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Thirty-seventh annual report of the Wisconsin Dairymen's Association : held at Barron, Wis., February 10, 11 and 12, 1909. Report of the proceedings, annual address of the president, and interesting e...

Wisconsin Dairymen's Association
Madison, Wisconsin: Democrat Printing Company, State Printer, 1909

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THIRTY-SEVENTH ANNUAL REPORT

OF THE

WISCONSIN

Dairymen's Association

HELD AT

Barron, Wis., February 10, 11 and 12, 1909.

REPORT OF THE PROCEEDINGS, ANNUAL ADDRESS OF THE PRESIDENT, AND INTERESTING ESSAYS AND DISCUSSIONS RELATING TO THE DAIRY INTERESTS.

COMPILED BY

A. J. GLOVER, Secretary.

MRS. A. L. KELLY, Stenographic Reporter.

MADISON, WIS.
DEMOCRAT PRINTING COMPANY, STATE PRINTER
1909

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MAR 30 1910

LETTER OF TRANSMITTAL.

WISCONSIN DAIRYMEN'S ASSOCIATION,
Secretary's Office,
FORT ATKINSON, Wis., Nov 30, 1909.

To His Excellency, JAMES O. DAVIDSON,
Governor of the State of Wisconsin.

DEAR SIR—I have the honor to submit for publication, as provided by law, the Thirty-seventh Annual Report of the Wisconsin Dairymen's Association, showing the receipts and disbursements during the past year, also papers relating to the dairy interests read and discussions had at the annual convention held at Barron.

Very respectfully,

A. J. GLOVER,
Secretary.

OFFICERS

PRESIDENT.
F. H. SCRIBNER,
ROSENDALE, FOND du LAC COUNTY.

VICE PRESIDENTS.
A. D. DeLAND, SHEBOYGAN, SHEBOYGAN COUNTY,
President 1877.

W. A. HENRY, MADISON, DANE COUNTY,
President 1890.

W. D. HOARD, FORT ATKINSON, JEFFERSON COUNTY,
President 1891-3.

C. H. EVERETT, RACINE, RACINE COUNTY,
President 1894-5.

G. W. BURCHARD, FORT ATKINSON, JEFFERSON COUNTY,
President 1896-7.

H. C. TAYLOR, ORFORDVILLE, ROCK COUNTY,
President 1898-9.

C. P. GOODRICH, FORT ATKINSON, WIS.,
President 1900-1.

J. Q. EMERY, MADISON, WIS.,
President 1901-3.

CHARLES L. HILL, ROSENDALE, FOND DU LAC COUNTY,
President 1904-5.

W. J. GILLETT, ROSENDALE, FOND du LAC COUNTY,
President 1906-7.

SECRETARY.
A. J. GLOVER,
FORT ATKINSON, JEFFERSON COUNTY.

TREASURER
H. K. LOOMIS,
SHEBOYGAN FALLS, SHEBOYGAN COUNTY.

CHESTER HAZEN, RIPON, FOND du LAC COUNTY,
President 1872-74. Died 1900.

HIRAM SMITH, SHEBOYGAN COUNTY,
President 1875-76. Died May 15, 1890.

H. F. DOUSMAN, WAUKESHA COUNTY,
President 1878.

Z G. SIMMONS, KENOSHA COUNTY,
President 1879.

C. R. BEACH, WALWORTH COUNTY,
President 1881-82. Died September, 15, 1896.

W. H. MORRISON, WALWORTH COUNTY,
President 1883-86. Died December 15, 1893.

H. C. ADAMS, DANE COUNTY,
President 1887-89. Died July 7 1906.

STEPHEN FAVILLE, DANE COUNTY,
President 1886. Died —, 1903.

ARTICLES OF ASSOCIATION.

ARTICLE I. The name of this organization shall be, the Wisconsin Dairymen's Association.

ARTICLE II. The officers of this association shall consist of a president, secretary and treasurer.

ARTICLE III. The vice presidents of the association shall consist of all past presidents.

ARTICLE IV. The president, vice presidents, secretary and treasurer shall constitute the executive board of the association.

ARTICLE V. The officers of the association shall be elected at the annual meeting and shall retain their offices until their successors are chosen.

ARTICLE VI. The regular annual meeting of the association shall be held each year, at such place as the executive board shall designate.

ARTICLE VII. Any person may become a member of this association and be entitled to all its benefits, by the annual payment of one dollar.

ARTICLE VIII. The executive board shall have power to call special meetings whenever and at such places as in their judgment its interests so demand.

ARTICLE IX. The officers of the association shall perform such other duties as usually devolve upon the officers of like associations.

ARTICLE X. The treasurer shall have the custody of all moneys belonging to the association, and authority to pay out the same whenever an order is presented, signed by the president and secretary.

MEMBERSHIP, 1909.

Atwater, J. T., Barron.
Augst, S. W., Cameron.

Borum, C. J., Barron.
Bowen, R. W., Bangor.
Brown, J. R., Barron, R. 1.
Britzman, Wm., Barron.
Barret, W. H., Barron, R. 3.
Borum, Geo., Barron.
Beckwith, Wm., Barron
Brown, W. L., Barron.
Bartlett, Wm., Barron.
Berg, Martin, Barron.
Borgen, John, Dallas.
Borgen, Hans, Dallas.
Berger, Ole H., Chetek.
Baker, W. H.. Barron.
Brennan, W. J., Tomah.
Biegler, Harlad G., Barron.
Bowen, J. E., Barron.
Bartlett, C. M., Cameron.
Bandli, Christ, Rice Lake, R. 5.
Bandli, John, Rice Lake, R. 5.
Bonet, W. H., Barron.
Bowen, O., Barron.
Baer, U. S., Madison.
Buchanan, Byron, Barron.
Burnham, Frank, Barron.
Burdick, F. H., Barron.
Beckwith, J. R., Barron.
Blassingham, C. D., Barron.
Brown, W. L., Barron.
Boyum, And., Barron.
Borum, T. W., Barron.
Bartlett, C. E., Cameron.
Bootz, John, Cameron.
Barfknecht, Frank, Barron, R. 4.

Coe, J. H., Barron.
Chessman, J. B., Racine, Wis.
Crawford, A., Barron.
Cramer, S. S., Milwaukee.
Clark, W. H., Rice Lake.
Crawley, J. P., Barron, R. 3.
Christianson, Robt., Barron.
Coe, C. C., Barron.
Crane, F. R., Menomonie,
Clark, John J., Berlin.
Corneliuson, T., Madison.
Cuthbert, J. C., Barron.
Coleman, Dr., Barron.
Cook, Geo. B., Cumberland.
Christianson, S., Barron.
Charles, L. P., Chetek.
Cheney, L. S., Barron.
Cuthbert, Roy, Barron.

Dickson, N. A., Almena, R. 1.
Dermansky, Barron.
Dennison, H. H., Barron.
DeWolfe, Arthur, Barron.
DeWolfe, Harry, Barron, R. 1.

Evenson, John, Barron, R. 1.
Ellsworth, H. G., Barron.
Erickson, John, Barron.
Ellis, W. H., Barron.

Floan, T. O., Rice Lake, R. 4.
Faurat, Isaac, Rice Lake, R. 2.
Fuller, J. F., Barron.
Ferris, John, Barron.
Frey, H. A., Barronette.

Gulickson, Andrew, Barron.
Grilley, D. S., Barron.
Greeno, J. R., Barron, R. 2.
Goheen, Chas., Barron.
Glover, A. J., Ft. Atkinson.
Greeno, G. R., Barron, R. F. D.
Grover, Wood, Ridgeland.
Gould, J. F., Clayton, R. 2.
Gillett, Frank, Barron, R. 4.
Gleiter, G. J., Barron.

Hinze, Gust, Barron, R. 4.
Howard, M. C., Cameron.
Hart, R. B., Cumberland.
Hunt, W. C., Barron.

MEMBERSHIP, 1909—Continued.

Heffner, C., Barron.
Horning, Wm., Cumberland.
Horstmann, F. Almena.
Hess, F. W., Menomonie.
Hill. C. L., Rosendale.
Hoxie, Fred W., Hillsdale.
Hover, H. J., Barron.
Hegtwedt, Chetek, R. 4.
Hansen, A. Fred, Clayton, R. 2.
Heldstad, C. O., Rice Lake.
Halvorson, Albert, Rice Lake, R. 5.
Herring, E. W. Barron.
Hazelberg, T. T., Rice Lake, R. 1.
Honda, A. A., Prairie Farm, R. 1.
Hagen, John, Turtle Lake.
Hill, F. E., Paskin.
Hooda, O. E., Prairie Farm, R. 1.

Johnson, J. H., Barron.
Johnson, Ole, Arland.
Jacobs, E. C., Elk Mound.
Johnson, Sherman, Barron, R. 1.
Johnson, Thure, Barron, R. 1.
Jure, Henry, Barron.
Jacobson, H. P., Barron.
Johnson, Bennie, Cumberland.
Johnson, A. W., Barron, R. 2.
James, W. D., Ft. Atkinson,

Kolb, C., Barron.
Krahanbuhl, F. J., Barron.
Kohten, Jacob, Barron, R. 1.
Klein, O. G., Barron.
Kulowatz, Christ, Clayton, C. 2.
Kline, D. Rollin, Cumberland, R. 1.
Krippner, W. F., Barron, R. 3.

Lawton, C. S., Barron.
La June, John, Rice Lake, Wis.
Lund, A., Augusta.
Lentz, E., Barron.
Lamb, E. L., Barron, R. 1.
Lehmann, Paul, Barron.
Lund, Samuel, Black River Falls.
Lake, Wm., Barron, R. 3.

Michalson, H. C., Turtle Lake.
Mossey, A. B., Chetek.
Matthys, Peter B., Barron, R. 2.
Markes, G. W., Barron.
Morrison, Claude, Barron, Wis.
Martiny, L. P., Chippewa Falls.
Millard, Frank, Barron.
Melone, John, Paskin.

Miller, J., Barron.
Meadows, C. W., Barron.
Mero, A., Rice Lake, R. 4.
Mess, Chas., Cumberland, R. 6.
Moe, S., Dallas.
McKinny, E., Barron.
Myers, J. W., Barron.
McKee, Wm., Barron.
McGuam, J. P., Barron.

Nelson, Ernest, St. Croix Falls.
Nesbit, Lloyd, Barron.
Nelson, Archie, Barron.
Nelson, E., Barron.
Nason, H. E., Osceola.
Ness, Henry, Clayton.

Ol on, Albert, Prairie Farm.
Osterbrink, Ignatius, Barron.
Orn, C. J., Barron, R. 1.
Orm, C. J., Barron, R. 1.
Osborne, A. J., Barron.
Ora, H. T., Manawa.

Pieper, Wm., Cameron.
Post, Dr., Barron,
Post, George, Barron.
Porter, W. T., Barron.
Pierce. E. E., Barron.
Peck, Arthur W., Marshall.
Peterson, Ed., Cameron.
Peck, George, Marshall.
Peterson, Geo., Prairie Farm.
Post, Chas., Barron.
Post, John, Barron
Palmer, L., Barron.

Roe, O., Cameron.
Rosenquist, A. M., Ladysmith.
Rockman, Julius, Barron.
Romanosky & Horstman, Barron.
Reese, Robt., Cameron, R. 1.
Roemhild, Frank, Prairie Farm.
Rockman, Ed., Barron.
Rather, W. F., Pebbles.
Radermacher, H., Barron.

Stebbins, Arthur, Barron.
Stowe, W., Barron.
Sumpter, A., Barron.
Sletten, Chas., Chetek.
Scribner, R. M., Rosendale.
Strong, C. N., Chetek.

MEMBERSHIP, 1909—Continued.

Scribner, C. H., Rosendale.
Searles, H. C., Fond du Lac.
Saastad, P., Cameron.
Snodgrass, Geo., Barron.
Sather, L. K., Barron.
Sullivan, Wm., Barron.
Stenerson, Tom, Barron.
Smith, Ed. E., Barron.
Spencer, Milton, Barron.
Severson, J., Barron.
Swetland, H. C., Cameron.

Taylor, J. W., Barron.
Thomas, Dell, Barron.
Taylor, C S., Barron.
Taylor, C. A., Barron.
Thompson, K. E., Barron.

Vol, Louis, Barron.

Wagonback, P., Barron.
Washburn, Steve, Barron.
Wygant, H. O., Barron.
Waukesha Canning Co., Barron.
Westram, C. A., Barron.
Welles, M. L. Rosendale.
Wickern, J. F., Barron.
West, Ray N., Ripon.

York, Arthur, Barron.

TRANSACTIONS

WITH

ACCOMPANYING PAPERS AND DISCUSSIONS

OF THE

Wisconsin Dairymen's Association

AT THEIR

THIRTY-SEVENTH ANNUAL CONVENTION

Held in Barron, Wis., February 10–12, 1909.

President F. H. Scribner in the chair.

The Chairman: The convention will please be in order. The first thing I notice on our program is the Address of Welcome by Mayor Atwater.

ADDRESS OF WELCOME.

Mayor J. T. Atwater, Barron, Wis.

Mr. President, Members of the State Dairymen's Association: Our little city of Barron surely welcomes you to meet in your Thirty-seventh Annual Convention. Not only does our city welcome you, but the county, and I might say, the whole northern part of the State.

When Mr. Ellsworth, Mr. Bowen and myself were with you last year and asked you to meet with us here this year, we told

you a great many things and promised you quite a number. Among other things we told you that we had plenty of hotel accommodations, and we did have at that time. Last fall a fire visited us, burned up a great many of our business places, and among them, a large forty-room hotel.

At that time we told you we had fine dairy herds managed by good dairymen who had herds of nice graded cows, and above all that we had the soil that produces the best dairy feed known in the United States, and it is improving each year. We are cleaning up more land for pasture, tilling the soil in connection with our dairying, so that this country has improved wonderfully in the last few years.

Our little city is a farmers' town, and I might say, a dry town too. Most mayors at meetings like this, gentlemen, tell you that they have thrown away the key, during a few days' stay here. But we don't have to have a key; we have no day policemen at all, and our night policeman goes on duty late and comes off early in the morning, and we can all feel perfectly safe. We have very few objectionable citizens in town; we have only one game warden and one oil inspector.

Aside from our fine dairy country to help keep up our town we have a few little industries here which you do not find in some of the southern towns of this size. We have a fine woolen mill, owned by C. S. Taylor, which turns out anything from a Mackinaw jacket to a piece of fine woolen cloth, and by the way, I believe he was the first man to bring in a full blooded animal of the dairy type.

We have also a large flour mill, owned by Jerry Taylor, but the Taylors don't own the whole town. We have a large canning factory here that cans a product from 1,500 to 1,800 acres a year, mostly peas. We have a large stave and heading mill; we have a fine brickyard, undergoing repair this year to the extent of several thousand dollars; good concrete works, putting up concrete silos, water tanks for the farmers, and all such work. We have sawmills and several other little industries like that. We have tobacco sorting houses here in town, and last, but not least, our creamery, and I wish that I could have put into carefully written shape what I have to say to you about our creamery. We have seen it grow in the last few years, and we are proud of it, as proud as of anything connected with Barron.

I do not know what more I could say to you, but after you have finished your three days' work here with our farmers, we will feel like saying to you the same as the old German who kept a store. After his customer had gotten through and was ready to leave, he always looked up and said, "Come in again."

RESPONSE TO ADDRESS OF WELCOME.

Mr. Goodrich: Mr. Chairman, Mr. Mayor, Citizens of Barron county: In behalf of the Dairymen's Association, I am glad I am here, as the old man used to say in meeting, "I think it is good for I to be here." That is the way I feel. And it is because we are sure of our welcome that makes us feel that way. I tell you I have been in places where I was not welcome, as you may judge by this button I wear, and I came to the conclusion I didn't like to be where I wasn't welcome.

We have met together to talk over a business that I believe is the best business that a farmer can engage in, and that is dairying. I know that the people of Barron county are much interested in this business, and we have met here together to talk over the things we are interested in. The truth is, no one man knows it all on any subject, and no one man knows so much but there is somebody else who knows something that he doesn't know, and, on the other hand, there is no man knows so little but that he knows something that some of the others do not know, and if we can only get together, we will all of us know a great deal more when we go home than we did this morning, and that is what we are here for. Thank you.

The Chairman: I have been interested in this dairy work for a great many years, it has been my life's work, and while, as I look back, I do not feel as though I had done all I could do, yet I realize that I have accomplished a great deal along these lines, and that it has only been done by hard, persistent work and thought. These things do not come by happen-stance, but by good, hard work. If a man is successful, it is because he has done something. We have to be busy, we have to think about our problems, our great questions all the way through,

and it is quite as important for the dairyman to fit himself as to get the work out of his cows.

I will suggest the names of the following gentlemen to act on the committees:

Auditing Committee: C. H. Everett, H. G. Ellsworth and J. E. Bowen.

Nominating Committee: C. P. Goodrich, A. J. Glover and M. L. Welles.

Resolutions: J. T. Atwater, U. S. Baer and Ray N. West.

Recess to 1:30 P. M.

AFTERNOON SESSION.

The convention met at 1:30 P. M.
Mr. C. P. Goodrich called to the chair.

ANNUAL ADDRESS OF PRESIDENT.

F. H. Scribner, Rosendale.

No one realizes more than I, the importance of the position, that at your last meeting was given me, as president of this association. As each succeeding year brings us a little nearer the wonderful possibilities of that most wonderful machine, the "dairy cow," and the possibility of Wisconsin as the greatest dairy state in the Union, it is only by united effort on the part of the officers and members of this association, that the state can expect to hold the envious position it now occupies.

The year just closed has been a notable one as concerns all lines of the dairy industry. The importance of better and more economical feeds is fast being recognized by the fact that more silos are being constructed; and the rigid fight against the "scrub" which is being taken up on every hand, is fast putting the special purpose dairy cow, the economical producer of milk,

cream, butter and cheese, where she rightfully belongs. Progress has also been made in the crusade against unsanitary barns, and the education of the dairyman in the vital necessity of better ventilation and more sunlight to keep our cows in a more healthful condition, and to help eradicate that dread disease, tuberculosis, which very materially reduces the efficiency of a herd as a machine for producing milk from feed.

Sixty million dollars was the annual returns from all classes of dairy products last year in Wisconsin, and while we are patting ourselves on the back, as to our great achievement, it might be well to consider that this increase over previous years is not all due to an increase in the production, but is partly due to the high average price received. There are in this state 1,250,000 milch cows, which would make an average of $48 return per cow, and after deducting the cost of feed for the year, leaves an alarmingly small amount of profit. Did we ever stop to think that to double the returns per cow would triple the profits per cow. A 150-lb. cow, figuring cost of keep at $25 and butter at 30c, would leave a profit of $15, while a 300-lb. cow with cost of keep at $35, would leave a profit of $55. It is only over and above cost of keep that we are to realize any profit, yet many say they did not have to buy any feed, yet is it not true the feed is worth just as much whether bought or raised?

In the recent Live Stock meetings held at Madison, in nearly every discussion, no matter what kind of stock, we heard the expression, "The sire is half the herd," and in this expression lies the salvation of the Wisconsin dairyman who wishes to receive all the money he can out of the business. There must be a constant tendency of the herd toward improvement in butter yield, for like every other business, nothing is at a standstill; advance or decline is the rule, and this movement will all be governed by the brains that control the work on the farm. A scrub man will keep a scrub herd, while there is no holding down of the thoroughbred man. In a recent census taken of 20 herds, an average of 2,096 lbs. milk and 80 lbs. of butter fat per cow in one herd is conclusive evidence in favor of grading up with a pure bred sire.

Too many farmers keep cows just because they happen to have them around. They feed them expensive feeds year after year, and never give thought to the question of whether it pays or not. They are dairymen by accident. If they have any good

cows in the herd, it is by accident too. They work upon the theory that the cow is a machine, and treat her about like they do their farm machinery.

I have been unfortunate enough to be assessor in our town for several years, and one of the questions I have to ask is, how many pounds of butter did your cows make last year, and the answer comes, "Oh, I don't know. I got my check and spent the money and that is about all I know about it." Is it a wonder, then, that the average production is where it is, when such shiftless, halfhearted methods are used?

The present high prices for good grade stock, if for no other reason, ought to be an incentive to breed and raise better stock, while the markets will take and pay fair prices for anything that has hide and hair. Yet what really makes the good price on a dairy cow, is her ability to do something. A man on my farm, who could not work, or would not work, would be worth nothing.

Although our meeting this year is the farthest north of any in the history of the association, yet we find a zeal and enthusiasm along dairy lines that well may be coveted. Here we find one of the most modern and best equipped creameries in the state. We find three county breeders' associations, the Holstein, Guernsey and Jersey, and in this county more cows have been tested for tuberculosis than any other county in the state, and on account of the disposition of its people, and of its natural grass facilities for producing milk, Barron county will soon be looked to as one of the leading dairy counties.

Three years ago Yeksa Sunbeam carried off the honor of being the champion Guernsey cow of the world, giving 857 pounds fat. Two years ago, Colantha 4th's Johanna carried off the honors as the greatest officially tested cow in the world, with 998 pounds of fat, and now comes Jacoba Irene, a Jersey cow, who unquestionably is the champion long distance cow of the world, that gave last year 17,253 pounds milk and 954 pounds fat, or an equivalent to 1,122 pounds butter. In the two years previous she gave 31,505 pounds milk and 2,053 pounds butter and in the three years previous 42,064 pounds milk and 2,745 pounds butter, and besides this, has dropped her owner a healthy, living calf each year; this means an income of over $800 for butter alone in the past three years.

I wonder if most of us have stopped to consider that it is possible for us to double the income of our farms. The average dairyman thinks only of his income from the milk alone, while it is just as possible to realize just as much more through the sale of good high grades or full bloods. There never was a time in the history of our country when good high grades were in such demand as at the present time, and one ought not to hesitate a minute to purchase a good pure bred sire to head his herd, for there never will be an over production of cows of this character, and it is the object of this association to do all it can to encourage work along these lines.

The following clipping expresses my sentiments very nicely: "Cow milking farmers do not borrow money from bankers; they loan money to bankers and others, they live in elegant homes and don't swear. The supply of good butter, cheese, pure milk, cream and blooded stock has never equalled the demand, to say nothing of a better class of boys and girls, home grown, for husbands, wives and high grade of citizens."

In June five meetings were held in Northern Wisconsin, which I think were productive of as much good as anything this association is doing, barring the test association work, for it brought the work of cow improvement to a large number of people that might not be reached in any other way, and the interest manifested assures me that more of such meetings could be held very profitably and that the money of this association could not be expended to any better advantage.

President Scribner resumes the chair.

OPPORTUNITY FOR THE ENTERPRISING DAIRYMAN.

J. Q. EMERY, Dairy and Food Commissioner, Madison.

(Read by Mr. U. S. Baer in the necessary absence of Mr. Emery.)

In the office of the President of the United States there is posted, where it may be readily noticed, the following brief poem by the late Senator Ingalls, wherein he personifies

OPPORTUNITY.

"Master of human destinies am I!
Fame, love, and fortune on my footsteps wait.
Cities and fields I walk; I penetrate
Deserts and seas remote, and passing by
Hovel and mart and palace—soon or late
I knock unbidden once at every gate!

"If sleeping, wake—if feasting, rise before
I turn away. It is the hour of fate,
And they who follow me reach every state
Mortals desire, and conquer every foe
Save death; but, those who doubt or hesitate
Condemned to failure, penury, and woe,
Seek me in vain and uselessly implore
I answer not, and I return no more!"

Let me briefly enumerate some of the requisite characteristics of the dairyman if he be enterprising.

First: He has integrity. The dairyman who does not build upon integrity may be likened unto the foolish man who built his house upon the sand, and when the rain descended and the floods came and the winds blew and beat upon that house it fell, because it was founded upon the sand; but the dairyman who builds upon integrity may be likened unto the wise man who built his house upon a rock and when the rains descended and the floods came and the winds blew and beat upon that house it fell not, for it was founded upon a rock.

Events which have occurred within the past year or two, in which men of national standing and reputation have gone down to ruin, emphasize the necessity of building not only our character but all our enterprises upon the solid rock of integrity. The integrity to which I refer must be broad enough to include intellectual integrity. The dairyman must be honest not only with his neighbors, his family and his herd, but he must be honest with his own intellect. I am fully persuaded that the lack of intellectual integrity is the cause of too many failures.

Second: If the dairyman is enterprising he uses intelligence. This applies alertness, the use of judgment and reason. It implies intellectual hospitality, the readiness and willingness to entertain new ideas and thoughts, to be a student, to be a learner.

Third: If the dairyman is enterprising he has the habit of industry, and he has method, accuracy and dispatch in doing work.

Fourth: The dairyman who is enterprising has the power of initiative and promptitude in beginning work. If the pig pen is situated beside the road near the house or barns where the odors do their harmful work to the family or to the dairy products, the enterprising dairyman has sufficient power of initiative to remove it to some more seemly place and to more suitably care for it when removed, though by so doing he runs counter to the long-established habits of his father.

Fifth: The dairyman if he is enterprising has the power of attention and perseverance. He must be able to center his thought and activity upon the essentials. He cannot fritter away his time over frivolous affairs nor can he allow himself to be distracted by the many conditions and circumstances that may tempt him by their solicitations. Having determined upon the necessary course to be pursued, he must persevere in that course and overcome all obstacles.

Sixth: And he must have courage in the presence of difficulties which are sure to confront him. These difficulties will test his integrity, his use of intelligence, his industry, and his power of attention and perseverance, and he must have the courage to meet successfully all these difficulties.

Seventh: The enterprising dairyman must have self control and self denial. My conception of self denial is simply the power of subordinating a poorer judgment to a better judgment.

Eighth: The enterprising dairyman is progressive. He uses his intelligence, his judgment, reason and other intellectual powers to acquaint himself with the progress in the dairy industry and to keep abreast of the times.

Ninth: The enterprising dairyman has common sense. The story of the Scotch Divine's charge to a young minister is applicable here. He said to him, My brother, if you lack piety you can get that through prayer, if you lack learning you can get that from the books, and so he went on enumerating one lack after another and pointed out how that lack could be supplied, and then closed by saying, But my brother, if you lack common sense, may the Lord have mercy on you.

To the young man who possesses these characteristics in some greater or less degree, or who at least has a tendency, an impulse toward these characteristics—a desire for them—dairying opens a splendid opportunity:

First: To make a good living. It is too much to say that in our present complex civilization any person can be entirely independent of others, but the dairyman may be relatively so and this is no unimportant matter. He can supply himself with pure food. He is not compelled to use the numerous adulterated food products which sordid and unscrupulous manufacturers and purveyors are seeking to palm-off upon the public. He may supply himself with fresh vegetables and fruits from his own farm, and likewise meats, also fresh dairy products, and he will have sufficient income to supply other needs.

Second: To establish and maintain a home. In doing this the opportunity is his of supplying himself, first, with the necessaries and following that with the conveniences and the comforts and the luxuries of life. Among these are books, music, education and some leisure.

Third: To conduct a modern farm. The young dairyman has the opportunity to construct, as the years go by, buildings suitable for his purposes and that are architecturally attractive. He may lay out his fields and give them tillage in such a way as to be a model. He may provide himself with orchards located and cultivated according to his own ideals that shall yield him a variety of luscious fruits, bountiful and timely. He may have around his home an attractive lawn and in all his operations display good workmanship because he prefers this to

slovenly or indifferent work, and if his heart is in this work it will be to him not drudgery but a constant source of pleasure.

Fourth: To develop and maintain a herd of high class dairy animals. This involves the use of intelligence and care in the selection, the breeding, the feeding, caring for and developing of the same. At first it may be that his herd will consist of grades which he is constantly improving by careful selection, breeding, feeding and care; but he will gradually develop a herd of pure breds. Being intelligent and progressive he will co-operate with his neighbors in like improvements. These buildings and fields and orchards and lawns and herds may be so provided and maintained that they shall be outwardly to his home like the pictures and the works of art that may ornament his home within.

Fifth: To co-operate with others in establishing co-operative creameries, cheese factories, etc., and establishing and maintaining such regulations in their management honestly and skilfully conducted, as to secure clean milk from clean, healthy cows, thus securing to the dairymen the profits of the industry as they well deserve.

Sixth: To be a cultured person, a useful citizen and a real artist. His fields may be laid out and cultivated in an artistic manner. His orchard may be artistic, so may his buildings. His herd of beautiful pure bred dairy cows that he has himself developed in the passing years may be veritable ornaments to his fields and pastures.

Seventh: To exercise inspiring leadership in the movement of people back to wholesome country life. There has been the great movement from the country to the city, but that movement is now beginning to reverse itself and an opportunity is offered the enterprising dairyman to so conduct all his farm operations, to so manage his herd, to so train his family to habits of industry, the love of music, of books and into the pleasure of the higher life, that his example may attract others into like undertakings.

DISCUSSION.

Mr. Goodrich: One of the good qualifications of a man is to pay his debts as he goes along. Down in the part of this State, where they have been dairying the longest, men are better able to pay than they are where they have been raising corn or doing any kind of business where their income is all in a lump, because they spend it before they get it, and they spend more than they ever get, and they get into debt. They are soon known to be not good pay, and I for my part don't think much of a man that isn't good enough to pay his debts. I don't suppose this hits anybody here, of course, but if it does, all right.

Now, a dairyman receives his income all the year around, every week or two it is coming in; in some rare instances, maybe a month, so he can wait until he gets his money before he spends it, and that is what the young man does that starts in dairying. He gets in the habit of paying for everything, and not spending his money before he gets it. When he gets it, he takes his check to the bank, and he doesn't need to use quite all of it. He draws what he needs and leaves the rest and so he starts a bank account. Now, I tell you a bank account is a beautiful thing to have, and when a man starts in and begins to have a little accumulation in the bank, he hates to see it all drawn out. I went to Mr. L. B. Caswell, a banker at Fort Atkinson, who was our congressman for fourteen years, and I asked him what class of men had the most deposits. Of course, I didn't ask him what deposits, that wouldn't have been a nice question. Well, he says, "We have over $100,000 deposited in our bank and mostly by farmers." I said, "What kind of farmers?" Now, of course, I wanted to know for a purpose, and was disappointed at his answer. He said, "I hadn't thought particularly about that, I will look it up and tell you the next time you call in." So I called in later, and asked him, "Have you looked that thing up?" and he says, "Yes, and I am astonished at the fact that it is almost all deposited by dairymen and they keep a balance to their credit right along, and to tell you the truth, I don't understand it." Of course I tried to explain to him how it came about.

Then there is another thing about dairying which has a tendency to make a man better otherwise. He has to be honest, honest at heart, or else he won't be honest with his cows and deal with them fairly. He has to be generous, because he must be generous in feeding his cows. He has to be a kind hearted man, he has to love his cows, keep down his temper and talk mildly, even if he doesn't feel mild, and he will get in such a habit of being kind and good to his cows, that first thing you know, it begins to have an effect upon his family and he is good to his family; he actually loves them.

The Chairman: I think there is one thought along the line of opportunity for the enterprising dairyman and that is the co-operation with his neighbor. It is so easy to run down what your neighbor says; to run down your neighbor's cattle, possibly because you don't happen to have the same kind of cattle that he does; and every time one does anything of that kind it hurts his own business; it hurts his own character. If a man isn't doing as he ought to, or we think so at least, let us go to him in a kindly way and see if we can't induce him by kindly words to do a little differently. It seems to me that would have a better effect than to pull and haul at one another.

Mr. Lillie: Mr. President, there is one thing that I feel like criticising in this paper, and that is the idea of quoting that epigram written by Senator Ingalls on "Opportunity." It carries the idea that there is only one chance for a man. If you take it then, all is well; if you miss that opportunity, all chance has passed by. I don't believe that. I believe there are opportunities that come up every day and every week of our lives; I believe we can even make opportunities for ourselves, and so, while in a measure, Senator Ingalls was right, yet I do not believe that ought to be the motto of the dairyman, because he is not passed by if he misses this particular opportunity.

The Chairman: We are now to hear what the Michigan Cow Testing Associations have been doing and from a man who has helped to form these associations.

We have asked Mr. Colon C. Lillie to come and talk to us about their testing associations, which have been wonderfully successful, and I am very glad to introduce to you Mr. Lillie from Coopersville, Michigan.

WHAT THE MICHIGAN COW TESTING ASSOCIATIONS CAN AND ARE DOING FOR MICHIGAN DAIRYMEN.

COLON C. LILLIE, Assistant Food and Dairy Commissioner, Michigan.

Mr. President, Members of the Wisconsin Dairymen's Association, Ladies and Gentlemen: I want to first assure you that I am very glad indeed of the opportunity of being here this afternoon. I am always glad of the opportunity to talk with dairy farmers about practical dairy questions.

First, I am glad to be here as a representative dairy farmer, one who owns and operates a dairy farm, and is interested in the question from a practical standpoint.

Then again, I am glad to be here as a member of the Michigan State Dairy and Food Department, which is trying to do something to uplift the dairy industry in our State.

Michigan is not noted as a dairy state like the state of Wisconsin which is known all over the country as a great dairy state. In many portions of it, you have intensive dairying, but in the state of Michigan we are young in this business. Of course there are a number of reasons for it; in the first place, Michigan is too good a state to be entirely a dairy state. You know, just across Lake Michigan we have what is known as the fruit belt of Michigan; considered from the fruit growers' standpoint, it is almost the most wonderful strip of land in the world. I never realized what an important strip of land it was until I went to the state of Florida one time among the orange growers. When they learned that I came from the Grand Rapids, Michigan, fruit country, they began to ask me innumerable questions about the fruit belt of Michigan, and so I found, when I got away from home, that Michigan was noted for something. That strip over there is protected, owing to the prevailing west winds and the water of Lake Michigan, in such a manner that it is the safest place to grow peaches in the United States.

I looked over the ground pretty thoroughly in Florida; saw a lot of orange groves, and you couldn't help but admire them.

They told some pretty big stories about their income from them, and then they asked me if there was anything in the fruit belt of Michigan that would compare with them. It was just after we had had a "bumper" crop there, and Roland Morrill had raised on his own farm and harvested $40,000 worth of peaches. I was proud that I had a story to match theirs.

Michigan is noted for one phase of improvement in dairying, although it is not a dairy state, and that is the co-operative cow testing associations. Our State Dairy and Food Department became very much interested in this idea of the co-operation of farmers for the purpose of testing their cows, finding out the profitableness, if you please, of each cow in the herd. It was not original with our department; we were very fortunate indeed in having as an inspector of our department a young man who was born and brought up on a Danish dairy farm, a Dane who had taken part in a Danish Control or Co-operative Association in Denmark, and who knew all about it. He had practical experience, and created enthusiasm in the rest of the department in this line of work. It is owing to him that the Michigan Dairy and Food Department received the enthusiasm sufficient to organize co-operative cow testing associations. Michigan organized the first co-operative cow testing association, not only in Michigan, but in the United States of America, the first one on this side of the Atlantic Ocean, and I have in my hand the record of this first Co-operative Cow Testing Association.

I know one time I attended a dairy meeting in my own county in Michigan and was talking about this subject somewhat as I am now, and I asked those in the audience to raise their hands, who owned Babcock testers, and there were three men in the audience who raised their hands. I said, "That is very good; I didn't expect that there would be three men in the audience that owned Babcock testers. Now, I would like to know how many of you are using those testers?" and there didn't a hand come up. There was an old Dutch farmer on the front seat, and I asked him, "Where is your tester?" He said, "Up in the garret." I asked, "Why is it up there, why don't you use it?" and he said, "Well, now, I'll tell you about it. The boy went down to Lansing and took the short course in dairying and he got enthusiastic about finding out what kind of cows we had and

when he came home he got me to buy a tester and scales, and we weighed the milk and tested it for two or three months, but it came summer time and the work increased on the farm. We kept putting it off, because we didn't have time to do it, just that day, and finally we got so we didn't do it at all. The tester was in the way and one day I told the hired man to put it up in the garret."

Now, that is just the way it works on the average farm, and for this reason the Co-operative Cow Testing Association is practical. You won't do it yourself and you ought to do it, because it places dairying on a business basis. As long as you won't do it yourself, the thing to do is to get your neighbors to co-operate with you so you can hire a man to go from farm to farm who will have nothing to do but attend to this business, and it will be tended to. That is where the Co-operative Cow Testing Association comes in. The man comes to the farm; he sees the cows milked and fed; he weighs the feed and charges it up at the market price. Of course he weighs the milk, and then he tests it to get the butter fat, giving each cow in the herd credit for the butter fat in her milk at the market price and charges up to her her ration at the market price, and after he has completed his work the farmer hitches up and takes him to the next farm, and he goes on in this way. At the end of the twelve months, he gets out a statement like this one (referring to a bulletin of Michigan Dairy and Food Department) showing the standing of each cow in each herd so that the farmer can see approximately how much it has cost him to keep every cow in the herd and how much the cow has yielded in milk or in butter fat. That puts dairying on a business basis. No man who keeps cows can afford to do without a cow testing association, and it costs but little.

The first great question that this system of work is settling for dairymen in Michigan is to prove to the average farmer that it pays him better to feed the crops which he grows on his farm to his cows, than it does to sell them off from the farm. It seems to me that this is the greatest benefit that these associations are doing to the dairymen in the state of Michigan. I believe that there are lots of farmers who keep cows and raise crops and buy some of the feed for them who would tell you that they honestly believe that if they sold their crops in

the market and got cash, they would get more out of their crops than if fed to cows.

Now, another reason why a man will do this is because he knows from actual experience and observation that when he grows crops upon his farm and takes out the nitrogen, phosphoric acid and potash stored up there, and then sells the crops from the farm, that he is depleting the soil of its available plant food. He is lessening its power of crop production, and it only takes about a generation before it reaches the stage where it will not produce profitable crops. A wise man looks at it in this way: If I raise these crops, and sell them off my farm, eventually I won't be able to raise profitable crops. So he is willing to work for almost nothing so far as labor is concerned, in dairying, to first turn those crops into cash through the dairy cow and get his money out of dairy production and husbands his soil fertility.

I asked a man in Grand Rapids, Mich., one time if he thought it was a profitable investment to buy bank stock if he had a little money that he wanted to invest. He says, "You won't get very big interest on bank stock, but it is mighty convenient to own a little bank stock, because if you want to borrow money, you can borrow it without any question." You see there was a business man that had his money invested in something simply because he found it convenient if he wanted to use it for the basis of a loan.

Cow testing associations are proving to the dairyman that he cannot get more out of his crops by selling them in the open market for cash than he can if he runs them through cows. This bulletin shows that in four cow testing associations, averaging about 300 cows, each association in different localities in the State of Michigan, that the owners on the average received $1.85 for every dollar's worth of feed which they fed their cows. And that certainly was not getting more for their hay, straw and grain by selling it off from the farm than to feed it to cows. If they had sold it off from the farm they would get a dollar but they could get $1.85 by feeding it to their cows.

In this Bulletin (referring again to a bulletin) it is shown that in the first co-operative cow testing association, every member of that association, received $1.73 for every dollar's worth of feed. They charged the feed up to their cows at

market price, just what they could get for the feed if they had hauled it from their farm and sold it in the market. For instance, last year in our cow testing association at Coopersville we charged our cows $7.00 a ton for clover hay. That is all we could have received for it if we had sold it off from the farm. We charged the cows $2.50 for corn silage and $3.00 a ton for corn stalks. I do not remember the other feeds, but they are all given in here. We charged them for cotton seed meal and oil meal and the other feeds we bought, exactly what we paid for them, and by doing that, we got $1.85 for a dollar's worth of feed.

Now, in the next place, these co-operative cow testing associations have shown us all that there is a great difference in cows. Many people would not believe it before; individuals knew it, but the average man would not believe that there is the difference in cows that look so much alike, stand in the same stable and are fed practically the same ration. Too many men figure that all cows are of the same value.

I heard a farmer say once that he would not pay over $35 for any cow, that was the limit. That man has not a very good idea of the value of a dairy cow, but I tell you when you pay $35 for some dairy cows, you are paying too much. A good dairy cow is worth from $150 to $250 more than a poor one which may be worth no more than $35 and even less, and the cow testing associations are proving it.

Suppose you have a cow which will not take the feed which you grow on your farm and manufacture it into milk, at a profit, how much is she worth as a dairy cow? Suppose you have another one standing right by the side of her, that will take the same feed and consume it and manufacture it into milk and make you a profit of $50. How much is she worth? Is she worth no more than thirty-five dollars, if she makes a profit in one year of $50? You look over those records, and you will find that there are a number of instances like that where one cow would not take the feed and manufacture it into milk at a profit; she would give the farmer perhaps 75 cents for a dollar's worth of feed. Another cow standing right by the side of her would give the farmer $2.00 for a dollar's worth of feed, or even $3.00.

That is one of the things that the cow testing association

is showing us, and when you know those things, how can you stop keeping records; how can you fail to keep on testing your cows and finding out? What is the sense of a farmer keeping a cow in his herd that won't take the feed which he gives her and manufacture it into milk at a profit? The cow testing associations have proved conclusively that we cannot pick out profitable cows by their looks; we used to think we could.

I know one time Professor Smith came out to my farm and we went down in the back pasture to look over a bunch of heifers, and I asked him to pick out the best one. He shook his head, and said, "No, I can't do it. Two or three years ago I thought I could, but I don't know as much about cows now as I thought I did then."

Why should you expect to pick out a profitable cow by her looks? Talk about common sense, you know that you can't tell a profitable horse by his looks; there is a heap of difference. You know that you can't tell by the looks of a man whether he is worth a cent or not.

The Chairman: Present company excepted.

Mr. Lillie: No, we don't except anybody on that score at all, and if you ever pick out a woman by her looks, you will get mightily fooled.

Now, why should we expect that we could pick out dairy cows by their looks? You know one man won't buy a dairy cow unless the bone in her tail reaches below the hock joints; another one won't buy unless the cow has crumpled horns; another one must be of such color; another of such a shape, and all these kind of things. Those are all good things to think about, and they may be indicative of dairy qualities, but, my friends, the only way to know a profitable cow is to put her to the test; feed her, keep track of what she did for you; count the cost and make a balance at the end of the year.

Another thing that these cow testing associations are teaching us is, that you cannot depend on a seven-day or thirty-day test; it doesn't amount to but mighty little. You have to keep a cow a year, you want to know how much she will give in a year, not in seven days, because we must feed her a year; and we have been mightily deceived in buying stock for breeding purposes from cows that made wonderful seven-day tests. They were forced unduly by expert feeders, put into an abnormal

condition so as to yield an immense amount for a short time, and I say these testing associations are teaching us that we do not want to put any dependence on those things; we want to know what a cow will do for us in one year, in two years, in three years, and that means that we will know something about the quality of that dairy cow under sensible, ordinary, liberal feed and management. We want to feed them to their capacity, but we do not want to feed so that we will injure them; we want to feed them up to their normal limit and keep them there, and then figure out how much they have cost for that year, and how much they have returned to us, and that will tell the whole story of that dairy cow. When you begin to figure along those lines you don't care whether she has a black and white or a lemon-fawn coat or what color she is. You are after the cow that will make you the most profit.

You will find out when you get into the dairy business on a business basis that it is not always the cow that yields the largest mess of milk in the year that gives you the most profit, and you are not particularly interested in having a wonderful yield of milk unless it is done at a profit. A good business man does not figure on doing a wonderful business and making nothing out of it; he would rather do a small business and have a profit.

Do you know, the most valuable lesson I got at the Michigan Agricultural College came about accidentally one day in the class. It was not taught in the text books or in the lecture room, but good old Dr. Beal was hearing our class in landscape gardening, and he was arguing that if we were ever to become landscape gardeners we had to study the proposition so thoroughly that we could see in our own mind just how a certain piece of landscape was going to look after it was developed. You cannot put a tree here and a bunch of shrubbery over there and then afterwards see that it is wrong and take it out and start afresh. In the course of his talk he turned to the class and said, "Young men, when you get back on your farms, it will pay you to take two days out of every week to study and think about your work." Think of the average farmer taking one-third of the actual time in reading, studying and thinking about his business. There wasn't a boy in that class but thought that a very extravagant statement, but the more I have learned about farming, the more I believe that Dr. Beal was right; that

one-third of the actual farmer's time—I do not mean a hired man's time, should be spent in studying his business. I mean the man who is the property owner, the man who has the investment. The farmer, in a way, is a capitalist and a laborer combined, and it is just as much his duty to make that capital earn him something as to make his bare hands earn something, and the more labor he can handle profitably on the farm, the more chance there is to make money off that farm. I mean the real farmer can well afford to work two-thirds of the time and think and study about his business the other third, and in ten years he will make more money than if he tries to put in all the time at hard work.

The cow testing association is the only basis of better breeding. What is the sense in raising a heifer calf out of a cow that has not the capacity to eat the feed which we raise, and turn it into a profit? How long will it take to improve a herd if you raise that kind of calves from that kind of cows? You will simply be going backward.

Somebody over here says, "What are you going to do with those worthless cows?" Another man asks, "Shall we sell them or give them to our neighbors?" N. P. Hull says, "Don't do that, that wouldn't be a Christian act." If you have a neighbor that is mean, a miserable ordinary cuss that you would like to get even with, don't sell them to him, but tell him he can have them if he will keep them five years. Make a contract with him, and then you can sit under the shade of a tree and see that fellow work and sweat and dig all summer to raise crops to feed those cows that will make him a loss, and you are pretty sure to get even with that man. If you can't do it that way, I don't know how you can. For my part, I would say make bologna sausage out of them.

Mr. Goodrich: You wouldn't say to feed them for beef, would you?

Mr. Lillie: No sir, I would sell them as quickly as I could; get a butcher to buy them.

Now, after you are rid of these poor cows, then you have your herd in shape to breed to a registered dairy sire; you have there the basis for improvement, and you can expect that improvement, because you will raise heifers that will be profitable producers, while, on the other hand, you cannot afford to run

the risk of breeding indiscriminately to a herd of cows that have never been even tested and you do not know those that are profitable producers and those that are not.

Mr. Everett: Why not breed to a grade sire, if there is one in the neighborhood that you can get for nothing?

Mr. Lillie: On the same principle that I cannot afford to breed to these cows before I know what they are. In the same way I don't know anything about this grade sire. You might get a grade sire that would be fairly prepotent and would bring you fairly good dairy heifers, but you would be more liable to get one that did not.

Mr. Everett: Did you ever know of a grade sire that really produced anything that was as good as he was himself?

Mr. Lillie: I ought not to express an opinion about that, because I have not paid any attention to grade sires for fifteen or twenty years.

Mr. Everett: Would you use one if you could get him for nothing?

Mr. Lillie: I would not. I would not run the risk. I would consider that would be going backwards instead of forwards.

The Chairman: Life is too short.

Mr. Lillie: Yes, indeed. One man over here asks what breed would you use in selecting a dairy sire? I am not here to tell you. I am simply here to call your attention to the fact that there are four or five breeds of cows that have been bred and selected for generations to consume large quantities of feed and to put that feed into the milk pail. There are special purpose dairy cows, and I advise you to choose some one of those breeds and use the one that you fancy most and you will make no mistake. I don't believe anybody could make a fairer or straighter statement.

So the man that will take a dual-purpose cow or beef cow and attempt to breed or select them expecting to get cows of dairy quality, is simply wasting a great portion of his life. You might just as well begin where somebody else left off and carry on the good work as to commence again clear down at the foot of the ladder.

A Member: How long would you let one of those cows go dry during the year?

Mr. Lillie: I believe that a cow ought to have a little va-

cation; it does them good. I think a good dairy cow should give milk about eleven months in the year and be entirely dry four weeks.

Now, the greatest benefit that we are getting out of these cow testing associations is this idea of co-operation that was brought up today. I tell you, if there is any one thing that the farmers of the United States need to do, it is to bring this spirit of co-operation into their business, to form co-operative business associations. That is what we want in every single neighborhood. We have got to learn that one single farmer alone is a mighty small business proposition; but when he is organized with all the farmers in his community, he is a proposition that can accomplish something. There is too much jealousy and that sort of thing among farmers; they are afraid that somebody else will do a little bit more business than they. I have seen people organize co-operative creameries in a community, put in their good money, elect president and secretary, and then sag right back in the breechings, praying all the while that the thing would be a failure simply because they were jealous. You can't do anything that way. We have got to learn, first of all, that if one farmer succeeds, all are going to succeed in that community. That is what makes the Danish farmer the most prosperous in the world, because he co-operates with his brothers, his neighbors.

A Member: Do these cows test differently at different times?

Mr. Lillie: Oh, yes, they vary. A cow will not always do her best; generally, if she makes a big record this year, next year she won't do quite so well, and the next year she will do better again. I wouldn't turn out a cow if she made a little profit, on one year's test. Of course, if she gave me fifty cents for a dollar's worth of feed, I would get rid of her as soon as I could get a butcher to take her; but if she gave me $1.25 for a dollar's worth of feed, or $1.10, I wouldn't turn her off until I had tried her another year. What we want is cows that will bring us $2.00 for every dollar's worth of feed and there are lots of them, and you can just as well have that kind as those that bring in $1.25. But the first test I made I wouldn't turn a cow off if she did fairly well; I would give her another chance.

The Kingdom of Denmark is about one-fourth the size of the State of Michigan. Michigan has now five co-operative testing associations, and the Kingdom of Denmark has 400; they

are in every neighborhood; they also have hen associations. The people all raise the same kind of hens so as to get uniform eggs, and they are all gathered and stamped so the consumer knows when the egg was laid, and after being gathered up they are taken to the Central Association and sorted over, put into different classes at different prices.

Why not let the farmer save the expense of the middleman that way, instead of having all sorts of commission men getting money out of it and selling them for somewhere about forty cents a dozen. The farmer isn't onto his job.

Then there is this question of community breeding. Mr. Goodrich was telling us in the noon hour how many thousands of dollars had been received for Holstein cattle which had been sold around Lake Mills in this state, and largely because all the farmers in that community raise one kind of cattle. When a buyer goes there he can pick up a carload easily; he hasn't got to come all the way up there and find one animal here and another one way over there. He can go to one little community and find his carload. We have localities over in Michigan where that thing is done, yet it has not been carried so far and so successfully as it has around Lake Mills. But that is what we want, co-operative business organization among the farmers. We have got to have it if we are going to make the greatest amount out of it.

There is another feature that we intend to incorporate into these co-operating testing associations, and that is sociability. At one meeting of our association, the members voted to hold monthly meetings at the farm homes of the members—and it strikes me that that can be made a very interesting and profitable feature—the different members of the association to meet at the farm where the testing has been done at that particular time and have lunch there. Have them take their wives along and enjoy it; look over the records there, talk this matter over, and have a little program. After luncheon call upon some of them to get up and talk about the different phases of this matter and their work upon dairying in general. I believe that we can make these meetings interesting and profitable and produce better feeling in our neighborhood. Meet often with a unity of purpose, and I believe that can be made one of the genuinely valuable features of co-operative testing associations.

I thank you very much for your attention.

DISCUSSION.

A Member: Do you think that the cow testing associations could be conducted successfully by the farmers weighing their milk once a month, bringing the samples to be tested at a central place?

Mr. Lillie: It could be done that way of course, but I don't think it would be as well. The greatest trouble I see in that practice is that every farmer, you know, has a great interest in seeing that his cow tests just a little bit better than the other fellows, and he will give her a little bit of advantage if he possibly can and not have his conscience stretched too much. Then again, it is necessary to get other details. It is just as important to know how much the cow eats as to know how much she is bringing in.

A Member: How often would you have your cows tested?

Mr. Lillie: The co-operative cow testing associations test once a month. It would be better of course to test oftener, but it is not practical.

A Member: Are two samples enough to give a fair test, one in the evening and one in the morning?

Mr. Lillie: Of course if he had more it would be better, but it is not practical to get more. The Danish Government has made careful estimates in their work on that, and they find that it is quite reliable.

A Member: What does a man cost you to do that kind of work?

Mr. Lillie: It costs from $300 to $350 a year, and his board and lodging. We figure on it costing the farmer a dollar per cow per year. If a man has ten cows, he pays $10, if he has twenty-five, he pays $25. If you don't have cows enough, it will cost $1.25 or $1.50, and it will be cheap at that. Mr. Rabild, the man I spoke of, has been picked up by the Dairy Division of the Department of Agriculture, and Chief Webster sent him to the Minnesota Experiment Station to investigate on this very point. Prof. Haecker has the records of the cows in that Experiment Station for sixteen years.

Mr. West: Would it make any material difference whether you would take the thirty days' milk or the one day's milk and multiply by the per cent of fat?

Mr. Lillie: No, how could it?

Mr. West: This man over here seems to think it might.

A Member: A cow might give thirty-five pounds of milk one day and twenty-five pounds another day.

The Chairman: You take it through the year and it will average up pretty well.

Mr. Goodrich: Before you get through the year one error will correct another pretty thoroughly.

I want to say that I think this cow testing association test will approximate pretty nearly right.

In 1901, they had the Pan-American Exposition at Buffalo. My son was employed there to test the cows every milking for the whole time, six months or more, and I have the records and I have spent a great deal of time studying over them. As I say, all milk was tested, so that they knew exactly what each cow produced. They can take any particular cow, the middle or the first of the month, or some day in every month right through, and figure it up from that and it varies very little. Some of them will come out exactly, and in this way we can know which are our best cows.

The Chairman: I would like to ask how many men in this room have the Babcock test. Put up your hands. Well, there are a lot of you; that is good.

Now, how many have got them up in the garret? Two. I see you have some honest people in Barron.

A Member: Mine is in the garret; we are not using it, but we are being tested through the testing association.

Mr. West: I think that in the discussion a while ago, the gentleman did not understand our Wisconsin conditions. The question was regarding the testing association where the farmers were saving their own samples and taking them to creameries. We have localities which will be strictly dairy localities in the future when the stumps have been grubbed out, and our lands able to support the herd on the land, and take good care of them, but at present, these localities are so situated that I do not think they could be handled practically under the plan of hiring a man to go around and do the testing. Therefore, our only chance to find out what our cows are doing is to form these associations where they send their samples to the creamery, and while it is true that some samples may be taken incorrectly,

I do not think that makes much difference. It doesn't do anybody any harm but the man that takes the sample. It can't do his neighbors any harm; he is getting no benefit out of it any more than the man who is taking his samples accurately, the way they should be taken, and I don't see why that method should be objected to. If a man wishes to cheat in that way, or any other way, he can do it under the other association practice.

Mr. Everett: The man simply cheats himself.

Mr. Lillie: I do not want my talk to be construed that I meant that that kind of an association is not of any value. The question that came to my mind was, that in my opinion they would not be as reliable as the other. I will admit that in some localities it would not be practical, probably, to organize cow testing associations because there would not be cows enough within a given radius, and that would make it cost too much, but I certainly think it is more reliable.

A Member: But the farmer is capable of weighing his own milk and taking a sample if he wants to be honest, isn't he?

Mr. Lillie: Oh, yes. There is a movement on foot in this country to register grade cows on performance. If we can have an association and go at that thing as it ought to be, it won't be but a little while before we will have a race of grade cows in this country that will be a little more valuable than pure breds, because they are on the registry on performance, not because they have royal blood in their veins. Now, we are going to have a class of cows that are registered cows, and registered because they do things, and then your kind of a record won't amount to anything.

Mr. West: I beg your pardon, I think it would. It may not amount to anything as far as the records go, but it gives a man a start.

Mr. Lillie: So far as this recording of cows on performance, those cows won't be considered at all.

Mr. West: These records, made the way they are, and the men who take their own samples and weigh their own milk, find out what their cows are producing.

Mr. Lillie: It is a mighty good thing, but don't compare it with the other system. Say it is a good thing and that is all there is of it.

Mr. Glover: I would like to ask Mr. Lillie what assurance he has that the man, who milked the cows the day before the tester arrived, to weigh and sample the milk in the system in vogue in Michigan, does it correctly?

Mr. Goodrich: Does the farmer know just what day the tester is coming?

Mr. Lillie: Not necessarily. He can go by the farmer's record of milk.

Mr. Goodrich: Suppose he doesn't have any.

Mr. Lillie: Then he has got two days, and if the cow doesn't give so much the next morning he knows something is not right.

Mr. Ellsworth: If the farmer is foolish enough to try to beat his neighbor, it seems to me he ought to get out of the business anyway. I have no criticism to make of the Michigan system of testing, and I believe the system spoken of by the other gentleman is all right.

My experience testing cows is limited. I commenced weighing every cow's milk two years ago in December and have done it every day since. I started by buying a lot of cows at an auction sale, and perhaps I got a larger number of good ones than if I went out and picked up one or two at one place; that is, before I got my tester. Then I sent my milk to the Barron creamery once a month and had it tested, and I got the butter-maker to tell me over the telephone what each cow tested, and the samples were all compared, and they tested from 2.9 to so high that I thought a job was put up on me, at least in one instance. I had one full blood Jersey cow. I was hunting after the poor cows, and we found that the larger part of them were too poor to keep, by testing; but I was so uncertain about this one cow that tested so high that I waited until some other cows freshened and took samples of their milk and samples of this cow's milk and I had them tested at another creamery, but I became satisfied I certainly had a good cow. I will say that the same cow was tested in this past year, and she hasn't done anywhere nearly as well. She ran down nearly two per cent, and I am sure I don't know the reason. Of course feed was not as good this last summer.

Mr. Everett: I think there is a lot of virtue in the argument of our friend over here, as well as in Mr. Lillie's argument. For instance, if it is impossible to form a test association in

this community, such as Mr. Lillie recommends, then the next best thing would be the one recommended by Mr. West. There may be some farmers in this community, though I must say you don't look like it, who would think it would be cute and cunning to send a dishonest statement to the creamery, a dishonest record of the milk. But he would only be cheating himself, and the buttermaker would be onto him quickly; he would certainly know that he was dishonest. That man would be branded in this community as a dishonest and unreliable man forever, and no man can afford such a reputation. Your buttermaker would also know the man that made the honest test and whether he or you had good cows, and he would very soon find out the one that was right and the one that was wrong from his books. No man is going to cheat himself; it would be no object to him to send a dishonest record of the milk from his cows.

There is only one thing really that gives a cow value and it is the fat she puts into her milk. If there is no fat in her milk, it isn't worth anything, except for pig feed; so you want to find out how much fat there is there. Test your cows some way; study out this question some way, and there is no better way than the Babcock test. There is no cheaper or more practical method for you to have the work done than through these testing associations for which you pay a dollar a cow to have your cows tested, and the official tester tells you at the end of the year what kind of a cow you have got and what kind of business you are doing.

Mr. Goodrich: He gives you a chart that you get from year to year and you can look back at it.

Mr. Everett: Another good point made is the amount of money that cows return to you for a dollar's worth of feed. If you can find that out, you are doing business like a business man. You know then whether you are making or losing money and only in that way can you become a successful dairyman.

The Chairman: I met one of my neighbor friends that I knew a good many years ago, and I was surprised to see that his right arm was gone. I asked him how he lost his arm, and he says, "Oh, I got it into a corn sheller, and away it went." I knew he was a dairyman and I said, "How do you get along with

all those cows?'' But he answered, ''Wife and the boys are milking and in fact I get along better than I ever did before, because I am using my head a little more.'' It isn't because we don't work hard enough, but we don't think enough.

I don't wonder sometimes that the boys want to leave the farm. On most farms there is no encouragement for the boys, but if a man has good stock the boys are more likely to become interested and then they will stay right there. Get good stock, raise them right, feed them right, breed them right, and you will get the boys interested. I don't blame our boys for going to the city where they can have their evenings and can go to a dance or a show if they want to, but when the farm work drags till nine and ten o'clock at night and somebody taps on the stove pipe at four o'clock in the morning, the farm boy doesn't care whether school keeps or not, and I don't blame him. Make the dairying a part of your farm work and you will have no trouble in interesting the boys.

Mr. West: I think there is one other phase in this work of co-operative testing associations that has not received enough attention, and that is the feeding question. Are these men that go around and are paid $300 and $350 capable of giving the farmers advice on feeding questions? Can he tell the farmer how to balance the ration of his cows so that he will get more out of them at the same or less expense?

Mr. Lillie: We have been fortunate in our work in getting old country people to do the testing, young men who have come over to this country and don't know our language very well and have had the practical work of cow testing associations in Denmark and in Norway. Those people are educated dairymen. They know how to balance a ration, know how to figure it out and that sort of thing. As soon as they learn how to talk, you can get a lot of information about feeding, based on their feeding in the old country. They can take the ration any dairyman is figuring and help him figure it out, tell him whether it is too narrow or too wide a ration. We are sending an inspector down to keep track of these men, and if there is any problem any of them don't understand, they can write to Friend Glover here of Hoard's Dairyman.

The Chairman: What does he know about a cow?

Mr. Lillie: Well, he thinks he knows a good deal, enough to answer questions.

Mr. West: No, we don't expect these men to go out and tell the farmers how to feed. But, for instance, I was in a barn the other night and the farmer said to me, "Do you think if I fed a little more oil meal and a little less silage, it would help my ration?" Now if a man had to take time to figure that out and tell him the next time, it wouldn't be much assistance to him.

Mr. Lillie: A young fellow that didn't know much could answer that question right off if he had any judgment at all and was brought up with dairy cows and saw the cows himself. He could give an opinion right off without very much figuring.

Mr. Glover: I have come to the side of Mr. West. I do not believe it is possible just at a moment's glance to tell whether a cow is getting too wide or too narrow a ration. The Experiment Station at Minnesota took years to find out that too wide a ration was injurious to cows. It seemed at one time during the experiment that it was not possible to feed a cow too wide a ration, and the cows did well on a very wide ration, but at the end of the third or fourth year, the animal was in a crippled condition. Moreover, at our own station it took them a long time to discover that salt was necessary. They took the salt entirely away from a certain group of cows and they seemed to do well without salt, but all at once the animals went to pieces figuratively speaking. It takes time to determine whether cows are being fed properly or not.

Mr. Lillie: The man who does the testing ought to know a great deal about scientific feeding, no question about that. He ought to know what is meant by a balanced ration and to figure it out, and take the ration that the practical farmer is feeding and see whether it is a balanced ration and be able to tell the farmer.

Mr. West: I had a man testing for me who was not able to figure out a balanced ration, I admit.

Mr. Lillie: That might be true when he first started out, but a good, bright young fellow in three or four months on that proposition would be familiar with it.

THURSDAY, FEBRUARY 11, 1909.

The convention met at 10 o'clock A. M.
President Scribner in the chair.

A LOCAL COW CENSUS.

L. S. CHENEY, Barron.

The Chairman: This has always been an interesting subject at every State Dairymen's Association, because it brings us in touch with what we are doing on our farms. There are a lot of us who are all right; our boys and our girls are all right, and we are all right, but when we come to put the test to our cows, they are not what they ought to be. I know sometimes we go to our state or county fairs and we think we are going to win out, but when we come into competition with others, we are not in it. It is a good thing to compare ourselves with our neighbors and see where we are at. We will now hear from Mr. Cheney.

Mr. Cheney: For something more than six weeks I have been collecting and studying facts concerning fifty herds of cows that are being kept in the neighborhood of our city to yield a revenue to their owners. The period covered in this investigation was the calendar year 1908, or the time beginning Jan. 1, 1908, and extending to Dec. 31, 1908. The greater portion of the information which I have obtained I present to you today in tabulated form upon the accompanying chart.

These herds yielded a cash return to their owners of a little more than $20,000 for the time mentioned above. In order to get at the cost of keeping these cows, the owners were visited and the matter was discussed thoroughly with them. None of them had an exact account in black and white of what they had fed to their cows, though a few had all the items on record except the roughage. However by getting their ideas of amounts of various feeds used, studying their methods of feeding; weighing sample feeds occasionally as found in the mangers ready

for the cattle and comparing my estimates with the amounts of the different feed items which the owners bought or raised, I have been enabled to reach estimates which, while not exact, I feel certain are not far from correct, since they were corroborated by the opinions of the herd owners and others acquainted with such matters.

I found among the different farmers a great difference in the amounts of different feeds used; some feeding heavily and others feeding barely enough to bring the animals through the winter in fair shape. I found also a considerable range of values attached to the different kinds of feed, by this I mean market values. Hay, for example, would range from $5 to $7 per ton for the same market grade and other feeds accordingly. In order to get at some practicable basis for figuring the cost of keep, I adopted a uniform price for each item of food as follows: Timothy hay per ton, $7; mixed hay, $6; clover hay, $5; millet hay, $4; corn fodder, $3; shredded corn stalks, $3; stover, $2; straw, $1; sugar beets, $4.50; other roots, $3; corn ensilage, $2.50; soiling crops, $2; pea ensilage, $1.60; oats, 40 cents per bushel; barley, 60 cents; corn, 65 cents; emmer or speltz, 60 cents; shorts, $23 per ton; middlings, $23 per ton; wheat bran, $22; buckwheat bran, $17; oil cake, $28. For pasture, I charged each cow $4.50 for the season.

Having found the cost of keeping the cow I went to the books of the local creamery, of which all of these farmers were patrons, and got there the number of pounds of butterfat sent in from each herd and the cash returns for the same for each month. In this manner I got the total amount of butterfat from the herd for the year, also the total amount of cash obtained for it. Then by dividing these totals by the number of cows in the herd I got the average for the herd in butterfat production and cash returns. As in all these cases, all the cream, excepting what was fed to calves and used at home, was sent to the creamery. The figures obtained from the creamery books show the entire cash returns from these herds.

As has already been stated the principal details of the cost of keeping the cow and the returns from her have been tabulated and may be seen on the chart before you. On this chart each herd is designated by number, following that in successive columns are the number of cows in each herd; the kind of cows;

the cost of feed in dollars and cents per cow; the cash returns from the creamery per cow; the pounds of butterfat per cow; the owner's estimate of what his cows would produce on an average in pounds of butterfat. In a few instances this was given in pounds of butter but as most were given in pounds of fat they were all reduced to the basis of butterfat. Following this is the average price per pound each received for the butterfat. It will be seen that this varies somewhat, depending upon whether the greater portion of the cream was produced in the summer when the price was low or in the winter when the price ranged higher. In the next column is found the value of the butterfat that one dollar's worth of feed produced and next to this is found the net profit or loss per cow in dollars and cents for the entire year. The numbers printed in red indicate that it cost that much more to keep the cow than she produced and the last column indicates whether butter was made at home or not; where a number occurs it means the number of pounds made. The blank spaces indicate that no butter was made.

That the facts stated upon this chart may become more intelligible, let us look a little closer into the records of a few individual herds. Let us begin with a couple that were not exactly paying propositions. In herd No. 13 there were six cows, one grade Jersey and five common stock. They were fed hay, straw and fodder, $18.50; grain and mill feed, $10.25; making $28.75 which with the pasture amounts to $33.25. These cows yielded their owner $18.12 worth of butterfat each in addition to milk and butter used at home leaving a deficit of $15.13. What is the matter with the cows? Let us look a little further. Each cow produced 75.4 lbs. butterfat which sold at an average price of 24 cents. That means midsummer fat when the price is lowest. This is not all. These cows are housed in a cold barn where it freezes every cold day and they get only cold water to drink. There may be something wrong with the cows but there is certainly something not just as it should be with the care they receive.

Now for No. 15. Here we find two grade Jerseys and three common stock. They were fed hay, straw and corn fodder, $18; grain, $5; and roots, beets, $7; making a total for feed of $30; add to this $4.50 for pasture and we have $34.50 as the cost of

keeping one of these cows for the year. In return she gave her owner 71.3 pounds of butterfat which sold at an average price of 26.3 cents, but this still left a balance of $15.63 on the wrong side of the ledger. We find upon examination that these cows have a cold barn and get their water from a spring out of doors in all kinds of weather. Neither this man nor the owner of herd No. 13 weighs or tests.

Now let us examine the record of herd No. 1. This is made up almost entirely of common stock, three of the cows having a little Jersey blood. There are twenty cows in all, producing 92.5 pounds of butterfat per head which sold at an average price of 25.7 cents per pound and cost 29.1 cents. The feed for these cows was ground oats $5; hay, $17.50; which with the pasture at $4.50 foots up to $27.

When the accounts are balanced we find a shortage of $2.70 per head. The owner of this herd does not spend money to buy farm papers or time to read them. His cows get their water from the creek that runs through his farm and on very cold days when they get into the barn they still have to fight the cold as it freezes in the barn at such times; in all weather, but the most severe, the cows are out. This man thinks it a good plan to have the cows on his wild woods pasture as they keep down the brush if the pasture is short.

Herd No. 47 is composed of ten Durham and Red Poll cows. The owner takes good care of his stock though he takes no farm papers. His cows are warmly housed; on all cold or stormy days go out only for water; he uses a tank heater to warm water for them and close attention is given to the feeding, the cows receiving hay as much as five times a day when in the barn all day. These cows were fed hay, straw and fodder, $14; ground grain (oats and barley), $10.50; bran, $4.62, which together with the pasture amounts to $33.62. They were well fed and got good care yet they only produced 121.1 pounds of butterfat per cow. This fat brought 27 cents per pound, that is, these cows were producing fat when it was worth almost the highest price, but in spite of all these points in favor of the cow, she still cost her owner 81 cents more than her butterfat amounted to. This man does not weigh or test.

Another herd similar in type to the one we have just considered is No. 37. This is composed of twelve head of Durhams,

either full bloods or grade, six of which are heifers with first calves. The owner of this herd is a painstaking, thoughtful man, who gives his cows good care, though he does not weigh and test. The cows are fairly well housed—it freezes a little in his barn in coldest weather. On mild days the cows are out three or four hours but whenever the weather is bad or the day cold, they are put back into the barn just as soon as they get their water. The water for these cattle is pumped into a tank which is inside a tank house. This tank house is heated so that the water goes to the cattle at a temperature of about 60 degrees. The feed was hay and straw, $14.50; soiling, 50 cents; shorts, $6; making, $21; which with the pasture brings the total up to $25.50. The cows returned their owner 104.2 pounds butterfat each, which brought him 25.3c per pound, yielding a net profit of 93 cents. One dollar's worth of this feed brought him about $1.03. This man feeding closer than No. 47 but giving his cows equally good care made a little the best showing, but as you will agree his profits are far from satisfactory. In these last two herds it would look as though the type of cow was at fault.

Herd 32 was made up of five Red Polls, three Shorthorns and six common or scrub stock, making fourteen in all. This owner has a good, warm, light and airy place for his cows; warms the water for them and does not allow them out in any cold or stormy weather excepting to get water. He fed hay, straw and fodder, $12.80; soiling, 79 cents; grain, oats and barley, $9.32; making in all $22.91, which after adding the pasture, $4.50, brings the total up to $27.41. In return for this the owner received 126.1 pounds of butterfat worth 26.3 cents per pound, which amounted to $33.21. After deducting the cost of feed and pasture the owner had left $5.80 as his profit per cow, or $1.21 worth of butterfat for $1.00 worth of feed. His net returns, you see, are still below the average. It will be noted that these cows are also mostly of the beef type. This owner realizes that he has been keeping the wrong kind of cows for profit and has already begun the breeding of purely dairy cows.

The cows of No. 44 were warmly housed in a dry, airy barn, turned out to warm water and allowed to go directly back into the barn again whenever the weather is cold or stormy. They receive hay, fodder and straw to the amount of $11; roots, 75

cents; grain, ground oats, $3.13, in all, $14.88. This with the pasture amounts to $19.38. These cows are fed cheaply and yet they are fed thoughtfully and judiciously for they return to the owner 116.1 pounds of fat which brought an average price of 26.7 cents per pound, a total of $31.10, netting the owner $11.72 per head; in other words, yielding $1.60 worth of fat for each dollar invested in feed and pasture. This man is a careful reader of good dairy and farm papers.

I desire to consider Nos. 9 and 49 together. They both show some remarkable results. No. 9 has seven head of common cattle which were fed $8.00 worth of hay, fodder and straw; $4.75 worth of mill feed and ground oats; roots, 65 cents; which with the pasture charge of $4.50 amounts to the remarkably low total of $17.90. From each of these cows the owner received 164 pounds of fat which brought the average price of 26.2 cents per pound, making a total return of $43.02. This man got his cows to make butterfat for him at 10.9 cents per pound. They made $1.00 worth of feed produce $2.40 in value of butterfat. To state it in another way, the cows netted him $25.12 per head. Herd No. 49 is made up of two common cows, mostly Shorthorn blood, and eight others with considerable Jersey or Holstein blood in them, ten in all. These cows received $10.50 worth of mixed hay, strong in clover; $1.25 worth of bran; $1.00 worth of roots each; making $12.75 for feed, which with the pasture makes a total of $17.25. Yet these cows produced 144.6 pounds of fat, worth 27.2 cents per pound, which brought him $39.41, a net profit of $22.16 per cow; $1.00 worth of feed yielded $2.28 in value. These two men evidently know how to make feed tell for the best returns. In both cases they have provided comfortable quarters for their animals and see to it that they are kept comfortable. No. 9 only allows his cows out on the pleasantest days, but he waters directly from the well. No. 49 warms the water for his cows, turns them out at noon to drink and puts them directly back into the barn every day. Both these men give close attention to the feeding and care of their cows, and while both have received splendid returns it is entirely probable that both could increase the net returns by heavier feeding.

No. 28 has a herd of eleven cows, one Jersey, two grade Jerseys, two grade Guernseys and six common stock with considerable Durham blood. He fed hay, straw and fodder, $10.27;

pea ensilage, $2.32; grain and mill feed, $3.27, which with pasture at $4.50 gives us a total of $20.36 per head. These cows gave in return for this 169.4 pounds of fat which brought an average price of 26.5 cents, a total of $44.99, making a net profit of $24.63 per head. The cow produced fat at a cost of 12 cents per pound or $2.21, for $1.00 worth of feed. This man though doing well is not satisfied with his surroundings. His barn is old and inconvenient, though very warm. He will have a new, up-to-date barn in a few months. He takes the best of care of his cows in every way. He reads the best farm and dairy papers and he is breeding only dairy cows and culling them to only such as yield a profit.

The last herd to which I desire to call especial attention is No. 38. The cost of feeding this herd was $36.17. This feed consisted of hay and straw, $6.60; corn ensilage, $7.50; stover, $5.00; soiling crop, $1.50; grain, mill feeds and oil cake, $15.85 (the oil cake was about $2), which with the pasture at $4.50 amounts to $36.17, considerable feed you may say to put through a cow. Right you are, but this man looks upon his cows as so many living machines that must be kept in perfect running order. From these machines he looks for profitable work. Let us look at his books and see whether he has been disappointed or not. These machines made on an average for him during the year 267.6 pounds of butterfat. This fat was produced at a season which brought the owner the highest average price paid to anyone on this list, namely, 27.6 cents per pound, or $73.99 per cow, producing a net profit of $36.72 per cow. While this butterfat costs more per pound than some other to produce, it still runs way below the average, the cost being 13.5 cents per pound. For every dollar's worth of feed, this man got $2.03 in butterfat value. One thing further, this man does not feel that he is being cheated out of something when he is feeding heavily. He figures this way. The more feed he can put through the animal and have its nutriment turned into butterfat at a profit, the more of the waste matter of his feeds he is putting into usable shape for returning to the farm as manure. How does this man secure his results? I do not pretend to be able to answer you positively, but I think I know of something about him that may have helped in securing these results. First, he is intensely interested in his work as a

dairyman, making the cows and their work his first concern. Second, he has in his house the very best dairy literature procurable and he reads and thinks about it. Third, he is constantly improving his herd of dairy cows by breeding and systematic testing and culling. Fourth, he has equipped himself with buildings suitable to make his cows just as comfortable in their quarters as he is in his. This means a thoroughly up-to-date barn with silo. And fifth, he manages his herd so that his cows produce the most butterfat when the price is highest.

To summarize: We have just 50 herds, the smallest had five cows while the largest had twenty. The total number of cows in all the herds is 553, making the average herd 10.6. The highest yield of butterfat per cow was 267.6 pounds, the lowest 45.9 pounds; the average per cow 139.5 pounds. The highest cost of keep per cow was $36.60, while the lowest was $17.25, with an average cost of $28.76. The highest cost per pound of fat was 54.4 cents, the lowest 10.9 cents. The highest butterfat value for $1 worth of feed was $2.40 and the lowest 45 cents, the average $1.35.

COST OF FEED AND INCOME OF FIFTY HERDS BELONGING TO PATRONS OF THE CREAMERY AT BARRON FOR THE YEAR 1908.

Herd No.	No. of cows.	Kind of Cows.	Cost of feed per cow.	Cash from creamery per cow.	Lbs. of butterfat per cow.	Owner's estimate of butterfat, cow.	Average price of butterfat.	Average cost of butterfat.	Value butterfat for $1 of feed.	Profit or loss (—) per cow.	Butter made at home and amount estimated.
1	20	Common, 3 with Jersey blood	$27.00	$24.30	92.5	100	25.7	29.1	$0.90	$2.70	350 lbs.
2	10	Two with Jersey blood, rest with Durham	24.88	37.43	147.6	150	25.4	16.8	1.50	12.55	350 lbs.
3	18	Six Gr. Guernsey, 3 Gr. Jersey, 9 with Jersey blood.	26.98	37.65	238.3	200	27.2	19.5	1.39	10.67	225 lbs.
4	8	Basis of herd a full blood Holstein cow, offspring from common sire	32.74	42.64	156.1	225	27.3	21.0	1.30	9.90	None.
			31.29	51.98	193.4	235	26.9	16.1	1.66	20.69	160 lbs.
5	9	One Gr. Jersey, 1 Gr. Guernsey, 7 common	35.49	45.94	169.6	185	27.1	20.9	1.29	10.45	100 lbs.
6	11	Two Gr. Jersey, 1 Gr. Guernsey, 8 common									
7	13	One Jersey, 3 Gr. Jerseys, 3 Gr. Guernseys, 2 Shorthorns, 4 common with Jersey blood	36.59	58.24	215.2	200	27.1	17.0	1.59	21.65	275 lbs.
			21.73	35.49	130.5	160	27.2	16.6	1.63	13.76	110 lbs.
8	13	Common with Durham blood	17.90	43.02	164.0	150	26.2	10.9	2.40	25.12	None.
9	7	Common stock	25.00	11.21	45.9	100	24.4	54.4	.45	—13.79	300 lbs.
10	7	Common stock	27.23	28.77	116.3	150	24.7	23.4	1.05	1.54	300 lbs.
11	7	Common stock	23.50	23.51	94.8	150	24.8	24.7	1.00	.01	210 lbs.
12	8	Common stock	33.25	18.12	75.4	150	24.0	44.1	.54	—15.13	300 lbs.
13	6	One Gr. Jersey, 5 common	21.90	27.13	99.8	100	27.2	21.9	1.23	5.23	None.
14	12	Common stock with Durham and Jersey blood	34.50	18.87	71.3	100	26.3	48.2	.35	—15.63	200 lbs.
15	5	Two Gr. Jerseys, 3 common	23.90	35.39	136.5	220	25.9	17.4	1.48	11.49	260 lbs.
16	12	Two Gr. Jerseys, 10 common with Durham blood	29.95	47.20	175.4	200	26.9	17.0	1.56	17.25	None.
17	10	Common stock	27.75	27.47	107.4	150	25.6	25.8	.99	— .28	90 lbs.
18	18	Two Gr. Jerseys, 16 common with Durham blood	29.68	32.20	120.1	250	26.8	24.3	1.10	2.92	260 lbs.
19	8	Three Gr. Jerseys, 5 Gr. Shorthorns	24.50	43.74	164.4	100	26.6	14.9	1.78	19.24	None.
20	8	Seven Gr. Holstein, 1 common	20.30	25.77	102.7	185	25.1	19.7	1.27	5.47	185 lbs.
21	6	Various grades	33.92	47.54	176.1	175	26.9	19.2	1.40	13.62	None.
22	20	Three Gr. Jerseys, 4 with Holstein blood, 13 Durham.	30.76	44.55	166.3	225	26.8	18.5	1.44	13.79	125 lbs.
23	15	Gr. Durham									
24	8	One Gr. Red Poll, 2 Gr. Galloways, 2 with Jersey blood and 3 common	36.60	49.23	184.7	200	26.7	19.8	1.34	12.63	85 lbs.
25	13	Two Gr. Jerseys, 8 with some Jersey blood, 3 common	28.71	27.41	104.5	100	26.2	27.4	.95	— 1.30	310 lbs.

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26	6	Common stock	33.53	30.41	116.3	—	26.1	28.8	.90	— 3.12	260 lbs.
27	7	Common stock	34.25	59.35	218.1	150	27.2	15.7	1.73	25.10	None.
28	11	One Jersey, 2 Gr. Jerseys, 2 Gr. Guernseys, 6 with Durham blood	20.36	44.99	169.4	200	26.5	12.0	2.21	24.63	None.
29	5	Common stock	20.02	31.86	120.2	125	26.5	16.6	1.59	11.84	None.
30	16	Common with Jersey blood	22.18	34.12	126.5	175	26.1	17.5	1.49	10.94	100 lbs.
31	8	Common with Shorthorn blood	20.50	27.94	110.7	125	25.2	18.5	1.36	7.44	160 lbs.
32	14	Five Red Poll, 3 Shorthorn, 6 common	27.41	33.21	126.1	225	26.3	21.7	1.21	5.80	100 lbs.
33	5	Common stock, 2 with Jersey blood	28.20	25.77	95.1	220	27.1	29.6	.91	— 2.43	110 lbs.
34	11	One Gr. Jersey, 2 with Jersey blood, 8 common	24.99	37.50	143.5	150	26.1	17.4	1.50	12.51	None.
35	13	Eleven Gr. Durham, 1 Gr. Guernsey, 1 Gr. Jersey	26.50	40.30	150.9	190	26.7	16.9	1.58	14.80	260 lbs.
36	11	One Holstein, 1 Gr. Durham, 9 common	25.00	31.41	115.8	150	27.1	21.6	1.25	6.41	210 lbs.
37	12	Three Durham, 9 Gr. Durham, (6 of herd heifers)	25.50	26.43	104.2	200	25.3	24.4	1.03	.93	160 lbs.
38	16	Eleven Gr. Jerseys, 6 common with some Jersey blood	36.17	73.99	267.6	290	27.6	13.5	2.03	37.72	None.
39	11	Common stock, 2 with Jersey blood	36.60	48.07	174.9	255	27.5	18.8	1.31	11.47	None.
40	10	Two high grade Jersey, 8 Durham with Jersey blood	32.60	54.95	207.1	—	26.5	15.7	1.68	12.35	None.
41	6	Two Gr. Jersey, 4 Gr. Durham	32.07	57.91	213.4	175	27.1	15.0	1.80	25.84	150 lbs.
42	12	One Gr. Guernsey —Jersey, 2 Gr. Jerseys, 9 common with Jersey blood	25.70	40.25	148.5	150	27.1	17.3	1.56	14.55	200 lbs.
43	8	Common stock, 2 with Jersey blood	22.50	22.56	90.6	125	24.9	24.8	1.00	.06	160 lbs.
44	10	Two Gr. Jerseys, 8 common with Durham blood	19.38	31.10	116.1	125	26.7	16.7	1.60	11.72	50 lbs.
45	7	Common stock with Red Poll blood	29.00	43.18	162.3	100	26.5	17.8	1.48	14.18	250 lbs.
46	17	Nine Gr. Jerseys, 5 with some Jersey blood, 3 common	26.40	39.73	148.4	200	26.7	17.7	1.50	13.33	365 lbs.
47	10	Durham and Red Poll	33.62	32.81	121.1	200	27.0	27.7	.97	— .81	235 lbs.
48	15	Common stock with some Jersey blood in most	29.40	32.39	121.9	—	26.5	24.1	1.10	2.99	None.
49	10	Two Shorthorn, rest with either Jersey or Holstein blood	17.25	39.41	144.6	175	27.2	11.9	2.28	22.16	150 lbs.
50	10	Common stock	33.20	36.29	130.6	—	27.8	25.4	1.09	3.09	None.
	10.6	Average	28.76	37.23	139.5		26.4	21.6	1.35	9.16	
	533	Total cows									

DISCUSSION.

Mr. Cheney: No. 47 took exceptionally good care of his animals; he is especially interested in his cows. He knows his cows and takes good care of them and still he comes out 81 cents behind. It is possible that the breed may have had something to do with that.

Mr. Ellsworth: As between 37 and 47, when you add the butter made at home No. 47 has done better.

Mr. Cheney: I kept away from considering that intentionally. Of course, in many cases it will make a great deal of difference. For instance, it might well occur that one of these men made no butter whatever, and the other made some, and it would make a difference between the balance on the credit side instead of on the debit side.

The idea that I had in this paper was that the cows were kept for profit, but of course the cow is entitled to the profit that she makes, whether it is used at home or sold, and if you add that butter made at home, you should also add the cream and milk used at home.

In every instance, where you have the word "common," there are a number of cows that have a little dairy blood in them, less than half, so that I group them as "common." In cases where I have marked, for instance, "4 J," that is four Jerseys; these four Jerseys include full bloods and grades. The term "grade" means an animal that is half blood or more, whether the blood came from one side or the other, or whether it is a registered animal or not. This expression "4 Jerseys" includes full bloods and grades, and that is true all the way through. "J." stands for Jersey, "G." for Guernsey, "Gal." for Galloway, "R. P." for Red Poll, and "S. H." for Shorthorn.

Mr. Goodrich: I am very much interested in this work, because I believe it is capable of doing the dairymen a whole lot of good. I have taken a great interest in the dairy business, and whenever I can see returns from the work that amount to anything, it always makes me feel good.

I have taken a cow census for the Dairymen's Association on several occasions and at other times, and I want to tell you about a thing that happened to me that made me feel good. I

took a census down here at Rusk and it ran along like this one; some made money and some didn't. I fixed up a chart with big figures of a few of those that I wanted to call attention to, some of the extremes, and amongst the rest was one, that was No. 4. I am not going to tell you his name. He had made a loss, quite a loss, I think about $25 to the cow. He was a bright young man who had attended the Agricultural College and the Dairy School, but he had a farm of two hundred acres that he was badly in debt for that he just bought, and he thought he must just work awful hard, and he worked so hard with his hands that his brain was beclouded—it must have been. When I went there and saw his cows, why, you know he wouldn't stop to talk to me, he had so much work to do. I could see that his cows were not doing very well; they were running out in November in a real cold day, and trying to make a living out of the corn stalks that were there. Well, he didn't know whether he had made anything or not. He was capable of figuring it, but he hadn't taken the time; he had to work so hard he couldn't.

He was down to the convention, when this was discussed and after the meeting he came to me and he says, "Which was my number?" I says, "Can't you tell your number by the number of cows and so on?" "Well, no," he said. He had been looking the list all over and he couldn't. I had the list printed and handed around. I said to him, "Do you really want to know your number?" "Why, yes." I said, "I am afraid you will feel worse than you do now if I tell you." He says, "Well, I want to know." So I told him, "It is No. 4." He was looking right at that chart, and you ought to have seen the expression on his countenance. He says, "For God's sake, is that the kind of work I am doing? If I am going to do such work as that, I better throw the job now than to continue it any longer." Finally, he stopped a minute and he says, "I can do better; I will do better, and next year, when you come up in this part of the country, I want you to call on me and see if I haven't done better."

It was a year after that time I had a census for the Fond du Lac meeting, and I got a letter from him. He says, "You remember No. 4 on your chart last year. You know I promised to do better and here are my figures." He had made out all

the figures; he didn't have so many cows, had rejected some of the cows and instead of $27 returned per cow, he had $52.52, and that is what that cow census and that meeting had stirred him up to do, and I felt as though if under God I had been the means of converting one soul, I felt then just like the preacher would feel who had brought one soul from the error of his ways. I say that without disrespect to anybody; I tell you I did feel good. That is six years ago and I have felt good ever since.

Mr. Bartlett: I would like to ask Mr. Cheney what kind of feed No. 9 was fed?

Mr. Cheney: Eight dollars worth of hay fodder and straw; $4.75 for mill feed, ground oats, and 65 cents for roots; that is all the feed.

Mr. Martiny: What time of year did these cows freshen?

Mr. Cheney: I didn't ask any of these about the time of the year. I gathered the time of the largest flow from the creamery returns, when they got the highest price. He gets 26.2 cents so that his cows would be milking either in the fall months, or possibly the spring months, that is, the bulk of the milk flow.

Mr. Martiny: Could you give us any idea how many of those men had silos.

Mr. Cheney: Yes, I asked that question. I haven't it designated on the chart. I think there were seven men in this list who have silos, but most of those men have had the silos only for this fall. There are a good many more men than that who have silos in this neighborhood, but they don't happen to be on this list. I think No. 38 fed corn silage. No. 28 fed heavily of pea silage from the canning factory.

Mr. Ellsworth: You take No. 9; he sold $151.10 worth of feed for $420, making a profit on his feed of $279. No. 38 sold $655.20 worth for $1,183.84, making a profit of $528.64 which is $249.54 in excess of No. 9. That shows he was doing the best business, although he did not sell his feed at a higher price.

Mr. Cheney: I will say that practically nobody had weighed his hay, but I asked every man what he fed his cows in the way of hay. Generally he would say, "Oh, I don't know," "Well, did you give them ten pounds a day?" "I don't know." "Fifteen?" "I don't know, maybe." That is the way the answers would come, and then I would have to go at it another

way. I would ask him how much hay he had in his bay, and how many full grown animals he fed out of that bay, and I would figure the time and tell him how it came out; fifteen or twenty or ten pounds per day per cow, figuring all the stock he had and his hay mow. He generally knew somewhere near how much he put in, and we could get somewhere near it in that way, although I do not pretend to have been able to get the exact amount.

A Member: Isn't good corn fodder as good as hay for a cow, Mr. Bradley?

Mr. Bradley: Not alone. I prefer a mixture, and even at that there are only two tons of corn fodder to be fed at that price.

The Member: I have nineteen head of cattle. I had a lot of hay, and it lasted me over three weeks; then I had some straw and some fodder. I have fed about fifteen pounds a day.

Mr. Cheney: That wasn't enough to maintain them.

The Member: They have kept up pretty fair. They are always in good flesh, better than any around there.

Mr. Goodrich: We all know that a cow has to have something to eat, and we know that she wants not far from 3 per cent of her own weight in food, and if she doesn't get it in hay she may get it in something else, but if she doesn't get pretty near 3 per cent of her own weight, then she isn't going to produce anything and she is going to run down.

The Member: My cows have good pasture.

Mr. Everett: There is a disposition on the part of some of you, as I glean it from these discussions, to see how cheaply you can keep your cows. Now, No. 9 on that chart contains a valuable lesson for us all and so does No. 38. No. 9 fed $17.90 worth of feed and he got for a dollar's worth of feed $2.40; that is a very remarkable record. It would seem that No. 9 was trying to see how cheaply he could keep those cows, on how little feed, and yet he got the biggest returns of any one on the chart for a dollar's worth of feed. Had No. 9 been a good, liberal feeder, he might have received $3.00 for that dollar's worth of feed, but it is evident that he was not a liberal feeder. He has remarkably good common cows which were fed very cheaply.

Now, No. 38 is evidently a liberal good feeder, but something

is the matter with his cows; he fed $40 worth of feed to a cow and only got $1.80 worth of butterfat for a dollar's worth of feed.

Mr. Goodrich: You don't have to use her up. A cow fed well and correctly and liberally will last longer than one fed under a stingy diet.

The Chairman: That is right. I have had just a little experience of that kind. I remember we bought a reasonably young cow, but she had always been kept on marsh pasture and fed marsh hay, and she was very old looking, five years old she really was. We had one cow that had all she could eat every year since she was born, and she died at about eighteen, and she was really a younger looking cow at eighteen than the other at five. It is not economical feeding to be stingy feeders, to keep the feed away from your cows. Our business is to see how much we can get through those cows profitably.

A Member: I didn't mean to starve our cows. Years ago I used a lot of bran, but this winter I haven't used so much. I had only a few cows and bran was pretty high, but I had seventeen tons of hay and I know from the looks of my hay stack what they have had.

A Member: Is feeding a cow five times a day better than three?

Mr. Goodrich: I don't think it is. A cow really doesn't eat her hay and fodder until she has had time to lie down and eat it afterwards; she gets it into her paunch, and she hasn't eaten it any more than you have eaten apples when you have gone out into an orchard and put your apples into a bag and carried them home. She takes the substance in her receptacle for that purpose, and then she lies down and eats it. You don't want to keep at her all the time; give her time to eat between times.

Mr. Halverson: If you are feeding forty or forty-five pounds of ensilage a day, what would you feed to balance?

The Chairman: In the first place I wouldn't feed a cow forty-five pounds of ensilage, unless she was a great monster of a cow; I wouldn't feed over thirty pounds, and I would feed it twice a day after each milking, so as not to have it flavor the milk. Three times a day is all that I have ever fed cows and a great many good dairymen think that twice a day is sufficient.

Mr. Goodrich: When we sit down to a meal it doesn't all go down at once, we have it in courses, you know. Now, with the cow, the first course is hay, the next course, ground feed and the next course, silage; that is once a day, and then at night they have another course.

Mr. Glover: There is another side to this question of keeping good cows instead of poor ones that has not been touched upon. Two years ago Hoard's Dairyman made a cow census in Minnesota, and there were a thousand cows in that census. Upon calculation I found 136 cows from the best herds returned as much money as did the other 864. That set me to thinking a little further. I said to myself—If a man keeps 136 cows that are going to yield more than another 800, it will be cheaper. It will require less barn room, less land, less horses, and less men to milk them. So I went to figuring. With land at $60 an acre I found that a farm, large enough to care for 136 cows, and proper buildings to house the men, the cows, horses, etc., amounted to about $30,000, and on the other hand to take care of 864 it would take an investment of over $180,000, and that is a great difference, a big difference. This is what might be called an economic study in dairying. Of course you don't produce as much milk, but you are getting a great deal more out of it for each dollar's worth of feed that you put into your herd.

Mr. Atwater: Isn't it a fact, Mr. Cheney, that you know herds around here that are producing a great deal more than those that you have taken for your census? Does this include some of our best herds around here?

Mr. Cheney: Yes, it does.

Mr. Atwater: Then some of these fellows have been lying to me. When I sell real estate, I try to tell customers just what the farmers tell me, and after seeing that chart I don't want to meet some of the fellows I have talked to.

Mr. Everett: You needn't be ashamed of that record.

Mr. Martiny: Some of those things are off; the actual production and the estimated production do not correspond.

A Member: I wish you would read again the grain ration fed by No. 38 to his cows.

Mr. Cheney: Hay and straw, $6.60; corn silage, $7.50; stover, $5.00; then there was corn meal and other grain feed, $15.85; soiling crops, $1.50.

Mr. Goodrich: He fed heavily concentrated feed, and that is what makes the price so high.

Mr. Taylor: I am not dairying at present, and I am not fit to talk in the class with the President and Mr. Goodrich and others, but I want to say a word with respect to this chart. It strikes me that it is a most admirable presentation of this matter, the very best we have ever had in our county, and I am sure it will bring great results, it can't help but set people thinking; it even set Atwater thinking. There are two points that I am impressed with, the work and the result it will accomplish; and, secondly, it is to me an admirable illustration of the matter which was brought out under the discussion of this cow test yesterday.

Mr. Wells: Mr. President, I took the trouble last winter to go up to Athens and study their record and see how they fed their cows. I stayed there all day and watched every item about their feeding, and I noticed they fed their cows, it seemed to me, quite frequently. I was in the habit of feeding my cows four times a day. I gave them their ensilage in the morning, fed grain on the ensilage, and then I fed them hay at eleven o'clock, after they were watered and put back in the barn. Then I fed them their ensilage at four o'clock with grain on it. I gave them a little hay after they got through milking, but up there the first thing they do in the morning is to feed them grain, then milk them; then they have their ensilage, and then after a while a little hay. Then they fed grain and then milk and then they got fodder. I came home from there and I fed differently than I ever did before, because I wanted to find out if there was anything in feeding the way they did. I asked them why they didn't feed their grain right on the ensilage, but Mr. Reitbrock said that you wanted to feed things separately, because you don't know whether she is eating the ensilage to get the grain, or eating the meal to get the ensilage, and I have been doing that same way myself. The cows did drop off for a day or two, but then they came back and have been doing better than they ever did, and I am keeping on feeding that way.

A Member: Don't you think it is a little dangerous to feed grain all by itself?

The Chairman: We do not feed heavy grains. We have al-

ways fed our grain on our ensilage. The experiment was tried at our Experiment Station of feeding steers corn meal, and they found that they did not get any better results feeding clear corn meal than where the corn and the cobs were ground up together, making only half as much meal as in the other case. The ground cob loosens up the meal, so that the juices of the stomach come in contact with the feed and they get better results. I have always contended that where we put the feed right on the ensilage, it goes into the stomach in that loose condition, and the juices of the stomach can get at it a little better.

Mr. Martiny: Coming back to the chart, Mr. Goodrich says, supposing butter was 11 cents a pound, No. 9 would have made more money than No. 38. We don't want to suppose it at all; we want to take the facts just as they are, and in that case there is no question but what No. 38 did a great deal the best. He got $7.72 more out of one cow than the other man did. There are two ways of looking at that. No. 9 paid the most dollars and cents for a dollar's worth of feed, but No. 38's cows made the most profit; they actually did a great deal bigger business. We want to impress on the minds of these people that while No. 38 did not produce as many dollars and cents worth yet his cows produced a greater profit for the year. Now, coming back to the way No. 38 fed his cows. He has fed very liberally, about 30 pounds of ensilage per day, and during the year about a ton of hay, and a little soiling crops and figuring on 200 days' feeding, he fed something over 6 pounds of concentrates per day on this very high-priced feed. Now, the question in my mind is—Couldn't he have fed these cows cheaper by putting in another ton of silage for the year and taking off about $5.00 worth of that concentrated feed? I think he fed pretty high on concentrated feed. What do you think about it, Mr. Bradley?

Mr. Bradley: Last season I was very short of pasture, and some of this concentrated feed was fed during the summer, so that I fed a little more than I have done in years past. I also had to feed some ensilage during the summer. My cost for keeping cows during the past year was some two or three dollars more than the year previous. I had to feed hay all through August and September, which of course made a difference.

Mr. Peck: I think what Mr. Bradley says about his pasture being short, partly explains why No. 9 is cheaper. He probably

had better pasture for his cows, and they stored up energy in the summer time for the winter.

A Member: I believe, taking one year and another, Mr. Bradley's expense would be altogether different. Last year was a very trying year.

Mr. Bradley: Yes, as a rule it would cost less.

A Member: I want to say that when Mr. Cheney was making this census, some of us didn't know exactly what he wanted, and I can see that some of the estimates he has there should have been reduced considerably. Some of them did not think to mention, for instance, that when the cows went dry they didn't get much, if any, dry feed. Still, taking all these things into consideration, this is certainly a great lesson to us all.

Recess to 1:30.

The Convention met at 1:30, same day.
The President in the chair.

THE DAIRYMAN AND THE STATE FEEDING STUFFS' LAW.

Prof. F. W. Woll, Madison Agricultural Experiment Station.

I was very glad to be present for a while this morning and see the earnest attention that you gave to the discussion of the paper that was read, and to see the enthusiasm with which the topics that came up were discussed, and I hope that enthusiasm will be continued throughout the sessions of the convention.

It needs no lengthy argument to show that the dairy farmer is or should be vitally interested in the subject of pure feeds. Among the results of experimental work with dairy cows conducted during late years, none has been brought out more prominently than this, that the production of the herd and the economy of the production are, as a general rule, as much dependent upon the kind of feeds the cows receive and the system of

feeding followed, as on any other single factor. The grain eaten by a cow during the year costs nearly as much as the rest of her ration when she is fed according to approved modern methods; that is, it will cost a farmer on the average about $15 a year for concentrates, or for a herd of, say twenty cows, something like $300 a year. This presupposes feeding four to five pounds of grain feed per cow on the average for each day in the year. Even if we assume that only half of this amount is fed on the average for all dairy cows in the state, it will mean that the feed bill our dairy farmers have to pay annually amounts to toward $10,000,000. This annual expenditure is not likely to be smaller as time grows on, rather the other way. While the expense of raising a good crop of hay or corn has not greatly increased of late years, the cost of concentrated feeds has, to the extent of 25 to nearly 100 per cent during the last dozen years, and present high prices will not in all probability go down in years to come. Taken in connection with the fact that liberal feeding will become more general with the adoption of modern methods of feeding and management of dairy herds, this will naturally render the feed question of still greater importance in the future than it has been in the past and make it more desirable than ever to consider whether or not full value is received for the money paid out for concentrated feeds.

It is only a short while since the state began to concern itself with what kind of feeds manufacturers and dealers sold their customers. If the feeds were sold for pure, unadulterated goods and were made up of mixtures of worthless materials with enough of the genuine stuff mixed in to pass for a fair article, there was no one that cared especially, except the buyer of the feed who was imposed upon, and honest manufacturers who had to meet unscrupulous competition and often could not do so, because the adulterated goods could be sold so much cheaper than the pure article and, unfortunately, often sold as readily. Only a few years ago some samples of wheat bran were forwarded for examination to our Experiment Station laboratory, which contained one-third to one-half of finely ground corn cobs and corn stalks, and still looked like a fair quality of bran unless examined closely. Even then the amount of worthless material found therein would not be apparent. The manufac-

turer and dealer handling pure feeds would be hurt just as much by the sale of such bran as the person buying it, for it could be sold at a much lower price than the pure article and yield a larger profit to the manufacturer at that.

Adulteration of mill feeds with whole and ground screenings, and of ground corn and oats with ground cob or oat hulls, has doubtless been practiced by dishonest manufacturers as far back as there have been buyers of cheap feeds, but during recent years adulterations in commercial feeding stuffs have become more frequent than was formerly the case, both on account of the gradual increase in feed prices, making it more profitable to adulterate, and because of the growth of certain manufacturing industries, which furnish large quantities of refuse materials that can be bought for a song, and used as adulterants of common feeding stuffs.

I need only refer to advertisements of oat hulls "unground in bulk, ground in bag," given in trade papers. See, for instance, last December issue of the Milwaukee "Flour & Feed." If there are any legitimate uses that ground oat hulls can be put to except for firing a boiler, they have not come to my notice. Neither can ground corn cobs be used legitimately in feed mixtures, as they are worthless as a feed when fed alone and, as a rule, reduce the feeding value of feeds which they are put into; and still, only a couple of years ago, we were told by a prominent Milwaukee feed broker that he had, that winter, shipped to Baltimore 30 car loads of wheat middlings adulterated with ground corn cobs. The reason why he volunteered the information was that none of it had been sold in this state, as he had had no call for it, he said, presumably owing to the character of the feed inspection work done here.

This testimony furnishes the best argument that could be asked for the continuance of this work in the case of mill feeds, as well as for other feeding stuffs. A Massachusetts bulletin just received also calls attention to the presence of adulterated wheat feeds on the market in that state and asks why consumers are willing to pay as much for a feed containing between 30 and 40% of ground cobs as for a high-grade wheat feed. The reason is that the majority of feed buyers are not at all discriminating in the matter of purchasing feeds, and think more about the price asked for a feed than about its quality. The cheapest is not always, nor indeed in the majority of cases,

the kind of feeds it will pay a farmer to buy. "Cheap and poor" holds true in regard to feeds as in the case of most other kinds of commodities.

There has been a greater danger of adulteration of feeding stuffs during recent years than was previously the case, partly, as suggested, on account of immense quantities of cheap adulterants having been thrown on the market by large manufacturing concerns and, partly, through the influence of modern business methods which bring strong competition between manufacturers of different kinds of feed articles and involve sales on small margins of profit. This condition of affairs is now generally understood, and a majority of the states in the Union have taken steps to protect their people against deception and fraud in the feed business, by passing feed inspection laws. These laws provide for sales of feeding stuffs under their true name and under guarantees of contents of valuable food ingredients in the same. Connecticut passed the first law of this kind in 1895. Other New England and eastern states followed the example set during the latter part of the nineties, and gradually more and more states placed on their statute books laws governing the sale and analysis of concentrated feeding stuffs within their borders, until at the present time every state east and south of us and a number of western states have put such laws in operation. Over 30 states in the Union have feed laws at this time. Our Wisconsin law was passed by the legislature of 1901, largely through the efforts of officers of your association, and has been in operation since January, 1902.

This fact that a majority of the states now have feed laws on the statute books, is in itself evidence of the necessity of such laws under modern business conditions. I suggested other reasons why these laws are necessary. Every year since our Wisconsin law went into effect we have had striking evidence that it has had a wholesome effect on the feed trade in this state; through it feed buyers have been able to obtain a much better grade of goods than they would have had for the existence of the law, and what is equally important, serious adulterations of feeds have been prevented or nipped in the bud.

As proof of the correctness of the first statement, I may refer to the quality of the ground corn and oats, or ground feed, so called, at the beginning of the feed inspection work of this

state seven years ago and last year. During the first two years after the feed law went into operation, 59 and 51 per cent of the samples collected by our inspectors in the feed stores in different parts of the state were either adulterated or of such low quality that it could not be definitely stated whether they were adulterated or whether only very poor materials were used in their manufacture. During the last few years only about 10 per cent of the samples collected have been at all suspicious or low-grade, and not a single sample of ground feed has been found for three years past among those collected that we could say positively was adulterated. The change worked in regard to this feed, of which immense quantities are sold in the cities and in the northern part of the state, is therefore most striking. We are doubtless taking a conservative position in stating that through the improvement in the quality of this one class of feed alone, buyers of concentrated feeding stuffs have been saved tens of thousands of dollars every year and it has, in the aggregate, easily been worth as much to the State as it takes to run our Agricultural College and Experiment Station for a year.

The adulteration of ground corn and oats with oat hulls or corn cobs is relatively harmless and affects mainly the pocket-book of the buyer, but we have had cases where directly injurious ingredients have been mixed into cattle feeds. I refer to the use of ground rice hulls as an adulterant of mixed feeds. Rice hulls are provided with fine sharp barbs, which are liable to become lodged in the intestines and cause impaction of the bowels and death of the animals eating feeds containing large quantities thereof. Southern farmers and breeders of cattle have found this out to their sorrow. This material is used in the south as a fuel and for packing eggs or adulterating feed stuffs. Several car loads of it were imported into our state a few year ago, but through prompt action on the part of the feed inspection department, and through the co-operation of our feed dealers, we succeeded in preventing its use for adulterating feeding stuffs sold in this state. Less than two years ago we again came across it, however, in samples of molasses feeds and dried brewers grains put out by a Milwaukee firm and at once took steps to stop the manufacture and sale of these feeds. Since the direct injury that may come to buyers

of feeds and their stock through the sale of feeding stuffs adulterated with rice hulls is now well understood by our feed manufacturers and dealers, we do not anticipate that this form of adulteration will appear again for perhaps a long time to come. The temptation to adulterate feeds increases, however, with the gradual rise in the prices of feeding stuffs, and the manufacturers of mixed feeds every once in a while receive quotations for carload lots of ground rice hulls from southern millers or commissionmen, with special attention called to the profit that can be derived from the use of this material in making mixed feeds. There is therefore no certainty when attempts will be made to use it again, but by keeping a sharp lookout and by prompt action in dealing with offenders, we feel confident that we shall be able to prevent any serious damage being done from this source to the farmers of our state and other buyers of concentrated feeding stuffs.

I might stop here, as you will doubtless consider that even the few suggestions made, amply justify the existence of this state feeding stuff law and show that it will be as necessary to keep the law on our statute books as it was to place it there seven years ago. One other point should, however, be mentioned. Two years ago the legislature changed the law so as to include mill feeds and malt sprouts under its provision, thus rendering these subject to license and inspection, as is the case with all concentrated feeding stuffs, except the pure grains sold separately or the unmixed meals made directly from these. This amendment which went into effect a year ago, met with determined opposition on the part of a few individuals of the State Millers' Association. While the opposition has come largely as stated, it is only fair to say that a majority of the merchant millers in this state are opposed to the law as it now stands, although as law-abiding citizens they conform to its provisions so long as it is in our statute books. The claim is made that the law is "unconstitutional and void, and in violation of the constitution of this state and the United States," the reasons given being, in effect, that the law exceeds the police power of the state and discriminates in favor of small millers in the state against merchant millers in and outside of our state. A test case was started last summer at Antigo, this state, and was won by the state in the municipal court at Antigo, and also

in the circuit court of the tenth judicial district. The case has been appealed and is on the supreme court calendar for the January term (Case 42, State vs. Goldberg). The decision of the supreme court is not likely to be rendered before next spring and meanwhile the present law will, of course, be enforced to the best of our ability. We know that it is a good law and that it has had a most wholesome effect on the feed business in this state, and it would therefore, in our opinion, be next to a calamity to have the law or any important provision thereof declared null and void. Without being able, perhaps, to look at the matter from a legal point of view, it does seem to me that each and every objection which those opposing the law have put forward, is fully covered by decisions handed down by the supreme court of the United States or of the various states. While it is readily granted that the law puts some hardship on feed manufacturers in the way of exacting a license fee, guarantees of valuable food components, labeling or stenciling of sacks, etc., it is in reality to their advantage to do so, as it gives consumers confidence in their goods and protects the manufacturers against dishonest competition and misrepresentation. Even if such were not the case, they should be willing to go to some trouble for the common good. The public has an unquestioned right to know just what they are buying and to be protected against frauds in the sale of feeds for animals, as well as for man, and it is for you dairy farmers, and for all good citizens, to see to it that efforts which may be made to have the law repealed by the next legislature shall not be successful. Everybody's business is always in danger of becoming nobody's business, but we trust that if it comes to a fight before the legislature this winter, we shall have the hearty support of all who keep and feed farm animals, or whose material welfare is dependent on the agricultural industries of the state, so that our law makers will not be left in doubt as to whether or not the people of the state think this is a good law and ought to be left on our statute books.

DUSCUSSION.

Prof. Woll: As you know, mill feeds are by far the most important concentrated feeding stuffs on the market in our state.

As a rule, the feeding stuffs on the market in our state are good, but it is for the exceptional cases that we have to have a law that will bring the offenders to justice.

The Chairman: Do you find more adulteration in bran than in middlings?

Prof. Woll: I won't say that, but it is a good deal easier to find it. You can find it in wheat bran by inspection, but in middlings it is ground up very fine, and often it is very difficult to tell it. You have to make a careful microscopical examination of middlings to tell whether they are adulterated or not.

The results of the feed examinations are published in bulletin form by the experiment station from year to year. Each year a feed bulletin is published, and farmers who are buying feeds for their stock will do well to procure copies of those bulletins. You will find listed there all these feeds that are manufactured, with the name of the manufacturers and the name of the dealers in whose stores the samples were purchased, and if you continue to buy poor feeds under those conditions, and do not take advantage of the information which these analyses and discussions give you, really you have no one to blame but yourselves.

Mr. Goodrich: What is Ajax feed made of?

Prof. Woll: Ajax Flakes is dry distillers grains, the refuse from a whiskey distillery. I believe that there are different kinds of whiskies. I cannot say I know so much about it myself, but they say that whiskey and whiskey are two different things and the mash that they make the whiskey from varies considerably, and therefore the composition of Ajax Flakes varies also. But on the whole, it is feed that is pure, that has no foreign adulterations. It is just as it comes from the distillery after having been dried, and it is very rich in protein and rich in fat, contains about as much protein as oil meal, and more fat. In feeding experiments that have been conducted this winter, we find that it has about a similar feed value as oil meal. It

would not be as valuable for feeding young stock as oil meal, in fact, it would not be specially adapted for feeding young stock, because it is quite oily and not flaky, but for feeding dairy cows it would be about of equal value to oil meal. When it comes to a question like that, a comparison between oil meal and Ajax Flakes, two feeds that have similar feeding value, then you want to consider the prices and if you can get it cheaper, you had better buy it if it is for grown up stock.

A Member: What is the difference between gluten meal and gluten feed?

Prof. Woll: Gluten meal is practically only the gluten of the corn with some common matter. It is more highly nitrogenous than gluten feed, which is gluten plus the corn bran. Gluten feed is only a product from starch from the glucose factory that you get in this state; you cannot buy any gluten meal in this state to my knowledge. It is a very valuable feed in every way, but the glucose and starch manufacturers have found it did not pay, and now make one product instead of three, gluten meal, gluten feed and corn bran. Now, they make it all into gluten feed, which is a very valuable feed, containing about 26 per cent protein, and a little less fat than oil meal.

Mr. Goodrich: What is Badger Dairy Feed?

Prof. Woll: It is a mixed feed; it is a little difficult to say what it contains. We know what the manufacturers say they put into it, but it contains screenings and brewers refuse, some malt sprouts and molasses. It has been tested a great deal in the state during the last year, Now they grind the screenings so that they have more wheat seeds in it and there is no objection to the feed.

A. Member: Will this gluten feed be of more value than Ajax Flakes or less?

Prof. Woll: Gluten feed will not be as valuable as Ajax Flakes; it is lower in protein and in fat. It is made up from the dried-up mash in the whiskey distillery as, Ajax Flakes is. In the manufactory the starch is removed and you have the dry refuse from the distillery after the starch has been taken out. We have found the Ajax Flakes a very valuable feed and ordinarily you can get it a little cheaper than you can corn meal and for the purpose of feeding dairy cows I should say

it ought to have the preference. There is this comforting fact in connection with both starch grains and glucose products and that is, that they are pure. They come from establishments where they are left after the starch or the glucose is removed. The refuse products are of little importance, and it wouldn't pay to adulterate them. But still it is well to examine the analysis always to see whether the manufacturers are in the habit of furnishing feed that is standard, and that you can find out by referring to our feed bulletins. If you will hand me your name or write to the experiment station at Madison, asking that your names be placed on our regular mailing list, those bulletins and many others that are published by the experiment station will be sent to you.

A Member: Do the Ajax Flakes contain cob ground?

Prof. Woll: No. It is of great importance to the manufacturers to have only grain, no cob. We have found that they are pure.

Mr. Goodrich: One thing we farmers want to know is, which is the most economical feed for us to buy? We want to buy the right kind of feed; we want to supply a cow with the right elements of feed, but we want to get it at as low a price as possible. Now these are the prices of the different feeds down at Fort Atkinson, and I will read them to you and ask your opinion as to which is the most economical. Here is bran, $23 a ton; gluten feed, $28; oil meal, $34; Ajax, $33 and Badger $27.

Prof. Woll: Bran and gluten feed are without question the most economical among those you mention there. All mill feed has something of a fancy price because it is well known to dairy farmers and it is a little higher than you can get some other materials that may be as valuable a feed, but at the prices you state I would say that wheat bran and oil meal are the feeds that we ought to get. Mr. Goodrich has figured out from the tables the per cent of digestible protein in bran and gluten feed. Of course if you are buying those feeds just to get flesh-forming materials, you can buy digestible protein cheaper in gluten feed than in wheat bran, but there are other food materials of value in bran and in gluten feed that determine what they are worth to you. The first problem that we can have in regard to the value of feeds is to figure on the total digestible matter,

not only the protein but the amount of carbohydrates; that is, starch and fat and other nutrients in the feed, and considering that, I would say that bran is the most economical feed and gluten feed would come next. Now, between Badger and bran, bran at $23 and Badger at $27, there is no doubt in my mind but what it will pay you to buy bran. The manufacturers themselves do not claim more than that it is somewhat more valuable, ton for ton, than bran, and it is fair inference that if there was more in it, they would certainly claim it.

The Chairman: A good many farmers think when they buy bran that they want to get bran that weighs at least fifty or sixty pounds to the bag. Is that the proper rule to go by, or the proper kind to buy?

Prof. Woll: There are two kinds of bran on the market, country bran, or old-fashioned bran, and flaky bran, and the question is often asked which is the more valuable, and it is somewhat difficult to give a general answer to that question, because it will depend upon what you are buying the bran for and what other feeds you have to go with it. If you want a bran that is as rich in protein as possible, the flaky bran will be more valuable to you than the more floury kind, or country bran, but not quite as digestible. But the total digestible matter is still ahead on the flaky bran.

The Chairman: A good many of our good dairymen are feeding middlings rather than bran, claiming they get a higher content.

Prof. Woll: They do, but they have to pay more for it. Middlings, as a rule, are one to two dollars a ton more than wheat bran, but it is somewhat more digestible and is worth just about that much more. It will depend on what you are feeding it with. In case of corn, oil meals and other heavy feeds, it will be better to feed bran, but if it is not necessary to lighten up the grain feed, then you need not consider anything but the total nutrients of the two feeds, and in that case I should say that the relative value of the two feeds stand about in that ratio, that middlings are worth one or two dollars a ton more than wheat bran.

The Chairman: Suppose you are feeding ensilage, would you prefer to mix the middlings with the ensilage in order not to get it into a doughy condition?

Prof. Woll: Bran would be better. That question came up this morning in connection with your dairy practice, and it is a little risky to take issue with the feeder of Loretta D., a man of Mr. Scribner's reputation; but we have some pretty good cows in our country and we never give our grain feed on silage; we always feed it separately. I don't know that it makes any difference, except that we want to accustom our cows to one method of feeding and make as few changes as possible, but I think a concensus would show that more dairymen feed silage and grain separately than together. At least from our experience we can say positively that you get good results from feeding them separately.

A Member: What is the difference between buckwheat and wheat bran?

Prof. Woll: Buckwheat bran is a very vague term. Buckwheat bran as we understand it, is just the black seed coats of the buckwheat kernel. It is very woody and very light and absolutely worthless as a feed. It contains fully one-half woody fiber, and you might as well feed your cows on chipped fence posts as buckwheat hulls. But buckwheat middlings are a very valuable dairy feed and if there is a fair proportion of buckwheat middlings to mix with the bran or with the hulls, it is pretty good feed. I looked into the question last winter somewhat, in regard to the quality of the product that our mills sell as buckwheat feed, and I found that the proportion of clear hulls varied from one-half to three quarters by weight. Now, if we know the chemical composition of buckwheat hulls, as we do, and buckwheat middlings, it is very easy to figure just what composition the buckwheat feed will have, and I should say that a good quality of buckwheat feed ought to contain at least 12 per cent of protein and it will contain nearly 30 per cent of woody fiber. Now, feed like that is not as valuable as wheat bran by far, but it is a good feed and if we condemn buckwheat hulls we should not condemn buckwheat feed made with from one-half to one-third per cent hulls, because the buckwheat middlings is a very rich feed, and buckwheat feed, I feel, does not get quite the credit that is due it by many farmers, because buckwheat hulls are very flaky as you know and you see very little of the middlings. If you have a chance to buy buckwheat cheap, I would suggest that you take

out and weigh a portion, say half a pound, and then sift out the middlings in an ordinary sieve, and if you find that there is more than two-thirds of the weight in hulls, then it is a poor grain, but if you find it is half hulls and half middlings, then you have a good feed, one nearly equal to wheat bran and as a matter of fact the mills very often sell the buckwheat hulls at a valuable price compared with the price of other feeds.

The Chairman: I noticed a good many of our agricultural and dairy papers are advertising these stock feeds. What do you say about the value of those feeds?

Prof. Woll: They are not feeds. They are medicines, tonics —at least I should say they are claimed to be medicines, but they are not what they are claimed to be. They are as far from it as the west is from the east. They are advertised a great deal and a great deal of work has been done trying to show up the peculiar merit that is said to be in these feeds. I have not the figures very accurately in mind, but I should think at least a dozen different Experiment Stations have been working on these feeds to see whether they could establish any special merit for feeding them to cows, horses, sheep, swine or poultry, and in practically every instance the result has shown that they have no value and generally are even detrimental. It is difficult to say why they should be detrimental, because, as a matter of fact, they are made up of a very small proportion of condiment, and the rest of it is filler. Those condiments you can buy at any drug store at a very reasonable price, and the pharmaceutical dose is generally about the same as what they would recommend to feed other concentrated feeds, probably not over ten per cent condiment, so that they certainly are not economical and it is not wise for any farmer to pay money out for them; that is my view and that is the view of other people that have looked into it. If you want further information on that point, I suggest that you send to us for Bulletin No. 151 on Stock Feeds. The evidence is given in that bulletin, and you can draw your own conclusions. At any rate, I believe if you look into it carefully, you will not buy very much stock feed.

Mr. Goodrich: I had a little experience with stock feed. There was a man in Milwaukee by the name of Wilbur who manufactures Wilbur's Seed Meal, and he sells it for about 12 cents a pound. I met him in Milwaukee a few years ago, and

of course he wanted to sell some to me, but I declined to buy, but he wanted I should have some and experiment with it, and he says, "I will give you a hundred pounds, twelve dollars' worth of it, if you will make an accurate experiment with it for a long period of time and report actual results." I did it; I fed it to one row of cows that were producing just about the same as another row of cows. I fed it according to directions and it lasted all winter, and when I figured up the results, it paid me just about as much as so much oil meal at a cent and a half a pound instead of 12 cents. I had an idea from the appearance of it that most of it was oil meal and the rest of it was "Wilbur's seeds."

The Chairman: We had a little bit of experience with these so-called calf feeds. A man sent some to me and asked me if I would carefully try it on a row of calves. We didn't dare try it on a whole row, but we tried it on five calves and we only killed three—we fed too much.

Prof. Woll: It is only fair to say that most of the calf feeds sold in this state are good materials, only you have to pay more for them than mill feeds, which you can buy. They are made up of good feeds and there is no reason why they should kill three calves if a man understands his business. It is possible that the president may have been working on some of these calf meals that have more condimental materials in them.

Mr. Martiny: There is a feed that is being put on the market that is a combination of ground alfalfa and refuse from the sugar beet factories. What do you know about that?

Prof. Woll: We found those and also alfalfa meal. Alfalfa is coming to be recognized as one of the great dairy feeds. It is generally stated, although that is stretching it a little, that alfalfa is worth as much per ton as wheat bran. It is not quite as valuable as that, but good alfalfa hay is a first class feed for dairy cows. Now, alfalfa meal is supposed to be just the tender plant, leaves and everything ground up fine. After you have it in the form of meal, however, it is difficult to say what quality of alfalfa was used in its manufacture; you have no certainty that it was made from a good quality of alfalfa. Also it is generally too expensive as sold in the state.

Mr. Goodrich: Is it worth any more when ground into meal than when fed whole?

Prof. Woll: No, it is not, the cow can get just as much out of it, in fact there is every reason to believe that she can do better on hay than on finely ground meal. It doesn't change the character of the feed. Alfalfa meals containing molasses and other materials, are good feeds, but there is the same objection to all those feeds, that you have no assurance as to the quality of the alfalfa that makes up the bulk of it. What you want to do is to grow alfalfa on your own farms as one of the growing crops in all dairy sections, a crop which is growing in importance in all dairy sections of the state.

There is a special bulletin published by our experiment station on alfalfa that you might send for and get information as to how to grow it. This is one of the most valuable methods of cutting down the feed bill that we have—growing and feeding alfalfa. While it is not quite as valuable as wheat bran it comes very close to it. For five tons of alfalfa, we can figure on four tons of bran.

Mr. Martiny: What effect has alfalfa and molasses on the production of milk?

Prof. Woll: I should not imagine there would be any trouble about it, except you want to be very careful how you feed it. It is very laxative, and you want to watch your cows, but aside from the danger of their getting rather loose bowels, I can see no possible bad effects that would come from it.

Mr. De Witt: What is the value of sugar beet pulp?

Prof. Woll: That is coming to be quite an important feed in some parts of this country where sugar factories are operating. In Europe it is a standard cattle feed in all beet growing sections and worth about as much as bran ton for ton. Ordinarily you can buy it a little cheaper, but there is not much of it being sold in this state, because our manufacturers of beet sugar dispose of their dried pulp, either in the East or send it to Europe, but if you can get it at prices up to within a couple of dollars a ton under bran, it will pay well to buy it. It is a good, wholesome feed and the cattle like it.

Mr. Jacobs: How does common wet beet pulp compare with good corn silage per ton?

Prof. Woll: Wet beet pulp is such an uncertain quantity, because you get it sometimes from the factories where the water is dropping out of the wagons, while other times they press it

much more. I don't know that I can give any definite answer to that. If it is very watery and sloppy, it would not of course be as valuable. I might say that two tons might be worth a ton of silage, but not more than that in case of a rather watery condition.

Mr. Jacobs: Have you put it into the silo?

Prof. Woll: No, but it is being done, as I understand, and in that way preserved very well. The use of a feed like that is limited to the immediate vicinity around sugar factories, because it doesn't pay to haul it very far on account of the water content; also the sugar beet factories will doubtless, one by one, put in dryers so that patrons will not be able to get wet pulp in the future. There are two or three factories now that are drying all their pulp. In that way they get a material that contains less than ten per cent moisture and will keep indefinitely and it is good feed.

Mr. Goodrich: I have the analysis of beet pulp. It is 10.2 per cent solid dry matter and .6 per cent protein.

Prof. Woll: It is very low in protein, but it is high in other valuable contents, carbohydrates. There have been experiments in feeding cattle with the dry pulp against corn meal and bran, and they find that it is almost as valuable, ton for ton, as those feeds.

THE CALUMET COW TESTING ASSOCIATION.

By W. F. Rather, Calumet Harbor, Wis.

The subject of testing cows is a very important feature of the dairy work and the cry is going out all over the country, "Where can we get good cows." It is a subject that well may be considered, for by the securing of good cows depends, in a large degree, the success of the dairy business and in failing to secure such, the best work can not be accomplished.

To Organize a Testing Association.

This work was introduced in Fond du Lac county by Mr. H. C. Searles in the year 1906. I must congratulate the officers of the Dairymen's Association in appointing Mr. Searles for this work. The first year Mr. Searles visited each farmer, one day weighing the milk and taking samples from each milking and did the testing at their homes and gave instructions to get the farmers interested in that work. After one year's work there was a meeting held on the 12th day of May, 1907, when the Calumet Cow Testing Association was organized with a membership of 44 farmers. An agreement was made that Mr. Searles would furnish a man who would do the testing and figuring for $1.00 per cow for the coming year, and the farmers to take the samples each month and deliver them to the testing stations which were the factories. At the end of this year's work another meeting was held. Mr. Searles said there were more associations organized in the state and that the Dairymen's Association was short of men who would fill the positions, so the factory men agreed to do the testing and keep up the work.

Testing Herds.

Some farmers have an idea that testing their herds for one year will be sufficient, but that is a mistake. Testing for one year and finding the profitable and the unprofitable cows is much better than not testing at all as it gives some foundation to work on but to get the full benefit from the work it should not be discontinued at the end of one year; it should be continued for a period of years. By sticking to a good thing year in and year out success is sure to follow. In my experience I found more beneficial effects the second year than the first. There are many dairymen who report the same results in our association. All the benefits of cow testing are not confined to finding out which are the most profitable cows. By knowing each month what each individual cow is doing, the dairyman is better able to feed and care for his cows. In fact, the work of testing should be an incentive to better dairying all

around. Wrong ideas in dairying are often responsible for dairymen keeping unprofitable cows for a long time and they cling to them as to old friends, even if the cash return from the product be small and the feed bill large. And so it is with many of the old, worn out ideas about dairying. Some dairymen never let go of them to the detriment of their own account and the advancement of the industry in general. But when it comes to improved methods and the adoption of ideas that are for their own personal interest, it is like pulling teeth to get them to take hold and stick to a good thing.

This clinging to old ways and worn out methods injures those who practice them more than anyone else. The loss from keeping unprofitable cows, while it retards advancement in dairying generally to some extent, falls upon the individual dairyman and he suffers more than anyone else. If he fails to avail himself of the means provided for helping himself, it is his own lookout. Hope lies in the younger generation of dairymen. The old fellow will cling to the past more or less all his days, but the younger generation with the future before them in which they have to make good, will be easier converted to better practices and more economic methods.

I would like to have given a full report of every herd in the association, but for lack of time I was not able to do it. I will give you some figures of the work of my own herd.

The first year I tested my herd, the best cow made 367.1 lbs. fat, the poorest cow 192.1 lbs. There were three cows in the herd that produced less than 200 lbs. fat during the year. The second year that I tested the herd the best cow made 305.8 lbs. fat, and the poorest cow made 232 lbs. I got rid of the cows that produced less than 200 lbs. fat. In the fall of 1907 in the months of November and December, I had five two-year-old heifers calve. Heifer No. 1 made 321.1 lbs. fat in a year. No. 2, 260.4 lbs.; No. 3, 252.6 lbs.; No. 4, 244.1 lbs. fat; No. 5, 224.6 lbs. fat. In the month of November, 1908, I had eight cows calve. In the month of December the best cow made 58.8 lbs. fat, while the lowest made 32.1 lbs. The average of the eight cows for the month of December was 44.7 lbs. fat. The milk was taken to the creamery and the price received for a pound of fat was 33 1-5 cents. Of the same eight cows for the month of January, 1909, the highest cow made 54.7 lbs. fat; the low-

est, 27.8 lbs. The average of the eight cows for the month was 42.8 lbs. fat. The price received for a pound of fat was 33 cents.

I hope that the figures stated above will convince every dairyman in this audience of the necessity of cow testing associations. I hope the time is near when every town in the state will have a testing association.

DISCUSSION.

A Member: Was that the average of all the cows?

Mr. Rather: No, it was the average of eight cows for each month. These eight all freshened inside of a week after the 15th of November, and that is the reason I put those eight cows into that work, because they had the same period to work in.

Mr. Jacobs: If you are going to test, isn't it important to put all your cows in?

Mr. Rather: I will keep up my monthly report. It is my intention to work on the full herd; start in every month.

Mr. Jacobs: Are you doing this testing yourself?

Mr. Rather: No, sir, our factory man is doing the testing and keeping up the work. We take the samples and carry them to the factory and he does the testing. At our second meeting, it was reported that the association was short of men to fill those positions.

A Member: What do you pay the factory for doing the work?

Mr. Rather: Five cents for each test for each cow per month, but we have to do the figuring ourselves.

A Member: That is sixty cents a year instead of a dollar a year.

The Chairman: How does that compare with the dollar system?

Mr. Rather: If you do your own figuring, it costs about half as much; the average is ten months.

Mr. Jacobs: What do you think is the general result? Do the farmers carry that out and keep the records up close?

Mr. Rather: There are a good many farmers who do not keep it up as they ought to, but still I think it is a great benefit. We have had discouragement in our test association. On the 8th of August, the factory where I take my milk was destroyed by fire and it took three months to rebuild, and some of us had to go as far as four miles to haul our milk, and that interfered with the testing. But they are taking it up again, and in the eastern part of the district in Marytown, there are twenty-four members who came in this month.

A Member: How many samples do you take during each month?

Mr. Rather: We take the samples of an evening's and a morning's milk, once a month.

Mr. Jacobs: Don't you think there are other advantages in weighing, besides keeping yearly records? Isn't it wise to watch your cows to see whether they are increasing or decreasing in their milk flow and to note the different effects of different feeds?

Mr. Rather: We have a scale right where we milk and we weigh frequently. Sometimes we weigh three or four days in succession to note whether the cows are falling off, or show any change. Where you have strange help to milk, I would prefer to weigh the milk at every milking, but where you have your own people that you can depend on, I say it does not pay for the trouble, but with strange help you can watch them a little closer.

The Chairman: There is no question but that we get more interested in our work when we do the weighing every time and keep records. If we neglect them, it gets out of our mind and we are not as full of interest as we ought to be. I know in our barn whenever we weigh the milk, we look back to see if there is as much as there was before and if there isn't, we want to know why, whether we have got all the milk, if the cow isn't feeding right or any other trouble.

Mr. Goodrich: How much time does it take to weigh the milk of each cow?

Mr. Scribner: It is so short, I can scarcely say.

WISCONSIN COW TESTING ASSOCIATION.

COW TESTING ASSOCIATIONS AND THEIR ADVANTAGES TO THE DAIRY FARMER.

By H. C. Searles, Fond du Lac, Wis.

Success in dairying depends upon the methods we adopt, as do other lines of business. If we are to engage in a certain occupation, we cannot study the fundamental points too thoroughly. In Denmark, cow testing associations have been in active operation for the past fourteen years, there being over four hundred associations in that country at the present time. This has been the direct means of raising their standard of butter per cow from one hundred twenty pounds at the beginning to two hundred twenty-four pounds per year. Figuring the butter at twenty-five cents per pound, this means that the revenue from butter alone was increased from thirty to fifty-six dollars a cow, per year, or that the gross income per cow had been almost doubled.

The average cow in Wisconsin produces one hundred and fifty pounds of butter per year, which indicates a chance for improvement in this country, and I believe this wonderful gain in production which was made in Denmark can be accomplished in Wisconsin.

The first cow testing association in Wisconsin was organized in Fond du Lac County in May, 1906, and proved of so much value to the dairymen of that district, that the work of organizing these associations has been continued, and at the present time we have thirty of these associations in twenty counties of this state with one thousand, one hundred members and a total of twelve thousand cows.

In visiting these associations one can see a marked advancement along the dairy lines. Breeders' associations are being formed in a number of counties and dairy farmers in general are realizing the necessity of using pure bred dairy sires to head their herds.

Good judges believe that in the entire country one-fourth of the cows do not pay for their keeping. As a matter of ordinary business prudence and a condition essential to success, every dairyman should study the individuality of his cows and keep a sufficient record of quantity and quality of milk product, and know approximately the cost of production, and systematically weed out his herd.

It would be well to have a standard for a satisfactory cow, and maintain this by promptly disposing of cows which fail to attain it, and gradually but persistently raise the standard of the herd.

If we are to be successful in dairying, it is essential that we have dairy bred stock. To illustrate this, I will give the production of two herds of cows which were fed and cared for under practically the same conditions. Herd Number One contained eighteen beef bred cows with an average of 3,964 pounds milk and 166 pounds of butter fat which, at twenty-five cents per pound, brought $41.50 per cow; herd Number Two contained ten dairy bred cows; average milk per cow, 5,732 pounds and 281 pounds butter fat which, at twenty-five cents per pound, brought $71.25 per cow, or a gain of $28.75. This is one instance of several which has been revealed through testing associations in this state.

The vast differences in production of individual cows in the same herd are only realized by weighing and testing a full year and keeping a complete record of same.

A great many farmers have, by my request, selected the cows in their herd that in their judgment were their best producers but found at the close of the year's testing that they were mistaken and that in many instances Number One cow was in fifth place, Number Four in second, and vice versa.

When these facts are brought out so plainly, it prompts men to be more considerate in breeding, feeding and caring for their dairy herd.

DISCUSSION.

Mr. West: There was a point made here yesterday by Mr. Lillie about samples being taken on the farm not making a reliable record. I should like to ask Mr. Searles to what extent he thinks unreliable records are made under this system in this state.

Mr. Searles: I have found very few that have taken unfair samples in my work. There is no reason why a man can not take those samples himself just as correctly as a man that is visiting his place, and he takes not a sample to put into the test bottle, but a composite sample large enough for a sample to be taken from.

Mr. West: Isn't it a fact that the farmers are more accustomed in this state to taking samples than they are in Michigan?

Mr. Searles: Perhaps so.

Mr. West: I don't think that the farmer has any interest in cheating himself, and he isn't cheating anybody else, so I don't see any reason for his not being absolutely honest. Our greatest trouble is in keeping up the interest, keeping people interested enough to continue this test. With Mr. Searles' help we have started some associations that died in their infancy, you might say, very young indeed. The creamerymen rather throw cold water on the work, though I believe it was one of the best things that could be done for the creamery, but the creamery men didn't think so, and I think they are standing in their own light in taking that position. In taking samples in this way, do you find they vary considerably?

Prof. Woll: How many of these associations are now in progress having a man in charge of that work?

Mr. Searles: All these on the dollar plan have a man in charge. There are six of those and we have twenty-seven of the others.

Prof. Woll: What is your opinion as to the relative value of the two kinds? Would you prefer to have them all done by the dollar plan, if you could?

Mr. Searles: I would, but there are localities where the herds are small and it is impossible to get enough cows to pay the man for doing the work.

A Member: Is there an association in Barron county?

Mr. Searles: No. There are associations on the other plan where they take their samples to the creamery, one at Dallas and one here at Barron.

COW-TESTING ASSOCIATIONS IN SOUTHERN WISCONSIN.

By RAY N. WEST, Ripon, Wis.

The work as it is being carried on in that section, is called, the "Dollar System." This system takes into consideration the three factors that determine the profitableness of a cow. First, the amount of milk produced in the year; second, the richness of the milk; third, the cost of production. On this last factor rests largely the value of the cow.

This work was taken up by Denmark in January, 1895, at which time the first association was formed which proved such a success, that at present Denmark has over four hundred associations in operation. The strides that Denmark has made in the increase of the average production of butterfat per cow and the great help this work has been in furthering the increase has caused other countries to follow in the footsteps of this little country, whose average yearly butterfat production per cow is 224 pounds, or just double what it was twenty-three years ago.

In an appropriation of $40,000.00 by congress a few years ago, for the benefit of the agricultural interests of the U. S., a portion has been spent in advancing the work of co-operative cow testing associations.

An organized association is composed of from twenty-six to thirty farmers who put into the test three hundred and fifty cows or over, at an expense of ($1.00) one dollar per cow, also furnishing board and lodging one day a month for the man who does the testing and conveying him to the next place. The members of an association live as near each other as possible, thus making a strong, easily handled association.

At their first meeting, a constitution and by-laws are adopted. a board of directors, composed of five members, is elected and from them are chosen the President, Vice President, Secretary and Treasurer.

These officers have the control of the affairs of their association and one of their first duties being the engaging of a man to do the work of the association. This man visits each place one day a month, for the year, weighing and testing the milk of each one for the day he is there and figuring the production for that testing period, using the day's work as a basis.

The feed fed each cow for the day is weighed and the amount and cost of feeding is figured for the testing period, using the day's ration as a basis. A testing period dates fifteen days each way from the day the test is taken, thus making twelve testing periods in a year's work.

Records of the production and cost of producing, made under this system, have been found by the U. S. Dept. of Agriculture to be the most accurate method of ascertaining the yearly work of a cow other than the actual production.

The first association formed in the United States was in Michigan in 1905. Since then, other states have taken up the work, until at present date there is a limited number scattered throughout the eastern states.

The first work under this system in Wisconsin, was taken up in Fond du Lac County by Mr. Searles in May, 1906. There are over four hundred cows on test in that association of which number over fifty produced less than 100 lbs. of fat for the year and one over 400 lbs. of fat.

In October of this year, this same line of work was again taken up, only more attention is now being taken of the cost of producing than there has been heretofore. That the amount of profit is regulated by the cost at which the product is produced, is as true in the dairies as in any other business.

A report of these associations and their location is as follows: Ft. Atkinson 22 members and 390 cows; Lake Mills 25 members and 320 cows; Whitewater 25 members and 350 cows; Tomah 30 members. 25 days' work and 330 cows; West Salem 27 members and 375 cows.

The man who does the work of one of these associations, is usually a student from an Agricultural College and his work,

other than keeping the records of the cows, consists in figuring the rations fed the cows and, if there is any chance of improving the ration either by balancing it better or feeding a cheaper ration as advantageously, it is the business of the tester to offer such suggestions to the feeder should he wish them. I have the work of a man's herd which shows the amount of benefit that man derived from feeding a better ration. His ration for the second month being better balanced and costing less:

Cost of feeding them $96.72, 16 cows returned in December, $196.16, profit 99.44. The sixteen cows in January returned $190.41 Cost of feeding them $73.43, profit $116.98.

All of these cows freshened before the first of December, with the exception of one, which freshened December 2nd. This increase was not in one or two cows alone, but an increase of from fifty cents to a dollar and fifty cents each. Butterfat for both months being figured at thirty-two cents a pound.

We have at present date five associations in running order in the state and over seventeen hundred and fifty cows under test. These associations are located at the following places: Fort Atkinson, Lake Mills, Whitewater, Tomah and West Salem.

Mr. F. B. Wulff is in charge of the work of the Fort Atkinson Association, and I have some interesting figures from his work there, although the test has not extended over a long enough period of time to give more than a slight idea of what these individual cows may do in their year's work.

In closing, I will say that the men who are taking up this work throughout the state are the dairymen who are putting the most thought in their work and wish to improve their herds as rapidly as possible and they find this the most accurate and satisfactory method to help them in attaining the end desired.

The expense of a test like this may seem high to some men, but does not outweigh the advantages and benefits derived. As in my talks with a great number of the members of the various associations, throughout the state, they say that the increase in their profits made by the added interests taken in their herds by themselves and their men more than exceed the cost of the test, at the time it is made.

Another proof of the success of these associations is the plans that the members are making for next year's work. Numerous other advantages might be mentioned that are derived from

the co-operation of members of associations of this kind, but a breeders' association, I think, is the most beneficial of them all. These benefits may be as much or as little—depending wholly upon the extent of the co-operation of the members of the association for, as in all corporations, the benefits derived depend wholly upon the amount of co-operation.

DISCUSSION.

Mr. Jacobs: Will we have the tests of those cows for the year?

Mr. West: Yes, we have only been testing three months.

Mr. Goodrich: You are going to charge them for their feed when they are dry as well as when they are in milk?

Mr. West: Yes, we will have to if we expect them to produce milk next year.

Mr. Jacobs: In this method of testing, have you worked out any method by which an official test can be made of pure bred cows which would be accepted in the advance registry work?

Prof. Woll: It may be well to say in that connection that for some ten or twelve years past the Experiment Station has been conducting the testing of pure bred cows in this state. These tests have been made mostly by breeders of Holstein cows for a short period of time, seven days consecutively. Of late this entire system of testing has gradually sprung up and we have now what we call semi-official testing, where our men go to the farm once a month and conduct tests for one day in case of Guernsey cows, or two days in case of Jersey cows. They go there once a month for every month in the year. Then the production of that cow is figured up, on the basis of the quality of milk on the test, and the breeders themselves furnish the milk records of the cows. The quantities of milk given, however, are checked up in various ways, so as to safeguard their correctness. Of late the question has come up whether or not this system of testing can be hitched onto the testing at the Station, the work that is being done. The work, of course, has been

limited to pure bred cows, and it probably has not very much importance here or any place where there are likely but few breeders of pure bred dairy cows, but I will say we are going to make an effort to combine the systems if the work pans out as we hope it will. We want to take that matter up with these various breeders of pure bred stock in the future and see just how the work can be best forwarded. Of course we are vitally interested in doing all we can for the development of the dairy herds of our State and whichever way is found to be the best, we shall try to take part in it.

A Member: Did I understand you to say that there were between twenty-six and thirty herds in those associations?

Mr. West: Yes, the association with the least membership had twenty-two—there were twenty-two days of work in that association. A man is not supposed to work on Sunday; he is supposed to spend Sunday at the place where he works Saturday, and there are four days during the month that he is not busy and he can work at anything else he wishes, or keep up his records in better shape in the few days that he may have outside of the number of herds he has visited.

Adjourned to meet the next morning.

FRIDAY MORNING SESSION, FEBRUARY 12, 1909.

The convention met at 9 o'clock A. M.
President Scribner in the chair.

The first business of the morning was receiving reports of committees.

Report of committee on Nominations read by Mr. Goodrich and adopted, as follows:

The committee on Nominations herewith report that we recommend the election of the present officers of the association for the ensuing year, namely:

For President, F. H. Scribner.
For Secretary, A. J. Glover.
For Treasurer, H. K. Loomis.
Signed by the committee,

C. P. GOODRICH, Chairman.
M. L. WELLES.

Report of the Committee on Milk and Cream scoring was read by Mr. Searles and adopted.

The following tables give the names and addresses of those who took part in the milk and cream contests and the score of each exhibitor.

U. S. BAER,
THOS. CORNELIUSON,
Judges.

MILK.

Number.	Name of Exhibitor.	Address.	Flavor.		Condition.			Score.	Remarks.
			Taste.	Smell.	Fermentation.	Cleanliness.	Acidity.		
			25	25	25	15	10	100	
1	Jacob Kohten.....	Barron.....	21	20	23	14	10	88	Unclean .
2	C. J. Orn.....	Barron.....	23	23	20	14	10	70	Smothered odor, possibly due to lack of aeration.
3	Albert Halverson...	Barron.....	22	19	21	11	10	83	Smell unclean.
4	Archie Nelson.....	Barron.....	22	20	22	14	10	88	Smell smothered.
5	P. L. Lehman.....	Barron.....	22	21	23	14	10	91 (5tn)	Tainted, unclean.
6	Wm. Bartlett.....	Barron.....	19	17	23	14	10	83	Smell and taste unclean. Manurial taint.
7	Peter Matthys.....	Barron....	23	23	23	14	10	93 (4th)	
9	J. F. Wichern.....	Barron.....	21	21	23	14	10	89	Tainted. Possibly from feed.
10	Louis Voll.....	Barron.....	21	22	22	13	10	88	Smothered taint. Possibly due to lack of aeration.
11	M. T. Spencer.....	Barron.....	24	24	21	15	10	94 (3rd)	
12	C. M. Strong.....	Chetek.....	22	18	22	14	10	86	Smell and taste unclean. Manurial taint.
13	L. P. Martiny.....	Chippewa Falls..	24	25	24	15	10	98 (1st)	
14	Fred Krahenbuhl...	Barron.....	23	25	24	15	10	97 (2nd)	

CREAM.

Number.	Name of Exhibitor.	Address.	Flavor.		Condition.			Score.	Remarks.
			Taste.	Smell.	Fermentation.	Cleanliness.	Acidity.		
			25	25	25	15	10	100	
2	C. J. Arn.....	Barron.....	21	17	24	15	10	87 (5th)	Smell unclean. Taste, slightly barny or wintry.
4	Archie Nelson.....	Barron.....	25	25	19	15	10	94 (1st)	
5	P. L. Lehman.....	Barron.....	22	16	22	15	10	85	Smell unclean. Manurial taint.
6	Wm. Bartlett.....	Barron.....	22	17	22	15	10	86	Smell and taste unclean. Somewhat resembling vegetable taint.
7	Peter Matthys	Barron.....	22	18	23	15	10	88 (4th)	Smell unclean.
8	Fred Krahnbuhl	Barron.....	22	20	23	15	10	90 (3rd)	Smell and taste unclean.
11	M. T. Spencer.....	Barron.....	23	21	23	15	10	92 (2nd)	Undesirable flavor developed by fermentation test. Smell unclean.

(The following remarks occurred during the reading of paper.)

Mr. Goodrich: What were the causes of the lower score?

Mr. Searles: They were scored off on taints of different kinds.

Mr. Goodrich: If I was a contestant here and my products scored off as some of those do, I would like to know what the matter was.

Mr. Searles: I want to say that it is evident that conditions are most favorable in this place. There was only one defect, and that was a gasoline odor in the cream house. There was a cement tank and the cream was immersed in it and everything was clean as a whistle, but there was that smell of gasoline in the room. That was at Mr. William Bartlett's place, and there was a little gasoline engine in the room.

Mr. Bartlett: I want to explain that my gasoline engine was out of order and was leaking and the odor was much more noticeable yesterday than it ever has been before.

The President: We all know that milk and cream and butter do take on taint very readily and we have to be very particular not to have any bad odor around.

Mr. Searles: The Whitman score is low tainted, possibly from the feed.

Mr. Whitman: I was feeding ground oats and clover hay and our clover hay last year froze out pretty bad and it wasn't clean clover. It was clover and weeds, all kinds, sorrel and everything mixed; that is the kind of hay we got. The oats were all right, but the trouble was in the hay.

The President: Probably the taint came from those weeds.

Mr. Searles: (Resuming reading of report). C. M. milk unclean, taint, manure odor.

A Member: I don't know how that happened. I cleaned the cow myself with a brush and the cow had been giving milk about three weeks. I milked her myself and went direct to the house; went into the separator room off the kitchen. It is a lathed and plastered room and ceiled. The side walls are painted and we try to keep it clean. I strained the milk into a glass jar that was ready and we covered it with a new cover. I thought of the rubber and thought possibly that would make a difference, but I couldn't see any other way to keep it tight; I had to take it twenty miles. I would like to have Mr. Goodrich or Mr. Scribner tell how that milk got such a bad score.

Mr. Searles: I should say that the udder of the cow was not quite clean and the sifting down onto your clothing drove that through. If there were any fine particles of manure on the cow's udder, they dropped down on your clothing and they would produce that flavor.

The President: Have you ventilators in your barn?

A Member: Yes, sir.

The President: I don't believe I would be afraid to drink some of that milk.

A Member: It can't be tasted in coffee, but that milk seems to be pretty bad.

The President: You can't detect taint so readily in coffee as in some other places. You take and pour it onto warm oatmeal, for instance, and you will detect it very readily. We have been furnishing cream to Milwaukee for a long time, and we haven't had any trouble with ours, but they tell me that where they have bad odors, it comes out strong on warm oatmeal, more so than anywhere else. This gentleman seems to have things in pretty good shape, including ventilation. If he had not ventilation, had bad stable odors and the cows were breathing that air over and over again, their whole system would become penetrated with it, and it gets into the milk.

A Member: How are you feeding?

A Member: We are not feeding as good as we ought to. We have had two dry years and we have a lot of stock with no silage. Our cows have been fed dry feed since the 20th of September; at which time our corn was all gone. We have a variety of hay, wild hay, clover hay, mixed hay and timothy hay. Our grain ration is ground oats and barley.

The Chairman: Sometimes the water gets tainted if a tank is open and we have heavy wind.

A Member: Our tank is not open, it is in the building but it is several rods from the barn and the building is studded up and boarded, inside and out, and under a shingle roof.

Mr. Rather: How often is that tank cleaned out?

A Member: That tank was thoroughly cleaned two weeks ago and some lime put in it.

The Chairman: You are a pretty decent sort of a fellow.

A Member: My wife thought so some years ago.

Mr. Goodrich: I don't have any idea that that is very ob-

jectionable milk, but you know that this was scored by experts with smellers equal to a foxhound; they can find anything that an ordinary person would not suspect. It would seem to me, from the gentleman's statement, that his conditions were almost ideal. Sometimes there are conditions about a cow that give a bad flavor to the milk that we can't tell anything about; I know it has happened on my farm, and ordinarily we wouldn't notice it unless it got to be very bad.

A Member: I don't know whether that rubber band was new or not.

A Member: How long was the cow in milk and what did she test?

A Member: The cow freshened three weeks before. I don't know what the test was.

Mr. Searles: She tested 5.2 per cent and gave twenty-five pounds of milk a day.

Mr. Welles: There is something about this milk testing business I don't understand. Two years ago I took some milk down to have it tested and the score given was 85. They said it smelt of the barn, bad flavors, etc. I wondered how it could get in and I don't know to this day, and I never got any satisfaction out of it. I took great pains in taking that sample and I don't have any trouble in shipping my milk.

Mr. Searles resumed the reading of the report, reaching the name of Mr. Cranefield, who won the second prize.

Mr. Cranefield: I brought my sample of milk down to find out what the trouble is with it if I can, rather than expecting to get any prize money.

Mr. Searles: There are no comments.

The Chairman: Well, the gentleman draws only second money, so there must be something wrong.

Mr. Halverson: What is the matter with No. 3?

Mr. Searles: Score 83; smells unclean. They couldn't locate any special trouble.

Mr. Halverson: I will tell you how we took our sample. I sterilized the bedding of this cow the evening before, she is clean always but this morning I washed her and milked right into this jar and my brother took the milk outside and cooled it. We have good ventilation in our barn, the King system, and it is well lighted. She gets ground oats, pretty good

clover hay and ensilage. The cow was clean, I know, but there might be some odors.

Mr. Goodrich: I believe, Mr. President, that all this is more the condition of the cow, something that we can't see—than anything else, and I will tell you why I think so. When I was working, making butter on the farm, or my wife was doing a good share of it,—but I looked after the stable end—I was selling butter at a fancy price, and I couldn't afford to have anything that was not just right. There had been no fault found with it, but after we had shipped one lot and kept some out to use, my wife, with her sharp smeller, discovered there was something that wasn't exactly right about it. I am free to say I couldn't smell it, and I couldn't taste it, and I thought I had a pretty good smeller, but she insisted there was something wrong about it. My wife said, when I told her I thought everything was all right at the barn, "It isn't in my end, I have looked everything over in the dairy house, and it isn't here." Then I asked the boys about the feed, if there had been any mouldy ensilage, or anything wrong, and they said no. Then my wife says, "Something is the matter with some of the cows." So she says, "Bring me the milk of each cow." So as soon as the cow was milked, we would take it to her, and she would examine it and she would say, "That's all right" "That's all right", till she came to one cow's milk, and right away she said, "There is where it is. It is that cow." When I got to Chicago I found that they had detected something. The customers never said a word about it, but the expert had found it. I wrote right back to my wife and I says, "For God's sake keep out the milk of Jane and Molly." That milk was kept out and after that there wasn't a sign of anything wrong.

Mr. Searles: I come now to the cream report. Mr. Matthis, score 88, unclean.

Mr. Matthis: That cream was taken out of the same can that scored 91.

Mr. Searles: Is your separator in the barn?

Mr. Matthis: Yes, the barn is ventilated with the King system. The separator is not where we keep the cows.

Mr. Searles: A separate room?

Mr. Matthis: To some extent; there is an alley through into the barn which is open.

POWER ON THE DAIRY FARM.

By PROF. F. R. CRANE, Principal Dunn Co. Agricultural School, Menominee, Wis.

Ladies and Gentlemen: This is the first time that I have had the pleasure of being in Barron county, and I hope it will not be the last time. I have been very favorably impressed in looking over these score cards, hearing about your cow testing for tuberculosis, noticing some of your fine farm buildings, and it has led me to the conclusion that Barron county must have a good many thinking farmers in it.

There are three classes of people on our farms today. In the first place, the first-class farmer, the thinking man, the business man, because if there is any class of business today that requires good horse-sense, it is farming.

The next kind of a man who is on the farm is the man who is not a careful thinker, the man who has intelligence, but who is careless in the manipulation of his business affairs. That man is not an entire success, but he is making farming go because the farm is back of him and not because he is on the farm.

The next kind of a man is the impossible sort of a fellow who cannot manage a business of any kind.

Now I ask you, "To what class do you belong? Are you a business farmer?"

I am to talk to you this morning about "Power upon the Farm" and I will say to you that the greatest power upon a good farm is a good man—perhaps you will tell me it is a good woman, and I won't disagree with you there.

What are the powers we are to use? Whether we are dairy farmers or not, we are looking for the best power that shall run the different machines used in our farm work. Some one has said it is the lazy man that is using power, but we don't believe that. I think it is the thinking man who uses power on the farm.

There are three or four kinds of powers. In the first place there is the old fashioned treadmill. I wouldn't even insult a mule by using it in a treadmill, much less a horse. If I used

anything, I should use the bull, thus giving him exercise. The power gotten from a treadmill depends upon the elevation of the floor, and if you arrange it so that it is raised to any marked degree, you will overwork your horse, a thing which you cannot afford to do very long. So I should say that about the only animal to be used in the treadmill is the bull, and it then becomes a "bully" power, from which you can get two or three horse-power.

Then we have the windmill. I have tested many windmills, and in a sixteen-mile wind the average mill will produce from two-thirds to three-quarters horse-power. Some of our large mills will run up to one and a half horse-power. A windmill is very satisfactory on a farm for pumping purposes if you have large storage capacity. It is a cheap power, no question about that, and satisfactory if you don't have to have a large amount of water all of the time. It is used for grinding purposes where small amounts of grain are to be ground.

The next power is that of steam. The dairyman always has use for steam in connection with the sanitary part of the dairy, but he may dispense with the steam engine where a cheaper power can be obtained.

We have now the internal combustion engine, known as oil, gasoline, gas and alcohol engines.

I have personally conducted many experiments with different gasoline engines, and have no hesitation in saying to the farmer that it is a satisfactory power. Occasionally it falls into the hands of a man who was never intended to have even a monkey-wrench. There is no excuse for any experienced man of average intelligence having trouble with a gasoline engine. We can teach anybody of ordinary ability in less than a week so they may run any gasoline engine that is made. There are very few complicated parts to understand, and you need understand but very few principles.

There are two types of gasoline engines: a two-cycle and a four-cycle. The two-cycle engine is a small power engine. We have heard of such engines made so as to produce twenty-five and fifty horse-power but up to the present time they have not been satisfactory. You buy a two-cycle engine and you buy plenty of trouble with it. The four-cycle engine is an engine that cleans itself, it fills, compresses, explodes and cleans. There

are four distinct movements of the piston and every time the engine gains power. The two-cycle engine is not economical; it is extravagant to run and you do not get the greatest power out of the same amount of fuel as if it were used in a four-cycle engine.

I say to you, do not buy an engine of a company that is not reliable; do not buy anything of any man unless he is reliable.

Much has been said about the farmers making alcohol from refuse upon their farms, but we must remember that there is more power in a gallon of gasoline than there is in a gallon of alcohol. You can afford to pay at the rate of fourteen cents a gallon for gasoline when alcohol is down to ten cents a gallon, as you would get an equal amount of power from either at that price. In other words, if you can buy alcohol at ten cents a gallon, you can afford to pay fourteen cents a gallon for gasoline. I suppose here you pay fifteen, sixteen or eighteen cents for gasoline.

Mr. Bradley—About fifteen or sixteen as retailed at the stores.

Prof. Crane: You can buy gasoline in larger quantities at from twelve and a half up. A gallon of gasoline will give the farmer better results than a gallon of alcohol. The Experiment Stations have proved it to our entire satisfaction. With gasoline we can get about a horse-power per hour out of every pint. If you have an eight horse-power engine, you will use eight pints of gasoline per hour at full power.

The question arises as to the size of power to buy. I should say to you, do not buy a small power. Figure exactly how much power you are to need for future work, then buy an engine that is from one-third to one-half larger than that. Do not think that you can get eight horse-power out of an eight horse-power engine because you can't do it. You can put that engine under the best possible conditions and you can get possibly eight horse-power, but use that engine; it begins to get a little dirty, there is some misfit somewhere, the adjustments will wear a little out of true, and the best you can do is to produce six or seven horse-power; so you must get an engine that is larger than you will actually require. It will cost a little more, but you can depend upon it as having about the power you need. If you are to need steadily, say six horse-power, it will cost you no more

to run that engine at six horse-power than to run with a six horse-power engine, and it will be more reliable.

Let me say a word about lubricating oil. Always use lubricating oil that is intended for gasoline engines. Never use ordinary oil for the interior of the engine for the valves will get dirty and the whole machinery will get stuck up. The valves upon a gasoline engine ought to be cleaned twice or three times a year, sometimes every two or three months, and I should do it whether it needed it or not. Clear out your cylinder by pouring in some kerosene oil. It cuts the gummy deposits.

If you are to let your engine lie idle for any length of time, put in kerosene oil and leave it, then when you get ready to use it again, run that out and let in gasoline until you have it well washed out.

Another thing, don't be careless in over-flooding your engine with gasoline. Of course, you cannot explode a gasoline engine unless defective. If you are a beginner, you might think that to turn on a little gasoline will give you little power; you keep turning on more and more, and the power runs up and turning on too much, the power falls off. We must learn that above or below a certain richness of gasoline in the mixture will cause a loss of power.

In purchasing a gasoline engine as a farm power; get a power of the size needed, locate the engine upon the best kind of a concrete foundation. If the foundation is uneven or insufficient, we loose power. Always locate the engine in a clean, light place. Do not put it under the stairs or in the basement.

After you have done all this, get the necessary tools to use with the engine and then remember that a gasoline engine needs no attention while running, but that it needs attention when standing still, and the time to give a gasoline engine attention is at the very moment that you close it down. Get it ready to work again.

Ninety per cent of the troubles with the gasoline engine come from ignition, and it is simply a question of batteries. Don't expect a battery to run for all time. They will run for a short length of time, but they are continually getting weaker. You may have been bothered every little while with an engine missing firing. Occasionally the engine will stop, and under those conditions, it is generally a question of batteries. Be sure your

batteries are right. You cannot always tell by testing the spark on the outside of the cylinder. I should recommend you to use the make-and-break spark with the primary coil and six dry-cell batteries arranged in a series. A less number of extra large batteries are sometimes used.

DISCUSSION.

A Member: Would it pay a member to have one of these auto sparkers to use in connection with his batteries?

Prof. Crane: Good question! There are magnetos and auto-sparkers. I think one is a good thing. We are using a magneto in our creamery at the School of Agriculture. We like it very much but the auto sparker is just as good. It will cost a little more, about $25; while the other will cost you $18 or $20. It will cost you anywhere from $1.50 to $2.00 four times a year for dry-cell batteries.

Mr. Bradley: I do my pumping and separating; that is all I use it for, and one set of those batteries lasts me about nine months. Maybe I can't tell when it is getting weak! I am having trouble the last three or four days with my engine. I tried the sparker this morning.

Prof. Crane: You take new batteries and put them in, turn your engine over, and I think it will be all right. Look to see if the points come together; see if they stick or are covered with a rusty deposit, and, if so, clean them. Sometimes we turn on too much gasoline and we then get a black smoke out of the exhaust! When it is a light blue color, it means too much lubricating oil; when it is a black smoke, it means too much gasoline. Too much lubricating oil hurts nothing but it makes your engine dirty. I should rather have too much lubricating oil than not enough and I should rather have too little gasoline than too much, because too much gasoline leaves a deposit and forms carbon within the cylinder.

The Chairman: Is it practical to arrange to heat enough water for the washing in the house with a gasoline engine?

Prof. Crane: You can heat a limited amount of water. You can heat water up to 190 without harm to the engine. We do not want water too cold in the jacket of a gasoline engine. If

the water is about 180 degrees, we get the highest efficiency out of our engine.

Just one thing about starting your engine. We sometimes have trouble in cold weather because the gasoline will not vaporize. I always use a little torch when the engine is cold, letting the flame play directly upon the carburetter. It is safe to do so.

A Member: Is a one-horse tread power equal to a one-horse power gasoline engine?

Prof. Crane: Yes. There are very few tread mills that will give you less than one and a half horse-power. Generally they are run at two horse-power. I should recommend that you buy a gasoline engine of not less than two. The smaller the engine, the closer the adjustments; you understand, larger engines have a wider range of adjustment.

Mr. Bradley: The engine I am using is a Fairbanks, guaranteed two horse-power. Isn't that sufficient for pumping water?

Prof. Crane: Yes, but it won't last as long as a three or four horse-power.

FEEDING AND CARING FOR THE DAIRY COW.

E. P. Goodrich, Ft. Atkinson.

Mr. President, Ladies and Gentlemen: I haven't a great deal of time, and this is a big subject, so I will try to condense to as small a compass as I can, and probably leave out a whole lot.

The feed and care of the dairy cow. Now, that means a dairy cow that I am going to talk about and no other kind. A dairy cow is one that is bred for dairying purposes alone. To begin with, to feed the cow right you have to commence back and feed the calf right and bring up the calf so it will be a good dairy cow.

Now, to feed the calf right, it must be fed so as to make it grow rapidly, develop its muscles, develop its capacity for tak-

ing coarse feed and not lay on a whole lot of fat. I contend that a dairy calf, to be the best, should be brought up differently from one that is intended for beef, because you want to guard against this habit of turning feed into beef.

I do think that you can take the best bred dairy calf in the world and feed it in such a way it will make an inferior cow. I heard Prof. I. T. Roberts of Cornell University express this in about the best kind of language. He says that you bring up a dairy calf to be a heifer and make her very fat, and when you come to ask her to produce milk profitably, she will tell you, "I can't do it; you have taught me to make tallow." Now, there is a good deal in that. I won't go any further on how to feed a calf, because I won't have time.

When the heifer comes to be a cow giving milk, which should be when she is about two years old if she has been grown properly and developed as rapidly as she ought to have been—and I say this because I want her to commence the business of her life (which is the giving of milk) at as young an age as two years old, because if you let her go longer, there is this danger of her getting the beef habit. You may think I put too much emphasis on that point, but I am satisfied from my experience that it is a very important point.

When she is fresh, you want to be careful about feeding her very much heavy grain feed for a few days, but in the course of two or three weeks you can get her up to what we call full feed.

Now then, I believe in feeding the dairy cow to her full capacity. Now, don't get scared about that until you hear all I have to say about it, *her full capacity*. That means all the good milk-producing feed that she can consume and digest and turn into milk.

It takes a certain amount of feed to sustain life; she has to have that anyway, you get no profit from that. What she eats over and beyond that and will turn into milk is what you want to feed her and feed her all that she can make good use of. You may feed so much that she will begin to put on flesh. You just want to get her up to good milking condition and keep her there. Now, when I say feed her to her full capacity, I don't mean feed her all the grain feed that she will eat. She has got

to have a balanced ration, but you must also have a proper proportion between the coarse fodder and the grain feed.

We were talking yesterday about burning out cows by feeding them too high. There is no such thing as doing that if you properly proportionate the coarse fodder and the grain feed, and the rule that I have adopted in my experience is that she should have not more than one-third concentrated feed in her daily ration. You can feed her that way and there will be no danger of over-feeding. There are a great many cows that have been overfed with grain feed.

The cows that were in the dairy test in Chicago in 1893, produced wonderfully; they were fed very high on concentrated feeds. There were Jerseys, Guernseys and Shorthorns, you know, and some of the Jerseys produced remarkably well, but they were fed very high on concentrated feed. Brown Bessie, the champion cow of the world, had about twenty-three pounds of grain feed a day, and they were fed all they could get to eat, but every one of those cows was damaged. I have taken great pains to find out what those cows have done since they made those big records and not one of them has ever done anything since except "Merry Maiden," and it took three years for her to get back to her normal capacity,—and it was just because they were overfed on concentrated feeds, and consequently they ate too little of the coarse fodder.

Now, you will naturally ask me how much grain feed should you give? How much will the cow make good use of? I can't tell you, because I don't know what her capacity is, but if she will eat twenty pounds a day of hay and forage, and ten pounds of concentrated feed, then you will be safe; but if you should increase her grain feed up to fifteen pounds and she should drop off five or six pounds on the coarse fodder, why she might produce more milk for a while, but you are on dangerous ground.

The President of the New York State Dairymen's Association, Mr. Gilbert, an old dairyman, once expressed himself in my hearing about this way. There are three things that you want to watch: (1) To see that the cow eats her feed with a good appetite, a good relish; (2) watch to see that her feed is digested properly—if it is not, there is something wrong; she

is probably fed too much; (3) watch to see that she puts it into the milk pail.

You cannot feed all cows alike. You can hardly feed any two cows alike. Van Pelt, who fed the cows down at St. Louis, was an expert at feeding cows, and he hardly fed any two cows alike.

Here is one cow that wants a little more of the protein; another that wants a little more of the carbohydrates. If you are feeding a cow too high in protein, she will run down in flesh; give her a little more of the carbohydrates; or if she is putting on flesh and not giving as much milk as she did, give her more of the protein feeds.

Another thing: you want to see that your cows eat with a good appetite. Never have feed lying before them uneaten. Many men will fill up the mangers with the best kind of hay, and the cow will eat what she wants and then she will lie down and she will be breathing on what is left and then she won't like it and she won't eat it so well as if you give her what she will eat and clean it up at once.

You can go into the barns of the best horsemen any time of the day and you won't find a spear of anything before the horses only just at mealtimes; and you know that is better with all animals. A man has got to be with his cows and watch them all the time; know all about them. A man that you hire to feed your cows will throw the feed into this one and that one and then go right out of the stable as quickly as he can, as though it was a disagreeable place in which to stay; he is no cow man. He won't stay there; he doesn't like the sight of a cow.

That makes me think of a little story. You know I like my cows; I would rather be out at the barn than anywhere else. A man came to our place one day and asked my wife where Mr. Goodrich was. She says "Probably he is out in the barn." "Does he stay out there in the barn all the time with the cows?" "Well, he spends considerable of his time out there." He thought he would say something smart, so he says, "If I had as good looking a wife as he has, I wouldn't be out with the cows." My wife ruffled up right away, and she said, "I would rather have a man associate with cows than associate with some men I know of."

I think I told you yesterday about my way of feeding. I haven't been running the farm myself for some years, but when I did I had as good clover hay as I could possibly make. I fed my cows some clover hay in the morning, and when they had eaten about so much—I knew about how much they would eat, here is Bessie, she eats about so much, and Lizzie would eat twice as much, and so on through the list,—I took what was in the manger right away. I wasn't going to have it there and they wishing they could eat it and couldn't. And do you know, the clover that was left was the best kind of stuff to feed your colts and horses, so it wasn't wasted. Then the cows were milked and I fed the corn feed and grain separately. Mr. Scribner puts his grain on the silage. I guess I won't quarrel with him about that, but I fed separately and I think it is the best way. Then I fed silage, about fifteen pounds to a cow. That was their morning's feed. Then at noon I fed them cut corn fodder or fodder corn, so as to give variety, you see. Then, at night they were fed about the same as in the morning, their grain fed twice a day and silage twice a day, making about thirty pounds of silage a day. They were watered twice a day.

Now, while I speak about water, I want to say what I think is the best way. I think it is the best way to have the cows watered every time after eating; if they are fed three times a day and their water is put into the stable in front of them, they will drink three times a day. Oh, but here a man says, "My cows won't drink but once a day." It is a habit that they will get into either way, and they will do better if they have the water where they can drink oftener, and I will tell you how I came to learn that.

One of my boys had quite a big farm out in Iowa; he had seventy-six head of cattle, most all of them cows. He put in a watering device that kept the water at the temperature of the stable; it is called the Buckley watering device. The water rises in a basin to a certain height and is regulated by a valve in the reservoir and the cows can drink whenever they want to. After my son had got that installed, one time when I was up there, he said to me, "Now, I have found out when a cow wants to drink." "When is that?" "Just after eating." Well, that seems to be so. They say that the time to water a horse is

before eating, but a cow has different machinery than a horse. I went out in the morning when he fed the cows. I saw all those cattle, seventy-six head, eating and as soon as they finished eating, they all drank and the water didn't come in fast enough, and every time he fed them, three times a day, they drank water after they were fed.

There is one fault about the Buckley watering device, and that is, that if it is left open it will get foul, because of scattered hay and other things. We had it fixed with covers and it didn't take the cows long to learn to raise the cover with their noses, and then it would fall back after they got through drinking. But the better way is to have a cement manger and sweep it out after they have done eating and then let the water in. Those cows certainly drank considerably more, and I think ate considerably more when they had water which they could drink at will, and almost every cow did better than when turned out once a day to drink at a tank, even where the water was warm and all right.

Now, why does the cow want to drink after eating? In the first place, when she is given a feed of coarse fodder it goes into the first stomach. It has got to be wet there before she can raise it and chew it again. You have all seen cows. when they raised the cud—sometimes the water runs out of their mouths. The water has got to be there whether it comes from the glands or some other way; the feed has got to be wet up and she naturally craves water. When it is all loose, floating in there, it gets rolled up into balls and then it is raised; she chews it and digestion has begun.

Now, I want to say something about feeding grain on coarse fodder. When she eats grain it doesn't go into the first stomach, it goes right on by, there is a sort of a switch there—I don't know just exactly how it goes right on by, but it does. Nature makes an effort to separate the grain feed from the coarse feed and one run one way and the other the other way.

The Chairman: How do you know?

Mr. Goodrich: I will tell you how I know. There was a man down at Pewaukee, John Hodgson, a genius and an investigator, who was going to find out things; he was just a crank on that. There was a butchershop not a long distance from him and whenever animals were brought in, he would ask

permission to feed them, two, or four, or six, or eight, or twelve hours before they were to be killed, so he could learn something, and then he examined them after they were killed to see where the feed went. Now, that was a new kind of a study, but he found that meal was actually separated from the solid feed when it was put into it; the meal had been strained off and it was separated from the coarse forage. He fed cattle corn in the ear with the husks on it. You know they can chew up husks and shell off the corn and some folks actually thought that cows could raise that corn and re-chew it. But what do you suppose John Hodgson found out? He found that the corn they shelled off went right into the second stomach, and not a kernel of it was with the husks in the first stomach. Now, can you tell me why we should put meal on silage?

You want to feed cows a variety; they like a variety just as well as you do, just exactly. How would you like to be put on one kind of food all the time? I met a man and I was down to his place. He had a lot of fine dairy cows; they cost him on the average of $200 a cow, and yet they were not doing very well. He said he was feeding corn stover and nothing but that for coarse fodder. He remarked that he wanted to feed that before the snow got so deep; it was too much trouble to haul it in. That was the reason his cows were running down and lots of that good feed wasted. He said, "I always feed that all out first. Then after that I will feed them clover hay, because that is on top of the mow. We will get rid of that, and then in the spring, when that is all fed out, I will feed my timothy hay." At the same time he realized he was not getting as much out of his cows as some of you fellows tell about. Now, it would be just as sensible for a man to say, "Now, wife, our cellar isn't very good and I am afraid potatoes will freeze this winter, so we will live the forepart of the winter on potatoes; then when it comes cold weather in the winter, I will kill a beef, and we will live on beef through the cold weather; it will keep fresh. Then when it comes milder weather in the spring we will live on bread." You would call any man that would talk like that a fool, but men do undertake to do that very thing with their animals right along, and their animals get awfully sick of it. They want it mixed up. You know potatoes and meat and bread are all good feeding,

but you want to have a little of one and a little of the other, and it is just so with the cow.

Then again you want to feed regularly. I tell you I believe it makes just as much difference to a cow as it does to a man. When feeding times come, they want to be fed. You could go into my stable when it is not feeding time and my cows would be lying down, chewing their cuds, they would not pay any attention to you. But you go in there just about feeding time. and every cow will jump up. They can tell the time of day just as well as you can by your stomach. It makes a man feel cranky to have a meal a little late sometimes. You come in from the field at noon, your watch and your stomach tell you it is dinner time, and you expect to have dinner, and you have to wait around an hour. Why, I tell you I have suffered more that way when I was a boy—it wasn't my mother that kept me, it was some other fellow's mother, and I tell you it worried me. I know that cows do a great deal better fed regularly.

You want to feed succulent feed. You know a cow will produce more milk on grass than she will on hay, a good deal more. Now, hay is just grass, cut and dried; you have just dried out the water and maybe you say that you might put the water back if it paid, but you can't make grass out of it again, I can tell you there is something about the natural juices in it which makes it more digestible and the cows will produce milk a great deal better.

So now, in winter we ought to provide succulent feed for them. We can't have grass, but we can come as near to it as possible; we can take green corn and put it in the silo and it has got all its natural juices. It is almost equal to fresh forage cut in the field. Every one of us who owns a silo knows that cows will hold up their milk a great deal better through the winter when they have succulent feed.

So much for the feed.

Now, we must care for them just as good as we can; we must make a cow just as comfortable and happy as it is possible to make her. She has got to be confined, she cannot have all the liberty she wants, but we should give her just as much liberty as is consistent with cleanliness and safety. So make her comfortable; you ought to have up all around in your barn in great big letters the word "Comfort," "Comfort," "Comfort."

That is what makes cows do well. You may have the best kind of cows and feed them all right, but if you don't care for them so as to make them comfortable then they won't do well for you.

Recess to 1:30 P. M.

AFTERNOON SESSION, FEBRUARY 12, 1909.

The committee on Resolutions submitted its report which was unanimously adopted as follows:

The following resolutions were presented and adopted:

Resolved, That the Wisconsin Dairymen's Association make an urgent appeal to the Legislature of the State in support of the proposed special appropriation of $30,000 for the purpose of aiding the College of Agriculture in its effort to promote agricultural knowledge and practice by carrying on demonstration experiments, and conducting traveling schools of agriculture to be held throughout the State. The work already done by the college in tuberculosis, potato spraying, orchard spraying, dissemination of pure bred seeds, reclamation of wet lands by drainage, and other important subjects, has been carried on at the urgent demand of the people of the State, and at the expense of college funds, which are much needed for the prosecution of the regular College work at the University. The College of Agriculture is unquestionably the best agency of the State that is fully equipped in knowledge, men and material to answer to this most important demand. The live stock, fruit, and crop interests of the State are in serious need of the knowledge this kind of demonstration gives. The splendid work of our Agricultural College has contributed in no small degree to the high rank the State has taken in the production of seed, grain, potatoes, tobacco, live stock, fruit, and dairy products, and we ask the Legislature that it make this special appropriation in furtherance of these important interests so conducive to the welfare and reputation of our State, and hereby instruct the officers of this organization to lay this matter

before the proper committees of the Legislature at their present session for their most careful consideration.

WHEREAS, The Management of our State Agricultural College has been petitioned by this Wisconsin Dairymen's Association, also by the Wisconsin Buttermakers' Association, and the Wisconsin Cheesemakers' Association in convention assembled, to issue a bulletin for milk producers, illustrative and descriptive of improved stalls and arrangements that improve the sanitation and healthfulness in dairy barns, and

WHEREAS, The wants of milk producers along aforesaid lines have not been satisfied, therefore be it

Resolved, That we again urgently request the management of our Agricultural College to issue such bulletin. Be it further

Resolved, That copies of this resolution be sent to the president of the State University, to Dean Russell and to the Committee on Agriculture of the Board of Regents.

WHEREAS, The State feeding stuff laws as they now stand have been the result of preventing in a large degree the adulteration of feeds and have to a large degree improved the condition of Wisconsin feeds; therefore, be it

Resolved, That this Wisconsin State Dairymen's Association here assembled at Barron, Wis., does hereby recommend to the present Legislature now assembled, that they use their influence and vote to maintain the laws as they now appear on our Statute books.

Resolved, That the Wisconsin Dairymen's Association desires to repeat its utterances in the past years in favor of the making of the Dairy Division in the Department of Agriculture an Independent Bureau and we call on our representatives in Congress to take hold of this most needed work.

Resolved, That we fully appreciate the splendid work being done by Dairy and Food Commissioner Emery and his able corps of assistants in enforcing the laws strictly to the letter.

Resolved, That the State and the nation owe it to the producers of honest food products and to the great consuming public to protect them against the evils of deleterious, adul-

terated, imitation, misbranded and fraudulent food products; and that dairy and food laws should be enacted and enforced with the purpose and with the effect of uprooting those evils and not with the effect of legalizing and condoning them.

Resolved, That it is the sense of this convention that the Wisconsin Dairymen's Association is warranted in using a large portion of its annual appropriation for the purpose of organizing self-supporting cow test associations.

Resolved, That the thanks of this Association are hereby extended to President F. H. Scribner, for his most excellent services to the Association for the past year and also in regard to the work he has done in issuing the Directory of the Wisconsin Live Stock Breeders' Association.

Resolved, That the thanks of this Association are hereby extended to Secretary A. J. Glover, for his faithful, very efficient and enthusiastic services as secretary of this Association.

Resolved, That the thanks of this Association are hereby extended to the officers, speakers and all others who have assisted by their presence and activities in making this a most successful meeting.

Resolved, That we have met with a severe loss in the absence of ex-Gov. W. D. Hoard from this meeting; and be it further *Resolved,* That it is the sincere wish of this Association, individually and collectively, that he may speedily be restored to complete health and perfect vigor.

Resolved, That we have been well received and entertained by the people of Barron and vicinity; that the local committees have been diligent and painstaking in preparing for this convention; that we duly appreciate the many courtesies and kindly acts extended to us and express sincere thanks for the same. The banquet was splendid; the hospitality of the citizens of Barron unsurpassed; we appreciate everything.

J. T. ATWATER,
U. S. BAER,
RAY N. WEST.

DISCUSSION ON MR. GOODRICH'S ADDRESS.

Mr. Goodrich: There is one thing I want to tell you, because some of you have asked me, and that is what kind of feed is the best.

Now, a cow needs a certain amount of protein to produce milk, from one and a third to two and a half pounds each day, according to what she does; then a certain amount of carbohydrates, making what we call a balanced ration. So if she does not get enough of the protein in one kind of feed, she must have it in another. If she hasn't it in one kind, we want to have our carbohydrates in another kind of feed. A man often asks what is the best kind of grain to give a cow to make her give milk. I will tell a little instance to illustrate that. One time in a Farmers' Institute a man asked, "What is the best kind of grain to feed cows to make them give milk?" I said, "I don't know." He says, "Are you joking?" "No, sir, I am in earnest, I don't know." "Well," he says, "you are talking about feeding cows all over the country and now you say you don't know. What makes you say that?" "Because I don't know what your coarse fodder is that this grain is to be fed with," and I went on and explained the best I could. Right after the meeting I saw a couple of men in a discussion. They happened to be men that I knew; one's name was Horace and the other was Ole. Horace was ready to jab a pin into me any time he could get a chance, and so as I was coming along he talked up loudly: "Perry says he don't know what kind of grain to feed cows to make them give the most milk. They better keep him home and send me out, I can tell." I came up to them, and I said, "Horace, what is the best kind of grain to make a cow give milk?" And he says, "Corn meal is best." Now, it was true that he got the biggest returns from cows of any one that was patronizing that creamery, and Ole was his close second, getting the next best. I said, "That is what you feed, Horace." "Yes." "No other kind of grain?" "No other kind of grain." "How much do you feed a day?" and he answered about eight pounds. "What do you feed with it?" and he said, "You know I have got alfalfa, don't you?" "Yes." "Well, I feed alfalfa hay and corn meal and some

other feed to make a variety, but that is the main feed." Don't you see he simply meant he was feeding a well balanced ration. Alfalfa has 11 per cent digestible protein; he probably fed about 15 to 20 lbs. a day and the cow didn't need much more, but it wanted lots of carbohydrates and the corn furnished 7 or 8 per cent carbohydrates. Well, when he said that I heard Ole say, "Horace, I don't believe what you say. I was feeding ten pounds buckwheat middlings a day and I changed onto corn and my cows went right down and they were going to dry up." So they got to disputing and I don't know but they might have fought but I didn't want that, so I said, "Now, Ole, what is it you feed with your buckwheat middlings?" "I feed timothy hay, I don't cut it as green as some folks." Now, timothy hay such as that has a little more than two and a half per cent digestible protein and buckwheat middlings has 22 per cent, so he fed a well balanced ration.

Corn meal is the best grain in the world to feed with plenty of alfalfa hay, or some other feed that has the protein in it, and timothy hay was all right to go with the buckwheat middlings, so when you are talking about the best kind of grain to feed, you have to figure on how much protein there is in the coarse fodder.

A Member: What is the difference between the feeding value of alfalfa hay and medium red clover?

Mr. Goodrich: The best kind of red clover has about 8 per cent digestible protein, and alfalfa hay has ordinarily 11 per cent and sometimes a little more. If clover hay is not cut pretty green, when it is in full blossom, it won't have so much as 8 per cent.

The Member: Well ,the sooner you cut this red clover, the less protein you have in it.

Mr. Goodrich: No, the more per cent of protein. You know pasture grass is a well balanced ration. Timothy grass when it is just growing up, has plenty of protein in it, but as it matures it has a great deal less.

A Member: Is not gluten meal cheaper to feed to the dairy cow than corn meal and give good results?

Mr. Goodrich: No, it won't give good returns, if you have enough protein without it. It has about 20 per cent digestible protein in it, and if you were feeding corn stalks and timothy

hay, gluten feed would be worth a great deal more than corn, but if you are feeding alfalfa hay, or feeding some other kind of grain feed that gives you protein, why, then you may not have use for the gluten feed. Gluten feed is deficient in ash. which is a great help.

A Member: What percentage of protein is there in alsike clover?

Mr. Goodrich: It is about the same as red clover, but a little better.

A Member: How are oats and barley with alfalfa?

Mr. Goodrich: They will do very well to go with alfalfa or clover hay. Clover hay and oats make an excellent ration. Barley contains a little more carbohydrates, and it would help it to put in a little bran.

RELATIONS OF CREAMERY SECRETARY AND MANAGER TO THE PATRONS.

Wm. J. Brennen, Tomah, Wis.

Mr. President—Fellow Dairymen:

On being asked by your Secretary, Mr. Glover, to take part in this program I was very much, though agreeably, surprised. At first I thought Iwould have to decline on account of having already accepted a part on the buttermakers' program which would take place on the same dates.

But the more I thought of it the more memory recalled the great benefits derived by the patrons of the Tomah Creamery on account of the meeting of the Dairymen's Association with us a few winters ago.

On closer study I almost felt in duty bound to come here to hear the dairy interests discussed by the leading dairymen of the State that I might learn something new and take back with me to our patrons and put into practice the good thoughts and suggestions so derived.

No special fitness or ability of mine (if I have any) would bring me here to give advice or theories. So the few thoughts

brought out in this paper will be from practical experience among almost 400 intelligent creamery patrons, the majority of whom are making a small profit but trying each year to do a little better.

To begin with, the manager should be an active, practical dairyman, or one who has been, formerly, a successful keeper of dairy cows. Otherwise he will be working along theoretical lines and will not understand the conflicting conditions that exist on the average patron's farm.

To be a help to anyone else. one must first thoroughly understand what he is talking about. Were I to seek advice along dairy lines, I would rather go to the man who made a success out of failure rather than he who was invariably successful.

The ever successful dairyman is often enthusiastic and one-sided, and knows nothing, or very little, about the stumbling blocks and pitfalls that the majority of us have to go through to make a success of the dairy business. The man who has failed through bad judgment on his own part and then succeeded in the same line of business can give advice, free from any enthusiastic alloy, conservative and solid.

I believe nine out of every ten dairymen in the past have some time in their career been brought face to face with the glaring proposition that they were loosing money or barely breaking even. While hundreds of other keepers of cows (we won't call them dairymen) have been content to keep milking scrubs or "dual-purpose" cows not knowing whether they were making money or not.

I will not say a word for or against any breed; each has its place except the scrub which should have no place outside the canning factory and were the truth actually known insofar as profit producers, at least 20 per cent of Wisconsin cows should be canned immediately.

About the first question I put to a patron who complains of his cows not making anything is this: What type or breed of cows are you keeping? He may answer you this way: "Oh, my cows are all right, big, fat and sleek. Was offered $50.00 apiece last June when they freshened, and I guess the cow buyer knows good cows."

Be careful before you ask him the second question: What are you feeding them? Better let him talk for twenty minutes

before you say much for he is the toughest proposition to successfully approach that any manager has to contend with. First, gain his confidence, if possible, and convince him that the creamery is not stealing from him. This may take a year's time, but what of it. At the beginning of the second year he may be thinking of getting a half breed dairy sire. Discourage this if you can by showing him what a pure bred dairy sire has done for some neighboring patron of his. He may still think that the other fellow is getting some of his money but you may have created a doubt at least in his mind that the fault lies in his so-called $50.00 cows that produce $40.00 worth of fat annually.

After such a patron has gotten some kind of a dairy sire or some grade dairy heifers, you may approach him with the second question. What are you feeding them? And a hundred to one you will find if he feeds anything at all besides timothy hay, it will be a little barley or corn meal, knowing nothing about a balanced ration, calling such things "Madisonian ideas" or "book dairying."

Such patrons to whom I have just referred are the extremes, but each dairy community has them and quite a few of them, too. But they are constantly decreasing n number, either seeing the folly of their dairy methods and adopting better ones or become disgruntled and go out of the dairy business because they thought the creamery was not giving them a square deal.

I sometimes wonder whether it would not be just as well to let such patrons find their own way and spend your time working with the rest of your patrons who form the vast majority and who are ever ready to adopt better methods when shown that their profits can be increased thereby.

On the other hand, we have patrons who know and admit that their cows are no good but still go on year after year without any special endeavor to better their conditions. They have fossilized and about the only way to arouse them from their lethargy is through their sons who quite often will see some profits in good dairy methods and become enthusiastic dairymen.

When the patrons have taken the first step in dairying by adopting some dairy breed of their choice, then the great ques-

tion arises, how to get the patrons to produce the greatest amount of milk or butter fat at the least possible cost.

Many of us, though we may have good dairy cows, fail to make a profit on account of not knowing how to mix our feeds to make a balanced ration or not knowing what a balanced ration is. The manager should study and know how to figure out the cheapest balanced ration. This "cheapest balanced ration" will not remain constant on account of the fluctuations in price of the ingredients which constitute it. Hardly a week passes without the manager being asked by some patron how much and what concentrates to feed his cows. Have him enumerate what grains he has and if a balanced ration can be figured out which will be as cheap as its purchased equivalent, all right. But it is quite hard to get protein enough from out common grains without feeding too much carbohydrates and fat which is wasteful. Suggest to the patron to sell the oats that he is feeding and purchase bran and oil meal or some other feeds rich in protein as a substitute. Show him by actual dollars and cents what he will save by selling his 45c oats and purchasing bran, $21.00 per ton, and oil meal, $31.00, or other feeds containing a high percentage of protein. Get the proper amount of protein and, generally speaking, the fats and carbohydrates will take care of themselves. Now, a person does not need to be an expert on feeds and feeding to do this. Neither does he have to remember the analysis of each grain, for we have the charts already figured out for us and all that is necessary is to know how to make the proper combinations.

A great number of our patrons have already learned to make the combinations from their dairy literature or from some other source but they are in the minority.

I do not believe that there is any person connected with creamery work who has so wide a field of action for helping the patron as the manager of a creamery. The manager who figures out the pay roll and knows how many cows each patron milks, occupies a position that no other person does (except the owner) of knowing about what each herd is doing. Time and time again have I stopped and wondered what some patrons are milking for; sending cream in the summer months and little or none in the winter when butter is light. The average returns per cow from their herds is about $35.00 or scarcely

enough to cover the cost of feed. And these are the patrons who are always complaining that the dairy business does not pay. We will find about 20 per cent of these patrons in the majority of creameries of the present time. Is there any possilble way of reaching this class of patrons? We will admit the difficulty of it. And even when one of them is reached, the transformation is so very slow. Ask him to join a testing association, and he will throw up his hands or shake his head. Others will say, "I will join the association just as soon as I can get rid of my old skates of cows and get a dairy breed." Several of our patrons have expressed this to me and you don't know how good I felt after waiting for this expression for one or two years.

Get just as many of the patrons as possible to keep a private record of their herds by weighing and sampling the milk, for a private record is the very best record that any dairyman can keep. It teaches him to be a liberal, but judicious feeder. When he does this work himself, it teaches him to think and keep on thinking and not satisfied with his lot, he sees wherein he is far below the average production of the good dairymen of his neighborhood who perhaps have been keeping private records for years.

However, the number of ordinary patrons who keep a private record are so few compared with those who do not keep any record at all that we must use some other method to reach the great majority.

This brings me to the point where the Dairymen's Association has wisely come to our aid by sending men into dairy communities to establish co-operative cow testing associations. The good that these associations are now doing is very great, even though in their infancy. And it's up to every creamery manager to do all in his power to help establish and show to the patrons the benefits derived from the cow testing associations. Show the skeptical one who thinks it a "graft to get some friend a job" that no one is benefited except the individual cow owner. Show him, though his herd taken collectively may be paying him a fair profit, that he may and undoubtedly has some individuals who do not pay their board.

Let me cite an instance from my own herd. For a few years

we weighed our milk day after day collectively, and sampled and tested each individual so we knew about the average test of each cow but did not know the total amount of milk given by each cow. We knew that the herd taken collectively (I don't like the word) was paying a fair profit. Then came Mr. Searles and his new fangled individual "Cow Testing Association." We kept an individual record, and lo and behold! what a flood of light was thrown on our collective minds; some individuals going well above 300 pounds of fat, and two falling below 200 pounds of fat, and these later were mature cows in their prime. One of them we purchased as a heifer 5 years ago for $25.00 (a big price), milked and stabled her for nothing for a period of years, but we have not got her now, thanks to the Cow Testing Association.

If we could but make the patrons of our creameries see the benefits of keeping individual records, it would not be long before all the patrons would be doing so, except the knockers and chronic kickers and perhaps they might be induced to move over into Michigan or Minnesota.

So, secretaries and managers of creameries, let us be up and doing before the other fellows get the start of us.

We can get them all to see as we do. Reforms in the dairy business, like politics, can't be revolutionized in a day, a month or a year. But systematic work along better lines will bear abundant fruit as the years go by.

What else can we do as secretaries to help the patron?

Show me the patron who has systematically been a reader of good literature for a period of years and I will show you a profit-making dairyman. On the other hand, let us visit the unsuccessful patron, with his scrubby cows, dirty unventilated stable, unsanitary milk, and filthy cream, and nine times out of the ten, he does not read a dairy paper at all. He never heard of a Colantha 4th's Johanna, a Jacoba Irene, a Yeksa Sunbeam, a Rena Ross, or a Loretta D.

Ask him what those names signified and he would be apt to tell you they were fast horses, chorus girls, or some grand old dames of Colonial times.

Tell him that they were cows that hold yearly records from 643 to 998 pounds of fat and he will laugh you to scorn. Place a dairy bulletin in his hands and he willl throw it aside and call

it "Madisonian." If he does, put another one just like it in his hands as soon as possible. After a while he may read it, and "after a while" he may find his cows have tuberculosis.

Oh, what a field for missionary work. And no one stands in a better position to help than the secretaries and managers of creameries. We stand in commanding positions with the field of campaign radiating in all directions from us. And we fail in our duty to patrons if we let a single opportunity to help go by without rendering assistance where we can.

Let us begin when we go home, if we have not already begun, to induce our patrons to subscribe for some good dairy paper and gather together the best dairy bulletins obtainable and place them in their hands. Of course a great number of patrons already are well versed along dairy lines. I speak only of those who are either careless or skeptical and have not access to any dairy literature or will not make any effort to obtain any.

Let us now consider for a moment the relations of the secretary and manager to the patrons in a business way.

To begin with, a manager should be broad minded, liberal, conservative and progressive. One who can stand criticism without being peevish or trying to retaliate, flattery without being carried away, success without thinking that he is the only one on earth who has been successful. Always keep in mind that there are others in our communities who can do just as well or a little better in our positions than we are doing.

It is no place for a narrow minded man, one who is always looking for trouble or insults. He should be successful in his own business affairs before trying to manage a business perhaps 50 times as large for some one else. Use all the ability and business training at your command to make every penny possible for the patrons, and get them to help you.

How often do we hear that we farmers are the hardest men in the world to get along together. I don't believe it. Experience has shown that the dairy farmer, when given a square deal, is the easiest and most intelligent man on earth to get along with. When I hear of a manager who is everlastingly quarreling with and complaining of the patrons, I know that the manager and not the patrons is to blame.

He either lacks business ability to properly manage the creamery, or some defective scheme in his business management he

has failed to correct by which he can render a true accounting to the patrons.

There are none of us above criticism, and all of us are subject to errors in judgment. Let our business conduct be so that we can and do command respect from the patrons. Unless we have the confidence of our patrons, we cannot get them to work with us.

Become acquainted with and study the conditions of each patron as far as possible. What a field for action and food for thought. Three or four hundred different individuals, each a little different in character, but all good fellows together. When we have gained their confidence then we have nothing to fear when we ask them to help us to make a little better grade of butter to command a little better price.

Begin the work of educating the patrons to furnish a high standard of cream at the initial and most essential point, the stable where the milk is produced. I care not whether the cow is tied to a pole or placed in our most modern sanitary stalls if she is kept clean. But clean she must be kept to get a high quality of cream.

Keep tab on the modern barns and stables being built in your vicinity and try to persuade those who don't know any better the value of sanitary floors and thorough ventilation and some form of tie to keep the cow clean.

Another point I wish to bring out, in regard to testing, we will assume that it is properly done. But frequently patrons are dissatisfied and can't understand why the test is so low or why it varies so. We can explain and expound and offer causes and theories until we are black in the face with little effect. Give this dissatisfied patron a cream sample jar and a tablet and let him take a composite sample of his cream, and you also take one at the creamery for the same period of time. Give him instructions how to take the sample and let the manager test his cream sample in the patron's presence. Seldom, if ever, do the two samples so taken vary but slightly and you send away a better satisfied patron and a friend.

Do away with this old idea that the manager is always right and the patron always wrong. Both are subject to errors. Don't try to force your ideas onto them, they have rights as

well as you. Let us keep our eyes and ears open, for the patrons can teach us many things we did not know before.

Just a word in closing. Let us as managers use every means in our power to get a high grade of cream. Keep a first class buttermaker and give him modern machinery to work with. Then see that the buttermaker makes the greatest number of pounds of butter possible from the butterfat, keeping within the law and without sacrificing quality. And positively be able to use the test for moisture and butterfat so you may know at all times that the normal overrun is maintained without cutting the test.

Then use every fiber of your business ability to get just as much for the manufactured product as possible. Run the business just as economically as if it were your own private business. Give the patrons every penny that rightfully belongs to them. Place a monthly statement of the business done in the creamery where the patrons can see and study it if they wish to. And at the close of the year make an itemized report to each patron a few days before the annual meeting so the patrons may have a chance to study it over.

And lastly be fair to the patrons, the employees and to yourself.

I thank you.

DISCUSSION.

Mr. Goodrich: Do you have any trouble with the patrons having poor cream?

Mr. Brennen: We do.

Mr. Goodrich: And what do you do with that poor cream?

Mr. Brennen: We send it back, and tell them what the trouble is.

A Member: It is often because they do not take care of their separators.

Mr. Brennen: Very often agents try to induce people to buy separators, and tell people it is not very much trouble to keep them clean. A great many people think they only need

to be washed once in three or four days, but the right way is to clean it every time it is used.

A Member: Do you take any cream from these water separators?

Mr. Brennen: Three or four years ago we had several patrons that had cold water separators; they had them because they were unable to pay $100 for another separator. When we find a patron in that condition, we tell him to do the best he can until he feels able to pay the price of a modern separator. We have four hundred patrons, and I don't think we have but two or three that use the cold water separator, but we never refuse their cream, although sometimes it is not quite as good as the average. You can't get as good a grade of cream from those separators. There are some kinds where the milk and water is not mixed. If you get those, you get a little better quality of cream than the other way, because if you have contaminated water mixed with your cream, it is a pretty difficult proposition to get good cream out of it.

A Member: How can you tell who sends poor cream and who sends good cream on your cream routes?

Mr. Brennen: I advocated at Eau Claire, the other day, to do away with the cream routes. As long as we have routes we will have trouble, unless we have the same man day after day to keep tab on the cream hauler. The cream hauler is not generally as careful as he should be. One man will have a poor batch of cream, and the next will be good, to be dumped right in with that, and it is a tough proposition. The tendency of the time seems to be getting further away from that branching out. A better policy would be to get as good cream as possible and have it delivered in individual cans.

A Member: It would be pretty hard to do that if you had large routes.

Mr. Brennen: Our patrons and others join together, and in that way they make a trip three times a week in the summer which brings it around every two weeks. We have four cream routes and five per cent of that is delivered in individual cans, and it is better than that delivered in barrels. If we had it all delivered in cream barrels, we wouldn't be able to make as high a grade of butter as we do now.

Mr. Glover: You do not seem to be so much in favor of dis-

posing of the cream route as to have the cream delivered in individual packages. It is an economical thing to have cream brought in, in individual cans.

Mr. Brennen: In our system we make the individual pay for the hauling. It is deducted from his cream check. It is delivered twice a week in the winter and every day in the summer. The cream should be produced closer to the creamery, and it is not necessary to get a territory thirty miles in diameter. You would not have a creamery large enough and would have to have two large creameries. When the cream is delivered in individual cans, we get it in early; the individual has to be there at 12 o'clock, or before, and that gives the buttermaker a chance in the afternoon to handle his cream. Out on long cream routes, they come in at all hours. We have a system which says they shall be in at four o'clock, but some days that is not possible. You will agree with me that cream that is hauled all around the route is not as good as that which is taken from the farm directly, hauled in the morning.

A Member: Have you ever tried using ice on the route?

Mr. Brennen: We did. once or twice, yes.

The Member: I am an operator of a creamery; we are running four milk routes and we use ice on the route, and we find that we can haul thirty miles. We have to put the ice right in the cream, so if there is any contamination, I don't know. The statement was made by one of the Minnesota State Inspectors that cream run through a dirty separator that has stood over night contains more germs than water in the sewerage of the city of St. Paul or Minneapolis.

THE SILO.

By Roy M. Scribner, Rosendale, Wis.

I think that every one will acknowledge that there is no other factor so important in the development of an animal as the feed question. For, no matter how extended a pedigree may be, if the feed part is neglected, scrub results will be obtained. A careful, watchful feeder will do more towards bringing up to a standard of higher production than one who may have better bred animals and is a careless, ignorant feeder.

Wisconsin has become the leading livestock state on account of her natural adaptability and natural conditions, coupled with men who have made the feeding problem a study and have found that palatable and easily digested feeds are a very important factor in getting results from our dairy cows.

If we could have June grass and June conditions the year round, nothing better could be found; but as the climate of Wisconsin does not produce this condition of affairs, we have to try and make a substitute for these conditions.

Why is it that grass produces such results? Simply because it is palatable, succulent and easily digested. A little later, the grass gets dry and the cows shrink in their flow of milk, just because the grass is less digestible. Carrying this idea to the corn crop, which, by the way, is the most valuable crop we raise because of the large amount of tonnage to the acre, we find to get the best results the corn must be harvested when in the most succulent and easily digested stage. Then comes the question how to hold and keep it in this condition. For this purpose the silo has been invented and through its means the cows are made to produce a maximum yield at a minimum cost.

The greatest long distance cow in the world whose picture and record we find on our program, "Jacoba Irene", never would have accomplished what she did unless she had been fed good ensilage.

It is also a fact that in the different cow censuses, it is found that farmers having silos were getting the largest returns from

their cows, which shows that Wisconsin farmers are further advanced than the Indiana man who asked "What is this ensilage? Is it raised from the seed? And where can I get the seed?

A larger amount of stock to the acre can be kept profitably and a larger growth and better development of the young stock made with silage. The leafy part of the silage is given the calves and grain fed with it. In constructing the silo, care should be taken not to have it too wide, but it should have a reasonable amount of depth. I know of a case where the silo is 32 ft. long and 16 ft. high. The consequence of this kind of construction was that there was not sufficient weight to make much pressure and poor ensilage was the result.

A very good rule in building is: The width should correspond with the size of the herd and the height with the number of days that you wish to feed. The average silo is 16 ft. in diameter and 30 ft. high. It is not advisable to build a silo less than 10 ft. in diameter and 25 ft. high. The materials at hand may control the construction; stone, brick, concrete, cement blocks, and wood, all are good.

Where surface water does not interfere, it is advisable to go into the ground for 6 or 8 feet below the stable floor. This makes the cheapest part of the silo and the silage is best as it is in the ground where it is cool and less circulation of air.

These first few feet may be walled with stone, or concrete, and then cemented smoothly on the inside. A silo for Northern Wisconsin should be built warmly, as feeding frozen ensilage is injurious and the inconvenience in getting it out is quite an item.

The first requisite is to have the silo air tight. In the Christenson style of brick silo and the cement block style, as well as some of the wooden kinds, there are two air tight walls, thus making a dead air chamber between. This dead air space prevents to a large extent the freezing of the ensilage. This freezing can be largely controlled by the manner of taking out the ensilage. If the surface is not kept level and solid and is allowed to be higher at the sides it will freeze and stick to the wall and if allowed to do this constantly will freeze almost to the center during extended cold weather.

In the brick and concrete styles, the walls should be reinforced in some way. The reinforcing can be heavy wire or barb wire twisted, and I might state incidentally that this is the best place for a barb wire fence anyway. This wire should be placed nearer the outside of the wall which will give the wall greater strength. The reinforcing should be put more often at the bottom because of the greater pressure there and as we go nearer the top, the reinforcement can be further apart.

The continuous door circular silo is acknowledged to be the best. The sides of this continuous door should be securely held by rods imbedded firmly in the silo wall to prevent walls spreading. These rods can be used for holding the doors and as a ladder for getting to the top of the silo.

A concrete silo can be built entirely by anyone without hiring expert help. Good gravel and cement and a knowledge of the proper proportions to mix is all that is needed.

The location of the silo should be well considered; it should be placed where most convenient to feed. When once built, unlike a barn which can be moved or turned around, the silo is a permanent institution. I have in mind one of the first silos I ever saw. It was built 8 or 10 rods from the barn, and silage had to be hauled with team whenever needed.

The kind of corn to grow is the largest that will mature in your locality. Our first experience with silage over 20 years ago, nearly drove us out of the business, for we were told that almost any corn would do, so we planted the large ensilage corn which never got into the roasting stage. The consequence was the silage was sour and we had trouble all the way through. Later on we found that to have good ensilage, the corn should be matured to where the ears have begun to harden and well out of that milky stage.

Where trouble has been experienced with silage tainted milk or cream, it has been through carelessness. Either the silo has not been air tight causing some to spoil, or carelessness in getting it out by loosening up too deeply, throwing out more than needed for the day's use, being slovenly about scattering along feed alleys, careless about getting the hands soiled and tainted, and then milking without washing the hands, and last but not least, improper or inadequate ventilation of the stable. Where these conditions are seen to and remedied, it matters little

whether you feed before milking or after. It has been our practice to milk while the cows are eating, and as our business has been the furnishing of cream for the city trade, in all our 25 years' experience, we have yet to hear of one complaint.

The silo is coming more and more into use for summer feeding, and the wise dairyman is looking out for this. To make a profit out of the cows, they must be kept busy and not allow those shrinkage periods which are so common in summer and early fall; this also lightens up the pasture and makes it possible to carry a larger number of stock on small acreage.

Within a radius of two miles of our farm, there are 17 silos and it is a conceded fact that Wisconsin has the largest number of silos of any state in the Union.

One thing should be remembered in putting up a silo, and that is, it pays to put up a good one. Too many men have had poor success with silage because they have neglected this fact.

DISCUSSION.

A Member: I was talking with a man that came to my place about building a silo and there was a man with him from Iowa and he says, "Oh, you don't want a silo. Lots of farmers were building them twenty years ago, but now men that keep cows don't have them." I was surprised after reading our farm bulletins and Hoard's Dairyman and the Wisconsin Agriculturist so long, that a man should come from there and say they were doing away with them. I couldn't understand it.

The Chairman: Those people may be furnishing milk for the Borden factories, and they will not take milk from ensilage fed cows.

A Member: He said it was shipped mostly into the city of Chicago.

The Chairman: There will be no objection to it if it is shipped to Chicago. In the early history of the silo in Wisconsin we recommended that almost anything would do to use for a silo, and many were put up under those conditions and the result was failure in many cases.

Mr. Rather: How would you put up a stave silo, so as to have air spaces as you strongly recommend?

Mr. Scribner: You would have to build it with what they call "boxing." I have not observed stave silos so much, but I know of several where they feed out before the ensilage has a chance to spoil. They have more than one silo and they feed out of the stave silo first.

Mr. Rather: Down in our neighborhood the stave silo makes the finest silage of all the silos around. Even if the silage is frozen you can feed it. It will be frozen around the outside, but it thaws out and there is no harm done. That is my experience.

A Member: How deep, for practical purposes, may a silo be from the top to the bottom, and also how deep is it practical to put a silo into the ground?

Mr. Scribner: For practical purposes, it may be as deep as thirty or thirty-five feet from the top to the bottom of the building. The convenience in getting out from a distance below the stable floor is generally conceded to be confined to about six or eight feet.

Mr. Rather: You can go as deep as you have drainage, and you don't want to go any deeper; that is, where you have drainage for the surface water. There are quite a lot of silos built on the side of a hill and they couldn't put them very deep.

The Chairman: We are practically into the ground fifteen feet; but below the stable floor, it is only seven feet.

Mr. Rather: In last week's Hoard's Dairyman, there was an article written by a man who condemned the cement silo, and he said a large number were doing away with the cement silo and using stave silos.

The Chairman: There is no reason why silage will not keep as well in a cement silo as in a stave silo. We have had a cement silo six years.

Mr. Rather: How long will a stave silo last?

The Chairman: Until they are rotted out and that depends on the quality of the wood and other conditions.

Mr. Rather: The statement was made that either the silage would get slimy and sour or else it would burn next the cement.

Mr. Scribner: That has not been our experience.

A Member: Will a silo pay for six or eight cows?

The Chairman: Yes, it will, because if you have a silo and you have six or eight cows, you will find that you can keep more cows with a silo. I have in mind a young man that put up a silo for eight cows, and he told me last year that before he put up the silo, the best he could get out of his cows was $50 a year from the cream, but after he put up his silo, he was able to get $75 a cow, and that brought him in $200, and his silo cost him $100. He said if he had to put up one every year, he would do so. He built one all of stone, from top to bottom, for $100. It was twelve by thirty.

Mr. Rather: What was it made of, hardheads?

The Chairman: The hardest kind of hardheads. He did most of the work himself.

A Member: What harm will the drainage of water do to a silo that is made entirely of cement from top to bottom and well built at the bottom, so that the drainage water cannot get inside?

Mr. Scribner: I should think if it was as well constructed outside as it is inside, it would hold the water out as well as it holds the juice of the silage.

The Chairman: A concrete silo would probably hold the water out, but an ordinary wall painted on the inside will not keep the surface water out.

A Member: A foundation built of water and concrete will keep water out.

Mr. Goodrich: I have a few figures that I want to read. In the course of my investigations, I have taken quite a good many cow censuses to tell what was fed and then what was returned. Where I took one cow census, there were forty-eight herds. I didn't select, I just went right out along the road and I put down what they fed, and when I came to look it over, I found that six fed silage and forty-two did not. Now, I wanted to compare and see whether they did as well without silage as they would do with it, and here I have the gross returns for those who fed silage, and it averaged $52.52 per cow. Some of them were good farmers, some not so good.

The gross returns of the forty-two who did not feed silage, averaged $34 per cow. The net profit above the cost of feed of the ensilage men was $21.02 per cow; of the others, $4 per cow. The gross receipts of the silage men was 54 per cent more

than the other, and the profits 500 per cent more, so it did certainly pay to build silos in that case.

The Chairman: It would look so, if you haven't lied about it.

A Member: How would clover be for silage?

The Chairman: Well, clover is all right; it can be used for silage, and it wants to be cut in with your feed cutter just the same as corn. We tried an experiment one year putting it in whole, just as we cut it from the field, and about one-third of what we put in was not good. We could not pack it so it would settle properly, but by cutting it in with a feed cutter it was all right.

A Member: Will a little stover do any harm?

The Chairman: No, it won't hurt.

A Member: Will it hurt to put it in with the dew on?

The Chairman: It doesn't make any difference. If there is any excess of moisture, the heat will take it up.

A Member: What is the cost of putting in corn silage.

The Chairman: About 50 cents a ton. That just includes the putting of the silage into the silo, not the value of the corn.

Mr. Goodrich: In charging up the feeds, in making these cow censuses, I figured silage at $2.50 a ton. But I tell you a man could do pretty well if he got ten tons to the acre, which is not a big yield, down as far as Fond du Lac County any way, and that is $25 per acre. The cost of harvesting is less than it would be to harvest corn the other way.

A Member: Will flint corn do better than dent here in Barron county?

The Chairman: Yes, if the dent doesn't get ripe; but if it does get ripe, you have more feed to the acre, more tons.

A Member: Should corn be cut right into the silo?

The Chairman: We cut and put right in.

Mr. Scribner: As I said in my paper, it should be just beyond the milk stage. In the dent corn, it should just begin to glaze over; that is just the right condition, the right stage for putting it into the silo for ensilage.

Mr. Goodrich: Now, that depends on how mature it is. If it was just getting into the roasting stage and you were afraid of the frost up here in this country, I should think it would be better to wait a little while and let the water dry out; but where the corn is mature I think that there isn't any too much moisture

in it. The rule is there should be about 70 per cent of water and 30 per cent of silage in it. Of course we cannot analyze it, but the stage that we have found the best to put it in, is when the lower leaves begin to turn and fall away, the corn is getting dented if it is dent corn, and when the earliest ears, the husks, are beginning to turn white. That is the stage that corn has the most nutriment in it, just the stage to cut it up and harvest for fodder, and also the right time to put it into the silo. If you have to cut it green for fear of frost, and there is a good deal of moisture in it I should think it would be better to have it dry out a little, because, as I have found, if you put it in so green it will be sour.

A Member: Do you add any water if there isn't moisture enough in it?

Mr. Goodrich: I have known a man to shock his corn because the silo was not ready and it got dried out. Sometimes, in such a case, it is a good thing to put in water, but where the fodder is just right you don't want to put in any water. But I will say, after you have it filled, you can put a good lot of water on it and it won't spoil. Gen. Burchard, the associate editor of Hoard's Dairyman, is pretty well posted on all things. He built a stave silo which was filled before the roof was on, and before the carpenter came to put on the roof, a very heavy rain fell. The General was worried about it; he thought it would hurt his silage. Probably three or four inches of water fell, and when they put on the roof, about two inches of silage had spoiled on top. Ever since then he puts on water and so do a good many others.

The Chairman: Do you use any covering for your ensilage?

Mr. Scribner: Yes, we do; it may be a covering of straw or marsh hay or we may sow on some oats, and the heat from the ensilage will make those oats grow and form a matted covering which keeps the top of the ensilage from spoiling.

The Chairman: Have you ever tried salt brine?

Mr. Scribner: Yes, we have with good results. Last year I tried a very strong solution of salt brine and not over three inches of our ensilage spoiled, and that was on the sides and in the center.

The Chairman: It wasn't over an inch and a half or two inches.

A Member: How much of that solution did you put on and what strength?

Mr. Scribner: I think our silo is sixteen feet in diameter, and I think I put on an eight-gallon can of salt brine.

Mr. Rather: A year ago last fall I read about this salt brine and I tried it. I put it on the same amount as you mention, thirty gallons of this solution strong enough to carry an egg. I was very much disappointed when I opened the silo, and I made the remark that I wished I had that brine man here. We haven't used any salt brine since.

A Member: How deep would your silo spoil where you covered with straw or marsh hay or oats.

Mr. Scribner: When we covered it with oats, the spoiled part was four or five inches at the most. I never have tried the straw or hay.

The Chairman: Something has got to spoil. It usually won't spoil much under cover.

Mr. Goodrich: Now, I am going to take issue with Mr. Scribner about that. He says something has got to spoil. I don't believe that necessarily. If you commence to feed right away after you get the silo filled you won't have a bit of it spoil.

The Chairman: I have filled a silo a good many times and I have fed from it a good many times, but I have found when we commenced to feed out of the silo before it has gone through that curing process, we wasted a lot of it as the cows didn't like it. Ensilage has to go through a curing process before it is ready.

Mr. Rather: Mr. Goodrich's advice may be all right, but I tried following it, and I had the same success that Mr. Scribner did.

Mr. Bradley: The gentleman spoke of building silos very small in the northern part of the state, that is, cement or brick silos. Wouldn't a cement silo freeze quicker and the silage stick to it more than to a stave silo if you couldn't keep out the frost?

Mr. Scribner: It certainly would, although it doesn't make much difference if you have an air space.

Mr. Bradley: Our stave silos may freeze some, but when we got a stone wall above the ground, twelve or fourteen inches, the silage froze much worse at this point than the stave silo,

and it stuck to it much worse, and my opinion was that the silage in the cement silo would stick and freeze to it worse than in the stave silo.

Mr. Rather: What kind of a cutter do you prefer?

The Chairman: A feed cutter.

Mr. Rather: A carrier or a blower?

Mr. Scribner: If my personal opinion were asked, I would prefer a blower.

Mr. Rather: My cutter was worn out. I used it for eighteen years with a carrier and I was obliged to buy another cutter, and the first machine I examined was the Ohio which had a blower on the flywheel. I found that all the kernels of corn were shelled from the ear before it came into the silo, and that was something that didn't suit me. I examined a smaller machine, built on pretty near the same principle, but the blower was independent from the machine, and I found you had to be very careful in running that machine without blocking the blower. The corn was shelled very bad, so I gave up the cylinder cutter-blower machines for my use. I examined and found one that would not shell the corn from the ear where the blower was attached to the flywheel right in back of the knife. There are a good many different machines, but you don't want to select a flywheel cutter with a straight knife. You want to select a flywheel cutter machine with a curved knife. I selected what they call the Tapec flywheel cutter machine. We bought the machine and took it on trial and the man said "If you can block that blower, you shall have that machine for a present," and I thought we were going to have it, but we haven't succeeded in doing it yet.

A Member: Mr. Goodrich explained this morning that the corn is separated after it gets inside of the cow. If the cow had a chance to pick that silage up without the ear it would save her the trouble of doing the separating. I have examined the silo inside and the corn comes into the silo separated from the other feed. The corn went on one pile and the rough part of the silage was around it. It kept a man busy to mix that feed. I have examined the silage when it was being fed and the boy said, "If we want corn for the chickens, we know where to go for it," and that is all the benefit I could see out of using that kind of a machine.

Mr. Bradley: In our neighborhood we have the cutter that

the gentleman just condemned, and we haven't found the trouble that he describes. If the corn goes into the silo on the ear will not your leaves separate from them just as readily as the corn that is removed from the cob?

Mr. Rather: No.

Mr. Bradley: We find it so. We used to have such machines before we used the blower but I like the blower. Ours is a small machine and I don't see that we have to be any more careful than in feeding with other machines. As to the leaves separating, I don't think they separated so badly as they did the year previous with the other machine.

A Member: About green corn souring, if you have a field of corn and the frost comes early and it freezes when it is right in the milk, would you put it in the silo at all, or would it become too sour?

Mr. Goodrich: Put it in the silo; you can get more good out of it than any other way.

A Member: Which is the most profitable crop to raise for the silo, green clover or corn?

Mr. Scribner: You get more silage to the acre in your corn crop than you will in your hay crop.

The Chairman: Isn't it necessary to give some dry feed with the ensilage?

Mr. Scribner: Yes; you have to make a balanced ration and your corn crop and your hay crop will be balancing that ration to a great extent.

The Chairman: Don't the cows crave for something dry if you undertake to feed them all ensilage?

Mr. Scribner: They certainly do. In some cases they will even eat the bedding from under their feet if they do not get enough roughage.

A Member: I wanted to know which would be the cheaper to raise, clover or corn for ensilage?

The Chairman: I think the corn would be the cheaper. If you put in clover, you want to cut it just as you would for hay at the same stage.

A Member: Is it necessary to feed out every year, or can you refill on top of the old?

Mr. Scribner: Yes. If there isn't any spoiled ensilage, you can go on and fill just the same as if there were no ensilage there. It doesn't make any difference if it is several years old.

The Chairman: I was in a silo a while ago where they were feeding eight-year-old ensilage and it was good ensilage, too.

A Member: Will hardwood lumber do for a silo?

Mr. Scribner: Not as well as pine or spruce.

Mr. Brennen: For twenty-five cows, how large a silo should be built?

Mr. Scribner: I should say not less than fourteen feet in diameter and about thirty feet deep. It costs just about $150 to build a cement silo. I mean a solid wall, of course.

A REPORT OF THE FORT ATKINSON COW TESTING ASSOCIATION.

By Ray N. West.

This association was organized October 15th, 1908, by the Wisconsin Dairymen's Association with the assistance of Mr. Helmer Rabild of the Dairy Division, Washington, D. C. The membership at the beginning was twenty-one, of which five withdrew before the end of the year, leaving sixteen herds to complete a full year's work. The association was organized on what we term the Dollar Plan, that is, each member paying $1.00 per cow per year for having the milk from each cow weighed and tested one day each month. From these weights and tests the yearly record was made. After the tester had finished his work with one herd he was carried by the owner to the next member's place and this was continued until he had visited all the members of the association.

Each member was provided with a book in which was kept a complete record of every cow. For the sake of identifying the animals, a rough sketch was made of each one and recorded on the page on which her record was kept. In this book the breed of the cow was given, her age, when fresh, milking period, pounds of milk produced each month together with the test, pounds of fat produced, gross returns, cost of feed, net profit, cost of one-hundred pounds milk, cost one pound butterfat, and returns for each $1.00 expended for feed. At the end of the year her record showed the amount of profit or loss she had given to her owner.

The roughages which the animal received were calculated upon the prices they could be sold for on the farm and the concentrates at market prices, which are as follows:

ROUGHAGES

	Per ton
Silage	$2 50
Clover hay	8 00
Timothy hay	10 00
Mixed hay	9 00
Marsh hay	5 00 to 6 00
Corn stover	5 00
Corn fodder	10 00
Green corn fodder	1 50
Alfalfa hay	12 00

CONCENTRATES

	Per ton
Corn and cob meal	$22 00
Dried brewers grains	27 00
Bran	22 00
Oil meal	35 00
Gluten feed	28 00
Barley	23 00
International sugar feed	25 00
Middlings	26 00
Cotton seed meal	30 00
Ajax Flakes	31 00
Badger feed	26 00
Sugarota	25 00
Malt sprouts	20 00

Pasture fifty cents to $1.00 per month, depending upon quality.

Since cow testing associations are governed by a set of by-laws which provides for a Board of Directors, the general details and management of the association were left entirely to these men. However, throughout the whole year, the Wisconsin Dairymen's Association co-operated with them and helped the cow tester in keeping the records and in other matters pertaining to the welfare of the association.

There were a few who became dissatisfied with the testing and withdrew from the association, but as they were bound by contract to pay so much money toward the support of this association, they did so without causing any vexation on the part of the officers. In making inquiry of each one of the members who withdrew from the association as to the reason why they were dissatisfied, I received in substance the following replies:

A: "I am expending all the money for feed that I can possibly spare and will have to let the testing of my cows go, until I have a better herd as I do not wish to inflict any greater loss upon myself this coming year." The owner of this herd had red and white cows bred to a bull which he supposed to be out of an A-1 cow, at any rate he says, "She gives a big mess of milk when fresh and always looks nice and fat." Note: This man had no definite measure as to the value of this

cow, "she gives a big mess of milk when fresh and looked nice and fat." It is plainly evident that he is not a dairyman.

B's reason for quitting was something like this, "When I sit down to a cow and milk her twice a day, I know just about how much she gives and if the milk has a nice rich color, I am reasonably sure that she is a good testing individual. By close observation I am satisfied I know what each one of my cows is doing." Isn't it strange that in this day and age when so much has been written upon the subject of dairying that any man can deceive himself into thinking that he could determine the richness of milk by its color. It was recently reported by the United States Government that buffalo milk is blue in color, but tests in many cases between 7% and 8%. If this man had studied the colors of the milks of the different breeds of cattle, he would know that judging milk by color is as ridiculous as attempting to estimate the weight of a pig in a bag. For example, Guernsey skimmilk is of a deeper shade of yellow than some whole milks of the other breeds of cattle.

C's reason for quitting the association was probably more justified than any member who withdrew. His wife could see no benefit in the test work and if he was to have any peace at home it became necessary for him to request the tester to pass his place. Comment upon this situation is unnecessary.

D claimed that one or two tests a year were all he cared for and he was not at all interested as to how much a cow returned for each dollar expended for feed. "All I care for," he says, "is what a cow produces and not what it costs to produce it." The real reason for D's withdrawal seemed to lie in the fact that he was not feeding his herd as he should, and they were not giving as good returns as he wished and did not care to have the results recorded. In other words, this man was one who disliked to know exactly what his cows were doing. He fully realized that his work was not profitable but did not have the courage to face the situation.

E found it necessary to withdraw from the association because the firm of which he was a partner had disposed of its place and he was obliged to move to another farm.

The work was very satisfactory to the members who remained through the year. When the association was reorganized several of the members expressed themselves very forcibly upon the value that they had received by knowing what their cows

were doing. One man said, "The money that I paid for having my cows tested was one of the best investments that I have made for years." Another member said, "There is no money that I take any more pleasure in paying out than that which goes toward paying for the work of finding out what each one of my cows is doing." Still another says, "It makes me more interested in my herd by knowing the cows individually and I find that my pet cow ranks as one of the poorest producers."

In reporting the different herds I give the records of the best and the poorest cows in the different herds and the average results of each herd. In calculating the results only cows with a full year's work were considered, that is, cows that were in the herd a whole year.

Herd No. 1 was composed of 16 Guernseys, two of which were registered. Only five cows completed the year's work, the balance being disposed of and others put in their places. Some of those sold were found to be making only a small profit, while others were of no particular breed, and the owner had a chance to purchase some Guernseys. A Guernsey sire was used. The cows were hardly in good milking condition and rather thin in flesh. The stable was well lighted, ventilated and whitewashed; conditions very sanitary.

The winter ration fed was composed of clover hay and corn stover *ad libitum*. For concentrates: Ajax Flakes 3½ lbs. and barley or corn (ground) 2 lbs. were given. In the spring the same roughage was given as in the winter with a grain mixture of International Sugar feed 5 parts; Ajax Flakes 8 parts, with about five lbs. to each cow. No grain was fed during the summer; pasture was woodland and marsh, half and half. In August they received some clover hay; in September and October, green fodder corn.

The following table gives the yearly record of the best and poorest cows and the average record of the herd:

	Best cow.	Poorest cow.	Average of herd.
Breed	Reg. Guernsey	Gr. Guernsey	Gr. G., Reg. G.
Age	9 years	7 years	
When fresh	Dec. 2, 1908	Fall of 1908	Early winter.
Milking period	10 months	12 months	Average 11 mos.
Milk, pounds	7,555	6,089.8	6,094.8
Fat, per cent	4.36	4.42	4.57
Fat, pounds	333.8	269.8	278.8
Gross returns	$112 86	$89 66	$92 57
Cost of feed	39 91	40 70	36 61
Net profit	78 21	48 96	55 86
Cost of 100 pounds of milk	52	67	595
Cost of 1 pound fat	12	15	13
Returns for $1 expended in feed	2 83	2 20	2.52

Herd No. 2 was composed of seventeen cows, Shorthorn and Holstein grades and one registered Holstein and a Holstein sire. Only fourteen completed a full year's work; the others were sold to the butcher. The cows are of good conformation and in fine condition. The barn was poorly lighted and had no ventilation.

The ration fed in winter of 1908 and 1909 was composed of corn stover, mixed hay (clover and timothy), marsh hay with a grain mixture of alfalfa meal 2 parts; bran, 1 part; corn, 1 part. From six to ten lbs. of this combination was fed daily. Pasture was on low ground, mostly wild grass. Some corn and cob meal was fed in June and July and marsh hay in fall.

The following table gives the yearly record of the best and poorest cows and the average record of the herd:

	Best cow.	Poorest cow.	Average of herd.
Breed	Gr. Guernsey	Gr. Holstein	Gr. S. & H.
Age	6 years	6 years	4 to 10 years.
When fresh	Oct. 25, 1908	June 18, 1909	Fall.
Milking period	12 months	10 months	Average 10 mos.
Milk, pounds	8,194.8	5,660.1	6,240.9
Fat, per cent	3.84	3.71	3.97
Fat, pounds	315.3	200.4	248.3
Gross returns	$104 38	$67 59	$83 74
Cost of feed	41 18	38 30	38 87
Net profit	63 20	29 29	44 87
Cost 100 pounds of milk	50	68	61
Cost, 1 pound fat	13	19	15
Returns for $1 expended in feed	2 53	1 77	2 19

Herd No. 3 was composed of fifteen high grade and registered Guernseys. A registered Guernsey sire was used. Cows were of good size and in excellent condition to make good returns for feed given, except for this reason. Abortion had been prevalent in the herd for the past year and a number of cows under test aborted. The barn was clean, well lighted, whitewashed and had an excellent system of ventilation.

The following ration was fed during the winter of 1908 and 1909: Silage 30 lbs., alfalfa 6 lbs., corn stover 6 lbs. For concentrates, 10 lbs. daily of Ajax Flakes and bran were given. Some cows received equal amounts of these feeds, while others two parts Ajax Flakes and one part bran. In the spring a grain mixture of equal parts of bran and Sugarota was given. The cows that freshened late in the winter were fed a light grain ration during the summer. Cows ran on a low blue grass pasture during the summer.

The following table gives the yearly record of the best and poorest cows and the average record of the herd:

	Best cow.	Poorest cow.	Average of herd.
Breed	Gr. Guernsey	Reg. Guernsey	Gr. and registered
Age	7 years	9 years	
When fresh	Dec. 29, 1908	April 26, 1909	Fall.
Milking period	8½ months	10 months	Average 10 mos.
Milk, lbs.	6,076	3,202	4,650
Fat, per cent	5.05	5.33	5.03
Fat, pounds	307.2	170.7	234.3
Gross returns	$101.57	$53.86	$77.59
Cost of feed	26.81	24.25	27.26
Net profit	74.76	29.61	50.33
Cost 100 pounds milk	.44	.757	.586
Cost 1 pound fat	.087	.22	.116
Returns for $1 expended in feed	3.78	1.42	2.84

Herd No. 4 had no particular breed of cows. The majority were natives and a few Holstein and Guernsey grades. A grade Guernsey sire was used. The cows, though thin in flesh, were healthy. Barn was clean and well lighted but had no system of ventilation.

The following ration was fed in the winter of 1908 and 1909: Corn fodder 10 lbs. (in November); marsh hay, *ad libitum;* clover chaff 8 lbs.; corn stover 20 lbs. (beginning in December). For concentrates: Badger feed in February, four lbs. per cow per day, Sugarota four lbs. in March, April and May. Otherwise no grain was fed. In summer the cows were on blue grass pasture. A limited amount of green fodder corn was fed in September.

The following table gives the yearly record of the best and poorest cows and the average record of the herd:

	Best cow.	Poorest cow.	Average of herd.
Breed	Native	Native	
Age	7 years	9 years	
When fresh	S pt. 2, 1909	Not within year.	
Milking period	10½ months	6 mo ths	Average 10 mo.
Milk, pounds	4,716	1,433	3,622
Fat, per cent	4.91	4.7	4.39
Fat, pounds	224.1	67.8	159.0
Gross returns	$71 14	$23 66	$52 80
Cost of feed	30 84	28 99	28 53
Net profit	44 30	—5 33	24 27
Cost 100 pounds milk	65	1 65	78
Cost, 1 pound fat	13	40	—18
Returns for $1 expended in feed	2 44	— 82	1 85

Herd No. 5 was composed of twenty-seven cows the majority of which were high grade Guernseys. Only twenty-two cows completed their year's test as some were found unprofitable and were disposed of to make room for profitable animals. The cows were in good milking condition, not fleshy but looked sleek and healthy. They were medium sized Guernseys and showed excellent milking qualities.

The following ration was fed during the winter of '08–'09: Corn silage, 25 lbs. per day (owner did not believe in feeding as much silage as some feeders do); clover hay 5 lbs., corn stover 5 lbs. For concentrates: bran and barley equal parts in November, December, and January, 8 lbs. per cow per day. In February and March, eight pounds of the following mixture was given daily: bran 1 part, International Sugar feed 1 part, corn meal 2 parts.

The pasture consisted of lowland blue grass but not enough for the number of cows pastured. In summer, clover, alfalfa, hay or silage was given. In September and October, green corn was fed.

The following table gives the yearly record of the best and poorest cows and the average record of the herd.

	Best cow.	Poorest cow.	Average of herd.
Breed	Guernsey	Guernsey	Guernsey.
Age			
When fresh	Nov. 15. 1908.	Last of Dec., 1908.	Fall.
Milking period	11 months	8 months	11 months.
Milk, pounds	8,585	3,409	5,547.5
Fat, per cent	4.6	5.4	4.8
Fat, pounds	407.1	182.8	268.1
Gross returns	$136.42	$61.98	$88.62
Cost of feed	44.12	36.73	37.92
Net profit	92.30	25.25	50.69
Cost 100 pounds milk	.47	1.08	.70
Cost 1 pound fat	.10	.20	.14
Returns for $1 expended in feed	3.09	1.69	2.60

Herd No. 6 was composed of one Holstein, four Guernsey grades and five native cows; a Holstein sire is used. The cows were very well kept considering the conditions which were not the best. The barn was rather old with no ventilation.

The following ration was fed during the winter of 1908 and 1909: Silage, average 30 lbs. per day; marsh hay, *ad libitum*, corn stover, 15 lbs. For concentrates, two pounds and a half a day of a mixture consisting of dried brewers grains 3 parts, bran 2 parts was given. Some Badger feed was fed in December and January instead of dried brewers grains. In summer they received no feed other than lowland pasture.

The following table gives the yearly record of the best and poorest cows and the average record of the herd:

	Best c w.	Poorest cow.	Average of herd.
Breed	Gr. Holstein	Gr. Guernsey	Gr. H. & G.
When fresh	Nov. 16, 1908	Nov. 17, 1908	Fall.
Milking period	8 months	9 months	10 months.
Milk, pounds	4,155	3,015	4,108.6
Fat, per cent	5.6	4.0	4.14
Fat, pounds	210.68	122.8	172.4
Gross returns	$71.11	$41.30	$57.23
Cost of feed	25.84	26.23	26.02
Net profit	45.27	15.07	31.22
Cost 100 pounds milk	.68	.87	.63
Cost 1 p und fat	.12	.21	.15
Returns for $1 expended in feed	2.75	1.57	2.20

Herd No. 7 was composed of twenty-five high-grade and registered Guernsey cows, all showing good size, conformation and breeding. Only fourteen cows of the herd completed a full year's work, as the owner was buying and selling continually, trying to improve his herd. A Guernsey sire was used. They were in good working condition, not fleshy, but looked healthy and well kept. The barn was clean, well lighted and ventilated.

The following ration was fed during the winter of 1908 and 1909: Silage average 35 lbs. per day, marsh hay, *ad libitum*, a little alfalfa and five lbs. corn stover. For concentrates, dried brewers grains, six pounds per day. In February and March two pounds corn and cob meal was fed with five pounds dried brewers grains per day. In April and May eight pounds per day of a grain mixture composed of three parts of corn cob meal and four parts of Sugarota was given. In June they received three pounds of corn meal per day; in July and August no grain; in September, silage. The pasture was blue grass and marsh grass nearly half and half.

The following table gives the yearly record of the best and poorest cows and the average record of the herd:

	Best cow.	Poorest cow.	Average of herd.
Breed	Guernsey	Reg. Guernsey	
When fresh	Nov. 25, 1908	Oct. 22, 1908	Fall.
Age		3 years	
Milking period	11 months	11 months	Average 10¼ mos.
Milk, pounds	9,756	4,840	6,187.8
Fat, per cent	4.2	4.1	4.5
Fat, pounds	410.4	201.8	278.0
Gross returns	$137.57	$66.88	$92.27
Cost of feed	36.34	38.43	37.49
Net profit	101.23	28.45	54.78
Cost 100 pounds milk	.37	.79	.60
Cost 1 pound fat	.08	.19	.13
Returns for $1 expended in feed	3.78	1.74	2.46

Herd No. 8 was composed of eight very good cows, nearly alike in production. One cow was in the test only six months, taking the place of a Shorthorn that was disposed of after being tested eight months. The Shorthorn cow went dry eight months after freshening, although she made a fair profit while milking. There are in the herd now three Guernseys, two Holsteins, one Ayrshire, one Jersey and one Shorthorn grade. The stable was clean, quite well lighted, and a comfortable home for the cows. The cows of medium size, showed good care, were in very good condition, and showed a fairly well developed dairy type.

The following ration was fed during the winter of 1908 and 1909: Timothy hay, *ad libitum*, corn stover, 10 lbs.; alfalfa hay, 8 lbs. For concentrates, corn and cob meal, 2 lbs. and dried brewers grains (in November 2 lbs. and in January 1 lb.); bran 2 lbs.; International sugar feed, 1 lb. in March; in April 3 lbs. The pasture was low land. In August they received some alfalfa hay, in September and October green corn fodder, except latter part of October, then corn stover in the place of corn fodder.

The following table gives the yearly record of the best and poorest cows and the average record of the herd:

	Best cow.	Poorest cow.	Average of herd.
Breed	Grade Holstein.	Gr. Guernsey	
Age	5 years	8 years	
When fresh	Fall 1908	Jan. 28, 1909	
Milking period	12 months	9 months	Average 11 mos.
Milk, pounds	7,856	6,147	6,705.1
Fat, per cent	4.18	3 91	4.14
Fat, pounds	317.57	240.7	278
Gross returns	$105.13	$77.14	$91.52
Cost of feed	38.55	33 77	36.35
Net profit	66.58	43.37	55.17
Cost 100 pounds milk	.49	.54	.54
Cost 1 pound fat	.12	.14	.13
Returns for $1 expended in feed	2.76	2.25	2.52

Herd No. 9 was composed of ten grade Guernseys of medium size. They were nearly all two or three-year-old heifers, three cows being over three years old. A grade Guernsey sire was used. The barn was warm but poorly lighted and ventilated.

The following ration was fed during the winter of '08–'09: Silage, clover hay, corn stover, and a limited amount of alfalfa. The fresh cows received a small feed of corn meal in February, otherwise no grain was fed. The pasture was blue grass. In August, September and October the cows received green fodder corn, also some mixed hay, clover or timothy.

The following table gives the yearly record for the best and poorest cows and the average record of the herd:

	Best cow.	Poorest cow.	Average of herd.
Breed	Gr. Holstein	Guernsey	
Age	6 years	2 years	
When fresh	Feb. 23, 1909	Sept. 29, 1909	
Milking period	12 months	11 months	11 months.
Milk, pounds	6,798	4,245	6,987
Fat, per cent	5.3	5.5	4.7
Fat, pounds	356.6	231.9	323.1
Gross returns	$119.91	$78.33	$104.58
Cost of feed	41.03	40.61	43.55
Net profit	78.88	37.72	61.03
Cost 100 pounds milk	.60	.92	.62
Cost 1 pound fat	.115	.17	.13
Returns for $1 expended in feed	2.97	1.95	2.43

Herd No. 12 was composed of eleven pure bred and twenty-five high grade Guernseys. The conditions under which this herd were kept were as good as possible, for the owner had to employ men to do all the work. The surroundings were sanitary.

The following ration was fed during the winter of 1908 and 1909: Silage, 35 lbs.; alfalfa, seven pounds in November and December; marsh hay in January, February and March; corn stover in December, March and April; clover hay in April and May. For concentrates: Bran, six pounds per day for winter; barley fed in November and December; Ajax Flakes in April and May, two and one-half pounds per day. Some gluten, dried brewers grains and oil meal was fed; in the fall oil meal took the place of the gluten. Alfalfa was fed in August and October; in September silage took the place of alfalfa. Note: Poorest cow was taken sick after being in test seven months.

The following table shows the yearly record of the best and poorest cows and the average record of the herd.

	Best cow.	Poorest cow.	Average of herd.
Breed	Gr. Guernsey	Reg. Guernsey	R. & Gr. Guer.
Age			
When fresh	Jan. 2, 1909	Not fresh in year	Fall.
Milking period	10½ months	7 months	11 months.
Milk, pounds	6,200	1,517.6	3,793
Fat, per cent	4.8	6.6	5.8
Fat, pounds	295.1	101.6	218.5
Gross returns	$95.92	$35. 2	$71.14
Cost of feed	40.88	39.73	41.78
Net profit	55.04	—4.61	29.36
Cost 100 pounds milk	.66	2.24	1.10
Cost 1 pound fat	.14	.38	.19
Returns for $1 expended in feed	2.34	.88	1.72

Herd No. 13 was composed of pure bred Holsteins and Guernseys, also a number of high grade cows. Registered Holstein and Guernsey sires were used. The herd contained thirty-six cows at certain times during the year but only thirteen completed a full year's work on account of the number bought and sold. The owner said he found this method the most practicable way of finding out his poor cows. Conditions under which this herd were kept were very good considering the number.

The following ration was fed during the winter of 1908 and 1909: Silage, fifteen pounds; corn stover, seven pounds; mixed hay, six pounds; ten pounds of grain mixture composed of bran four parts, gluten two parts, cotton seed meal one part, was given to fresh cows and those nearing the close of their lactation period only received five pounds. Pasture was blue grass and a grain ration was given in summer the same as in winter. In August and September green fodder corn was fed, but grain ration was lessened nearly one-half.

The following table gives the yearly record of the best and poorest cows and the average of the herd:

	Best cow.	Poorest cow.	Average of herd.
Breed	Reg. Holstein	Gr. Holstein	
Age			
When fresh	Aug. 30, 1909	Dec. 5, 1909	Winter.
Months in milk	11 months	11 months	Average 11 mos.
Milk, pounds	13,101	8,690	8,386
Fat, per cent	3.8	3.6	4.0
Fat, pounds	499	312	339
Gross returns	$166.78	$103.14	$112.09
Cost of feed	46.94	47.35	41.54
Net profit	119.84	55.69	70.55
Cost 100 pounds milk	.35	.54	.50
Cost 1 pound fat	.09	14	.12
Returns for $1 expended in feed	3.63	2.25	2.70

Herd No. 14 contained nearly every breed of cows but the Jersey blood predominated. A Guernsey sire was used. Twenty-three cows were started in the test but only fifteen completed a full year. Some of those started were found to be very unprofitable and were only run a few months. The stable was clean, well lighted and sanitary. Cows were in fair flesh but not nearly as well fed as some herds in the test.

The following ration was fed during the winter of 1908 and 1909: Corn stover, fourteen pounds a day; clover chaff to February 15th; clover hay from February to June. For concentrates: Six pounds per day of two parts of dried brewers grains and one part corn. In January six pounds of International sugar feed was given. In March and April six pounds of the following mixture was fed: Corn meal,

one part; International sugar feed one part. The pasture was blue grass with no grain ration. In September alfalfa hay was given, also some green fodder corn through September and October.

The following table gives the yearly record of the best and poorest cows and the average of the herd:

	Best cow.	Poorest cow.	Average of herd.
Breed	Jersey	Native	
Age			
Milking period	11 months	7 months	
When fresh	Jan. 8, 1909	Not in year	Early winter.
Milk pounds	6,370	1,620	4,052
Fat, per cent	3.8	6.6	4.8
Fat, pounds	242.3	107.5	193.3
Gross returns	$79.96	$37.15	$63.45
Cost of feed	30.12	26.32	27.05
Net profit	49.84	10.83	36.39
Cost of 1 pound fat	.12	.24	.14
Cost 100 pounds milk	.47	1.62	.66
Returns for $1 expended in feed	2.65	1.41	2.34

Herd No. 15 consisted of two grade Jerseys, thirteen grade and registered Guernseys and a registered Guernsey sire. The owner said he had two or three cows which he knew were so poor that there was no need of having them tested. It was one of the first herds in which a pure bred sire was used in the vicinity of Ft. Atkinson. The benefit derived from the care and time given in breeding, selection and care of the herd was shown by the returns for $1.00 expended in feed. The barn and surroundings were in the best condition for the comfort and care of the cows.

The following ration was fed during the winter of 1908 and 1909: Silage, thirty pounds; clover hay, eight pounds; corn stover, seven pounds. For concentrates: Corn and cob meal, two parts; bran, one part; International sugar feed, one part; barley (ground), one part; also a little oil meal or gluten. Eight pounds of the mixture was fed per cow per day. In May six pounds of a mixture of two parts bran and one part barley (ground). The pasture was a blue grass upland and no grain fed with it. In August and September green fodder corn was fed with pasture.

The following table gives the yearly record of the best and poorest cows and the average of the herd:

	Best cow.	Poorest cow.	Average of herd.
Breed	Reg. Guernsey	Gr. Jersey	
Age	6 years	10 years	
In milk	11 months	8 months	
When fresh	Nov. 4, 1908	Dec. 3, 1908	
Milk, pounds	10,028	6,001	7,369
Fat, per cent	5.0	4.5	5.3
Fat, pounds	505	272	392
Gross returns	$169.45	$91.43	$131.15
Cost of feed	45.11	40.57	44.99
Net profit	124.34	50.86	86.26
Cost 100 pounds milk	.45	.68	.60
Cost 1 pound fat	.09	.15	.112
Returns for $1 expended in feed	3.75	2.25	2.92

Herd No. 16 consisted of no particular breed, although a pure bred Guernsey sire was used and a few cows showed some Guernsey blood. There were eight cows in the herd at the start and only five continued a full year. One died and two were sold, one going to the butcher on account of her unprofitableness from the milk-producing standpoint. The barn was well built but not as clean and sanitary as it might have been. The owner took no extra care of the herd nor in the breeding.

The following ration was fed during the winter of 1908 and 1909: Corn fodder, fifteen pounds; corn stover ten pounds; marsh hay, *ad-libitum* in December and January. For concentrates: Bran in January and February, six pounds per day; then Sugarota in March and April; corn meal and bran in May and June, mixed about two parts bran and four parts corn meal. The pasture was blue grass. Three pounds corn meal was given in July and four pounds barley in August. Green fodder corn was given in August and September.

The following table gives the yearly record of the best and poorest cows and the average of the herd:

	Best cow.	Poorest cow.	Average of herd.
Breed	Gr. S. H.	Gr	S. H.
Age			
Months in milk	10 months	11 months	10½ months.
When fresh	Dec. 15, 1908	Oct. 10, 1908	Fall.
Milk, pounds	8,399	5,662	6,631
Fat per cent	3.5	4.2	4.0
Fat, pounds	294.	239.	266.
Gross returns	$96.56	$79.66	$87.00
Cost of feed	49.52	47.94	47.51
Net profit	47.04	31.72	39.49
Cost 100 pounds milk	.59	.84	.71
Cost 1 pound fat	.16	.20	.17
Returns for $1 expended in feed	1.95	1.65	1.83

The following table compares the results of the best and the poorest cows in the association:

	Best cow.	Poorest cow.	Difference.
Breed	Reg. Guernsey	Native	
Age	6 years	9 years	
Milking period	11 months	6 months	
Milk, pounds	10,028	1,433	8,595
Fat, per cent	5.0	4.7	
Fat, pounds	505	67.8	437.2
Gross returns	$169.45	$23.66	$145.79
Cost of feed	45.11	28.99	16.12
Net profit	124.34	—5.33	129.67
Cost 100 pounds milk	.45	1.65	1.20
Cost 1 pound fat	.09	.40	.31
Returns for $1 expended in feed	3.75	—.82	4.57

(2) The following table compares the results of the best and the poorest herds in the association.

	Best herd averaged.	Poorest herd averaged.	Difference.
Milk, pounds	7,369	3,622.6	3,746.4
Fat, per cent	5.3	4.4	
Fat, pounds	392	159	233
Gross returns	$131.15	$52.80	$78.35
Cost of feed	44.99	28.53	16.46
Net profit	86.26	24.27	61.99
Cost 100 pounds milk	.60	.78	.18
Cost 1 pound fat	.12	.18	.06
Returns for $1 expended in feed	2.92	1.85	1.07

(3) The following table compares the results of the best herd and the average of all the herds.

	Best herd, averaged.	Average of all herds.	Difference.
Milk	7,369	5,709	1,660
Fat, per cent	5.3	4.2	
Fat, pounds	392	242	150
Gross returns	$131.15	$83.63	$47.52
Cost of feed	44.99	37.76	7.23
Net profit	86.26	45.87	40.39
Cost 100 pounds milk	.60	.66	.06
Cost 1 pound fat	.12	.15	.03
Returns for $1 expended in feed	2.92	2.21	.71

TREASURER'S REPORT FOR 1908.

Mr. President and Members of the Association:

The following itemized report is made showing the source from which all moneys paid into the Treasurer's hand were received and the disbursements paid on orders from the Secretary which I hold as vouchers.

RECEIPTS.

Feb. 6.	Amount in hands of treasurer	$797 77
	Memberships	38 00
June 8.	From state treasurer	1,000 00
Aug. 12.	From state treasurer	1,000 00
Nov. 9.	From state treasurer	1,000 00
1909.		
Jan. 21.	From state treasurer	2,000 00
Apr. 25.	Memberships	2 00
		$5,837 77

DISBURSEMENTS.

Mar. 27.	Dr. H. L. Russell, exp. Monroe convention	$2 80
Mar. 27.	H. K. Loomis, hotel bills, Monroe convention	59 75
Mar. 27.	H. K. Loomis, exp., Monroe convention	11 39
Mar. 27.	D. H. Otis, exp., Monroe convention	2 95
Mar. 27.	W. J. Gillett, exp., Monroe convention	9 73
Mar. 27.	C. P. Goodrich, exp., Monroe convention	3 41
Mar. 27.	H. K. Loomis, premiums	30 00
Apr. 9.	F. Marty, taking cow census	28 74
Apr. 9.	Peter Zumkehr, instructor	120 00
Apr. 9.	H. C. Searles, instructor	155 22
Apr. 11.	W. A. Henry, exp., Monroe convention	2 45
May 1.	W. J. Fraser, exp., Monroe convention	11 36
May 1.	Mrs. A. J. Kelly, reporting convention	106 00
May 12.	Peter Zumkehr, instructor	100 00
May 12.	H. C. Searles, instructor	161 55
May 28.	Fond du Lac Printing Co	23 14
June 10.	Peter Zumkehr, instructor	130 00
June 10.	H. C. Searles, instructor	168 93
June 30.	F. H. Scribner, exp., attending dairy meetings	70 02

July	3.	H. C. Searles, instructor	186 91
July	3.	Peter Zumkehr, instructor	130 00
July	11.	Miss Stella Dunkle, stenographer	12 00
July	30.	F. H. Scribner, expense	5 86
Aug.	6.	Clark Engraving & Printing Co	6 24
Aug.	6.	H. C. Searles, instructor	208 29
Aug.	6.	Peter Zumkehr, instructor	135 00
Sept.	2.	H. C. Searles, instructor	196 12
Sept.	8.	Peter Zumkehr, instructor	130 00
Oct.	12.	H. C. Searles, instructor	170 13
Oct.	12.	Peter Zumkehr, instructor	95 00
Oct.	12.	H. K. Loomis, postage	50
Nov.	5.	Ray N. West, instructor	137 44
Nov.	5.	H. C. Searles, instructor	182 36
Nov.	5.	Peter Zumkehr, instructor	135 00
Nov.	5.	Cornish Curtis & Green, supplies	9 59
Dec.	9.	Ray N. West, instructor	134 79
Dec.	9.	H. C. Searles, instructor	176 90
Dec.	9.	Peter Zumkehr, instructor	120 00
1909.			
Jan.	7.	H. C. Searles, instructor	167 33
Jan.	20.	Ray N. West, instructor	151 32
Jan.	20.	Henry Elmer, printing proceedings Swiss Cheese-makers' convention	122 29
Jan.	20.	Peter Zumkehr, printing	2 50
Jan.	20.	Cornish Curtis & Green, supplies	25 98
Jan.	20.	Fargo Creamery Co., supplies	18 70
Feb.	6.	Schaum Engraving & Printing Co	4 90
Feb.	6.	Wisconsin Dairy Supply Co	11 05
Feb.	6.	H. C. Searles, instructor	180 88
Feb.	6.	Ray N. West, instructor	154 54
Feb.	6.	Peter Zumkehr, instructor	40 00
Feb.	6.	Cornish Curtis & Green, supplies	35 85
Feb.	17.	W. D. Hoard & Co., printing	60 70
Mar.	2.	H. K. Loomis, postage	1 00
Mar.	2.	Express on treasurer's book	35
Mar.	22.	A. J. Glover, secretary, salary and expenses	259 22
Apr.	23.	A. J. Glover, exp., sec. office	94 99
		Balance in treasurer's hands	1,136 69
			$5,837 77

SECRETARY'S REPORT, 1908.

To the President and Members of the Wisconsin Dairymen's Association:

I have the honor to submit the following report of the expenditures covering the period from the adjournment of our Convention at Monroe, (March 11, 12 and 13th, 1908), to the present time.

Convention expenses of 1908	$209 84	
Convention premiums paid	30 00	
		$239 84
Instructor H. C. Searles, 11 months, organizing cow testing associations	$1,046 00	
Expenses	908 62	
		1,954 62
Instructor R. N. West, 4 months, organizing cow testing associations	240 00	
Expenses	338 09	
		578 09
Fred Marty, for taking cow census		28 74
Printing, programs, letterheads, books for cow testing associations		83 84
Office and traveling expenses of secretary	$104 21	
Salary of secretary	250 00	
		354 21
Cuts for report and program		11 14
F. H. Scribner, president, expenses, attending Tuberculosis convention	5 86	
Attending summer conventions	70 02	
		75 88
Outfits for cow testing association		101 08
Stella Dunkle, stenographer		12 00
H. K. Loomis, stamps, express		1 85
Swiss Cheesemaking Purposes.		
Instructor Peter Zumkehr, 227.5 days	$1,137 50	
Printing report	122 29	
		1,259 79
Total		$4,701 08

The President: I want to say in closing that we have had a very pleasant stay with you people here. We certainly have enjoyed it from our standpoint and if you people have been as well pleased with the meeting as we are, we shall all leave here well satisfied, I am sure.

It is to get people to thinking that we have these meetings, and if we have only succeeded in getting some new people thinking on these lines, we shall have accomplished what we came for. I hope you won't go back on the farm and forget the good things you have heard here. Let's keep thinking about them and see if we can't make the year 1909, a far more prosperous year than we have had before, and if we will only do this, I am sure it will be good for us all that we have been here. I thank you.

Mr. Ellsworth: Mr. President and Gentlemen of the Wisconsin State Dairymen's Association: In behalf of the three Breeding Associations of Barron County who sent me to Monroe last year to invite you to come here, we now thank you for coming here, and in behalf of those Breeding Associations and in behalf of the citizens of the city of Barron and Barron county, we invite you to come again. While we do not wish to be greedy, we would be glad to have you come at any time. We believe that you can do as much good in this locality as in any other.

The President: We now stand adjourned.

AUXILIARY MEETINGS HELD IN MARCH AND JULY BY MESSRS. F. H. SCRIBNER AND H. C. SEARLES.

There were held under the auspices of the Wisconsin Dairymen's Association, three meetings in March, 1909. The first meeting, held March 23, was at Centralia, Polk county. Mr. Ernest Nelson of Rosendale was instrumental in getting this meeting, and was very desirous that a cow testing association should be organized there. About sixty-five were present.

The next meeting, held at Bloomer, Chippewa county, March 25, was also an interesting one, with sixty present, and through its influence a test association was organized.

March 26, a meeting was held at Rice Lake, Barron county, and although the attendance was small, yet the interest was so strong that later on a test association was formed.

In June, five meetings were held in Burnett county, the first at Grantsburg. There were only about a dozen present. It was something of a showery day which may partly account for the small attendance, but the few were interested.

The second meeting was held at Falun, with about the same result.

The third meeting, at Siren, gave us new courage and we felt that after all some good things might come out of Burnett county. There were over fifty present.

The fourth meeting, at Aaron, the 25th, was a picnic meeting held in the grove, in which a morning and afternoon session was held. About 75 were present and all entered into the discussions with a lot of interest.

The last of the series was held at Orange Saturday evening, the 26th, with about seventy-five present. As a result of this series of meetings, a Burnett County Breeders' Association was organized.

F. H. Scribner.

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