22-28 was a greater success than any of its predecessors.

This show is an important part of the dairy development work of the state for it brings dairy cattle breeders with their choice herds from every part of the United States and offers farmers of not only Iowa, but the Misssissippi Valley as well, an opportunity to become acquainted with the various breeds. It has also enabled many dairymen of Iowa to purchase foundation pure bred stock for future herds at a minimum expense.

Premiums are offered for dairy cattle, butter, cheese and milk which together with the display of dairy appliances and farm implements attracts thousands of farmers and dairymen. The Iowa State Dairy Association holds an annual meeting in connection with the show. Other dairy organizations of the state also affiliate in holding their conventions, annual meetings, etc.

The Dairy Cattle Congress is incorporated under the laws of Iowa and is financed entirely by sale of stock. It is self-supporting and each year sees it growing in its importance as a dairy show.

CREAMERIES IN THE EARLY DAYS

BY M. J. CORT.

It was in the year 1876 when I first began to see the necessity of doing something in the creamery and butter business. I had heard of Iowa's first creamery at or near Manchester, which was put in operation in 1872. At that time I was in business in Zwingle, 14 miles south of Dubuque. We were taking in lots of butter in trade for merchandise, which, when mixed together, caused it to contain a variety of colors. We bought a hand butter worker and paid $5.00 for a recipe which taught us how to re-work butter ready for the market. We handled our butter in this manner for a couple of years. In the spring of 1879, the Iowa Dairy School was started, and from it we got what information we could regarding the Dairy Business. At this time we were paying 8 cents a pound for our butter.

I never will forget the day I took seven tubs to Dubuque, and Mr. Walker, a commission man, who said, "Cort, all that I can pay you for that butter will be 4 cents a pound—no commission." I gave him four of the tubs and shipped the other three to a firm in New York City.

We had read of various individual creameries over the country. N. S. Andrews had sold his plant at Baldwin, west of Maquoketa. I drove down and made him a proposition to build a creamery at Zwingle, and agreed to furnish him the power from our steam mill for $100 a year. He accepted and came up and started the creamery in the year 1879.

Our people never received less than 12 to 15 cents thereafter. Creameries began to spring up all over the state, mostly individual plants. There was no way of testing cream at that time, but Andrew's tester was later invented. It was composed of a common 14 quart, 20 cent, wooden pail which contained some 6 inch bottles. He succeeded in selling 15 of these testers for $100.00 each. Later he invented the Conqueror Test churn, and then moved to Dubuque and began manufacturing it. In three years he cleaned up $25,000, and in 1887

I quit the store business and commenced working for him.

At that time Iowa had 449 creameries and 52 cheese factories still mostly individual or stock company plants. Then it was that testers of all kinds began to come into use. We had the Conqueror, the Short Method, the Bennling, Centrifugal, Prof. Patrick's, the Cochrass, and the Babcock, while the various acid and casein tests were also being used. About three months after the Babcock tester was put on the market, creameries all over the country voted to use it. In fact, the whole world began using it along about 1891. Mr. Babcock donated it to the world free to use and the co-operative movement began in earnest.

I sold, equipped and put the machinery in running order at Colesburg, Iowa—my first sale. I helped organize creameries at Baletown, Luxenberg, Sherrels Mound, Dyersville, Holly Cross, New Vienna, Epworth, Cascade, Temple Hill, Petersburg, Worthington and other points. Then it was that I helped the Hamy & Campbell Co., equip their plant near Beach's soap factory, and we began in earnest. Then it was that the Danish Western and De Laval, came into use, and in a short time thereafter the Sharples. I went to Tripoli, Iowa, to see the first De Laval which was brought to this country by Mr. Jeppe Slifsgaard in 1882. It was held at the Customs House in New York for two months, because the Revenue Officer could not decide if it was made out of steel or cast iron. They finally decided that it was steel and made him pay $93.00 for revenue.

The first De Laval separator was used in 1883, and the first Danish Western separator in 1884 by Mr. Marsh, of Waterloo. The first factory separator was introduced in general about 1889 or 1890. In 1893 I sold the first Disbrow combined churn and butter worker which was sold in Iowa. For a starter, we sold Bacillus 41 which we called B. 41.

As I said, the co-operative movement had made a good start for in 1896 Iowa had 725 creameries and 71 cheese factories while Minnesota had 445 creameries, 62 skimming stations, and 69 cheese factories.

In 1890, the festive animal known as the Creamery Promoter, crossed the border, as one of my friends said, and invaded the territory. Mr. W. B. Barney, Iowa Dairy and Food Commissioner, gave the best definition of a promoter I have ever heard. He said "a promoter is a man who sells something he has not got, to people who pay for something they never get." I claim and always will claim, that the Creamery Promoter and the Skimming Station were the causes of the set-back in the dairy business in Iowa, Kansas, Nebraska, Minnesota, North and South Dakota and, in fact, every dairy state. The promoter got his wish in Kansas and Nebraska, when the dairy business was just beginning, and as a result those states have never gotten down to what we call co-operative work since. These same promoters also started in Minnesota and in North and South Dakota.

I have stated that the Promoter and the Skimming Station was a set-back for the creamery business. The only real promoters we ever had was a Chicago firm. This firm could not get the agency for any separator, viz., the Danish Western, De Laval or Sharples, but the Alexander had been invented in the old country, and this company bought the exclusive right to manufacture it in the United States. They called it the "Alexander Jumbo," and it was a jumbo.

The company would send one of their promoters out (at that time they had 15, with offices in Chicago), and this promoter would get the farmer to subscribe from $5,000 to $6,000, each man subscribing $100 or more. His contract called for building and complete creamery outfit, the farmer furnishing the site. When the necessary amount was subscribed, the agent would send his contract to his company.

Next came the builders. When the building was completed, another man would arrive with the machinery. He would place it and when completed, he would do as the builder did, viz., pay his hired help by giving them vouchers which were also given to the lumbermen and masons, all to be paid by the collector. Then he would have the officers examine the building, machinery, etc., and if found according to contract, they would sign the acceptance which read, "We have this day examined the machinery and building and find everything according to the contract and have accepted the keys." This acceptance would be sent to the house at Chicago, then it was placed in an envelope with the con-

tract and sent to the collector who would collect the money, pay off the vouchers and make complete settlement.

They had a system. They blew the whistles of an average of three plants a day in the year 1892 and did a business of over two and one-half million dollars that year.

I have always explained very frankly the methods of the promoter and the detriment they were to the country, while working in the early days and up to the present time. When I helped to organize a creamery, I did not mention machinery until money was subscribed and organization was completed. I never was bothered with competition until it was found out that I had completed organizing a creamery when the promoters would call and try to show how much could have been saved if they had been given a chance to make a bid. At this time machinery concerns of all kinds sprang up until there were so many of them that for half a dozen or more years up to 1897 (and even later) the machinery was sold for less than cost, causing some of the firms to fail.

Creamery machinery at that time consisted of a receiving vat, milk heater, separator, cream vat, box churn and tester, also a Mason Worker, and a skimmed milk scale. Before we used the separator we used the Fairlamb can, until a machine called the Butter Extractor came into existence about 1891. This extractor was a separator and a churn combined and had the speed of a separator. In the 4 or 5 inch opening at the top there was placed what is called an inverted squill wheel which was drawn close enough to come in contact with the cream as it was driven up and would churn it into butter before it was allowed to flow out as in a separator. The butter would fall to the bottom of the bowl and go out through a hole in the bottom of the bowl into a tub which contained ice to "preserve" it. It was found, however, that the animal heat interfered with the keeping quality of the butter and caused makers to cease using the method after more than half a million dollars had been spent upon it.

A few years after, about 1896, or 1897, the hand separator made its appearance and we heard something about pasteurization. I sold and put in operation the first pasteurizer, in Minnesota, in the spring of 1897. It was the famous Hill's Pasteurizer. I believe that when the hand separator was introduced and was being used that it put a damper for some time in the organization of a lot of fine co-operative creamery associations, because at that time a creamery could be built and equipped for from $2,500 to $3,000. With the hand separator system, they could save from $450 to $700 in building and equipment but if there were 100 patrons, each one would have to purchase a hand separator for $100 each, which would amount to $10,000. Thus it can be seen that their creamery would cost them $12,500 or more, and in a newly-settled country, the people could not raise the money to start such a concern but were compelled to ship their cream. I am sure that if the farmers in general all over the country knew how much butterfat, worth from 60 to 75 cents a pound, they are feeding to their pigs and calves, they would be tempted to return to the factory separators again. I have made this test and know what I am talking about.

I remember that at one of my meetings an old gentleman asked, "which should we do, put a large separator in our factory or each one of us buy a hand separator?" I was stuck. I told him that in a few days I could tell, or on my next trip over the territory. I took 40 half pint jars and some corrosive sublimate tablets with me, made some fast drives early in the morning and in the evenings, caught the farmers operating their hand separators, took samples of their skimmed milk, sent the samples in by express and had the professor of the Experimental Station test them. It was found that the farmers, regardless of the kind of separators, were losing from two tenths to one and a half pounds of butterfat in the skimmed milk. One man's machine left two pounds of fat in the milk, while the 39 samples tested, showed an average of a little over three-fourths pound butterfat in every 100 pounds of milk extracted by the 39 machines. When I met the gentleman again, I was able to tell him the difference. Just before this I had sold a large machine and in the contract had guaranteed it to show not over .03 of 1% fat in the skimmed milk, and I knew it must have done as guaranteed because I never heard from the people afterwards.

From about 1891 to 1896 competition in factory separators taught us a great lesson. The tester gave us a chance to show

what a machine was doing, so much so in fact that we frequently had our separators located in a factory beside competitors' separators, neither one paid for, but guaranteed to do good work in skimming. They had to be tried out in order to convince the company which was the best. The only way to settle it was for each salesman to be present, three judges appointed, an expert from the factory where the machines were made, and an expert, superintendent, or some other fellow from the house, all ready. Each separator would have to separate equal quantities of milk and the one which did the closest skimming won. But how did they win? In contests, like in war, everything was considered fair. In consequence, every advantage was taken to win. One might dilute the acid and one might buy off the judges. I have seen them drag their fingers through the cream and rinse them off in the other fellow's sample. In fact there was so much rottenness done in contests that they became a thing of the past. I have even seen the experts sleep beside their separators so that his competitors would not get a chance to sand his bearings. Oh, yes, everything is fair in war, but I am glad to say that education changed all such actions. The leading idea of manufacturers now is to improve their machines, and attempt to show up their machines in the proper manner.

Another thing which caused a lot of our creameries to close and kept others from being organized, was the shipping of cream by the farmers themselves. Had the various traveling men and solicitors explained the churn over-run, and showed the loss resulting from shipping cream, the creamery business would have been benefited. The people were also told by some of our men in authority that in order to start a creamery, they had to have at least 500 cows. Had this advice been listened to, there never would have been a single creamery company organized.

After the various agricultural colleges were started we began to study and learn how to explain the proper methods of feeding. All we did before we found this out, was to feed regardless of the kind of animal or the quantity necessary to accomplish any good. We did not know how necessary it was to get rid of the "star boarders." Not one man in a thousand ever kept any account of what he sold or what he fed, and I am sorry to say that I believe not one out of a hundred of our farmers to-

day, really know what they are doing. Most of them simply sow and reap, feed and sell feed, and never balance their accounts at the end of the year to see if they are making any profit. As a result many are compelled to go to their banks and borrow enough to tide them over until the next year, never knowing what caused the losses which made them borrow.

FEEDING DAIRY CATTLE FOR GREATEST PROFIT

BY PROF. C. L. BLACKMAN.

DAIRY HUSBANDRY DEPARTMENT, IOWA STATE COLLEGE.

At this time as never before conditions demand that every individual shall produce a maximum to compensate for the great losses sustained in War and what is true now is more or less true at all times. The dairyman then who is feeding and breeding cattle should see to it that the individual cows in his herd are producing a maximum of product at a minimum of cost.

This result can only be attained by good breeding practices, careful thoughtful feeding and intelligent selection based on reliable records. All of these items should be well considered and any one then left out weakens the rest of the work done.

Good feeding may be considered equal to either of the other two phases of Dairy Herd Management in realizing the greatest production and profit from the individual cow.

The feeding of dairy cattle, while reputed by some to be a great secret known to but few, is in reality merely one of those farm problems which can be readily solved by giving the matter some serious and thoughtful consideration. A great amount of technical knowledge is not necessary, but merely an understanding of wants of the cattle and the feeds which may supply these demands.

A brief discussion of the form of the digestive apparatus may serve to explain why a ration to be most efficient should have certain characteristics.

The cow is a ruminant and is preeminently a user of rough feeds such as grasses, hays, and silage, and for that reason is equipped with a very capacious digestive apparatus different from other types chiefly in that it contains three stomachs, be-

sides the regular digestive stomach common to other animals not ruminants.

The first stomach of the cow is chiefly a storage place where food, which has been but little masticated, is stored. The second stomach readily communicates with the first and acts as a catch basin for foreign materials. When a cow eats roughages she swallows her food rapidly after little chewing. When at rest she returns this food to her mouth about four ounces at a time and rechews this food completely and then swallows it again and this time the food goes to the third stomach, or (manifold), where the water is partly pressed out and the food then passes on to the last stomach where it meets with the digestive juices of the stomach.

A dairy cow produces most economically when she is fed up to her normal capacity. For that reason it is essential to have the cow eat as much as possible. In order that she do this it is necessary to supply at all times a ration that is palatable and one the cow is always anxious to receive. To insure palatability care should be taken to select leguminous roughages as far as possible and those which contain all the leaves. In selecting grain, care should be taken to get good clean grains free from mouldy and rancid conditions, also care should be taken in mixing the more palatable with the less palatable feeds. For example, gluten is not palatable to most cows, but it is valuable feed and may well be used in some rations to secure a proper balance of nutrients.

It would be of little avail to a cow if she should consume large amounts of feed that were low in digestibility as this would overtax her system. Thus it is very necessary to select roughages that are highly digestible. However, in roughages it often occurs that the palatable feeds are the digestible ones although this need not necessarily be true. Hays that have been cut too late are often so "woody" that it requires too much energy to digest them. This is generally true of straws and dried stovers. The digestibility of grains purchased in the market can generally be determined in a relative way by their (fiber) content which usually comes from the hull or outer parts. In selecting grains it is usually more economical to feed those low

in fiber even though they are more expensive. This is especially true in feeding different grades of the same product. "The Best is often the Cheapest." The dairy cow more than any other class of livestock on the farm works through the entire year and for a long period of years and for that reason it is highly important that some consideration be given the ration from the standpoint of effect on the digestive tract. An effort should be made as far as possible to supply some feeds which have a cooling effect on the system, such as silage and roots. Here in the Central West silage is the cheapest feed of this sort and all dairymen who are in a position to grow enough corn to fill a silo should have one which will supply the wants of their herd.

On farms where silage is not available oil meal should be a part of the grain ration, especially during the winter months as this has a soothing and laxative effect on the digestive apparatus. Oil meal may well be used where silage is fed, but if possible it should always be used where silage is not fed.

Previously it was stated that the cow utilizes large amounts of rough feed, besides this it has been found that a certain amount of bulk is absolutely necessary in the ration. It is said that a cow could starve to death with her first stomach one-third full of food, and this is true because it is necessary to have more than that in the stomach before the cow can ruminate. The matter of bulk has to be given consideration in the case of grains, especially, as the hays and silage are all bulky enough to be properly handled. In making up the grain ration, care should be taken to use as many pounds of bulky grains such as wheat bran, and ground oats as the heavier grains, such as corn meal, gluten and cotton seed meal. It has been found by experiment that corn and cob meal is equal pound for pound in feeding value with corn meal where the cob is the only source of bulk. This is not because the cob adds any appreciable amount of nutrients but because the bulk added makes it possible for the cow to more completely digest the nutrients present in the corn meal. Corn and cob meal may be made the basis of many of our dairy rations in this part of the country where so much corn is grown.

The dairy cow is fed for the purpose of supplying her wants in protein, carbohydrates, fat and ash, and as these nutrients perform special functions in the body it is necessary that they be supplied in the proper proportion. A brief explanation of the function of these nutrients may assist in demonstrating their importance.

Protein, which is one of the most valuable nutrients, is used for the purpose of building and repairing muscle tissue, bones, hide and hair as well as furnishing building material for the foetus and supplying protein to the milk. This is the only nutrient capable of performing this work.

Carbohydrates and fats supply heat and energy to the body and furnish materials for making body fat as well as that in the milk. Fat, however, is two and a quarter times more valuable as an energy furnisher than carbohydrates.

Ash supplies the mineral content to the bones and also supplies and maintains the mineral content of the blood stream and tissues and furnishes ash to the milk.

Generally, in referring to the balance of nutrients, we mean the relation between the amount of protein present and the amount of carbohydrate and fat, inasmuch as the ash pretty well looks out for itself if due consideration is given to the other characteristics of the ration. Inasmuch as the carbohydrates and fat cannot perform the function of protein, it is necessary to supply enough of this nutrient to take care of the wants of the animal and a lack of this in the ration will limit the production although an abundance of other nutrients might be present. It is also important that too much protein shall not be present in the ration because, while an over-supply may be used to furnish energy, protein is no more valuable for this purpose than carbohydrates and is far more expensive, and besides this, too much protein overtaxes, unnecessarily, some of the essential organs of the body.

For several reasons it is desirable at all times to supply a ration which comes from several sources. In the first place the cow must always be kept eating and a ration taken from one source may become unpalatable to the cow if fed for a long time. But if several feeds for example are used in making up the

grain portion of the ration one of these may be dropped out and another added and the ration made more palatable, and at the same time the cow will not feel the undesirable effect of a sudden change from one grain to another. Furthermore, it has been found that all the proteins are not alike in feeding value and that often two proteins are better than the same amount of one protein. Thus, for best results the feeds given a cow should originate with several different kinds of plants, for example, a ration made up of clover hay, corn silage, ground oats, cotton seed meal and corn and cob meal would insure complete nutrition if fed in proper amounts.

The last factor to be considered, and one which is equal to any in value, is that of economy of the ration. If all other characteristics were right and this one wrong, the ration would be a failure. Again, however, in this part of the world where hays and grains are grown in abundance, the problem is not a difficult one. In general it may be said that home grown feeds are the cheapest as they are free from freight charges and middle men's profits. However, there are times when it is possible to haul whole grain to market and bring back such factory by-products, such as wheat bran, and save money. Previous to the war this was especially true of oats.

In growing feeds for economical milk production it is always well to grow legume hays as far as possible. In case roughage has to be bought legumes again are usually the cheapest when considered from the standpoint of nutrients contained, and that is the basis on which all feeds should be bought whether they be roughages or concentrates.

FEEDING GUIDES.

While it is impossible to state accurately what and how much feed should be fed to all cows at all times, some general suggestions may be of value.

1: Feed one pound of hay per day for each hundred pounds of live weight when silage is also a part of the ration.

2: When silage is not used feed two pounds of hay for each one hundred pounds of live weight.

3: In feeding silage give three pounds of silage per day for each one-hundred pounds of live weight.

4: Feed one pound of grain for every two and one-half to four pounds of milk produced per day. Cows giving high testing milk should receive the larger proportion of grain.

In order to produce milk most economically it is very necessary to prepare the cow for her year's work by feeding her well during the dry period which should last from six weeks to two months. Too often it is the practice among farmers to slight their cows at this time because as they say, "They are producing nothing." However, it should be recalled that they are producing a calf and besides that they need extra feed to build up and prepare for a hard year's work. One of our best feeders has said that the feed he feeds during the dry period is the cheapest feed of all the year in that it gives greatest returns for the money expended.

Just before and immediately after freshening the cow should receive but little grain and that of the lighter types such as wheat bran, ground oats and perhaps a little oil meal. This should be gradually increased until the cow is receiving enough to insure a maximum milk flow and the cow may receive as high as one pound of grain for every two and one-half pounds of milk. Care should be taken at all times to so feed that the milk flow is maintained at a constant level as far as possible. For awhile in the spring and early summer, when the pasture is abundant, it is well to remove all grain from the ration, and thus give the digestive system an opportunity to rest a little. Later on in the season, when the pasture dries up, and the cows begin to decrease in milk flow, enough grain should be added to prevent too much decrease, so, as the milk decreases, the grain should be increased to maintain the flow at a constant level.

The dairyman should at all times keep some sort of a production record which he uses as a feeding guide. If this is done, sudden and permanent slumps in production will be prevented.

Increasing the economy of dairy production through liberal feeding of thoughtfully planned rations has often been demonstrated in the Cow Testing Associations as well as elsewhere. One of the most convincing pieces of evidence along this line was furnished this year by the herd records of one of the Pioneer Cow Testing Association members. The table below shows how each of the cows were fed these years and how much each produced.

FEED AND PRODUCTION RECORDS OF THE SAME COWS
WHEN LIBERALLY FED & POORLY FED
SEE HOW IT PAYS TO FEED

Name	Age	Year	Record Lbs. Milk	Record Lbs. Fat	Grain Lbs. protein Feeds	Grain Lbs. carbo Feeds	Roughage Straw	Roughage Hay	Roughage Silage	Total Feed Cost	Profit
Daisy	5	1917	6748	255.4	56	1730	310		11878	$ 85.52	$0.01
	6	1918	8173	341.0	956	2936		300	9491	148.19	80.27
Beauty	4	1917	5774	264.4	56	1730	310		11878	85.52	54.02
	5	1918	8220	360.3	1156	2929		300	11301	172.72	69.19
Jewell	5	1917	6264	267.2	56	1922	310		11878	89.09	72.11
	6	1918	8847	381.6	1096	3704		300	10641	164.36	89.79
Bess	5	1917	7560	280.9	56	1922	310		11878	89.09	57.79
	6	1918	8261	343.0	1096	3704		300	11391	164.36	64.96
Black	3	1917	6604	289.3	56	1578	310		11878	81.71	66.42
	4	1918	7876	322.1	816	2098		225	9933	137.05	67.16

1917 Days on Pasture.....214
1918 Days on Pasture.....150

While the rations fed the herd, the second year, were not ideal, yet the cows increased their production enormously because of the protein concentrate (oil meal in this case) which was added to balance the ration and because a generally more liberal ration was fed. Another interesting thing to note is that the cows were on pasture five months the second year while the first year they were on pasture seven months which is altogether too long a season to pasture in Iowa. A pasture record like the latter too often means that the cows were running in stalk fields long after they should be in a good warm barn.

There is an impression among too many dairymen that young stock should utilize all the poor rough feed (because they are not producing anything). This is an erroneous idea and a dairyman should put money into good feed for young stock just the same as he makes saving deposits or makes investments, knowing that some day he will get it all back with good interest.

This fact was clearly demonstrated by the records on the scrub cows and heifers brought to Iowa State College from Arkansas to be used in a breeding experiment. The following table shows clearly how the younger animals profited by the better feeding they received while growing. All of these cows were

of the same breeding (scrubs) so the difference in production was due to the feed received during their development.

TABLE TAKEN FROM BULLETIN NO. 165 OF IOWA STATE COLLEGE

AVERAGE PRODUCTION OF SCRUB COWS BROUGHT IN FROM ARKANSAS

Group	No. of Lactations	Average Prod. Milk	Average Prod. Fat	Increase in % Milk	Increase in % Fat
Mature	15	8168.7	132.64		
4 year old	15	9367.7	166.36	14	8
Heifers	28	4096.1	191.21	27	24

It is interesting to note that heifers as nearly mature as four year olds were made into better cows for having received a liberal balanced ration at the end of their growing period. The remarkable increase in production of the young heifers over the mature cows brings back the fact that liberal feeding of young stock pays good dividends.

Many farmers believe that it is not necessary to feed a grain ration especially if there is corn in the silage, however, when it is considered how much product the cow actually makes the fallacy of this idea is readily seen. It no doubt would be possible for the "original unimproved cow" to feed on roughages alone, but when it is realized that the cow of today is an unnatural animal developed far beyond her normal producing ability it is readily seen why it is necessary to feed some grain in order to secure maximum production, which is the cheapest production.

Remember the properly bred and selected dairy cow is a machine which works most efficiently when fed to capacity with a carefully balanced ration.

CHANGES IN THE LAWS

If there are any periods, in particular, during which the public, and dealer as well, needs the protection given by efficient food laws and laws effectively regulating the traffic in other essential commodities, it is during periods of high prices and times of changes in economic conditions. Such conditions prevail, and from present indications will continue to exist for some time.

During the past two years, it was found that many provisions of the various laws enforced by this department were not as effective as desirable to meet the present and probable future conditions. Where conditions indicated, changes in the laws were suggested to the Thirty-eighth General Assembly, and with but one or two suggestions of minor importance, were favorably received and acted upon. While most of the changes were important there has been no change in any of the basic principles of these laws. Practically all new legislation consisted of measures designed to enlarge the scope and strengthen them .

Changes were made in the Food Law, Sanitary Law, Dairy Law, and Weights and Measures Law. These changes will be discussed in order. There was no change in any of the other laws enforced by this department. One new law, the Egg Law, was given to this department to enforce. While this may be considered as a part of the food law, it is for convenience treated separately. Except where otherwise noted all changes in the various laws are now in effect.

CHANGES IN FOOD LAW.

An amendment to the food law gives this office authority to issue standards for foods where such standards are not fixed by statutes. Such standards as are adopted must conform with those issued by the Secretary of Agriculture of the United States and be approved by the Executive Council. The standards provided for by this amendment have been issued in the form of a rule and regulation and are printed as a section of this bulletin.

A second amendment requires that the name of any article

of food sold in "package or wrapped form" be placed upon the package or wrapper. This provision applies to all packages entering commerce as such or put up by the manufacturer, packer or jobber for ordinary commercial use. It does not apply to small amounts sacked or wrapped by the retailer for the purpose of delivering small quantities to the consumer.

CHANGES IN THE SANITARY LAW.

The duty of enforcing the sanitary law in so far as it affects hotel kitchens was transferred from this department to the office of hotel inspector. The hotel inspector enforces the hotel law relating to hotel rooms, toilets, wash-rooms, fire escapes, etc., and it was decided that, inasmuch as the hotel inspector called at the hotels for such inspection work, he could, at the same time, make the inspection of sanitary conditions affecting the preparation and serving of food.

CHANGES IN THE DAIRY LAW.

The old sections of the dairy law defining milk, cream and skimmed milk and stating what constitutes adulteration and misbranding of them was stricken from the law and a new section, covering these subjects, enacted. There has been no change in the standards for these products, the new section being but a revision of the obsolete wording of the original section. In the new section the phraseology is modern and the meaning clear, making it possible to properly word informations to cover violations of any provision of the section.

A new section of the law, effective October 1, 1919, defines imitation evaporated milk and imitation ice cream and regulates the sale of such imitations. During the past few years several articles of food have appeared upon the market designed to take place of evaporated milk. In general these are nothing more or less than evaporated skimmed milk to which some vegetable oil, usually cocoanut oil, has been added. These products were sold under coined names and extensively advertised, in many cases as evaporated milk. These imitations do not possess the food value or properties of evaporated milk, altho the advertising propaganda conducted by the manufacturers and salesmen led many consumers, and grocers as well to believe that they were.

The law now covering this class of products requires that

they be labeled with the words "Imitation Evaporated Milk" in such a manner as to acquaint the dealer with the true nature of the product he is buying and the purchaser with what he is consuming.

A new section of the dairy law provides for the registration of state marks or brands to be placed on containers used for the purpose of shipping or delivering dairy products. The objects which it is hoped this provision will accomplish are:

1. To prevent the misuse of containers.
2. To promote sanitary handling of containers and contents.
3. To clearly establish the ownership of containers.
4. To aid in assorting, billing and shipping containers and their contents.
5. To promote the more rapid movement of containers and their contents.

The section makes it an offense to misuse any container bearing a state brand or holding any branded container for more than three days without the consent of the owner of the container.

Of particular interest to the grocer is a new section prohibiting the use of "dairy-terms" on packages of oleomargarines and in advertising material advertising oleomargarines. This section is as follows:

No person, firm or corporation shall use in any way, in connection or association with the sale or exposure for sale or advertisement of any substance designed to be used as a substitute for butter, the word "butter," "creamery," or "dairy," except as required by Section twenty-five hundred seventeen (2517) of the Code, or the name or representation of any breed of dairy cattle, or any combination of such word or words and representation, or any other words or symbols or combination thereof commonly used in the sale of butter. (Sec. 6, Ch. 206, Acts of 38th G. A.) This section becomes effective August 1, 1919.

The Renovated Butter Act is a measure prescribing regulations under which that product shall be sold. These regulations, as well as the definition of renovated butter, are essentially the same as the federal regulations governing the shipment of renovated butter in inter-state commerce with the exception that the words "Renovated Butter" must be placed on the top and sides of each package in type three-fourths (¾) inch in height, and that a plainly legible card be placed upon renovated butter offered for sale in other than original packages.

The law relating to collection of statistics pertaining to the production and distribution of dairy products has been amended so as to increase the scope of this work.

CHANGES IN WEIGHTS & MEASURE LAW

The principal change in the weight and measure law consists in a revision of old section 3009-j. This has been divided into sections 3009-j-1. to 3009-j-4 inclusive as follows:

Sec. 3009-j-1. *Dry commodities sold by weight or measure.*—All dry commodities, weighing ten ounces or more, except drugs, section comb honey and those specified in section nine, (Sec. 3009-i) shall be bought or sold only by standard weight or numerical count, lineal or surface measure, except where parties otherwise agree in writing.

Sec. 3009-j-2. *Statement of weight required.—Bales of hay or straw.*—Whenever any product is sold and the selling price is determined other than by the numerical count, lineal or surface measure, and the products do not have the net weight plainly written, stamped or printed thereon, the seller shall at the time of delivery, upon the request of the purchaser, furnish a plainly written or printed statement showing the name of the article sold, the quantity in net weight thereof, and the price paid for each item. No person, firm or corporation shall sell, offer or expose for sale any bales of hay or straw without first attaching thereto a plain and conspicuous statement of the minimum net weight contained in such bales. Provided that nothing in this act shall be construed to require a statement of weight on each bale where hay or straw is sold by the ton and a ticket showing the gross, tare and net weight accompanies the delivery.

Sec. 3009-j-3. *False weight—Entry at false weight or measure—Rules and regulations.*—That for the purpose of this act, any person, firm or corporation shall be deemed guilty of a misdemeanor and shall be punished by a fine of not less than five dollars ($5.00) nor more than one hundred dollars ($100.00), or by imprisonment in the county jail not exceeding thirty (30) days:

First. If any such person firm or corporation sell, barter, trade, deliver, charge for or claim to have delivered to a purchaser an amount of any commodity which is less weight or measure than that which is asked for, agreed upon, claimed to have been delivered, or noted on the delivery ticket.

Second. If any such person, firm or corporation make settlement for or enter credit, based upon any false weight or measurement for any commodity purchased.

Third. If any such person, firm or corporation make settlement for or enter credit, based upon any false weight or measurement, for any labor where the price for producing or mining is determined by weight or measure.

Fourth. If any such person, firm or corporation record a false weight or measurment upon the weight ticket or book.

Provided, however, that reasonable variations shall be permitted, and tolerances and exemptions as to small packages shall be established by

rules and regulations made by the State Dairy and Food Commissioner.

Sec. 3009-j-4. *Bottomless measures.*—The use of bottomless measures is hereby declared a violation of this act, unless they conform in shape to the United States standard measure.

The section relating to inspectors checking weights of loads of commodities being delivered has been amended and the law now gives inspectors of this department the authority to "stop any wagon, auto truck, or vehicle loaded with ice, coal, hay, grain, cattle, hogs, vegetables, junk or any other commodity being bought or offered for sale or sold, and order the same re-weighed for the purpose of obtaining the correct weight thereof.

LAWS ENFORCED BY DAIRY AND FOOD COMMISSIONER

DAIRY LAW

The object of the dairy law is to insure the manufacture of clean wholesome dairy products of uniform quality and possessing high nutritive value, and to encourage and promote all branches of the dairy industry, thereby securing for Iowa farmers a steady and fair market for one of Iowa's most valuable agricultural products.

FUNCTIONS OF ASSISTANT COMMISIONERS AND DAIRY INSPECTORS

Inspection and educational work relative to sanitary conditions of dairy farms, cream buying stations, creameries, condensed milk factories, cheese factories, ice cream factories.

EDUCATIONAL WORK AT CREAMERIES

Instructs butter-makers in new methods of handling raw materials and manufacture of butter.

Confers with and addresses creamery boards and assists in moulding policies of the creameries.

Assists in the building of new and remodeling of old creameries, and installation of new equipment.

Periodically checks moisture content of the butter being made.

Periodically checks salt content of the butter being made.

Studies methods of manufacture at the creameries for the purpose of increasing the efficiency of the plant.

Checks costs of production and costs of marketing.

Advises creamery as to the best sources of equipment and materials.

Assists in securing frequent and regular transportation facilities.

Assists in securing satisfactory markets in our eastern cities for butter.

Tests creamery scales, both test scale and platforms scales, to insure accuracy and fair dealing.

Schools operators in conducting babcock test.

Holds examinations to determine competency of candidates to hold license to perform babcock test.

Checks and controls production of navy butter.

Checks and controls production of Iowa trade-marked butter.

Assists in the organization of cow-test associations and calf clubs.

Assists in educational work tending to promote greater and more economical production of milk and cream.

INSPECTION WORK IN THE FIELD

Inspects stocks of butter and butter substitutes at warehouses, stores, bakeries and restaurants to see that illegal butter and illegal butter substitutes are not carried on stock or offered for sale.

Investigates and conducts cases relative to testing of milk and cream by unlicensed Babcock operators.

Investigates complaints relative to unlicensed milk plants and milk depots.

Investigates comlaints relative to false reading of Babcock test and other unfair practices.

Investigates complaints relative to the application of the anti-discrimination law as affecting the purchase of butter fat.

FUNCTION OF THE LOCAL MILK INSPECTORS

In charge of local milk inspection work under supervision of State Milk Inspector.

Inspects dairy farms supplying market milk to his district.

Inspects conditions, scores and keeps records as to sanitary conditions of dairies, milk plants and milk depots.

Periodically tests percentage of fat and solids in milk sold in his territory.

Periodically secures and forwards samples to the department laboratory for scoring and bacteriological analysis.

Investigates complaints as to quality of milk delivered and relative to violations of the laws pertaining to production and sale of milk in his territory.

FOOD LAW

The object of the food law is to prevent the manufacture and sale of harmful, deleterious and adulterated foods, or foods which are sold under false representation as to their quality or value.

FUNCTION OF FOOD INSPECTORS UNDER FOOD LAW

Inspect Iowa establishments where foods are manufactured to see that no harmful or fraudulent adulterant enters their composition.

Inspects conditions under which foods are stored, transported and sold to see that adulteration is not practiced.

Surveys and forwards to laboratory samples of foods which he suspects or concerning which he receives complaint as to quality, adulteration or short weight.

Inspects retail establishments to see that no illegal food-stuffs are carried in stock.

Inspects quality of eggs, poultry and other farm produce sold to buyers and handled through trade channels to see that these products are not spoiled or in a condition which would lead to their being spoiled before reaching the consumer.

SANITARY LAW

The object of the sanitary law is to insure cleanliness in the manufacture, distribution and sale of foods.

FUNCTIONS OF INSPECTORS UNDER SANITARY LAW

Determines sanitary conditions in establishments where foods are manufactured, prepared, stored and sold.

Sees that raw materials are in sound condition and that decayed and other unwholesome materials are kept out of food products.

Sees that no diseased persons are employed in establishments where foods are manufactured or sold.

Sees that foods are properly protected from dust, dirt, foul odors, flies, rodents, and other contaminating agencies.

Sees that restaurants, hotels and other similar establishments maintain proper toilet and washroom facilities in order that employes can keep clean.

SEED LAW

The object of this law is to prevent the sale of undesirable varieties of seeds, seeds of low germination, dirty seeds, seeds containing excessive amounts of weed seeds, and seeds which are short in weight.

FUNCTION OF INSPECTORS

Inspects seed houses to see that seeds are properly cleaned and stored.

Traces origin of seeds to see that undesirable and too slow maturing varieties are not imported.

Sees that packages of seeds are full weight.

Investigates complaints relative to fraudulent dealing in seeds.

Samples stocks of seeds and sends samples to laboratory for analysis.

WEIGHTS AND MEASURE LAW

The object of the Weights and Measure law is to secure for all the true weight or measure of the commodity sold or purchased.

FUNCTION OF THE WEIGHT AND MEASURE INSPECTORS

Inspects and tests accuracy of all weights, measures and scales used in the purchase and sale of articles of commerce.

Checks weights or measures of articles bought and sold by weight or measure to see that proper weights and measures have been given.

Inspects heavy wagon, elevator and mine scales to see that they are properly installed and kept adjusted.

Investigates complaints relative to false weights and measures and other violations of the weights and measure law.

CONCENTRATED COMMERCIAL FEEDING STUFFS LAW

The object of this law is to secure fair dealing in the sale of commercial feeds.

FUNCTION OF INSPECTORS

Examine stocks of feeds to see that they are properly labeled as to

quality, etc., and to forward samples to laboratory for analysis and comparison of feeding value.

Inspects stocks of feeds to see that packages bear tax tags.

Other laws enforced by this department are:

Paint and Linseed Oil Law,
Egg Law,
Turpentine Law,
Cold Storage Law,
Commercial Fertilizer Law,
Calcium Carbide Law,
Insecticide and Fungicide Law.

The duties of inspectors under these laws are similar to their duties under the laws in which duties are set forth in detail.

SUMMARY

During the year ending November 1, 1919, our inspectors have inspected a total of 21,129 establishments as follows:

Grocery	4,195
Meat Market	3,285
General Store	2,240
Bakery	825
Slaughter House	129
Restaurant	1,964
Coal Dealer	157
Elevator	839
Feed Store	123
Ice Cream Factory	622
Creamery	1,241
Dairymen	488
Farm Dairy	137
Confectionery	890
Wholesale Grocer	308
Seed Dealer	57
Bottling Works	24
Cream Station	2,079
Produce	1,128
Miscellaneous	398
Total	21,129

The following tabulation shows the nature of samples analyzed in our laboratory during the year:

Cream and Milk	1,547
Ice Cream	159
Miscellaneous Food Products	453
Samples for Attorney General and County Attorneys	60
Samples for Pharmacy Commission	9
Stock Foods	139
Seeds	25
Bacteriological Analysis	82
Total	2,474

DEPARTMENT FINANCES

Fees Received Year Ending October 31, 1919.

Inspection Fee Tags	$24,663.43
Sanitary Law Licenses	15,207.00
Scale Inspection Fees	8,549.45
Babcock Test Licenses	7,296.50
Egg Licenses	5,724.00
Scale Tag Licenses	4,821.00
Stock Food Licenses	4,860.00
Milk Licenses	3,056.00
Cold Storage	1,018.75
Commercial Fertilizer	400.00
Butter Trade-Mark Expenses of Wrappers and Labels	51.23
Feeding Stuff Analysis	54.00
Seed Analysis	13.50
Total	$75,717.86

EXPENSES YEAR ENDING OCTOBER 31, 1919.

Name	Salary	Expenses	Total
W. B. Barney	$ 3,008.33	$ 331.12	$ 3,339.45
*W. A. Gordon	494.84	27.26	522.10
*W. H. Harrison	1,613.46	31.68	1,645.14
E. L. Redfern	2,554.16	57.86	2,612.02
B. O. Brownlee	1,827.00	1,269.99	3,096.99
T. A. Clarke	1,856.95	1,117.38	2,974.33
R. E. Clemons	1,856.95	1,251.77	3,108.72
G. M. Lambert	1,856.95	1,187.14	3,044.09
*H. E. Ritter	1,428.20	912.88	2,341.08
F. W. Stephenson	1,954.15	673.82	2,627.97
*F. C. Hinze	361.28	180.26	541.54
*H. W. McElroy	133.33	91.86	225.19
O. P Thompson	1,856.95	1,432.74	3,289.69
L. P. Anderson	1,856.95	927.37	2,784.32
*F. C. Gilmore	841.96	686.69	1,528.65
L. P. Shaffer	1,745.29	1,065.11	2,810.40
*H. J. Forrester	184.94	98.30	283.24
*L. L. Flickinger	533.34	352.55	985.89
J. S. Bittner	1,856.95	715.40	2,572.35
E. A. Countryman	1,754.17	778.67	2,532.84
M. E. Flynn	1,856.95	786.67	2,643.62
J. W. Milnes	1,856.95	668.16	2,525.11
*J. M. Morrow	825.29	455.99	1,281.28
*C. Otteson	1,769.45	1,023.83	2,793.28
H. A. Stearns	1,727.76	889.90	2,617.66
*H. Richards	344.10	176.21	520.31
C. S. Bogle	2,078.15	397.36	2,475.51
*E. C. Lytton	279.29	4.22	283.51
A. B. Briggs	1,856.95	1,515.02	5,371.97
E. J. Nolan	1,856.95	1,777.82	3,634.77
W. G. Jordan	1,852.76	------	1,852.76
S. O. Van De Bogart	1,856.95	782.37	2,639.32
*A. W. Day	1,158.61	------	1,158.61
*W. C. McCarney	568.55	------	568.55
R. V. Murphy	1,402.49	------	1,402.49
*H. W. Dahl	219.23	------	219.23
Elma Schnack	1,054.16	------	1,054.16
Rene Thorson	1,054.16	------	1,054.16
*Vera Thompson	854.16	------	854.16
*Bess McCoy	166.66	------	166.66
*Mary Rose	161.13	------	161.13
J. W. Lytton	963.33	------	963.33
Laboratory Expense	------	628.17	628.17
Weights and Measure Expense	------	271.04	271.04
Miscellaneous Office Expense	------	1,893.78	1,893.78
Milk Agents' Expense	------	809.15	809.15
Milk Agents' Fees	------	5,118.65	5,118.65
Inspection Fee Tags	------	4,393.90	4,393.90
Telephone	------	81.31	81.31
Telegraph	------	38.34	38.34
Electricity	------	45.72	45.72
Drayage and Express	------	250.62	250.62
TOTAL	$ 55,340.18	$ 35,168.08	$ 90,508.26

* Employed less than one year.

CITY MILK LICENSES

Table showing the number of milk licenses issued to city milk dealers for each year from 1910 to 1919. In each case the year ends on July 4th.

Year	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919
Number	1,106	1,310	1,908	2,038	2,189	2,365	2,729	2,858	2,936	2,718

LOCAL STATE MILK INSPECTORS OF THE STATE OF IOWA

Cities	Inspectors
Boone	Maurice Healy, M. D.
Burlington	W. F. Shroeder
Cedar Rapids	Phillip Pray
Council Bluffs	W. M. Hendrix
Davenport	H. J. High
Des Moines	W. B. Barney, Jr.
Dubuque	J. N. Graham, D. V. S.
Ft. Dodge	Francis Ludgate, M. D. C.
Iowa City	C. S. Chase, M. D.
Keokuk	Geo. B. Narrley, M. D.
Marshalltown	R. M. Allen, D. V. S.
Mason City	A. L. Wheeler, M. D.
Muscatine	C. J. Hackett, D. V. S.
Ottumwa	B. W. Van DerVeer
Sioux City	W. D. Hayes, C. P. H.
Waterloo	E. J. Eaves

CREAMERY STATISTICS OF IOWA

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

COUNTY	No. of cream eries reported	Pounds of milk received	Pounds of cream received	Pounds of butter manufactured	Pounds sold to patrons	Pounds sold outside of Iowa	Pounds sold in Iowa
Adair	2	95,645	708,224	219,460	20,562	142,642	56,256
Adams	1	------	------	45,670	------	------	------
Allamakee	6	------	5,987,072	1,666,259	48,232	1,275,437	89,375
Audubon	6	18,592	892,081	250,086	30,388	282,816	46,396
Benton	2	116,800	333,331	136,614	3,904	58,110	72,924
Black Hawk	10	8,693,192	5,095,112	2,335,028	88,276	1,418,720	688,410
Boone	1	------	1,602,003	39,946	13,391	232,598	205,045
Bremer	21	49,548,980	2,912,121	3,952,944	185,422	2,095,656	105,136
Buchanan	7	11,997,628	2,760,903	1,373,744	103,149	1,212,473	87,396
Buena Vista	4	682,940	1,322,411	451,077	93,781	106,072	106,072
Butler	9	4,307,096	3,201,818	2,214,323	73,040	1,249,647	142,659
Calhoun	2	74,355	538,667	732,576	19,369	189,573	73,684
Carroll	7	270,555	2,121,762	783,992	19,696	408,438	361,681
Cass	2	------	488,313	437,584	539	505,381	59,067
Cedar	6	5,378	3,626,788	614,174	49,772	900,246	290,660
Cerro Gordo	7	913,918	8,705,880	3,439,452	51,269	2,623,363	182,109
Cherokee	1	------	39,555	13,188	1,314	7,231	4,640
Chickasaw	9	4,493,308	6,667,649	2,368,533	142,153	2,155,039	66,314
Clay	6	231,000	632,758	840,815	21,191	344,610	23,335
Clayton	12	15,316,261	5,614,233	2,382,688	101,803	2,116,426	90,900
Clinton	5	25,552	1,243,379	1,907,087	1,508,812	1,850,116	72,306
Crawford	1	92,817	1,106,661	482,550	260	442,845	22,343
Dallas	1	------	83,164	24,949	2,247	6,503	16,194
Delsware	12	8,790,746	5,282,821	2,023,057	148,987	1,721,281	142,799
Des Moines	1	12,750	619,725	333,580	885	102,952	236,935
Dickinson	3	------	972,976	345,469	14,447	172,435	64,881
Dubuque	14	6,514,350	6,672,955	5,035,801	76,726	3,792,571	84,055
Emmett	2	30,058	1,256,994	366,913	29,489	191,425	10,898

CREAMERY STATISTICS OF IOWA—Continued.

COUNTY	No. of creameries reported	Pounds of milk received	Pounds of cream received	Pounds of butter manufactured	Pounds sold to patrons	Pounds sold outside of Iowa	Pounds sold in Iowa
Fayette	19	27,401,786	7,993,434	3,699,786	185,608	2,790,639	191,926
Floyd	4	68,710	1,137,256	655,323	18,306	522,180	166,648
Franklin	5	33,616	2,558,160	696,576	31,743	476,253	39,467
Greene	1	----------	38,888	17,001	354	2,167	13,480
Grundy	3	480,807	7,496,253	427,808	27,458	425,660	3,454
Guthrie	3	42,764	691,535	208,120	10,298	70,776	136,248
Hamilton	3	----------	208,222	68,409	5,890	44,648	2,556
Hancock	6	593,101	3,661,319	1,176,317	51,521	1,044,02	66,259
Hardin	10	233,582	7,530,151	2,365,165	84,068	1,982,162	242,710
Henry	1	150,000	----------	14,500	----------	----------	----------
Howard	8	1,500,100	6,648,971	1,727,406	124,443	1,522,038	6,035
Humboldt	5	----------	1,397,978	538,352	49,171	296,293	154,323
Ida	1	not	churning	----------	----------	----------	----------
Iowa	5	60,000	633,506	200,330	21,209	123,040	55,825
Jackson	7	79,147	6,096,991	1,081,444	32,697	966,131	411,073
Jasper	2	----------	422,630	134,929	4,597	53,132	67,200
Johnson	2	----------	1,634,268	328,393	----------	152,514	161,279
Jones	6	371,515	5,745,550	1,742,058	102,255	1,543,027	96,769
Keokuk	2	421,193	1,135,181	439,329	1,000	369,729	68,600
Kossuth	12	240,081	5,444,818	1,466,108	138,721	1,022,044	117,351
Lee	2	----------	5,795,274	2,194,983	----------	7,183,396	223,084
Linn	6	----------	4,820,113	1,784,410	67,130	1,445,730	241,058
Lucas	1	----------	509,393	186,550	----------	----------	186,550
Lyon	3	----------	664,702	641,854	1,060	613,862	26,942
Mahaska	2	----------	237,726	285,383	2,600	131,368	----------
Marion	1	----------	----------	133,799	----------	10,422	33,450
Marshall	3	95,578	1,394,626	579,947	19,661	370,677	180,990
Mitchell	7	776,856	10,374,823	1,503,892	88,259	1,350,273	49,393
Mills	1	----------	134,620	50,630	715	29,879	20,046
Monroe	1	125,000	150,000	65,000	-------	20,000	45,000
Montgomery	1	448,261	409,470	154,783	----------	----------	1,016
Muscatine	1	33,692	386,375	105,875	4,633	49,743	51,582
O'Brien	4	238,766	1,713,644	591,970	38,328	436,643	115,107
Osceola	3	100,017	773,542	360,386	28,487	187,112	26,787
Page	1	----------	758,189	951,098	----------	856,345	35,979
Palo Alto	8	577,218	3,120,481	1,087,038	117,848	848,363	91,621
Plymouth	1	410,397	123,793	58,244	----------	----------	58,224
Pocahontas	3	40,000	405,149	154,395	5,159	113,849	35,387
Polk	3	540,015	3,956,740	3,592,224	-------	1,061,509	2,510,718
Pottawattamie	1	----------	1,077,516	1,341,676	----------	1,110,357	267,903
Poweshiek	2	219,368	526,368	121,082	5,627	54,156	61,300
Ringgold	1	----------	180,000	70,000	500	30,000	20,000
Sac	2	182,472	489,503	172,554	19,764	82,651	70,238
Scott	3	----------	1,572,117	563,205	8,658	394,253	269,324
Shelby	2	----------	275,675	105,174	12,143	81,143	12,000
Sioux	8	496,355	3,714,812	1,873,456	97,991	1,618,760	105,593
Story	6	168,780	4,408,217	557,172	57,552	413,461	86,149
Tama	3	36,000	909,192	698,195	8,589	630,624	58,772
Taylor	1	----------	124,860	150,546	16,500	77,546	56,500
Union	2	71,700	7,093,434	3,699,786	-------	750,193	33,410
Van Buren	1	----------	112,670	37,255	2,528	33,752	975
Wapello	3	64,200	2,902,898	2,373,251	300	1,971,486	404,765
Wayne	1	----------	2,268,194	792,185	1,982	745,383	44,820
Webster	4	90,332	1,678,296	405,378	1,958	58,886	344,534
Winnebago	8	641,038	4,997,495	1,408,391	145,618	1,372,649	79,938
Winneshiek	10	----------	7,747,083	2,751,385	46,725	2,594,044	103,176
Woodbury	3	2,863,414	29,689,261	12,689,261	10,350	11,894,288	835,977
Worth	9	22,908	3,796,271	1,314,460	232,150	1,173,951	57,759
Wright	3	210,772	1,115,910	274,198	12,628	130,196	79,980
TOTAL	393	154,249,983	334,331,326	90,915,938	4,878,592	79,647,236	12,259,116

CONDENSED MILK FACTORIES

Number	Name of Factory	Located at or Near	Name of Proprietor or Secretary	P. O. Address of Proprietor, or Secretary	Manager	P. O. Address Manager
	Bremer County—					
1	Mohawk Condensed Milk Co.	Waverly	S. J. Scudder	New York City	J. Lawrence Shaffer	Waverly
	Dallas County—					
2	Perry Packing Co.	Perry	Leroy Corliss	Omaha, Neb.	H. J. Ryner	Perry

CHEESE FACTORY LIST

Number	Name of Factory	Located at or Near	Manager Secretary or Name of Proprietor	P. O. Address of Proprietor, Secretary or Manager	Name of Cheesemaker	P. O. Address of Cheesemaker
	Adams County—					
1	Nodaway Factory	Nodaway	F. M. Eastlack	Nodaway	Francis Eastlack	Nodaway
	Allamakee County—					
2	Cherry Mound	S. of Waukon 99 mi.	D. J. Murphy	Waukon	Mike Gotthardt	Harper's Ferry
3	Forest Mills Factory	S. of Waukon 9 mi.	D. J. Murphy	Waukon	E. E. Austin	Waukon
4	French Creek Factory	N. of Waukon 7 mi.	D. J. Murphy	Waukon	Frank Best	Waukon
5	Hanover No. 3 Factory	N. of Waukon 8 mi.	D. J. Murphy	Waukon	A. Gerber	Waukon
6	Hanover No. 1 Factory	N. of Waukon 9 mi.	D. J. Murphy	Waukon	Frank Jones	Dorchester
7	Rossville Cheese Factory	Rossville	D. J. Murphy	Waukon	C. S. Klemme	Waukon

*Central Churning Plant. c-Co-op. s-Stock. 1-Individual.

CHEESE FACTORY LIST—Continued

Number	Name of Factory	Near Located at or	Manager Secretary or Name of Proprietor	P. O. Address of Proprietor, Secretary or Manager	Name of Cheesemaker	P. O. Address of Cheesemaker
8	Village Creek Factory....i	N. of Waukon 6 mi.	D. J. Murphy	Waukon	L. D. Cayton	Lansing
9	Dorchester Factory....i	Dorchester	D. J. Murphy	Waukon	Mike Helmbrecht	Dorchester
10	Frankville Factory....i	Frankville	D. J. Murphy	Waukon	Elmer Braun	Postville
12	Volney Factory....i	Volney	D. J. Murphy	Waukon	R. Fredenfels	Monona
	Bremer County—					
13	Janesville Co-op. Cheese Factory..c	Janesville	R. H. Allen	Janesville	Chas. Bye	Janesville
	Cass County—					
14	Lewis Cheese Factory....i	Lewis	Mrs. M. M. Delean	Lewis		Lewis
	Clayton County—					
15	Elkport Cheese & Cream Co....s	Elkport	Geo. L. Gifford	Elkport	Henry Eickhoff	Elkport
16	Farmersburg Cheese Co....c	Farmersburg				
	Howard County—					
17	Jamestown Cheese Factory....i	Riceville	John Stittler	Riceville	John Stettler	Riceville
	Humboldt County—					
18	Pioneer Cheese Factory....s	Renwick	Willie Keller	Renwick	Willie Keller	Renwick
19	Elmer Cheese Factory....s	Renwick	Willie Keller	Renwick	Albert Keller	Renwick
	Warren County—					
20	Norwalk Cheese Factory....i	Norwalk	Leonard Christiani	Norwalk	Leonard Christiani	Norwalk

*Central Churning Plant. c-Co-op. s-Stock. i-Individual

CREAMERY LIST

Number	Name of Creamery	Located at or Near	Name of Proprietor, Secretary or Manager	P. O. Address of Proprietor, Secretary or Manager	Name of Buttermaker	P. O. Address of Buttermaker
	Adair County—					
1	Greenfield Creamery Co....c	Greenfield	W. A. Foster	Greenfield	Chris Lundhoy	Greenfield
2	Adair Co-oper. Creamery Co....c	Adair	D. J. Couden	Adair	J. T. Ryan	Adair
	Adams County—					
3	Far. Mutual Co-oper. Cry. Assn..c	Prescott	O. M. Green	Prescott	E. E. Green	Prescott
	Allamakee County—					
4	New Albin Co-oper. Creamery....c	New Albin	R. G. May	New Albin	E. Rice	New Albin
5	Ludlow Co-oper. Creamery....c	Waukon	Henry Selbert	Waukon	Wm. P. Muth	Waukon
6	Postville Far. Co-op. Cream. Assn.c	Postville	C. C. Sanders	Postville	B. F. Shultz	Postville
7	Farmers Waukon Creamery Co....c	Waukon	H. G. Hogin	Waukon	Albert Hansmeier	Waukon
8	Arctic Spring Creamery Assn....c	Quandahl	O. C. Flatberg	Spring Grove, Minn.	Martin Goodno	Sp'g Grove, Minn.
9	Calhoun Creamery Assn....c	Church	C. J. Riser	Church	F. W. Hessel	Church
	Appanoose County—					
10	Strickler Creamery Co....s	Centerville	F. T. Strickler	Centerville	F. T. Strickler	Centerville
	Audubon County—					
11	Exira Creamery Co....	Exira	A. S. Stone	Exira	C. B. Peterson	Exira
12	Audubon Township Creamery Assn.c	Exira	L. P. Nelson	Exira	L. P. Nelson	Exira
13	West Hamlin Creamery Co....c	Exira	Martin Nelson	Exira	Carl Lynge	Exira
14	Oakfield Township Creamery....c	Brayton	Henry Dangaard	Exira	M. Anderson	Brayton
15	Audubon Creamery Co....c	Audubon	Peter Jensen	Audubon	Ansgaar Jensen	Audubon
16	Crystal Spring Creamery Co....s	Kimballton	Peter Thuesen	Kimballton	Peter Thuesen	Kimballtown
	Benton County—					
17	Model Creamery Co....i	Newhall	Wm. Gardemann	Newhall	Clay Lego	Newhall
18	Farmers Creamery Co....i	Belle Plaine	W. R. Lloyd	Belle Plaine	W. R. Lloyd	Belle Plaine
19	J. Beyer Creamery Co....i	Norway	John Beyer	Norway	Geo. Phillips	Norway
20	Vinton Creamery Co....i	Vinton	C. G. Daniels	Vinton	C. G. Daniels	Vinton
	Blackhawk County—					
21	Mt. Vernon Creamery Co....c	Boies	Geo. H. Moeller	Denver	E. H. Rohrssen	Cedar Falls
22	Benson Dairy Co....c	Benson	J. R. Dumond	Cedar Falls	J. F. Lorenzen	Cedar Falls
23	Crain Creek Creamery Co....i	Denver	Wm. Meier	Denver	Wm. Meier	Denver

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CREAMERY LIST—Continued.

Number	Name of Creamery	Located at or Near	Name of Proprietor Secretary or Manager	P. O. Address of Proprietor, Secretary or Manager	Name of Buttermaker	P. O. Address of Buttermaker
24	Orange Creamery Co. c	Waterloo	C. C. Bechtelheimer	Waterloo	R. W. Chadwick	Waterloo
25	Union Creamery Co. c	Finchford	G. A. Evenson	Janesville	Thos. Sadler	Janesville
26	Hudson Co-op. Dairy Assn....c	Hudson	O. H. Brandhorst	Hudson	Wm McFarlane	Hudson
27	C. A. Fosse....i	LaPorte City	C. A. Fosse	LaPorte City	H. Bettner	LaPorte City
28	Cedar Falls Creamery Co....i	Cedar Falls	Riedel & Jensen	Cedar Falls	T. N. Olsson	Cedar Falls
29	Co-op. Creamery Co. of Jubilee....s	Jesup	A. J. Widdel	Jesup	Harley Everet	Jesup
30	Cedar Valley Creamery Co. c	Waterloo	J. N. Brandes	Cedar Falls	Jens Jensen	Waterloo
31	Farmers Co-op. Creamery Co....c	Dunkerton	G. S. Glecknet	Dunkerton	W. P. Hughes	Dunkerton
	Boone County—					
32	Rosendale Co-op. Creamery c	Story City	L. C. Peterson	Story City	J. M. Gertson	Story City
	Bremer County—					
33	Little Valley Creamery Co....c	Sumner	Chas. Krueger	Sumner	F. Wills	Sumner
34	Climax Creamery Co. c	Sumner	Herman Selle	Sumner	A. L. Nichols	Sumner
35	Klinger Co-op. Creamery Co....c	Readlyn	Henry Otto	Readlyn	C. W. Zell	Fairbank
36	Knittel Creamery Co. c	Readlyn	J. Strottsmann	Readlyn	F. H. Wehling	Readlyn
37	Fremont Creamery Co. c	Tripoli	J. L. Clark	Tripoli	J. L. Clark	Tripoli
38	Fredericka Creamery c	Fredericka	J. H. McDonald	Fredericka	Don Ambrose	Fredericka
39	Dayton Creamery Co. c	Sumner	F. E. Hatch	Sumner	J. G. Nichols	Sumner
40	Western Douglas Creamery Assn....s	Bremer	Carl O'Berhen	Plainfield	Ernest Haase	Waverly
41	Janesville Creamery Assn. c	Janesville	B. O. Squires	Janesville	B. O. Squires	Janesville
42	Siegel Creamery Co. c	Tripoli	Fred Bodemeyer	Tripoli	J. W. Wedemeyer	Waverly
43	Spring Fountain Creamery Co....c	Sumner	Wm. Zell	Sumner	F. W. Bremer	Sumner
45	First Maxwell Creamery Co....c	Denver	H. C. Griese	Denver	H. C. Koeneke	Denver
46	Excelsior Creamery Co. c	Sumner	Geo. Rockdaschil	Sumner	W. T. Hughes	Sumner
47	Washington Creamery Co. c	Waverly	J. B. Monaghan	Waverly	C. L. Gamm	Waverly
48	Potter Siding Creamery Co....c	Tripoli	Fred Hildebrand	Waverly	E. M. Guiney	Tripoli
49	Sumner Creamery Co. V....c	Sumner	Geo. Wescott	Sumner	E. B Olds	Sumner
50	Denver Creamery Co. c	Denver	E. W. Brandt	Denver	Otto Buherer	Denver
51	Tripoli Creamery Co. c	Tripoli	Glen G. Anderson	Sumner	F. H. Harms	Tripoli
52	Artesian Creamery Co. c	Denver	Henry Seegers	Waverly	C. J. Beier	Waverly
53	Readlyn Creamery Co. c	Readlyn	H. A. Griese	Readlyn	H. A. Grieve	Readlyn
54	J. Mellinger & Son i	Plainfield	G. Mellinger	Plainfield	R. L. Alderson	Plainfield
	Buchanan County—					
55	Jesup Creamery Co. c	Jesup	C. L. Bright	Jesup	D. G. Hoffman	Jesup

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CREAMERY LIST—Continued.

Number	Name of Creamery	Located at or Near	Name of Proprietor Secretary or Manager	P. O. Address of Proprietor, Secretary or Manager	Name of Buttermaker	P. O. Address of Buttermaker
56	Lamont Creamery Co. c	Lamont	O. C. Gladwin	Lamont	E. A. Cole	Lamont
57	Klinger Creamery Co. i	Fairbanks	C. H. Rohrssen	Fairbanks	C. H. Rohrssen	Fairbanks
58	Wapsie Valley Creamery Co. ....p	Independence	C. V. Rosenberger	Independence	Roy Stewart	Independence
59	Fairbanks Far. Co-op. Creamery....c	Fairbanks	A. J. Langley	Fairbanks	E. E. Brant	Fairbanks
60	Hazelton Far. Co-op. Creamery....c	Hazelton	J. W. Basham	Hazelton	Matt McDonwall	Hazelton
61	Winthrop Creamery Co....i	Winthrop	J. C. Guthrie	Winthrop	J. Slaughter	Winthrop
	Buena Vista County—					
62	Linn Grove Creamery i	Linn Grove	Peterson & Larson	Linn Grove	Peter Peterson	Linn Grove
63	Farmers Creamery & Product Co. c	Newell	J. C. Aroe	Newell	N. C. Olson	Newell
64	Alta Creamery Co. i	Alta	J. J. Bork	Alta	J. J. Bork	Alta
65	Plain View Creamery Co. ....p	Storm Lake	J. M. Hussey	Storm Lake	Paul Moerman	Storm Lake
	Butler County—					
66	New Hartford Far. Mut. Creamery c	New Hartford	R. L. Farnsworth	New Hartford	P. W. Peterson	New Hartford
67	Community Creamery Co. i	Parkersburg	C. J. Rohde	Parkersburg	C. J. Rohde	Parkersburg
68	Shell Rock Creamery Assn. ....s	Shell Rock	D. C. Austin	Shell Rock	F. D. Daniels	Shell Rock
69	Albin Creamery Co. i	Parkersburg	W. H. Chapman	Parkersburg	W. H. Chapman	Parkersburg
70	Farmers Co-op. Creamery Co....c	Greene	J. Jacobson	Greene	J. Jacobson	Greene
71	White Rose Creamery Co. i	Austinville	S. T. Patterson	Austinville	Paul F. Anderson	Austinville
72	Dumont Creamery Co. i	Dumont	R. O. Reed	Dumont	R. O. Reed	Dumont
73	Clarksville Creamery Co i	Clarksville	H. W. Stine	Clarksville	M. A. Jones	Clarksville
74	Farmers Co-op. Creamery c	Allison	Wm. Allen	Allison	Roy Sweet	Allison
	Calhoun County—					
75	Pomeroy Creamery Co. i	Pomeroy	H. A. Albrecht	Pomeroy	Geo. Froom	Pomeroy
76	Cedar Creek Creamery Co. i	Somers	S. P. Peterson	Somers	A. M. Knudsen	Somers
77	A. Baird & Co. ....s	Lohrville	A. Baird & Co.	Lohrville	J. J. Stamen	Lohrville
78	Moon Bros. Creamery i	Manson	Harry A. Moon	Manson	C. G. Moon	Manson
	Carroll County—					
78	Manning Creamery Co. ....s	Manning	J. A. Bruck	Manning	Fred Shifflett	Manning
79	Dedham Creamery i	Dedham	H. Lauridsen	Dedham	H. Lauridsen	Dedham
80	Jensen Creamery i	Coon Rapids	Jens Jensen	Coon Rapids	Jens Jensen	Coon Rapids
81	Rose Valley Creamery Co. i	Roselle	M. Friedman	Carroll	M. Friedman	Carroll
82	Halbur Creamery Co. i	Halbur	M. J. Wagner	Halbur	M. J. Wagner	Halbur

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CREAMERY LIST—Continued.

Number	Name of Creamery	Located at or Near	Name of Proprietor Secretary or Manager	P. O. Address of Proprietor, Secretary or Manager	Name of Buttermaker	P. O. Address of Buttermaker
83	Farmers Co-op Creamery ....s	Breda	A. J. Tolking	Breda	J. E. DuCharme	**Breda** ....
84	Templeton Creamery Co. c	Templeton	John Bierl	Templeton	Frank Domayer	Templeton ....
	Cass County—					
85	Central Iowa Poultry Egg Co. i	Atlantic	Corin Bros.	New York	Victor Hattesen	Atlantic ....
86	Swift & Co. ....s	Atlantic	G. G. Jeck	Atlantic	E. J. Evans	Atlantic ....
	Cedar County—					
87	Lowden Far. Mut. Co-op. Assn. c	Lowden	Kossuth Pauls	Lowden	W. L. Sloan	Lowden ....
88	Durant Far. Creamery Assn. c	Durant	A. R. Lamp	Durant	W. F. Shurke	Durant ....
89	West Branch Creamery Co. i	West Branch	W. C. Phelps	West Branch	R. O. Ras	West Branch ....
90	Golden Star Creamery i	Bennett	W. H. Kroeger	Bennett	A. R. Christensen	Bennett ....
91	Massillon Co-op. Creamery Co. c	Massillon	P. H. Schneider	Massillon	Peter White	Massillon ....
93	Tipton Creamery i	Tipton	A. J. Barth	Cedar Rapids	Otto Wichman	Tipton ....
	Cerro Gordo County—					
94	Rockwell Co-op. Creamery Co. c	Rockwell	S. C. Siegfied	Rockwell	F. D. Ford	Rockwell ....
95	Far. Mut. Co-op. Creamery Co. c	Clear Lake	H. E. Palmeter	Clear Lake	Guy Thomas	Clear Lake ....
96	Dougherty Far. Creamery Co. c	Dougherty	R. J. Mullen	Dougherty	Chris Jensen	Dougherty ....
97	Plymouth Co-op. Creamery Co. c	Plymouth	N. F. Ward	Plymouth	C. N. Hart	Plymouth ....
98	Ventura Farmers Creamery Co. c	Ventura	J. E. Sawyer	Clear Lake	E. P. Conway	Ventura ....
100	Thornton Creamery Co. i	Thornton	G. & H. Assink	Thornton	Geo. Assink	Thornton ....
101	E. B. Higley Co. ....s	Mason City	C. O. Keefe	Mason City	R. E. Adams	Mason City ....
	Cherokee County—					
102	Cherokee Creamery Co. i	Cherokee	John H. Goeb	Cherokee	Leonard Lowell	Cherokee ....
	Chickasaw County—					
103	Williamstown Creamery Assn. c	New Hampton	C. M. Burmaster	Fredericksburg	Theo. Slack	New Hampton ....
104	Jerico Creamery Assn. c	New Hampton 11 Mi. N. E.	T. O. Knutson	New Hampton	J. P. Kelley	New Hampton ....
105	Farmers Co-op. Creamery Assn. c	Nashua	S. W. Blinn	Nashua	Hugh Bullis	Nashua ....
106	Alta Vista Far. Creamery Assn. c	Alta Vista	Albert Tretren	Alta Vista	R. Jorgensen	Alta Vista ....
107	Lawler Creamery Assn. c	Lawler	Ray Nulty	Lawler	John Finnegan	Lawler ....
108	Iowa Farmers Creamery Assn. c	Ionia	J. F. Cagley	Ionia	F. W. Stickman	Ionia ....

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CREAMERY LIST—Continued.

Number	Name of Creamery	Located at or Near	Name of Proprietor Secretary or Manager	P. O. Address of Proprietor, Secretary or Manager	Name of Buttermaker	P. O. Address of Buttermaker
109	New Hampton Far. Cre'm'ry Assn. c	New Hampton	J. W. Krieger	New Hampton	G. W. Mohler	New Hampton ....
110	Fredericksburg Butter Factory c	Fredericksburg	C. L. Whitcomb	Fredericksburg	Chris Russler	Fredericksburg ....
111	Sand Co-op. Creamery Co. c	Lawler	H. A. Grimso	Lawler	John Flaskerud	Lawler ....
	Clayton County—					
12	Littleport Far. Co-op. Creamery c	Littleport	C. C. Ruegnuts	Elkport	Earl Batchelder	Littleport ....
13	Strawberry Far. Creamery Assn. c	Strawberry Point	W. A. Carrier	Strawberry Point	H. C. Ladage	Strawberry Point ....
114	F. A. Hatch Co. ....s	Edgewood	F. H. Hatch	Edgewood	R. E. Firman	Edgewood ....
115	Garnavillo Creamery Co. ....s	Garnavillo	A. J. Kregel	Garnavillo	J. N. Gilbertson	Garnavillo ....
116	Crown Brand Creamery Co. i	Elkader	J. P. Leonard	Elkader	J. P. Leonard	Elkader ....
117	Garber Far. Creamery Assn. c	Garber	R. F. Smith	Garber	O. F. B. B.	Garber ....
118	Farmers Co-op. Creamery Co. c	Volga	L. J. Tenney	Strawberry Point	Wm. Mc Ginnis	Volga ....
119	Farmersburg & St. Olaf Co-op. Creamery Co. c	St. Olaf	H. O. Larson	St. Olaf	J. F. Fisher	St. Olaf ....
120	Union Farmers Co-op. Creamery c	Monona	C. E. Hazlett	Monona	P. A. Jordhal	Monona ....
121	Farmers Co-op. Creamery Co. c	Edgewood	W. A. Robinson	Edgewood	W. H. Eischeid	Edgewood ....
122	Millville Creamery Co. c	Millville	H. G. Friedlein	Turkey River	R. C. Wilson	Turkey River ....
123	Farmers Co-op. Creamery Co. c	Osterdock	John White	Garber	R. J. Smith	Osterdock ....
	Clay County—					
124	Farmers Co-op. Creamery c	Dickens	D. C. Van Hoven	Dickens	G. A. Flack	Dickens ....
125	Langdon Mut. Co-op. Creamery Assn. i	Langdon	**A. B. Cutler**	Langdon	Earl E. Post	Langdon ....
126	Greenville Creamery i	Greeneville	L. Larson	Greeneville	C. Christiansen	Greeneville ....
127	Webb Creamery Co. ....p	Webb	Birdsall & Anderson	Webb	Hans Vibe	Webb ....
128	Royal Creamery Co. ....s	Royal	Peter F. Soenke	Walcott	....	....
129	Spencer Dairy Products Co. c	Spencer	Jensen & Christiansen	Spencer	Eric Jensen	Spencer ....
	Clinton County—					
130	Swift & Co. ....s	Clinton	S. F. Hayward	U. S. Yards Chicago, Ill.	H. W. Ames	Clinton ....
131	Farmers Co-op. Creamery Co. c	Wheatland	W. A. Templeton	Wheatland	R. E. Long	Wheatland ....
132	Clinton County Central Creamery i	Dewitt	O. C. Capper	Dewitt	O. C. Capper	Dewitt ....
133	Farmers Co-op. Creamery Co. c	Toronto	Henry Struck	Toronto	R. L. Litts	Toronto ....
134	Charlotte Creamery Co. ....s	Charlotte	Martin Nielsen	Charlotte	Martin Nielsen	Charlotte ....

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CREAMERY LIST—Continued.

Number	Name of Creamery	Located at or Near	Name of Proprietor Secretary or Manager	P. O. Address of Proprietor, Secretary or Manager	Name of Buttermaker	P. O. Address of Buttermaker
	Crawford County—					
135	Nicholson Ice & Prod. Co.....s	Denison	R. P. Ellis	Denison	A. Hyslop	Denison
	Dallas County—					
136	Farmers Co-op. Creamery & Products Co. c	Dexter	J. F. Pease	Dexter	P. F. Christianson	Dexter
	Delaware County—					
137	Colesburg Co-op. Creamery Assn...c	Colesburg	Robert A. Gull	Colesburg	A. L. Landis	Colesburg
138	Manchester Co-op. Creamery Co..c	Manchester	E. V. Davis	Manchester	Elmer J. Reed	Manchester
139	Hopkinton Creamery Assn.....c	Hopkinton	D. H. Johnson	Hopkinton	R. Furstein	Monkinton
140	Earlville Creamery i	Earlville	I. S. Hutton	Earlville	Morton Reeve	Earlville
141	Greeley Far. Co-op. Creamery Co...c	Greeley	F. B. Armstrong	Greeley	W. R. Crabb	Greeley
142	Silver Springs Creamery Co.....s	Delhi	E. B. Porter	Delhi	H. B. Bancroft	Delhi
143	Farmers Mut. Creamery Co.....m	Sand Springs	John L. Batchelder	Sand Springs	John L. Batchelder	Sand Springs
144	Hazel Green Creamery Co.....c	Ryan	Daniel King	Delhi	Alex Graham	Manchester
145	Farmers Creamery Co.....c	Ryan	Henry Brayton	Manchester	Wm. Diiger	Ryan
146	Masonville Co-op. Creamery Co....c	Masonville	J. Wellman	Masonville	Mark Lyden	Masonville
147	Bear Creek Creamery Co.....c	Dyersville	B. J. Woerdehoff	Earlville	J. E. Taylor	New Vienna
148	Farmers Co-op. Creamery Co.....c	Thorpe	M. E. Blair	Manchester	G. Stuesse	Thorpe
	Des Moines County—					
149	Burlington Creamery Co.....e	Burlington	H. K. Tweedell	Burlington	E. H. Griffith	Burlington
	Dickinson County—					
150	Spirit Lake Produce Co.....i	Spirit Lake	I. N. Clark	Spirit Lake	Victor Welter	Spirit Lake
151	Lake Park Co-op. Creamery Co...s	Lake Park	J. G. Chrysler	Lake Park	E. E. Starr	Lake Park
152	Milford Far. Butter & Cheese Assn.	Milford	Fred W. Born	Milford	Fred W. Born	Milford
	Dubuque County—					
153	Beatrice Creamery Co.....c	Dubuque	Tony Norskow	Dubuque	Tony Norskow	Dubuque
154	Worthington Farmers Creamery....c	Worthington	Wm. White	Worthington	C. Beahler	Worthington
155	Swift & Co.....s	Dubuque	F. S. Hayward	U. S. Stock Yds. Chicago, Ill.	Frank Gonser	Dubuque
156	Cascade Co-op. Creamery Co.....c	Cascade	P. J. Carlin	Cascade	H. A. Fettkether	Cascade

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CREAMERY LIST—Continued.

Number	Name of Creamery	Located at or Near	Name of Proprietor Secretary or Manager	P. O. Address of Proprietor, Secretary or Manager	Name of Buttermaker	P. O. Address of Buttermaker
157	Balltown Far. Co-op. Creamery Co. c	Balltown	L. J. Sigwarth	Waupeton	A. Barker	Waupeton
158	New Vienna Central Creamery.....s	New Vienna	H. F. Smith	New Vienna	M. O. Birkwer	New Vienna
159	Hawkeye Far. Creamery Co.....c	Farley	C. V. Hanna	Epworth	Thos. E. Landis	Farley
160	Hickory Valley Creamery Co.....c	Dyersville	Simon Burlage	Farley	Fred J. Haven	Farley
161	Holy Cross Creamery Co.....c	Holy Cross	Tony J. Maiers	North Buena Vista	John Dawson	North Buena Vista
162	Sherrill Mut. Co-op.Cry. Assn.....c	Sherrill	J. C. Boleyn	Dubuque	Fred Koeller	Specbts Ferry
163	Hague Creamery Co.....i	Zwingle	H. S. Hague	Zwingle	H. S. Hague	Zwingle
164	Far. Golden Star Creamery Co...c	Dyersville	Albert J. Kern	Dyersville	D. F. Broers	Dyersville
165	Globe Creamery Co.....c	Luxenburg	John Langel	New Vienna	J. P. Cripper	New Vienna
166	Iowa Dairy Co.....c	Dubuque	Andrew Fluetsch	Dubuque	H. E. Williams	Dubuque
	Emmett County—					
167	Farmers Creamery Co.....c	Wallingford	O. O. Refrell	Wallingford	Wm. Helgason	Wallingford
168	Ringstead Co-op. Cry. Co.....c	Ringstead	S. C. Hain	Ringstead	J. C. Jensen	Ringstead
	Fayette County—					
169	Waucoma Farmers Co-op. Assn....c	Waucoma	Joe Reilly	Waucoma	Frank Shipton	Waucoma
170	Farmers Creamery Co.....c	Arlington	Floyd Pinnsey	Arlington	E. E. Mitlestadt	Arlington
171	Center Valley Cry. Co.....c	Sumner	R. O. Dietel	Sumner	Ray Scoles	Sumner
172	Farmers Mut. Co-op. Cry. Co.....c	Maynard	J. C. Lewis	Maynard	Frank Seeley	Maynard
173	Riverside Creamery Co.....i	Wadena	Wm. M. McGinnis	Wadena	Wm. M. McGinnis	Wadena
174	West Union Co-op. Creamery Co...c	West Union	Wm. E. Halstead	West Union	Geo. Haur	West Union
175	Clermont Valley Creamery Co.....c	Clermont	Alfred Olson	Clermont	A. Erickson	Clermont
176	Oelwein Farmers Creamery Co.....c	Oelwein	A. W. Stewart	Oelwein	G. A. Hanson	Oelwein
177	Westgate Co-op. Creamery Co.....c	Westgate	F. C. Coleman	Westgate	L. C. Barnes	Westgate
178	Fayette Creamery Assn.....c	Fayette	Peter Jubb	Fayette	C. H. Pinch	Fayette
179	Oran Creamery Co.....c	Oran	J. N. Getz	Oran	B. F. Bently	Oran
180	Richfield Creamery Co.....c	Sumner	F. G. Neimann	Sumner	J. B. Zbornik	Sumner
181	Farmers Co-op. Creamery.....c	St. Lucas	G. H. Haekman	St. Lucas	J. T. Mogle	St. Lucas
182	Hawkeye Creamery Co.....c	Hawkeye	H. F. Hauth	Hawkeye	Frank Bowdish	Hawkeye
183	German Creamery Co.....c	Westgate	Wm. Seegars	Westgate	E. H. Homan	Westgate
184	Elgin Farmers Creamery Co.....c	Elgin	Melcher Luchsinger	Elgin	Ed. Hanson	Elgin
185	Farmers Mut. Creamery Assn.....c	Stanley	L. G. Gleim	Arlington	W. E. Miffelstadt	Stanley
186	Farmers Co-op. Creamery Assn....c	Alpha	A. A. Belknap	Alpha	W. A. Rizer	Alpha

*Central Churning Plant. c-Co-op. s-Stock. i-Individual.

CREAMERY LIST—Continued.

Number	Name of Creamery	Located at or Near	Name of Proprietor Secretary or Manager	P. O. Address of Proprietor, Secretary or Manager	Name of Buttermaker	P. O. Address of Buttermaker
	Floyd County—					
187	Niles Creamery Co.....l	Colwell	Frank Gruner	Charles City	Chas. Vurath	Charles City
188	Charles City Creamery Co.....l	Charles City	N. H. Nelson	Charles City	Joe. Klemmer	Charles City
189	Nora Springs Cry. & Prod. Co.....l	Nora Springs	W. F. Miner	Nora Springs	C. Erickson	Nora Springs
190	Rockford Co-op. Dairy Assn.....c	Rockford	J. O. Ersland	Rockford	J. O. Ersland	Rockford
	Franklin County—					
191	Farmers Co-op. Cry. Co.....c	Popejoy	Ed. Akens	Dows	H. J. Binger	Popejoy
192	Latimer Co-op. Creamery Co.....c	Latimer	O. Johnson	Latimer	Rasmus Nelson	Latimer
193	Farmers Creamery Co.....s	Alexander	W. F. Dunn	Alexander	W. H. Tinkey	Alexander
194	Swift & Co.....s	Hampton	Swift & Co.	Chicago, Ill.	F. C. Koenig	Hampton
195	Hamilton Co-op. Creamery Co.....c	Coulter	Geo. Dohrmann	Hampton	L. Anderson	Coulter
	Greene County—					
196	Jefferson Creamery Co.....l	Jefferson	Gruner Bros.	Jefferson	M. E. Bruner	Jefferson
	Grundy County—					
197	Fern Creamery Co.....c	Parkersburg	W. H. Henning	Parkersburg	J. T. Soles	Stout
198	Beaver Center Creamery Co.....m	Stout	Andrew J. Meyer	Stout	T. E. Dilger	Stout
199	Buck Grove Creamery.....l	Parkersburg	H. G. Kramer	Aplington	H. G. Kramer	Aplington
200	Fredsville Co-op. Creamery.....c	Dike	N. C. Syndergaard	Cedar Falls	F. D. Shifflet	Cedar Falls
	Guthrie County—					
201	Farmers Creamery Prod. Co.....s	Guthrie Center	E. J. Kilgare	Guthrie Center	Martin Van Dam	Guthrie Center
202	Casey Creamery Co.....c	Casey	John H. Smith	Casey	Fred F. Oddy	Casey
203	Panora Co-op. Creamery Co.....c	Panora	F. F. Wilcox	Panora	F. F. Wilcox	Panora
204	Menlo Mutual Cry. Assn.....c	Menlo	E. J. Martens	Menlo	A. A. Nolte	Menlo
	Hamilton County—					
205	Ellingson, Mathre Co. l	Webster City	Ellingson Mathre Co	Webster City	E. L. Hall	Webster City
206	Randall Farmers Creamery c	Randall	C. L. Sydnes	Randall	L. E. Nelson	Randall
207	Ellsworth Creamery Assn. c	Ellsworth	S. Stenberg	Radcliffe	C. J. Knutson	Ellsworth
208	Farmers Co-op. Creamery Co. c	Stratford	Ed. Peterson	Stratford	John Rierson	Stratford
	Hancock County—					
209	Woden Farmers Creamery Co. c	Woden	Adolph Orthel	Woden	Geo. Boreen	Woden

*Central Churning Plant. c-Co-op. s-Stock. l-Individual.

CREAMERY LIST—Continued.

Number	Name of Creamery	Located at or Near	Name of Proprietor Secretary or Manager	P. O. Address of Proprietor, Secretary or Manager	Name of Buttermaker	P. O. Address of Buttermaker
210	Kanawa Farmers Co-op. Mutual Creamery c	Kanawa	J. P. Larson	Kanawa	B. Swanson	Kanawa
211	Farmers Co-op. Creamery Co.....c	Garner	J. Clessel	Garner	C. R. Conway	Garner
212	Crystal Creamery Co. .....s	Crystal Lake	H. P. Stahr	Crystal Lake	R. O. Rasmussen	Crystal Lake
213	Klemme Co-op. Creamery Co. c	Klemme	Valentine Josten	Klemme	A. D. Gimmer	Klemme
214	Britt Creamery Co. c	Britt	H. A. Shaper	Britt	G. G. Kolthoff	Britt
	Hardin County.					
215	Ackley Creamery Co. l	Ackley	Martin & Hadley	Ackley	F. W. Nelson	Ackley
216	Alden Creamery Co.....c	Alden	E. C. Edwards	Alden	Floyd Kidd	Alden
217	Hubbard Creamery Co. .....s	Hubbard	H. K. Granner	Hubbard	Fred Herdog	Hubbard
218	Eldora Creamery Co. l	Eldora	Herbert Soballe	Eldora	G. J. Gudneckt	Eldora
219	Cleves Creamery Co. .....s	Cleves	W. F. Sharp	Cleves	Robt. H. Johns	Abbott
220	Owasa Co-op. Creamery Co. c	Owasa	C. J. Bradden	Owasa	H. Brokaw	Owasa
221	Swift & Co. .....s	Iowa Falls	J. B. Smith	Iowa Falls	J. Fiete	Iowa Falls
222	Steamboat Rock Creamery l	Steamboat Rock	A. M. Whitney	Steamboat Rock	A. M. Whitney	Steamboat Rock
223	Concord & Scott Creamery c	Radcliffe	D. H. Bobb	Radcliffe	D. H. Bobb	Radcliffe
224	Iowa Falls Creamery. Co. c	Iowa Falls	S. J. Osgood	Iowa Falls	J. R. Jones	Iowa Falls
	Henry County—					
225	Pleasant Hill Dairy l	Mt. Pleasant	Ralph C. Campbell	Mt. Pleasant	Ralph C. Campbell	Mt. Pleasant
	Howard County—					
226	Whelan Produce Co. l	Elma	J. P. Whelan	Elma	J. P. Whelan	Elma
227	Saratoga Co-op. Creamery Assn.....c	Saratoga	John Zidlicky	Cresco	Hans Witzke	Saratoga
228	Farmers Co-op. Creamery Co. c	Chester	L. A. Eggericks	Chester	C. C. Plummer	Chester
229	Farmers Creamery Co. c	Cresco	J. J. House	Cresco	T. C. Yeoman	Cresco
230	Maple Leaf Creamery Co. c	Maple Leaf	D. Lane	Elma	N. W. Graff	Elma
231	Schley Creamery Co. l	Schley	J. V. Placek	Cresco	Frank Barnes	Cresco
232	Cresco Creamery Co. l	Cresco	Palmer & Nelson	Cresco	L. A. Palmer	Cresco
233	Farmers Co-op. Creamery c	Protovin	C. P. Painovsky	Protovin	C. W. Chyle	Protovin
	Humboldt County—					
234	Waucousta Creamery Co. c	Ottosen	C. O. Lomen	Ottosen	L. J. Bremsen	Ottosen
235	Bradgate Creamery Co. l	Bradgate	E. H. Avery	Bradgate	D. A. O'Neil	Bradgate

*Central Churning Plant. c-Co-op. s-Stock. l-Individual.

CREAMERY LIST—Continued.

Number	Name of Creamery	Located at or Near	Name of Proprietor Secretary or Manager	P. O. Address of Proprietor, Secretary or Manager	Name of Buttermaker	P. O. Address of Buttermaker
236	Bode Creamery Assn. c	Bode	H. C. Olson.....	Bode	I. J. Shurson.....	Bode .....
237	Thor Creamery Co. ..... s	Thor	J. E. Lanning.....	Thor	H. B. Looney.....	Thor .....
238	Humboldt Creamery Co. ..... s	Humboldt	W. F. Priebe, Jr...	Chicago	B. E. Lanning.....	Humboldt .....
	Iowa County—					
239	Troy Creamery c	Williamsburg	Geo. H. Hough.....	Williamsburg	.....	.....
240	Marengo Creamery Co. ..... p	Marengo	Ady & Sullivan.....	Marengo	H. C. Whisler.....	Marengo .....
241	Farmers Co-op. Creamery Co..... c	Victor	Wm. Boyle.....	Victor	Wm. Boyle.....	Victor .....
242	Genoa Bluffs Creamery Co. c	Ladora	Mrs. May Tanner....	Marengo	J. R. Bushey.....	Marengo .....
243	York Creamery Co..... c	Williamsburg	H. W. Hudepohl....	So. Sinasla.....	M. Greenfield.....	Williamsburg .....
	Ida County—					
244	Holstein Co-op. Creamery Co..... c	Holstein	Gus Whede	Holstein	John D. Sulter	Holstein .....
245	Sterling Creamery Co..... l	Lamotte	Huffman Cry. Co. .	Lamotte	John M. Huffman	Lamotte .....
	Jackson County—					
246	St. Donatus Creamery Co..... l	St. Donatus	J. L. Heinrixy	St. Donatus	N. E. Palmerton ...	St. Donatus .....
247	Farmers Union Co-op. Cry. Co..... c	Maquoketa	M. J. Joiner	Maquoketa	H. C. Thompson ...	Maquoketa .....
248	Spring Brook Creamery Co..... c	Creston	A. J. Negus	Creston	Ed Rubasamen	Creston .....
249	Hanson Produce Co. ..... s	Maquoketa	L. B. Huiman	Maquoketa	G. S. Wing	Creston .....
250	Creston Creamery Assn..... c	Creston	Max Eahler	Creston	A. J. Spahn	Maquoketa .....
251	Bellevue Creamery Co..... l	Bellevue	Geo. Ellinghouse ...	Bellevue	Warren Mace.....	Bellevue .....
252	Monmouth Creamery Co..... l	Monmouth	C .H. Merold	Monmouth	W. H. Miller	Monmouth .....
	Jasper County—					
253	Dairyland Dairy Co..... l	Newton	Guy M. Lamberet..	Newton	Walter Anderson ...	Newton .....
254	Maplehurst Dairy Co..... p	Newburg	S. G. Squire	Newburg	W. J. Martens	Newburg .....
	Johnson County—					
255	Iowa City Produce Co..... c	Iowa City	A. J. Feney	Iowa City	Ross Swence	Iowa City .....
256	Sidwell's Dairy..... l	Iowa City	Albert B. Sidwell ..	Iowa City	W. E. Hunter	Iowa City .....
	Jones County—					
257	Amber Co-op. Creamery Co..... c	Amber	P. B. Daly	Amber	Orville Bailey	Amber .....
258	Farmers Creamery Co..... c	Center Junction ...	C. A. Burmeister ..	Center Junction ...	Harry Johnston	Center Junction ...
259	Farmers Mutual Creamery Co..... c	Monticello	O. W. Brazelton	Monticello	P. Lehman	Monticello .....
260	Iowa Creamery Co..... s	Oxford Junction ...	L. F. Sutton	Clinton	Watson Sheik	Oxford Junction ...
261	Anamosa Farmers Creamery Co...c	Anamosa	Henry Mrey	Anamosa	Claude A. Miller	Anamosa .....

CREAMERY LIST—Continued.

Number	Name of Creamery	Located at or Near	Name of Proprietor Secretary or Manager	P. O. Address of Proprietor, Secretary or Manager	Name of Buttermaker	P. O. Address of Buttermaker
262	Langworthy Mut. Creamery Co....c	Langworthy	Carl W. Siebelf...	Langworthy	Geo. Denton	Langworthy .....
	Keokuk County—					
263	Geo. M. Griffin Co..... l	Sigourney	C. A. & I. S. Griffin.	Providence R. I....	E. E. Hall	Sigourney .....
264	S. E. Reisman Creamery Co..... l	What Cheer	S. E. Reisman	What Cheer	Earl D. Spaith.....	What Cheer .....
	Kossuth County—					
265	Ledyard Co-op. Creamery Assn.....c	Ledyard	P. A. Wessman.....	Ledyard	Henry M. Dyer.....	Ledyard .....
266	Bancroft Co-op.Creamery Co.....c	Bancroft	Frank A. Fangman	Bancroft	H. E. Thies.....	Bancroft .....
267	Swea City Co-op. Creamery Co.....c	Swea City	C. W. Pearson.....	Swea City	J. A. McAdams.....	Swea City .....
268	Lone Rock Co-op. Cry. Co.....c	Lone Rock	Robt. Jacobs	Lone Rock	L. R. Roderick	Lone Rock .....
269	Farmers Co-op. Creamery Co.....c	Hoberton	F. C. Boals.....	Algona	J. Blomster	Algona .....
270	Algona Co-op. Creamery Co.....c	Algona	D. A. Wallace.....	Algona	M. P. Christianson	Algona .....
271	Germania Co-op. Creamery Co.....c	Germania	J. E. Smith	Germania	H. W. Jarchow	Germania .....
272	Burt Co-op. Creamery Co.....c	Burt	Walter H. Smith ..	Burt	Paul McCauley	Burt .....
273	Whittemore Co-op. Creamery Co...c	Whittemore	M. W. Fandel	Whittemore	J. A. Fender	Whittemore .....
274	Lotts Creek Co-op. Creamery Co...c	Lotts Creek	Otto Wichtendahl ..	Lone Rock	Fred Tucker	Lone Rock .....
275	Fenton Co-o.p Creamery Co.....c	Fenton	C. F. Lange	Fenton	C. F. Bolling	Fenton .....
276	Titonka Co-op. Creamery Co.....c	Titonka	J. C. Newville	Titonka	John Poelson	Titonka .....
	Lee County—					
277	Swift & Co..... c	Keokuk	F. S. Hayward.....	Chicago	R. S. Merrick	Keota .....
278	Ft. Madison Creamery Co..... p	Ft. Madison	J. W. & B. K. Peter	Ft. Madison	J. W. Peter.....	Ft. Madison .....
	Linn County—					
279	Valley Far. Creamery Co..... l	Central City	E. E. Henderson.....	Central City	Herold Millard.....	Central City .....
280	Farmers Mutual Creamery Co.....c	Coggon	M. L. Ware.....	Coggon	L. C. Popenhagen....	Coggon .....
281	Springville Creamery Co..... l	Springville	E. N. George.....	Springville	Chas. Huettner.....	Springville .....
282	Walker, Iowa, Creamery Co..... l	Walker	H. J. Nietert.....	Walker	S. W. Laird.....	Walker .....
283	Blue Valley Creamery Co..... s	Cedar Rapids.....	E. T. Guthrie.....	Chicago	Randers Strand.....	Cedar Rapids.....
284	Center Point Creamery Co..... l	Center Point.....	Pollock & Romne....	Center Point.....	C. N. Pollock.....	Center Point.....
	Lucas County—					
285	Douglas Ice Cream Co..... s	Chariton	A. V. Whitlatch.....	Chariton	W. C. Miller.....	Chariton .....
	Lyon County—					
286	Rock Rapids Creamery Co..... l	Rock Rapids	W. J. Purchas.....	Rock Rapids	A. E. Robertson.....	Rock Rapids.....

CREAMERY LIST—Continued.

Number	Name of Creamery	Located at or Near	Name of Proprietor Secretary or Manager	P. O. Address of Proprietor, Secretary or Manager	Name of Buttermaker	P. O. Address of Buttermaker
287	Farmers Creamery Co.....s	Inwood	R. W. Willander	Inwood	R. W. Willander	Inwood .....
288	George Creamery Co.....l	George	C .A. Rasmussen	George	H. E Wilson	George .....
	Mahaska County—					
289	Jasperi Creamery Co.....l	Oskaloosa	M. & J. Jasperi.....	Oskaloosa	M. Jasperi.....	Oskaloosa .....
290	Oskaloosa Creamery Co.....c	Oskaloosa	Keota Produce Co..	Oskaloosa	O. W. Albright.....	Oskaloosa .....
	Marion County—					
291	Pella Creamery Co.....s	Pella	Ben Kuyk.....	Pella	H. F. Lemcker.....	Pella .....
	Marshall County—					
292	Jackson Dairy Co.....s	State Center	Jackson Dairy Co..	Marshalltown	G. L. Richardson.....	Marshalltown .....
293	Minera Valley Creamery Co c	Marshalltown	Chas. C. Scindele....	Clemons	E. M. Frederickson..	Clemons .....
294	State Center Farmers Creamery....c	Clemons	Chris Jensen	State Center	Chris Jensen	State Center .....
	Mills County—					
295	Glenwood Creamery Co.....s	Glenwood	C. M. Gray.....	Glenwood	C. M. Gray.....	Glenwood .....
296	Malvern Cold Storage Co.....s	Malvern	Bruce Boehner.....	Malvern	Bruce Boehner.....	Malvern .....
	Mitchell County—					
297	Rock Creek Creamery Assn.....c	Osage	H. L. Johnson.....	Osage	M. J. Mikkelson.....	Osage .....
298	Little Cedar Creamery Co.....l	Little Cedar	John Christianson...	Little Cedar	John Christianson...	Little Cedar .....
299	Stacyville Creamery Co.....c	Stacyville	W. A. Schrandt.....	Stacyville	A. F. Watson.....	Stacyville .....
300	Riceville Creamery.....l	Riceville	W. A. Fritz.....	Riceville	W. A. Fritz.....	Riceville .....
301	New Haven Creamery Co.....l	New Haven.....	Julius Brunner.....	Osage	Leon C. Knutson.....	Osage .....
302	Osage Co-op. Creamery Co.....c	Osage	John Torsteff.....	Osage	Geo. Burdette.....	Osage .....
303	St. Ansgar Creamery Co.....c	St. Ansgar.....	M. A. Tollefson.....	St. Ansgar.....	H. R. Bullis.....	St. Ansgar.....
	Monroe County—					
304	W. H. Kreger Creamery Co.....p	Albia	W. H. Kreger.....	Albia	Fay Burlingame....	Albia .....
	Montgomery County—					
305	Bine & Bartery Creamery Co.....p	Red Oak	Lee Bine	Red Oak	W. F. Coonley.....	Red Oak .....
306	Tyler Bros.....p	Villisca	R. F. Tyler.....	Villisca	R. F. Tyler.....	Villisca .....

CREAMERY LIST—Continued.

Number	Name of Creamery	Located at or Near	Name of Proprietor Secretary or Manager	P. O. Address of Proprietor, Secretary or Manager	Name of Buttermaker	P. O. Address of Buttermaker
	Muscatine County—					
307	West Liberty Co-op. Cry. Co.....c	West Liberty.....	Emmett Buckman...	West Liberty.....	W. H. Sampson.....	West Liberty.....
	O'Brien County—					
308	Archer Creamery Co.....l	Archer	Adolph Christianson	Archer	A. L. Steinke.....	Archer .....
309	Sutherland Creamery Co.....p	Sutherland	B. G. Renalnk.....	Sutherland	Chas. W. Greene....	Sutherland .....
310	Hartley Creamery Co.....s	Hartley	A. Tagge.....	Hartley	I. Looostrom.....	Hartley .....
311	Sheldon Creamery Co.....l	Sheldon	D. A. Miller	Sheldon	L. E. Woddewise	Sheldon .....
	Osceola County—					
312	Johannes & Sellers Prod. Co.....p	Sibley	I. F. Johannes & J. F. Sellers	Sibley	J. E. Moore	Sibley .....
313	Ashton Creamery Co.....l	Ashton	Evert Denherder	Ashton	Evert Denherder	Ashton .....
314	Melvin Creamery Co.....l	Melvin	Anderson Bros.	Melvin	W. H. Anderson	Melvin .....
	Page County					
315	Swift & Co.....s	Clarinda	F. S. Hayward	Chicago	F. E. Kelley	Clarinda .....
	Palo Alta County—					
316	Mallard Butter & Cheese Assn.....c	Mallard	F. C. Truong	Mallard	Robert Bless	Mallard .....
317	Farmers Co-op. Creamery Co.....s	Ruthven	M. P. Junker	Ruthven	M. P. Junker	Ruthven .....
318	Silver Lake Creamery.....s	Ayrshire	F. W. Shellman	Ayrshire	F. W. Shellman	Ayrshire .....
319	Farmers Creamery Co.....c	Graettinger	J. Anderson	Graettinger	Henry Hanson	Graettinger .....
320	Lost Island Creamery Co.....s	Graettinger	A. C. Christianson..	Graettinger	A. P. Anderson	Graettinger .....
321	Emmetsburg Creamery Co.....c	Emmetsburg	L. Stoebner	Emmetsburg	W. A. Thayer	Emmetsburg .....
322	West Bend Creamery Co.....c	West Bend	A. L. Fry	West Bend	O. W. Dubbs	West Bend .....
323	Depew Creamery Co.....c	Cylinder	Nick Martin	Cylinder	Leo D. Reasner	Cylinder .....
	Plymouth County—					
324	LeMars Creamery Co.....s	LeMars	W. S. Hutchinson ...	Sioux City	P. E. Horner	LeMars .....
	Pocahontos County—					
325	Pocahontas Creamery.....l	Pocahontas	Gust Wheler.....	Pocahontas	Gust Wheler	Pocahontas .....
326	Palmer Creamery Co.....l	Palmer	Ed. V. Johnson.....	Palmer	B. H. Johnson.....	Palmer .....
327	Laurens Creamery Co.....l	Laurens	J. G. Hinn.....	Laurens	P. W. Johnson.....	Laurens .....

CREAMERY LIST—Continued.

Number	Name of Creamery	Located at or Near	Name of Proprietor Secretary or Manager	P. O. Address of Proprietor, Secretary or Manager	Name of Buttermaker	P. O. Address of Buttermaker
	Polk County—					
328	Des Moines Creamery Co.....l	Des Moines.....	J. F. Dawson.....	Des Moines	A. L. Larson.....	Des Moines .....
329	Swift & Co.....s	Des Moines	F. S. Hayward.....	Chicago	John Van Dam....	Des Moines .....
330	Farmers Produce Co.....s	Des Moines	L. O. Loizeaux.....	Des Moines.....	N. Danielson.....	Des Moines .....
331	Beatrice Creamery Co.....s	Des Moines	H. R. Wright.....	Des Moines	S. R. Pemberton..	Des Moines .....
332	Flynn Dairy Co.....s	Des Moines	E. D. Berry.....	Des Moines	.....	.....
	Pottawattamie County—					
333	Bloomer Cold Storage Co.....s	Council Bluffs.....	Fred E. Hurd.....	Council Bluffs.....	D. J. Chambers....	Council Bluffs.....
334	Mack & Mack Creamery Co.....s	Council Bluffs.....	McKenzie & McMurray	Council Bluffs.....	C. E. Miller.....	Council Bluffs.....
	Poweshiek County—					
335	Grinnell Creamery l	Grinnell	J. F. Fowler.....	Grinnell	Raymond Fowler....	Grinnell .....
336	Brooklyn Creamery Co.....s	Brooklyn	E. C. Kamos.....	Brooklyn	E. C. Kamoss.....	Brooklyn .....
	Ringgold County—					
327	Mt. Ayr Creamery .....s	Mt. Ayr	H. Tedford.....	Mt. Ayr	Fletcher Mills.....	Mt. Ayr .....
	Sac County—					
328	Farmers Co-op. Creamery Co.....c	Early	B. F. O'Hara.....	Early	B. F. O'Hara.....	Early .....
329	Sac City Creamery Co.....s	Sac City.....	H. F. Lange.....	Sac City.....	A. G. Redman.....	Sac City.....
	Scott County—					
330	Bell Jones Co.....s	Davenport	J. A. Bell.....	Davenport	Geo. Farris.....	Davenport .....
331	The Pioneer Creamery Co.....c	Davenport	Geo. H. Simondson..	Quincy, Ill.....	Lewis Rasmussen....	Port Bryan, Ill.....
332	Tri-City Butter Co.....c	Davenport	P. J. Lyngholm.....	Davenport	Claude Rainey.....	Davenport .....
	Shelby County—					
333	Harlan Ice & Cold Storage Co.....l	Harlan	M. Ankerstjerne....	Harlan	M. Ankerstjerne....	Harlan .....
334	Buck Valley Creamery Co.....c	Kimballton	H. A. Jorgenson....	Harlan	Chris B. Jensen.....	Harlan .....
	Sioux County—					
335	Farmers Mutual Creamery Co.....c	Hospers	John Kersten.....	Hospers	Wm. Matters.....	Hospers .....
336	Farmers Co-op. Creamery Assn.....c	Hull	J. W. Smit.....	Hull	A. M. Hein.....	Hull .....
337	Alton Creamery Assn.....s	Alton	C. J. Mueller.....	Alton	H. E. Collins.....	Alton .....

CREAMERY LIST—Continued.

Number	Name of Creamery	Located at or Near	Name of Proprietor Secretary or Manager	P. O. Address of Proprietor, Secretary or Manager	Name of Buttermaker	P. O. Address of Buttermaker
338	Rock Valley Creamery Co.....c	Rock Valley.....	F. E. Corwin.....	Rock Valley.....	M. Anderson.....	Rock Valley.....
339	Farmers Co-op. Creamery Co.....c	Boyden	John Rensink.....	Boyden	H. J. Wargowsky...	Boyden .....
340	Hawarden Creamery Co.....l	Hawarden	Emil Zorr.....	Hawarden	Emil Zorr.....	Hawarden .....
341	Farmers Mutual Co-op. Cry. Assn. c	Orange City.....	J. A. Ver Steeg....	Orange City.....	Tom DeJong.....	Orange City.....
342	Farmers Mut. Co-op. Cry. Co.....c	Sioux Center	A. Yonker.....	Sioux Center	A. Yonker	Sioux Center .....
	Story County—					
343	Farmers Co-op. Creamery Co.....c	Slater	Chas. Skortman....	Slater	Clarence Clark....	Slater .....
344	Dairy Dept. I. S. T.....c	Ames	Prof. M. Mortensen	Ames	F. C. Hinze.....	Ames .....
345	Roland Farmers Creamery Co.....c	Roland	H. E. Evanson....	Roland	L. H. Larson.....	Roland .....
346	Huxley Far. Co-op.Creamery Co....c	Huxley	Sam Maland.....	Huxley	O. A. Jensen.....	Huxley .....
347	Zearing Creamery Co. c	Zearing	C. P. Bean.....	Zearing	Carl Peterson.....	Zearing .....
348	Story City Creamery Co.....c	Story City	Fred Miller.....	Story City	Fred Miller.....	Story City .....
349	McCallsburg Far. Creamery.....c	McCallsburg	G. J. Vallen.....	McCallsburg	O. A. Jensen.....	McCallsburg .....
	Tama County—					
350	J. H. Neal Creamery Co.....s	Tama	R. C. McFarland....	Tama	Chris Christianson..	Tama .....
351	Gladbrook Creamery Co.....l	Gladbrook	H. E. Forrester....	Gladbrook	Albert McCardle ..	Gladbrook .....
352	Traer Creamery Co.....l	Traer	John Erickson.....	Traer	Benthine Slouburg.	Traer .....
	Taylor County—					
353	Bedford Creamery.....l	Bedford	Frank Dunning ...	Bedford	Leslie Klopp.....	Bedford .....
	Union County—					
354	Afton Creamery Co.....l	Afton	B. O. Williams.....	Afton	B. O. Williams.....	Afton .....
355	Swift & Co.....c	Creston	F. S. Hayward.....	Chicago	Leonard Brotherton	Creston .....
	Van Buren County—					
356	Blue Grass Creamery Co. c	Stockport	L. C. Morris.....	Stockport	John Dahm	Stockport .....
	Wapello County—					
357	Yorkshire Creamery Co.....s	Ottumwa	H. Morrell.....	Ottumwa	R. P. Burns	Ottumwa .....
358	Swift & Co. .....s	Ottumwa	F. S. Hayward.....	Chicago	L. Nielsen.....	Ottumwa .....
359	F. G. Buxton Creamery l	Ottumwa	F. G. Buxton.....	Ottumwa	P. N. Kletner.....	Ottumwa .....
	Wayne County—					
360	J. L. Humphrey.....l	Humeston	J. L. Humphrey.....	Humeston	M. W. Bixbey	Humeston .....

CREAMERY LIST—Continued.

Number	Name of Creamery	Located at or Near	Name of Proprietor Secretary or Manager	P. O. Address of Proprietor, Secretary or Manager	Name of Buttermaker	P. O. Address of Buttermaker
	Webster County—					
361	Gowrie Co-op. Creamery Co.....c	Gowrie	J. E. Johnson	Gowrie	P. B. Vorder	Gowrie
362	Gold Bar Creamery.....l	Ft. Dodge	S. U. Deneker	Ft. Dodge	Rudolph Deneker	Ft. Dodge
363	Ft. Dodge Creamery.....l	Ft. Dodge	A. R. Loomis	Ft. Dodge	B. Jensen	Ft. Dodge
364	Dayton Co-op. Creamery Co.....s	Dayton	J. A. Nixon	Dayton	M. J. Mansgarer	Dayton
	Winnebago County—					
365	Vinje Creamery Assn.....c	Scarville	Ole Strom	Scarville	Albert Knudson	Scarville
366	Thompson Co-op. Creamery Co...c	Thompson	M. N. Tapager	Thompson	Ben Lobik	Thompson
367	Scarville Creamery Assn.....c	Scarville	J. E. Hermanson	Scarville	Sorn Kristensen	Scarville
368	Forest City Co-op Cry. Assn.....c	Forest City	J. E. Reed	Forest City	B. Frisble	Forest City
369	Buffalo Center Co-op. Cry. Co.....c	Buffalo Center	H. P. Engen	Buffalo Center	H. P. Engen	Buffalo Center
370	Lake Mills Creamery Co.....c	Lake Mills	Ole T. Groe	Lake Mills	Carl Hoviand	Lake Mills
371	Lincoln Co-op. Creamery Co.....c	Rake	A. A. Sheldon	Rake	L. K. Bjerke	Rake
372	Leland Co-op. Creamery Co.....c	Leland	O. Michaelson	Leland	S. O. Rusley	Leland
	Winneshiek County—					
373	Festina Creamery Co.....c	Ridgeway	Burr Oak	Festina	Mike Hauer	Festina
374	Burr Oak Co-op. Creamery Cc.....c	Festina	J. B. Huinker	Burr Oak	Floyd Ferris	Burr Oak
375	Ridgeway Creamery Co.....l	Highlandville	Albert Erickson	Ridgeway	O. A. Fosse	Ridgeway
376	Highland Creamery Co.....l	Decorah	O. A. Fosse	Locust	Peter J. Bidney	Locust
377	Decorah Far. Ice Cave Cry.....s	Ossian	Bidney & Akre	Decorah	N. O. Bendickson	Decorah
378	Silver Spring Creamery Co.....s	Calmar	N. O. Bendickson	Ossian	O. O. Hauge	Ossian
379	Calmar Creamery Co.....s	Ridgeway	W. E. Cornell	Calmar	I. Barlow	Calmar
380	Lincoln Creamery Co.....c	Decorah	A. A. Olson	Ridgeway	J. A. Bakken	Ridgeway
381	Pleasant Co-op. Creamery Co.....c	Wm. Linnevold	O. O. Rue	Decorah	Albert Kraby	Decorah
382	Nordness Creamery Co.....c	Nordness	Geo. A. Lundy	Decorah	V. V. Johnson	Decorah
	Woodbury County—					
383	Arctic Cream Co.....s	Sioux City	S. S. Hamilton	Sioux City	Henry Dern	Sioux City
384	Hanford Produce Co.....s	Sioux City	I. H. Whittemore	Sioux City	W. O. Wheelock	Sioux City
385	Blue Valley Creamery Co.....s	Sioux City	E. T. Guthrie	Chicago	C. L. Smith	Sioux City
386	Roberts Sanitary Dairy Co.....s	Sioux City	B. C. Seeley	Sioux City		
	Worth County—					
387	Farmers Creamery Co.....c	Manly	E. R. Stock	Manly	Ray Tribl	Manly
388	Joice Creamery Co.....c	Joice	I. L. Skutle	Joice	H. Hagen	Joice

CREAMERY LIST—Continued.

Number	Name of Creamery	Located at or Near	Name of Secretary or Manager	P. O. Address of Proprietor, Secretary or Manager	Name of Buttermaker	P. O. Address of Buttermaker
389	Kensett Creamery Co.....l	Kensett	Geo. Haverman	Kensett	Geo. Haverman	Kensett
390	Far. Co-op. Cry. Assn. of Tenold..c	Joice 7 miles N. E.	O. K. Starre	Kensett	H. C. Stendal	Northwood
391	Hartland Creamery Co.....c	Northwood	H. L. Boe	Northwood	N. O. Dehlen	Northwood
392	Farmers Creamery Co.....c	Grafton	E. M. Glassel	Grafton	Peter Refsdahl	Grafton
393	Hanlontown Creamery Co.....c	Hanlontown	E. A. Gudvangen	Hanlontown	E. A. Gudvangen	Hanlontown
394	Far. Butter & Cheese Assn.....c	Northwood	M. D. Johnson	Northwood	F. D. Warner	Northwood
395	Fertile Co-op. Dairy Co.....c	Fertile	J. A. Johnson	Fertile	J. A. Johnson	Fertile
	Wright County—					
396	Clarion Creamery Co.....s	Clarion	W. H. Thomas	Clarion	J. W. Kagley	Clarion
397	Goldfield Co-op. Creamery Co.....c	Goldfield	Geo. M. Nelson	Goldfield	John Roberts	Goldfield
398	Farmers Co-op. Creamery Co.....c	Belmond	G. F. Elder	Belmond	C. H. Jennings	Belmond

*Central Churning Plant. c-Co-op. s-Stock. l-Individual.

DAIRY COMMISSIONERS.

Name	County From Which Chosen.	Date of First Appointment.	Years Served
Henry D. Sherman	Jones	May 1, 1886	1886—1890
Augustus C. Tupper	Mitchell	May 1, 1890	1890—1894
William K. Boardman	Story	May 1, 1894	1894—1898
*Levi S. Gates	Delaware	May 1, 1898	1898—1898
Bryon P. Norton	Howard	Nov. 8, 1898	1898—1902
Herbert R. Wright	Polk	May 1, 1902	1902—1906

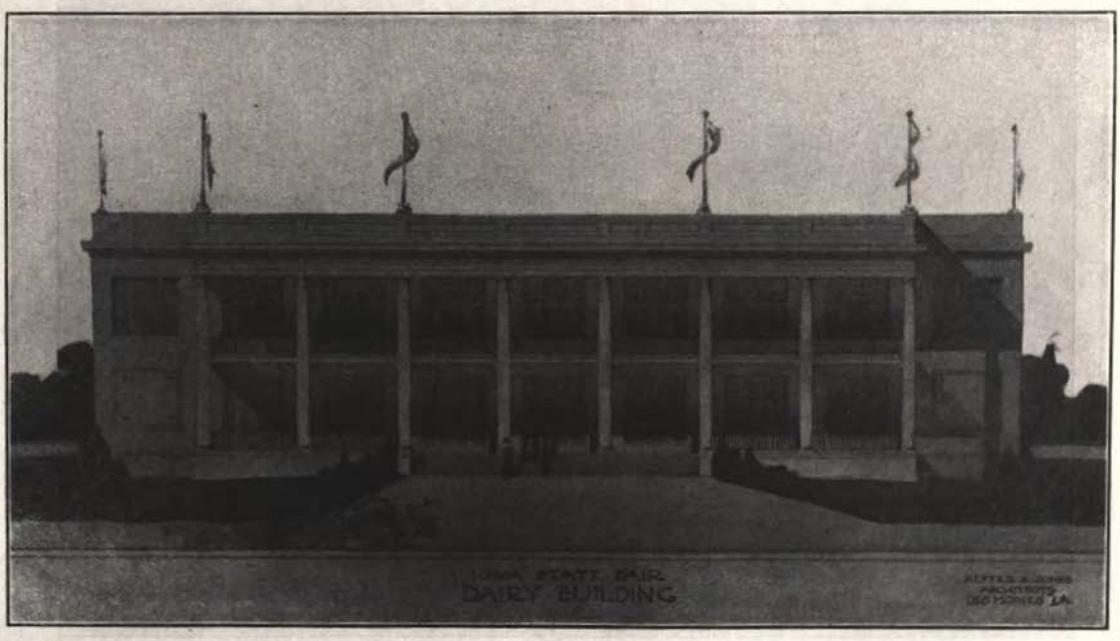
* Died October 11th, 1918. Bryon P. Norton appointed to fill vacancy.

Note: Name of Office changed by act of Thirty-first General Assembly to Food & Dairy Commissioner.

DAIRY AND FOOD COMMISSIONERS.

Herbert R. Wright	Polk	July 1, 1906	1906—1910
William B. Barney	Franklin	May 1, 1910	1910—

INDEX


STATE FAIR
DAIRY BUILDING