Fourth annual meeting of the Wisconsin Buttermakers' Association : held at Fond du Lac, Wisconsin, February 21, 22, 23, 1905.

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FOURTH ANNUAL MEETING

. . OF THE . .

Wisconsin Buttermakers' ..Association..

HELD AT FOND DU LAC, WIS.

FEBRUARY 21, 22, 23, 1905

FOURTH ANNUAL MEETING

OF THE

WISCONSIN BUTTERMAKERS' ASSOCIATION

HELD AT FOND DU LAC, WISCONSIN

FEBRUARY 21, 22, 23, 1905

ORGANIZED FEBRUARY 21, 1901

Compiled by

F. B. FULMER

P. B. HABER PRINTING COMPANY
FOND DU LAC, WISCONSIN

LIST OF OFFICERS.

MATHEW MICHELS, *President*.....GARNET
R. C. GREEN, *Vice President*.....ALBION
J G. MOORE, *Secretary*.....MADISON
E. C. DODGE, *Treasurer*.....LAKE MILLS

EXECUTIVE COMMITTEE.

PROF. E. H. FARRINGTON.....MADISON
O. B. CORNISH.....FORT ATKINSON
A. L. PARMAN.....MAZOMANIE

LETTER OF TRANSMITTAL.

Ettrick, Wis., April 10, 1905.

I herewith submit to the officers and members of the Wisconsin Buttermakers' Association, a report of the proceedings of their fourth annual convention held in Fond du Lac on February 21, 22 and 23, 1905.

The convention was a very successful one; the attendance was very large; the machinery and supplies exhibit was an ideal one; there were 124 entries of butter, and the convention closed with 305 members.

The financial condition of the Association is very good. As is shown by the financial report in the back part of the book, there remains in the butter fund after paying all expenses, a large sum for the next premium fund.

In closing my official connection with the Association, and in leaving the state, I extend to you my feeble expression of gratitude for your aid and encouragement in the past. You occupy a strong position today. May you prosper in the future as you have in the past.

Respectfully yours,

F. B. FULMER.

NAMES OF THE MEMBERS OF THE WISCONSIN BUTTERMAKERS' ASSOCIATION, 1905

Adams, M. J.	Waukesha.
Adams, E. L.	Coloma.
Alexander, C. B.	Chicago, Ill.
Alexander, E. J.	New Franken.
Anderson, Fred.	Somers.
Andrus, H. B. J.	Neillsville.
Armstrong, J. C.	Chicago, Ill.
Ashman, F. W.	Lime Ridge.
Baer, U. S.	Madison.
Bair, F. B.	Chicago, Ill.
Baker, E. R.	Johnson's Creek.
Bates, R. R.	Madison.
Bauer, Robert	Fond du Lac.
Bast, Henry	Stockbridge.
Bagley, F. R.	Chicago, Ill.
Bartling, Fred	Orfordville.
Beecham, W.	Chicago, Ill.
Benthine, H. H.	Sandwich, Ill.
Bingham, Earl	Hustler.
Bjerregaard, R. P.	Oshkosh.
Bjerregaard, C.	Oshkosh.
Blessig, L. W.	Milwaukee.
Blood, F. J.	Chicago, Ill.
Blumenstein, W. E.	Sullivan.
Blumenstein, Geo.	Sullivan.
Boettcher, J. E.	Waukesha.
Bowman, H. S.	Sauk City.
Bracy, E. L.	Farmington, Iowa.
Bragg, W. C.	Stanley.
Brookins, R.	Fond du Lac.
Brunson, F. A.	Minneapolis, Minn.
Brown, F. M.	Cedar Rapids, Iowa.
Brugler, J. B.	Milwaukee.
Bush, F. H.	Knapp.
Buckstaff, G. A.	Oshkosh.
Bursch, B. G.	Lamar.
Carr, F. A.	Aurora, Ill.
Carson, Prof. W. J.	Madison.
Carter, E. W.	Augusta.
Casperson, H. C.	Glenwood.

Chapin, C. S.	Boston, Mass.
Chapin, C. J.	Omro.
Chapin, B. J.	Omro.
Christians, F. A.	Fremont.
Clute, L. E.	Oshkosh.
Clark, W. E.	Stevens Point.
Collyer, W. D.	Chicago, Ill.
Cole, C. L.	Minneapolis, Minn.
Corneiluson T.	Belleville.
Cooper, W. D.	Whitewater.
Covill, A. L.	Berlin.
Cornish, O. B.	Fort Atkinson.
Cushman, J. T.	Chicago, Ill.
Cushman, M. A.	Chicago, Ill.
Dabareiner, L.	Hortonville.
Dale, J. J.	Chilton.
Dally, B. H.	Milwaukee.
Dasch, E. O.	Cashton.
Davis, U. E.	Chicago, Ill.
Decker, A. J.	Fond du Lac.
De Zotell, F. A.	Madison.
Durleth, H. M.	Waupaca.
Deischer, J. R.	Chicago, Ill.
Demerest, J. G.	Waupaca.
Dibble, A. C.	Milwaukee.
Diekow, R. C.	Wausau.
Dillon, H. P.	Eau Claire.
Dixon, A. E.	Evansville.
Dodge, E. C.	Lake Mills.
Duell, H. R.	Sandwich, Ill.
Duxbury, E. L.	Green Bay.
Eby, John	Berlin.
Een, R. C.	Amherst
Ellis, B. J.	Stoughton
Else, Rudolph J.	Johnson's Creek.
Eldredge, C. J.	Chicago, Ill.
Emery, Prof. J. Q.	Madison.
Engbretson, Martin	Scandinavia.
Engelhardt, Richard	Arland.
Erickson, Albert	Amery.
Evans, B. J.	Grand Rapids.
Farrington, Prof. E. H.	Madison.
Farquahrson, W. E.	Prescott.
Fassbender, H.	Greenville
Fauver, M. S.	Blue Mounds.

Fehling, E.	Reesville.
Fellenz, J. B.	Kewaskum.
Fiend, W. J.	Jefferson.
Flick, W. J.	Weyauwega.
Frank, H. J.	Neenah.
Friday, H. P.	Markesan.
Friday, S. B.	Milwaukee.
Fuller, R. A.	Marshfield.
Fulmer, F. B.	Ettrick.
Gates, C. N.	Madison.
Gallagher, T. F.	Chicago, Ill.
Gerlach, C.	Grafton.
Gibson, John	Rush Lake Junction.
Glaus, C.	Milwaukee.
Goetsch, H. A.	Money Creek, Minn.
Goodchild, L. A.	De Pere.
Gohdes, E.	Rusk.
Grell, H. J.	Johnson's Creek.
Green, R. C.	Albion.
Griffin, H. E.	Hancock.
Grower, Ralph	Bloomer.
Guelzow, A. F.	Fond du Lac.
Hague, Harry S.	Garnet.
Haag, Wm.	Cadott.
Halvorson, H. J.	Eleva.
Hamann, A. C.	Manawa.
Hamilton, E. A.	Stanley.
Hammond, E. E.	Baraboo.
Hansen, E. R.	Detroit, Mich.
Hanson, Edward R.	Omro.
Hanson, Geo.	Oakfield.
Hart, Thos. H.	Symco.
Harms, F. H.	Loganville.
Harbaugh, C. B.	Berlin.
Harrison, Wm.	Green Bay.
Harwood, O. E.	Madison.
Hastings, Roy	Marshfield.
Haugland, A. C.	Chicago, Ill.
Heinrich, C. E.	New London.
Heller, Otto	Thorpe.
Henning, A. W.	Eldorado.
Hennrel, L. G.	Wales.
Hermanson, Eric	Northland.
High, John	Berlin.
High, Arnold	Berlin.
Hjort, H. J.	Luck.

Hoh, L. H.	Appleton.
Hoh, C.	Appleton.
Holm, Casper C.	Fall River.
Houkom, J. A.	Pigeon Falls.
Hubbard, L. E.	Neillsville.
Huth, F. W.	Elkhorn.
Hyne, W. J.	Evansville.
Jackson, Henry	Clintonville.
Jackson, J. J.	Union Grove.
Jannen, J. H.	Adell.
Jaquith, Fred H.	Hartford.
Jennings, A. A.	Chicago, Ill.
Jensen, John E.	Luck.
Jenks, A. H.	Berlin.
Johnson, Marine	Rosendale.
Jones, W. F.	Lake Mills.
Jones, J. J.	Beaver Dam.
Jones, C. J.	Fond du Lac.
Judkins, C. W.	Van Dyne.
Kachel, J. C.	Whitewater.
Kaemmer, Chas.	Almena.
Kalkhurst, E. A.	Milwaukee.
Kates, C. M.	Custer.
Kelling, F. H.	Berlin.
Keeney, Z. C.	Chicago, Ill.
Kieffer, P. H.	Manchester, Ia.
Kielsmeier Bros.	Manitowoc.
Kittleson, C. L.	Ettrick.
Klokker, J. A.	Peru.
Knepfer, J.	Mayville.
Knoke, O. E.	New London.
Knoll, Paul	Johnson's Creek.
Korb, E.	Boyd.
Krebsbach, N.	Calvary.
Krohn, Wm. F.	Whitewater.
Kuhl, Fred W.	Troy Center.
Larson, P. A.	Holmen.
Larson, W. H.	Neenah.
Larson, H. C.	Dodgeville.
Laurene, P. L.	Winneconne.
Laurent, F.	Algoma.
Leach, D. E.	Ellsworth.
Lee, S.	Misha Mowka.
Lemon, A. M.	Waupun.
Lehman, A.	Knowles.
Lonsbury, J. M.	Watertown.

Lund, Carl	Larsen.
Magrane, John F.	Rusk.
Maire, A. W.	Madison.
Martin, Martin	Hazel Green.
Martin, H. A.	Marshfield.
Mathe, F. A.	Marshfield.
Mattson, M. B.	Chetek.
Mathews, E. M.	Omro.
Manzke, W. F.	Chicago, Ill.
Mau, W. A.	Elk Mound.
Meredith, J. L.	Elburn, Ill.
Meyer, M. H.	Madison.
Meinhardt, F.	Chicago, Ill.
Michels, Matt.	Garnet.
Michels, John	Madison.
Moersch, Quirin	Calumet Harbor.
Moore, J. G.	Madison.
Mullen, Geo. W.	Wales.
Munroe, Fred L.	Cadott.
McClean, A. E.	Melrose.
McCauley, Paul	Dunsville.
McCombs, C.	Eau Claire.
McCormick, E. C.	Plover.
McCormick, F. E.	Almond.
McDonald, J. P.	Baraboo.
McKinstry, H. C.	Rockford, Minn.
McLane, A.	Whitewater.
McLean, L. F.	South Byron.
McManners, H. S.	Melrose.
Nabor, O.	Mayville.
Netland, Thos.	Madison.
Newman, B. W.	Deerfield.
Nicolaus, C.	Troy Center.
Nickel, W.	Amery.
Nohr, F. C.	Chicago, Ill.
Nolan, H.	Poy Sippi.
Olson, Otto	Mount Horeb.
Olson, L. A.	Almond.
Olson, H. N.	Arnott.
Paddock, E. A.	Elkhorn.
Parman, A. L.	Mazomanie.
Passmore, C. L.	Iola.
Paulson, Chris.	Middleton.
Peterson, P. C.	Amery.
Peterson, J. S.	Meridean.

Peterson, E. C.	Wautoma.
Pheatt, H. D.	Milwaukee.
Potter, H. O.	Kendall.
Price, C. N.	Oakfield.
Puerner, J.	Jefferson.
Pyburn, E. S.	Hanover.
Renner, C. L.	Elgin, Ill.
Remmel, Wm.	Mayville.
Reid, R. A.	Hancock.
Roemer, Jas. A.	South Kaukauna.
Roon, B.	Sparta.
Ruland, Frank	Oakfield.
Runersten, J. C.	Milwaukee.
Safford, O. P.	Oconto.
Sandholt, H.	St. Paul, Minn.
Schield, John	New Richmond.
Schiller, Jac.	Marytown.
Schmidt, J. N.	Leland.
Schmidt, Ed.	Elgin, Ill.
Schnider, W.	Johnson's Creek.
Schmaling, O. J.	Avalon.
Schulz, R. A.	St. Paul, Minn.
Seyfert, G.	Allenton.
Sheldon, D. A.	Lake Mills.
Shepherd, W. P.	Chicago, Ill.
Shilling, S. B.	Mason City, Ia.
Shucknecht, H. E.	Minneapolis, Minn.
Sieker, W. C.	Milwaukee,
Simmons, J. A.	St. Paul, Minn.
Smith, J. H.	Neillsville.
Smith, J. R.	Chicago, Ill.
Snyder, F. E.	Whitewater.
Sorenson, Jens P.	Milltown.
Sorg, H.	Reedsburg.
Sprecher, J. U.	Camp Douglas.
Stewart, W. A.	Eagle.
Straehlow, J.	Watertown.
Strebe, A. F.	Brothertown.
Stryker, Irvin W.	Lomira.
Tamblingson, R. E.	Watertown.
Taylor, Victor E.	Lake Mills.
Thomas, C. O.	Osseo.
Tingleff, C.	South Wayne.
Titus, W. O.	Neillsville.
Toogood, V. R.	Lake Mills.

Trager, Gust ..... Mazomanie.
Trester, H. ..... Rushford, Minn.
Trudelle, S. F. ..... Milwaukee.
Tucker, E. H. ..... Marshfield.
Tullege, A. E. ..... Fond du Lac.
Tuttle, M. J. ..... Omro.
Tyler, Clay ..... West De Pere.

Utridge, P. S. ..... Cadott.

Van Duser, James ..... Hebron.
Van Kirk, O. J. ..... Berlin.
Vesper, A. L. ..... Waupun.
Viergutz, F. A. ..... Neillsville.
Voight, W. A. ..... Merrill.

Waddell, F. O. ..... Baraboo.
Ward, E. W. ..... St. Paul, Minn.
Warner, T. J. ..... Rosholt.
Watson, J. B. ..... Fond du Lac.
Weaver, A. E. ..... Darien.
Weber, Gust H. ..... Columbus.
Weber, J. T. ..... Hartford.
Weber, J. C. ..... Fond du Lac.
Weuthrich, Fred ..... Mayville.
Weuthrich, A. ..... Woodland.
Whitney, Glenn C. ..... Poy Sippi.
Wigginton, W. R. ..... Cashton.
Wileman, A. J. ..... Milton Junction.
Williams, C. H. ..... Chicago, Ill.
Willson, W. D. ..... Elgin, Ill.
Willis, Robert ..... Mineral Point.
Wilson, W. W. ..... Melvina.
Winner, Grant, ... Clintonville.
Wolff, J. T. ..... Chicago, Ill.
Wollensach, S. C. ..... Kewaskum.
Wood, G. D. ..... Appleton.
Wright, L. K. ..... Wausau.
Wyrs, John ..... Medford.
Wyst, W. ..... Medford.

Zachn, F. C. ..... Milwaukee.
Zastrow, F. W. ..... Princeton.

ANNUAL MEETING AT FOND DU LAC, FEBRUARY 21-23, 1905

ARTICLES OF INCORPORATION AND BY-LAWS

—OF THE—

Wisconsin Buttermakers' Association

Articles of Incorporation.

Article First. The undersigned have associated, and do hereby associate themselves together for the purpose of forming a corporation under chapter 86 of the Revised Statutes of the State of Wisconsin, for the year 1898, and the acts amendatory thereof and supplementary thereto, the business, purposes and objects of which corporation shall be the education of its members for a better practical knowledge of creamery operation, promoting progress in the art of buttermaking, in the care and management of creameries, the sale, transportation and storage of butter, and in the weeding out of incompetency in the business of buttermaking; the further object of the incorporation is to demand a thorough revision and rigid enforcement of such laws as will protect the manufacture and sale of pure dairy products against fraudulent imitations, and to suggest and encourage the enactment of such laws in the future as experience may from time to time demonstrate to be necessary for the public good of the dairy industry.

Article Second. The name of said corporation shall be the "Wisconsin Buttermakers' Association," and its principal office and location at Madison, Wisconsin.

Article Third. The association shall be a corporation without capital stock. Any person who is a practical creamery operator, and such other persons as are connected or interested in the manufacture and sale of pure butter may

become members of this corporation by paying one dollar ($1.00) annually in advance and signing the roll of membership.

Article Fourth. The general officers of said association shall be a president, vice president, secretary and treasurer, and the board of directors shall consist of three members of the association. The term of the officers of the association shall be one year, or until their successors are elected at the next annual meeting following their election, and until such successors qualify. At the first meeting of the members of the association there shall be elected a director for the term of one year, a director for the term of two years, and a director for the term of three years, and thereafter there shall be elected at each annual meeting a director for the term of three years, and each director shall hold his office until his successor is elected and qualifies.

Article Fifth. The principal duties of the president shall be to preside at all meetings of the Board of Directors and of the members of the association during his term of office. He shall appoint all necessary committees and sign all orders drawn on the treasurer, and perform such other duties as may pertain to his office.

The vice president shall discharge the duties of the president in the event of the absence or disability, for any cause whatever, of the latter.

The principal duties of the secretary of said association shall be to keep a complete and accurate record of all meetings of the association or of the Board of Directors, keep a correct account of all finances received, pay all moneys into the hands of the treasurer and receive his receipt therefor, and to countersign all orders for money drawn upon the treasurer. He shall safely and systematically keep all books, papers, records and documents belonging to the association, or in any wise pertaining to the business thereof. He shall keep a complete list of the membership, help formulate and publish the program for the annual convention, publish a full report of said convention after adjournment, assist in such other matters of business as may pertain to the convention, and such other duties as properly belong to his office.

The principal duties of the treasurer shall be to faithfully

care for all moneys entrusted to his keeping, paying out same only on receipt of an order signed by the president and countersigned by the secretary. He shall file with the secretary of the association all bonds required by the articles of incorporation or the by-laws. He shall make at the annual meeting a detailed statement of the finances of the corporation. He must keep a regular book account, and his books shall be open for inspection at any time by any member of the association. He shall also perform such other duties as may properly belong to his office.

The board of directors shall be the executive committee and shall audit all accounts of the association or its officers, and present a report of the same at the annual meeting. The executive committee shall assist in the necessary preparations for the annual convention and shall have sole charge of all irregularities or questions of dispute that may come up during any annual meeting. They shall determine the compensation that may be connected with any of the various offices.

The Board of Directors with the other officers of the association shall constitute the executive board, which board shall decide upon the date and place of holding the annual convention, premiums to be offered at said convention, and such other regulations as may be necessary for the success of the annual meeting.

Article Sixth. The treasurer of the corporation shall give a bond in the sum of two thousand dollars ($2,000.00) for the faithful performance of his duties. The said bond to be approved by the board of directors before being accepted by the secretary. Whenever the corporation may so desire, the office of secretary and of treasurer may be held by one and the same person. This action can only be taken at a regular election of officers.

Article Seventh. These articles may be altered or amended at any regular session of an annual meeting of the members, proposed alterations or amendments shall have been read before the association at least twenty-four hours previously, and provided the proposed alterations or amendments shall receive a two-thirds vote of the members present.

Article Eighth. The first meeting of this corporation for

the election of officers and directors shall be held on the 26th day of February, 1903, and such corporation shall hold a meeting of its members annually during each calendar year at such time and place as may be determined by the executive board.

By-Laws.

Article First. All elections shall be by ballot, except in the case of a single nominee, when election by acclamation may be substituted.

Article Second. This association will accept no special or side premiums of any nature whatsoever.

Article Third. Only one tub of butter may be entered from any one creamery for competition for any of the prizes or premiums; if more than one tub is so entered such entries shall be debarred from participation in all premiums.

The size of butter packages entered in competition at the association contest shall be no smaller than a twenty pound tub.

The butter so entered shall belong to the association. After the scoring contest has been completed the said butter is to be sold; the association will pay the express charges, the exhibitor's membership dues for the current year and such other expenses as may be connected with the butter exhibit; the balance remaining from the sale of the butter shall be deposited in the treasury and be devoted to the premium fund for the next annual convention.

Article Fourth. The privileges of the association butter contests are open to exhibitors outside of Wisconsin, but such exhibitors must be present in person, or have a representative of the creamery present at the convention to entitle him to share in the pro rata premium fund or compete for any other prizes offered by the association, and must conform to all regulations required of state exhibitors.

Article Fifth. The association shall give a Gold Medal for the highest scoring tub of butter and a Silver Medal for the second highest.

Article Sixth, Sec. 1. The score that shall entitle an exhibitor to a share in the pro rata shall be determined by the executive committee in advance of each yearly meeting.

Sec. 2. The scores of those exhibitors not participating in the pro rata shall not be published.

Article Seventh. All points of parliamentary practice not covered by the Articles of Incorporation or these By-Laws, shall be governed by "Robert's Rules of Order."

Article Eighth. These By-Laws may be altered or amended in the same manner as prescribed in the Articles of Incorporation.

FOURTH ANNUAL MEETING

—OF THE—

Wisconsin Buttermakers' Association

FIRST SESSION.

(Crescent Opera House)

Tuesday, February 21, 2:30 P. M.

Meeting called to order by the President.

President Moore: We will now have the Rev. Mr. Halsey ask the invocation.

Rev. Sabin Halsey: I will be pleased if at the close of the short invocation, you will all unite in the Lord's Prayer.

We thank Thee, Oh God, our Father, that we have learned the great lesson of dependence upon Thee. Men may plan and men may toil, but only Thou hast the power to give them increase. We believe that whatever is of interest to us, to the advancement of civilization, to the prosperity of mankind itself, it is proper for us to invoke Thy blessing upon, and so we invoke that blessing today upon the men from the various parts of the state, and wilt Thou, Oh Father, grant to them strength of mind, to do their work, and we thank Thee that every good and gracious gift cometh from Thee.

Thou hast sent us snow, and Thou wilt send us sunshine and rain, and cause fruit to be brought forth, and in these temporary blessings coming to us we may see indications of Thy care for us. Bless the homes, keep sickness from the families here represented. May these men go back to their homes, and loved ones, and bless us as we repeat what the Lord hast taught us to repeat, saying:

Our Father who art in heaven,
Hallowed be Thy name,
Thy kingdom come, Thy will be done,
In earth as it is in heaven.
Give us this day our daily bread,

And forgive us our trespasses as we forgive them who trespass against us,
And lead us not into temptation,
But deliver us from evil,
For Thine is the kingdom,
The power and the glory,
For ever and ever. Amen.

The President: We will now listen to the address of welcome by his Honor, the Mayor, the Hon. John Hughes.

Mayor Hughes: Gentlemen of the Convention: On behalf of the city of Fond du Lac, I extend to you a most sincere welcome. Our people are certainly much interested in your business, interested in the butter we have to use every day, even three times a day when we can afford it. And when we pray for our daily bread, may we include our daily butter; notwithstanding that our daily butter costs us far more than our daily bread.

We are also interested in its manufacture; we are interested in your creameries, in their surroundings, in its cleanliness; all this contributes to the purity of the product of your manufacture.

I wish to say that if in any way I can help to make your comfort greater while here, or aid in the exhibit of your machinery, I will be very glad to have you call upon me.

Thank you all, gentlemen.

The President: We will now listen to the response to the address of welcome, by Mr. Kelling, of Berlin. I guess we will have to send some one for Mr. Kelling; he just stepped out for a moment and will be right back, and we will have to wait his return. In the meanwhile, we might receive the report of our treasurer, Mr. Dodge.

Mr. Dodge: We closed our books in 1904; the several funds stand as follows:

General Fund.

Feb. 23, 1904, balance	$ 575.10
Feb. 21, 1905, from advertising	220.00
Total	$ 795.10
General expenses (4 vouchers)	459.60
Balance on hand	$ 335.50

State Fund.

June 6, Received from State Treasurer	$ 500.00
Feb. 20, (in vouchers)	360.08
Balance on hand	$ 139.92

Premium Fund.

Balance, March 2, 1904	$ 392.13
City of Fond du Lac, Feb. 21, 1905	300.00
Contributions, Feb. 21, 1905	295.00
	$ 987.13
Due from contributions	45.00
Total Premium Fund, as advertised	$1032.13

The President: We have heard the report of our treasurer. What will you do with it?

It is moved and seconded that the report of the treasurer be accepted.

Carried. The report is accepted.

The President: We will now listen to Mr. Kelling's response to the address of welcome.

Mr. F. H. Kelling, Berlin: I was very sorry, gentlemen, that I had to leave the hall for a few minutes, but I will do the best I can.

BERLIN, WIS., February 17, 1905.

Mr. President, Brother Buttermakers, Ladies and Gentlemen: I have very great pleasure, as well as honor, in responding on behalf of this association, to the address of welcome to which we have been privileged to listen, and in assuring our friends of Fond du Lac of our thorough appreciation of this generosity and kindness. We have listened to the Mayor's words of welcome not only with our ears but also with our hearts, for nothing so touches and moves the soul as sincerity and earnestness and I am sure nothing is more sincere and genuine than your broad and cordial welcome, and we thank you for your generous hospitality so heartily tendered us.

It may seem questionable taste just at this moment, to suggest any thing to mar or threaten the harmony of the present

occasion or interfere in anywise, with its kindly greetings, but I think our Fond du Lac friends are entitled to know something of the extent and magnitude of their undertaking, in attempting our entertainment.

But the legitimate aim and purpose of this association is a most important one, and has direct bearing upon the welfare, development and prosperity of the country at large. There is an impression abroad that the Dairy interests are of slight consequence and unimportant, but the fact is, that its product is of more importance than that of any other branch of agriculture, that has been well demonstrated at the monstrous agriculture building, at the great St. Louis World's Fair, and I believe a good percentage of our friends in this audience today have had the pleasure of seeing these fine exhibits. It is to this advancement of the interest, that the efforts of this association is addressed. Another thing pleasant to remember in this connection is, that the millions to be made and saved by the advancement of this industry, are to go *into the pockets,* not to swell the coffers of the millionaire, but into the pockets of the poor. It is the farmer to whom these gains are to be distributed, and with which he can beautify his home, educate his children and provide for himself an old age of independence and comfort.

After again thanking our hosts for their more than abundant provision for our needs and pleasure, I beg to conclude by congratulating the association upon its fortunate selection of this city. Her railroad facilities are of the best, her hotels unexcelled, and she is as warm as the fireside of a happy home. And now with thanks for your kind attention, and in the hope and expectation of a happy and successful meeting, I hasten to make way for the future business of the convention. I thank you.

The President: I have here a telegram from Prof. Decker, who says he missed his Central train, but will arrive on the North-Western at 4 o'clock.

By the way, tomorrow our sessions will be held in the Court House, and not as the program states, in the morning in this hall, but instead all the day in the Court House. There will be an opera troupe who will have to have the hall to fix up for the evening.

I will state to all of you who have railroad certificates, that

the secretary would like to have you hand them in as soon as possible, as we must have the stated number.

I see by the program that I am the next victim on there, so I will begin on my Annual Address.

Before I commence, however, I will say that we will have Mr. Jules Lombard sing for us as soon as he gets his second wind. I see he has just come in the door, and I am sure you will all be pleased at that announcement.

Mr. Jules Lombard: I will say that I cannot sing now; I have been riding all night; I have had no chance to sing or obtain an accompanist. I was not advertised for this afternoon, and can't we wait until tonight?

The President: We will have to if you say so.

(Exclamations of Sing Now! Sing Now! from the members.)

Mr. Lombard: Well, I will do the best I can right here and now. Music requires preparation as a rule.

The President: I understand the young lady of the city of Fond du Lac who was to favor us this afternoon, refused to have anything to do with that piano, and so we had to fall back on our old standby Mr. Lombard, and we had the nerve to call him out of bed.

Mr. Lombard: I do not care for the piano. I have sung a little song entitled "Rose Bush." Have I ever sung it to you? I am not going to sing Maggie until tonight.

It is a simple song, an epitome of human life, and I think better for me to sing than this rag time.

(Sings.)

Great applause.

The President: Ladies and Gentlemen: I say ladies—I see we have two with us. I am sorry we have not any more. Maybe the buttermakers are like myself—not able to get their wives to come with them. Maybe some of them are glad of it. I don't know.

(Reads address.)

President's Address.

Ladies and Gentlemen, Members of the Association:

We are again assembled for the fourth time in annual con-

vention, and as representatives of a great and leading industry of a great state, we come here to obtain those advantages that can only come to us by thus associating ourselves together.

Our main purpose as stated in our "Articles of Association" is the educating of ourselves to a better practical knowledge of the art of buttermaking; we have surely given ourselves a large field to work in.

In this day and age when the knowledge of today, so soon becomes the lore of yesterday, it becomes our duty to avail ourselves of every means that will tend to help us in attaining the objects as set forth in those articles.

That our meetings have been very successful along this line, and in filling a long felt want, the attendance of so many connected with this field of endeavor at our past conventions would seem to testify, and it is to be hoped that this convention will mark as interesting and profitable a period in our history as any we have ever had.

Another object of our being, as set forth in our articles of organization, is to demand a thorough revision and rigid enforcement of such laws as will protect the manufacture and sale of pure dairy products, and to suggest and encourage the enactment of such laws in the future as experience may from time to time demonstrate to be necessary.

At the World's Fair Contest at St. Louis last year, Wisconsin's exhibit of butter, either in quantity or quality was not of such a character as to reflect credit on us as enterprising and progressive buttermakers. However humiliating it was for us to see a neighboring state take the honors of that contest, I believe that in the end we will derive benefits that will overshadow in importance anything we could have gained there, by thus bringing, so forcibly to the powers that be, the necessity for improvement.

The Wisconsin Cheesemakers showed their ability in making a product that possessed quailty, even if they were as backward or even more so, than our buttermakers in helping to make a creditable showing for the Badger state.

One of the important factors in the cheesemaking industry has been the instruction provided by the Wisconsin Dairymen's

Association for the last fifteen years, something the buttermakers have not had the advantage of until recently.

The necessity of instruction among our creameries as shown by the results of recent contests is imperative, and if Wisconsin is to advance in the dairy business or even hold the position it now occupies, some action must be taken to provide adequate inspection and instruction of our factories and makers.

To this end a bill has been introduced in the assembly, known as No. 182 A, to provide an increase in the number of inspectors under the dairy and food commission and it becomes the duty of the members of this association, collectively and individually, to use their influence with the members of the legislature to secure the passage of this bill.

It may be that some of you are not familiar with 182 A. It provides for an assistant dairy and food commissioner, and an assistant chemist, and fifteen additional inspectors, eight of these inspectors shall be expert cheese men, and six of them expert buttermakers, and one expert food inspector. We have had a great deal of discussion about this, in order to keep it out of politics, but in order to obviate that, no one shall have these positions without passing an examination as an expert cheesemaker or buttermaker. This obviously will tend to uplift the personnel of the force of inspectors, so we can take our place among the different states as we should. Other states and Canada have gone ahead, and left us to bask ourselves in past glories, and it is time for us to wake up.

The competitive contest as a factor in improving the quality of our dairy products has passed the experimental stage. The idea of a monthly scoring contest I believe is an importation from Denmark, where the government has placed the seal of its approval upon it, by appropriating a large sum of money for its support.

I believe it is to Mr. J. H. Monrad the credit belongs for first advocating the necessity of these scoring contests and showing their educational value. After a good deal of agitation and discussion of the subject the National Creamery Buttermakers' Association inaugurated a series of monthly scoring contests which have proved to be successful. Besides the educational features, these contests have brought to the front and made prominent a

large number of those buttermakers who participated in them.

At a meeting of the executive committee of the National Association, it was decided not to hold a contest this year; it is believed that a monthly scoring contest, held by the state, would be of much greater value to the individual than the National contest.

Many makers were deterred from participating in the National contests who might be induced to participate in a state contest; this has been the experience of those conducting the contest recently held in Michigan.

Minnesota and Iowa will hold state contests this year and if Wisconsin is to retain its place as one of the leading dairy states, it must adopt some such method whereby its makers can attain greater proficiency, while remaining at work, than some of them now possess. In a state contest the inspectors of the Dairy and Food Commission and the instructors of the Dairymen's Association could visit those factories whose products were found to be lacking in quality and aid the maker in obtaining better results.

At our last meeting in Eau Claire, I advised the holding of a state contest and a committee was appointed to devise ways and means; nothing was accomplished however. During the early part of the season the Dairy and Food Commission mailed to every creamery and cheese factory in the state an invitation to participate in such a contest and asked for an expression of opinion. For some reason, whether lack of interest or not, I do not know, very few replies were received to that invitation. All that did favor us with their views were in favor of holding a contest. The cost of these contests under present conditions, must necessarily fall on the maker, which no doubt keeps many from securing the benefits to be gained.

It might be that state aid can be secured for the carrying on of a contest, as it would only be an extension of the principles of education, as already expressed in the aid given to farmers' institutes, state fairs and associations of various kinds. It is to be hoped that this convention will take some action in regard to this matter in order that the forthcoming season may witness some development along this line of work.

A bill introduced by Mr. Ekern, that provides that $5,000 shall be voted to the regents of the School of Agriculture, State Uni-

versity, to provide for the expense of holding the yearly contest, and it is up to the buttermakers to use their influence to see that the bill goes through.

I know of no better means for the makers to advertise their skill than to participate in a contest, if by good fortune, one is established with state aid, and then there can certainly be no excuse, on the score of expense, for not participating. There is other proposed important legislation, including amendments to existing laws, for the betterment of the industry that should also receive our earnest support.

Among the crying needs of our business is better buildings, better sanitation and better equipment. Another, and not the least, is a better and cleaner supply of raw material upon which to show our skill in making a finished product.

Any system of instruction or inspection which does not include the producer, is believed to be faulty and as the field is so large that effective instruction by the state is hardly practicable, it is necessary for each maker of dairy products to be a missionary in his locality to preach the doctrine of cleanliness and advanced dairy knowledge.

I think there are 175,000 farms in the state, and so you will see the impracticability of having a force of inspectors to go to every farm of the state; it will be as much as we can do to go to each creamery, as Wisconsin has the largest number of creameries of any of the states.

County associations, where the makers or others interested in the manufacture of pure dairy products could meet more frequently than once a year as this association does, would be especially helpful and an increased force of inspection could be of great assistance in promoting and fostering the idea which has proved so satisfactory and successful in other states where tried.

From my experience, while limited, I believe I can say that it will pay our makers, wherever possible, to arrange for holding patrons' picnics this coming summer and fall and also see to it that steps are taken in their neighborhood for obtaining for next winter a farmers' institute. Some one must lead in matters of this kind and who better can do it than the buttermaker.

The maker should strive to make the creamery the pivotal point of the community in which it is placed and have his patrons

looking to it, for other things beside a place to market his milk. Buying twine, salt, fuel and other necessities in car lots, thus saving the patron money, seems to me to be one of the means to accomplish this much to be desired result.

In the last year the Dairy and Food Commission has received numbers of requests from makers desiring help in securing positions, and we desire to have it understood by both makers and creamery owners or managers, that every effort will be made to bring those desiring positions and those needing makers together for their mutual benefit.

We can felicitate ourselves on our continued prosperity as an association and that our finances are in such a healthy condition as to again enable us to offer a premium fund greater than that ever offered by any state organization.

We are in receipt of state aid to the extent of five hundred dollars, and a bill has been introduced in the legislature calling for an increase in the amount to fifteen hundred dollars. I do not know whether so much of an increase can be obtained at this time or not, but one thing I think would be helpful and that is, that instead of printing a limited number of copies of the report of our proceedings and paying for it ourselves, we should ask the state to print a number sufficient so that a copy could be sent to each creamery in the state. It may be that this could be secured more readly than the sum of money asked for.

We are here as the guests of the city of Fond du Lac and it is to be hoped that the educational, fraternal and business features of our meetings will be of such a character that its citizens will be proud of the fact that they gave to us the freedom of their city.

Applause.

While it is not on the program, I will call on our secretary, Mr. Fulmer, for any remarks he may wish to make in the form of a secretary's report.

Mr. Fulmer: There are several things that I could speak of at this time, and I will bring up two or three to your attention. One thing I took from the President's remarks in regard to a bill in regard to scoring contests; my recollection is Bill 116 A, which I wish to impress upon your minds—Bill No. 116 A

—don't be afraid to write to your assemblyman or state senator, and ask him to use his influence for the passage of that bill. Bill No. 116 A.

Now, if in the course of human events, that bill was to become a law, as many of us would like to see, and I presume you all would, do we realize what benefits would come to the creamery industry and cheese industry as well! It is broad in its provisions, and it is simply to conduct an educational test for the benefit of the cheese factories and creamers. If you are interested in it, get out and work.

Another thing has been thrown up to me, as secretary. I don't know whether the convention wishes to take any action but I offer it as a suggestion, keeping my own opinion in the background, and that is for a different provision for the division of our premium fund. Are we, as an association, in a position to desire a different method of dividing our premium fund? If you have an opinion, I wish you would make your opinion known during the convention.

Another thing that your secretary spent a great deal of time on, was in trying to secure an excursion rate for this convention. More time was spent on that proposition than on any other one single thing that pertained to this convention. Now it seems that the position we occupy, the magnificent showing we have had in the past, the large membership, exceedingly large machinery exhibits, and also the large number of exhibits of butter, would seem to indicate to my mind at least, that we ought to be deserving of a better rate than that which we get. Or in other words, receive the same rate under different conditions. It is necessary for us to receive one hundred of these railroad certificates that your president has spoken about in order to secure a one and one-third fare. In addition to them, the association has been compelled to put up a cash guarantee in advance to the Western Passenger Association of Chicago, of $17.00, to pay the fare and expenses of their joint agent here two days. It is hoped that all of you who have these certificates will turn them in at the earliest possible moment. The joint agent will be here tomorrow as per contract, if they live up to their contract, and remember that the association has got $17.00 of its money at stake for your benefit.

Another thing was brought to your secretary's attention, was by a buttermaker in this state, and was this: that many of the creameries in this state are not arranged for convenience, and he offered the suggestion that the association take some important step, some decided step towards adopting a uniform plan for laying out a creamery, and the arrangement of the apparatus in such a way as to have it convenient. Really that suggestion is something worth a good deal. A poorly arranged creamery, as far as room is concerned, placing of the apparatus means much in time to the buttermaker. If that is worth anything as a suggestion, kindly act upon it. You can give it to your committee on resolutions, or have a special committee appointed on it if you wish. That is a few of the things brought to the attention of your secretary. One other thing the secretary would like to say: that this has been an especially hard year to complete all arrangements connected with the convention. You will remember that we are following in the footsteps of the National Association last year. While not a great many of us from this state were down there, we feel the influence of that association when soliciting for contributions, for advertising in the program here by which to realize money to pay running expenses, and not only that, the elements seemed to have conspired against us, railroad trains were late, mail and letters delayed two or three weeks in passing to destination where they should have passed in twenty-four hours; those are some of the conditions we have had to encounter. Everything has been moving slowly, and if any arrangements were made which did not suit you, or details were overlooked, kindly bear with us when considering these things. If any of you have any suggestions to make in the line of work, whereby we might make the future meetings more successful, I am sure your officers will gladly receive them.

I thank you for your attention.

Applause.

The President: Our program for the other sessions will be quite full, and it seems to be the time now to discuss these suggestions in regard to the division of our funds. There is one thing I would like to bring up; while I am not making butter

and I might not get the gold medal if I were, I think that some of the buttermakers would rather have a silver cup instead of a gold medal. Our by-laws provide that your officers can furnish a gold medal. I would like the opinion of the buttermakers upon this. It seems to me if I was to have a gold medal I would rather have a silver cup than the gold medal. I have been in the homes of two buttermakers where they had a silver cup and their wives were proud of them.

Any other ideas that have struck you in regard to the remarks of our secretary?

Mr. Dalley suggests that we make the prizes cash. Some could probably use the cash to better advantage. I for one might take very kindly to Mr. Dalley's suggestion. It is up to you to decide what you would like to have.

Mr. Dalley: In view of the fact that you mentioned a remark I made, I will say this; that when a man is competing for an honor, in this manner for the time being, temporarily, the gold medal or the silver cup is well enough. It is only a question of a year or two, and the novelty wears off. It is cast aside, and that is the last you see of it. You may keep it around the house for a few years, and finally lose it. It has been my experience that as—I have a few—I don't believe I could find one of them today. I don't know where they are, and I am of the opinion that a man in competition as long as it don't reflect upon his integrity in any way, why it would not be better for him to be the recipient of a cash prize that he can utilize for his family as he may see fit. Make it large enough for him to get a hustle on himself.

Mr. Jones: I am interested in this phase of the butter question, and that is my apology for rising to speak in this gathering. The gentleman who has spoken has lost sight of the trophy, and I think we may lose sight of some of these suggestions before we are through this afternoon. I mean particularly the legislation we want enacted, that will affect the future of our interests, and I am sure it will be the experience of nine out of ten will forget to write to their representative. I wonder if it is not possible for this association to have some slips printed, small slips three or four inches square, calling attention of the members to the different bills and pass them around. Have two or three hundred

of them and in that way we have the number of the bill, and what it is for, and we can more readily write to our representative to help pass that bill, or we will leave him at home next time. We can touch him in a weak point, that he must help us pass these bills, or we will attend to his case. Get legislation that we want.

Mr. Baer: Two years ago, the Wisconsin Cheesemakers' Association wanted an additional appropriation from the state legislature. I was detailed to try to work up some energy, and some interest among the cheesemakers of Wisconsin, to write in to their members of the legislature, asking for this legislation. I went to the State Capitol building, and I got a list of all the senators and assemblymen. I went to the state printer and had lists printed, then I got out a circular letter, and took these lists, and the cheesemakers' mailing lists of the state, and divided them into counties, took these printed lists of senators and assemblymen, the member from each county, so that it would be absolutely no trouble for the cheesemaker to find his member in the legislature, and drop him a line asking him to vote for that bill calling for an appropriation. I mailed 1,000 of those lists and 1,000 of those circular letters marked in the manner I stated, and requested in that circular letter that each man should write his member, mail me a postal card so I would know how to approach that member. Out of the 1,000 sent out I got thirteen postal cards in reply.

The President: Is there anything further along the line of Mr. Jones' suggestion?

Mr. Schuknecht: Along this line right here might be a good place to drop in a little remark based on experience, trying to work up legislation. Getting an appropriation for more inspectors. This printed slip business is all right as far as it goes, but you must carry it further than that. Put more weight behind it. The name of one going in there is comparatively soon lost sight of at Madison, because he is a little bigger down there than at home. We tried that kind of deal in Iowa, and they adopted this scheme. The state Dairy Commissioner's Office took the matter up, and had some headings printed; I do not now recall the exact form; the idea will suggest the form all right; put headings on a piece of paper, and mailed to the different

buttermakers throughout the state, and under the heading was a space for the buttermaker to circulate that petition in the morning at the factory when his patrons came up. And you can get a lot then to sign that list, and it will go in with fifteen, twenty or forty names instead of your writing alone, and it increases the weight with the senator or assemblyman in proportion to the number of his constituents wanting that thing. It is an easy thing to circulate, and that passed that bill in Iowa, and it adds weight that is worth something. I just drop that anyway as a suggestion.

Mr. Baer: Another effectual way to reach our member in the legislature is for the organization to pass resolutions endorsing this legislation. And in these resolutions instructing the secretary to have copies of that resolution or resolutions as the case may be, made and distributed upon the desks of the members of the senate and assembly. They should be placed in the hands of sone one at Madison, who will see to it that those resolutions are placed upon the members' desks at the time that particular bill is up for discussion. That is important.

If placed on the table two or three weeks before the bill is up for discussion, before it is presented to the senate or assembly, for discussion, those resolutions will be thrown in the waste basket, but if you have somebody at Madison to spring them at the right time, they will have their weight. I move you that a committee be appointed to draft special resolutions endorsing the legislation as mentioned in your address, and spoken of by our secretary, to be presented to this association for its endorsement.

I make that as a motion, Mr. President

Seconded by many.

The President: It is moved and seconded that we have a committee appointed to draft such resolutions as will endorse and carry out this idea as presented.

Motion carried.

The President: I appoint on that committee E. C. Dodge, Geo. Hanson and Jas. Van Duser. But if the association so desires, we will make a special resolution committee for these resolutions if you think that would bring it out better.

A member: The motion calls for a special committee.

The President: I make the special committee: Mr. Baer, chairman, Mr. Dalley and Mr. Corneliuson as that committee. If Mr. Dalley does not wish to act, I will take pleasure in putting in Mr. Schuknecht on that committee. We want to get somebody.

Mr. Schuknecht withdraws his name. I will put on Mr. Michels.

Our regular resolution committee will be Messrs. Dodge, Hanson and Van Duser.

We will have an exhibit committee. We have a large amount of money from supplymen, and they contribute greatly to the success of our meeting, and we want them to have a better write up than before, and we are going to have an exhibit committee to write them up. Will it be too much to ask you to go on that committee, Mr. Shilling? Mr. Sam Shilling, of Iowa, Mr. A. Parman and Mr. A. Wileman. These three to act as a committee on exhibits.

Are there any other suggestions along this line to come before us? It seems to me that so many men are here we ought to have more ideas brought out. We want your opinions, but if you keep them in your minds, it don't do us any good.

Tonight we have two very interesting lectures, and they will both be illustrated by stereoptican slides, and I can say for Prof. Farrington's, which I saw in Madison, that it will be very interesting. It will place the features of the cow test as developed in St. Louis so you will remember it.

Prof. Decker's lecture I know nothing about, but the subject we all come in contact with, and therefore will be interesting to us all.

The members of the Dairy and Food Commission have been going before the Farmers' Institutes this winter talking clean milk. In the southern part of the state I got some milk one morning, and got samples of milk from the bottom of the can to filter, to show them the solid matter and filth in the milk. The result surprised me and them also. Mr. Emery will be here tomorrow, and will bring those samples for you to see. The state has been expending large sums of money to maintain a dairy school to educate the buttermakers and the producers of milk, and some object to this expenditure. The buttermakers must create a sentiment in their localities for good laws. We have

got laws, but we must make them effective. When you consider that in this state we have 1,200 creameries, and 1,800 cheese factories that all have to be looked after by the force of the Dairy and Food Commissioner, and when you consider the commission has only four men, and only three of those know anything in regard to the creameries and cheese factories, you will understand it will be impossible for us to do very much. I had a letter from a buttermaker who says: "I have been looking for you for over a year." I have not been able to get there yet, although that was received over a month ago, so this legislation is very important for us to have, and I hope the resolution that will be passed here will be just as strong in effect as the remark I heard about some resolutions, that they fairly burnt the paper. I hope you will all be present tonight.

The meeting tonight is called for 7:30, and so far as I am able, I shall call this meeting at 7:30.

If there is nothing more, we will adjourn until 7:30 tonight at this place.

Adjourned.

EVENING SESSION CALLED.

7:30 o'clock.

(Crescent Opera House)

Hall's Orchestra favored the members with a concert which was highly appreciated by the Convention.

The President: The first number on our program will be "The World's Fair Dairy Cow Test," an Illustrated Lecture by Prof. E. H. Farrington, Madison.

Mr. Dodge: There is a resolution:

Resolved, That the President and Secretary of this Association are hereby requested to procure the services of T. C. Richmond, Esq., of Madison, to represent the interests of this Association before the Freight Commission Committees of the legislature.

As I understand, Mr. Richmond has offered to represent this association without remuneration.

The President: Gentlemen, you have heard the reading of the resolution. What is your pleasure?

Seconded by many.

It is moved and seconded that the resolution be adopted as read.

Are you ready for the question? All those in favor say aye, contrary no, the ayes have it. Resolution is so adopted.

Mr. Farrington: Mr. President, and Ladies and Gentlemen:

The World's Fair Dairy Test.

PROF. E. H. FARRINGTON, Madison, Wis.

A public test of dairy cows conducted by a non-partisan management seems to have become one of the essential features and attractions of an American World's Fair. The history of such tests in the past is well known to dairymen in general and the plan on which they have been conducted is well understood by persons interested in this line of work.

Some idea of the way in which the "Dairy Cow Demonstration" was carried on at the St. Louis World's Fair may be obtained from a brief statement in regard to the general plan on which the test was conducted.

General Plan of the Test.

Four dairy barns were built by the Exposition Company and one of them was occupied by Jersey cows for some time before the Demonstration began. The Shorthorn, the Holstein and the Brown Swiss cows were brought to the barns early in the spring of 1904.

Everything being in readiness the official records were begun at noon June 15th, 1904.

The cattle associations selected the cows of the breed they represented and placed a man as superintendent in charge of them. The superintendent secured men of his own selection who milked, fed and cared for the cows under his direction. No restrictions in regard to the amount or kind of feeds given the cows were placed on these superintendents, but every pound of feed was weighed and charged to each cow daily. These weights of feed as well as the weights of milk at each milking,

were recorded on blanks provided for the purpose by men employed by the Exposition, who were stationed in each barn during the entire day. In addition to the two recording clerks, a Jefferson guard was detailed to each barn, he being on duty day and night.

The feed provided by the breed superintendents was stored in the various barns in a feed room which was locked and the key held by the record clerks of that barn. The grain ration for each cow was weighed daily and placed in a locked box marked with the number of the cow. One day's ration of hay or green feed was also weighed into a numbered burlap sack which was sealed with a wire or metal band seal.

At feeding time during the day the record clerks unlocked the boxes and cut the seals, allowing the herdsmen to feed each cow as much of the weighed feed as he chose and then re-locked and re-sealed the boxes and sacks. Feed left uneaten was not weighed back but left in the box or manger until disposed of either by the cow or the superintendent. Feed once mixed and charged to a cow was never credited afterwards.

At milking time the milk of each cow was weighed and sampled by the record clerks. The samples were taken with a small Scovill sampling tube and placed in quart milk bottles which were numbered and kept in a box which was either sealed or locked at all times when not in use.

The cows were milked three times each day, at 4:00 A. M., 11:30 A. M., and 6:00 P. M., a composite sample of the three milkings of each cow being placed in one sample bottle.

The day began at noon so that after the mornings milking the bottles contained a sample from three milkings. The bottles containing the samples were taken to the laboratory where they were cooled to near 60 degrees Fahr. by placing ice water in the boxes. Three men were there employed in testing the samples. The tests made were a determination of butter fat by the Babcock test and the solids not fat by means of the lactometer readings and the use of tables showing the percentages corresponding to these readings.

Each sample was tested by two men and their results compared. When differences of over .2 per cent occurred a third test was made; a difference of .1 per cent was not considered

sufficient to make it necessary to make a third test, but the higher result of the two was accepted.

The laboratory records as well as the daily weights of feed and milk were made on blanks provided for the purpose and three copies of each day's results were made by using manifold paper; these blanks were turned over to the office force where four clerks were employed daily. The daily record blanks were first inspected by the office clerks and their legibility and accuracy noted. The first sheet was kept in the office for making book records, while the first carbon copy of the daily figures regarding the cows in each herd were given to the superintendent of that herd, the second carbon copy of each daily record blank was posted near the office where it was available to any one interested in it.

In the office the four record clerks copied the figures from the daily record blanks into permanent record books which showed the daily weights of feed given to each cow, the total weight of each feed given each cow to date, the daily and total to date weight of milk and the daily tests or per cent fat and solids not fat in each cow's milk. From these figures the daily and total weights of butter fat and solids not fat contained in the milk of each cow was calculated.

The Method of Feeding.

The cows of each breed were fed and cared for as directed by the representatives in charge of them. There was a uniform system of recording the results, but each herd superintendent was given a free hand to feed his cows any kind of a ration of normal cattle foods that he considered best adapted to the animals in his charge. All the cows were milked and fed three times each day and a statement about the daily routine in one stable will give a general idea of the method of feeding in all the barns.

At 8 A. M. the numbered and locked feed boxes were taken to the feed bins and the daily ration of grain for each cow was weighed into her box, which was then locked and placed on the floor in front of her stall.

Three sacks of hay were then weighed out for each cow, sealed and placed near her grain box; one feeding of silage was then weighed into a feed box and to this silage in the box was added about one-third of the grain which had been previously

placed in the locked box. This mixture of silage and grain was given to each cow immediately after the noon milking, which began at 11:30 and was finished about 1:00 p. m. By 1:30 p. m., the cows had eaten their grain and silage and they were given one of the three rations of hay which had been previously weighed and sealed up in sacks. After feeding the hay the cows were all watered by carrying water to them in buckets.

From 2:00 to 5:00 P. M. was a period of rest for man and beast. At 5:00 P. M. a ration of silage was weighed out for each cow; to this was added a portion of the grain from each cow's locked box and this mixture was fed immediately after milking which began at 6:00 P. M. After eating the grain and silage each cow was given one sack of hay and all were watered and left for the night at about 8:30 p. m.

In the morning the first thing done was to milk the cows, then feed silage, grain and hay as at previous feedings. The cows were watered again at about 8:30 A. M. It will be noticed that in this barn the cows were not feeding while they were being milked. In some of the other barns the cows were fed their grain ration just before milking, so that they were eating while being milked.

There was quite a difference in the proportion of grain and roughage fed the cows in the different herds. Two herds were fed large quantities of green feed such as green clover, green corn stalks, etc., with the grain, and other herds fed no green stuff, but larger amounts of concentrated grain feed with silage and hay.

Some idea of the amount and variety of feed consumed daily by one cow in the different herds is shown by the following figures:

ONE DAY'S RATION OF ONE COW IN EACH HERD.

Feed—	Brown Swiss lbs.	Holstein lbs.	Jersey lbs.	Shorthorn lbs.
Alfalfa Hay	7	..	18	9
Cut Alfalfa Hay	..	15	6	..
Corn Silage	..	..	16	24
Green Sweet Corn	40	15	..	..

Green Cow Peas	..	35	..	..
Wheat Bran	..	2	3	4
Linseed (Oil Meal)	..	..	2	2
Ground Oats	..	..	2.5	2
Hominy Feed	8	5	2.5	3
Gluten Feed	..	..	5.0	2
Corn Meal	..	..	1.5	..
Corn Hearts	..	..	2.5	2
Cottonseed Meal	1	1	..	2
Distillers Grains	..	..	..	2
Union Grains	15	14	..	..
Total	71	87	59	54
Including grain	24	22	19	21

Such records as these are probably a revelation to many a man who has fed and milked cows for years. It is not customary to give more than five to ten pounds of grain per day to cows on the home farms, and the majority of them probably get less than five pounds. A capacity for assimilating large rations is necessary for producing large quantities of milk and butter, and most of these World's Fair cows were fed to their limit of endurance. A daily feeding per cow of near twenty pounds of grain, together with thirty to sixty pounds of green feed was not uncommon, although there were some variations in the amount during the 120 days of the test.

It will be noticed by these figures that two of the herds were fed only three and four kinds of grain per day, while the other two were given seven and eight kinds of grain per cow per day. Small quantities of a large number of different kinds of feed seemed to be considered by some of the feeders as best adapted to the production of milk, while others fed larger amounts of a few kinds.

RECORD OF THE BEST, POOREST AND AVERAGE COW IN EACH HERD PRODUCED PER DAY.

	Brown Swiss	Holstein	Jersey	Shorthorn
MILK—POUNDS.				
Best cow	(*1)51.0	(*20)67.5	(*37)48.4	(*63)43.4
Poorest cow	(*3)38.5	(*7)47.1	(*36)38.8	(*62)21.4
Average cow	44.2	53.4	41.5	34.6
TEST OF MILK.				
Best cow	3.4	3.5	4.8	4.0
Poorest cow	3.8	3.2	4.1	3.9
Average cow	3.62	3.43	4.7	3.8
BUTTER FAT—POUNDS.				
Best cow	1.748	2.355	2.334	1.737
Poorest cow	1.477	1.507	1.615	0.843
Average cow	1.596	1.832	1.936	1.277
BUTTER—POUNDS.				
Best cow	2.042	2.753	2.750	2.057
Poorest cow	1.731	1.756	1.898	0.988
Average cow	1.870	2.12	2.28	1.495
SOLIDS, NOT FAT—POUNDS.				
Best cow	4.363	5.171	4.357	3.720
Poorest cow	3.585	3.614	3.441	1.902
Average cow	3.919	4.239	3.634	2.980
FEED COST OF MILK PER QUART.*				
Best cow	$0.0109	$0.0090	$0.0110	$0.0109
Poorest cow	0.0139	0.0122	0.0130	0.0215
Average cow	0.0124	0.0107	0.0116	0.0132
FEED COST OF BUTTER PER POUND.				
Best cow	$ .136	$ .110	$ .097	$ .117
Poorest cow	.155	.164	.132	.234
Average cow	.147	.135	.105	.153
No. of cows in herd..	5	15	25	28

* Assuming two pounds to the quart.

MILK AND BUTTER PRODUCED BY EACH HERD IN THE 120 DAYS.

	Brown Swiss	Holstein	Jersey	In Class B Shorthorn
No. of Cows	5	15	25	25
Milk, pounds	26,508	96,169.9	124,524.2	103,800.5
Average Test	3.62	3.43	4.7	3.6
Butter Fat, pounds	957.8	3298.4	5810.6	3835.0
Butter, pounds	1120.5	3817.0	6844.9	.....
Value of Butter at 25c..	$ 280.12	$ 954.26	$1711.25	.....
Solids, not fat in Milk, lbs.	2351.7	7630.9	10902.4	8938.9
Cost of Feed	$ 164.47	$ 515.72	$ 720.40	$664.00

TOTAL FEED CONSUMED BY EACH HERD DURING THE 120 DAYS.

	Brown Swiss	Holstein	Jersey	Shorthorn
No. of Cows.....	5	15	25	29*
Feed—				
Alfalfa Hay	2,091.8	11,386.4	44,971.1	32,997.0
Green Clover	3,298.0	10,255.0	.....	.....
Oats and Peas.....	4,989.4	17,725.0	.....	.....
Cut Green Corn.....	21,821.0	59,203.5	.....	.....
Bran	525.0	1,811.9	7,851.5	11,588.5
Oil Meal	275.6	541.0	5,384	4,737.0
Cottonseed Meal	518.45	695.5	1,706	4,602.0
Malt Sprouts	2,120.4	.....	.....	.....
Gluten Feed	2,416.3	966.3	12,591.8	9,666.0
Hominy Feed	4,544.7	3,207.7	1,928.5	7,583.5
Clover Hay	2,001.9	96.0	1,274.0	6,206.0
Union Grains	3,561.7	22,384.3	.....	.....
Ground Oats	.....	99.5	2,917.5	8,211.0
Corn Meal	.....	789.2	9,454.7	967.0
Corn Hearts	.....	4,483.1	4,167.0	6,901.5
Cut Alfalfa	.....	8,432.0	18,202.9	.....
Cow Peas	.....	1,706.9	.....	.....
Middlings	134.5	.....	.....	.....
Silage	.....	.....	36,782.5	51,587.0
Distillers Grains	.....	.....	2,688.7	6,221.0
Rolled Oats	.....	.....	202.0	.....

* One cow died at the end of the first period of sixty days.

Among the many valuable lessons taught by these exhaustive records is the great superiority in economical production of milk and butter by some cows over others which may require nearly the same feed and care. Many people fail to realize what a wonderful animal a cow is.

It is certainly amazing, if one stops to think of it, that a cow of average capacity secretes in her milk, one hundred and thirty-six million fat globules per second, and that a cow gives 8,000 pounds of milk in 120 days, as did one of those in the St. Louis dairy tests, is manufacturing milk at the rate of nearly one and one-half quarts per hour day and night.

Few investments are accumulating interest at the rate of eight cents per hour as was the case with this cow, if her milk is worth about five cents per quart.

Another feat accomplished by this cow was the production of 903 pounds of milk-solids in 120 days, or about seven and one-half pounds of solid, digestible food every twenty-four hours.

Isn't that a wonderful performance and doesn't it increase your respect for a cow?

The cost of the feed of this cow was $36.57, and if the 8,000 pounds of milk made from it is worth five cents per quart, its total value is $200. This was produced in four months, or at the rate of $50.00 per month. The feed cost of $36.57 is equal to about $9.00 per month, making a possible net return of nearly $41.00 per month from this cow.

During the 120 days she gave over eight gallons of milk per day (67.5 pounds) and this contained two and three-fourths pounds of butter which is a wonderful record to be kept up for so long a time. The feed cost of this butter was eleven cents per pound; and of the milk, nine-tenths of a cent per quart.

This cow ate during the 120 days, 10,347 pounds of feed of which about one-fourth (2,652 pounds) was grain or concentrates; and in addition to her milk production, she gained 54 pounds in live weight.

Another wonderful cow in the World's Fair tests gave 5,800 pounds of milk during the 120 days, and it contained within one-third of a pound as much butter as the first cow mentioned. She ate 6,543 pounds of feed, of which about one-third (2,100 pounds) was grain. The feed cost of the butter produced by this cow was nine and four tenths cents per pound, and that of her milk was one and one-tenth cents per quart. She made practically the same amount of butter as the first cow, but ate $4 worth less feed. She gained 77 pounds in live weight.

Dairymen of this and every other country are greatly indebted to the management of this World's Fair for the accumulation of so much valuable data. No college experiment station, state or government, has ever carried on and probably never will conduct such an experiment as this has been. The cow represented a great variety of animals, such as can only be gotten together by an enterprising organization like a World's Fair management. The men in charge of the cows in each herd were feeders and cow-owners of long experience, and the weights and records have been kept with scientific accuracy.

The careful watch that was kept over the feeding of the cows, and the accurate weighing of everything given to and taken from them, make the records extremely valuable. There

was no guesswork in any of the weights, and the entry of every figure was verified within twenty-four hours of the time it was recorded.

To dairymen in general the most important question to be studied is the economical production of milk. Can the milk production of a certain herd be improved by the changes in feed suggested by these records, and will it not be profitable to make a change in the herd and replace some cows with better ones?

There is no fiction in these World's Fair records, and they should stimulate many thousands of dairymen to do better. The standard has been placed many points higher than it was one year ago, and it is to be hoped that these records will not lack for company as time passes, but that within a few years a goodly number of cows will be found in the new class that has been established by the cows at St. Louis.

The President: Before we have our next lecture, we will be favored by the orchestra with another piece of music.

The orchestra responds with a number of highly appreciated and much applauded selections.

The President: I now have the pleasure of announcing a reading by Miss Willmer, of Oshkosh.

Miss Willmer responds with numbers. Great applause.

The President: The next on our program will be an illustrated lecture by Prof. John W. Decker, Columbus, O., on "Contamination of Milk and Cream."

Prof. Decker: Mr. Chairman, Ladies and Gentlemen: The slides that I have this evening cover a number of phases of the Dairy business. The first group gives something of the immensity of the business in the United States, and particularly in Wisconsin. Something of the composition of milk as a second part. The contamination of milk and its product as a third part, and the fourth part, the secretion of milk, and the fifth part some familiar Wisconsin scenes.

Some Interesting Facts About Dairying.

JOHN W. DECKER

I. Antiquity of Dairying.
II. The Magnitude of the Dairy Business in the United States.
III. Interesting Facts About Dairy Products.

I. Antiquity of Dairying—Dairying is an ancient vocation. We are told in Genesis 18:13, that when Abraham received some distinguished visitors he "set before them milk and butter and the calf which he had dressed." A well known king by the name of David is said to have been a shepherd boy. From the fact that his father sent him on a mission to his soldier brothers carrying ten small cheese we may infer that the sheep were kept for dairy purposes.

From the peat bogs of Scotland and Ireland are being recovered firkins of butter that have reposed there for centuries. The firkins were made by digging out a section of an oak log. The butter is full of cow's hairs, red in color. This may indicate that the butter was churned in the primitive form of churn-a-skin.

The butter of the orient is today, what it has been for centuries—grease—but it is held in high esteem for both inside and outside application. In Thibet there is an annual butter pow-wow when a great image of Buddha twenty feet high is carved out of butter and butter lamps are burned. In three or four days the image melts from the heat of the lamps and is thrown into a ravine. People come for hundreds of miles to see it. These millions of people must be educated to the merits of American creamery butter—the best on earth.

II. The Magnitude of the Dairy Business in the U. S.—There are in the United States 18,112,707 cows over two years of age, kept for milk. If we were to place these cows in line allowing ten feet of space for each cow, 528 would make a row a mile long, 528,000 would make a row 1,000 miles long and 1,584,000 would reach 3,000 miles or from New York to San Francisco. We would be able to place twelve such rows

with the cows at our disposal, and we would have the spectacle of a solid column of dairy cows, twelve abreast from one ocean to the other. They aggregate the immense value of $625,000,000 and a big army of 2,000,000 dairymen is required to care for them. These cows are not evenly distributed over the country. New York has 1,537,921, one-twelfth of the whole number, or enough to make one of the rows. Iowa comes second with 1,479,676 within its borders, Illinois third with 1,064,491, and Wisconsin a close fourth with 1,032,811, and Pennsylvania the fifth state with over one million has 1,022,074. But numbers alone do not tell the whole story. The size of the states changes their order with respect to density. The greatest density is in New York, Vermont, Connecticut and Iowa, where there are more than twenty-five cows to the square mile; while Ohio, Pennsylvania and New Jersey come in second in density with twenty to twenty-five cows per square mile, and a third class with twelve to twenty per square mile into which fall Wisconsin, Illinois, Indiana, Maryland, Delaware and New Hampshire. The product—MILK—from these cows is used proportionately as follows:

	Cows required
Butter at 154 pounds per cow, per year	9,700,000
Cheese at 368 pounds per cow per year	800,000
Condensed Milk at 912 pounds per cow per year	200,000
Milk consumed at 430 gal. per cow per year	7,412,707
Total	18,112,707

The manufacture of dairy products started on the farm. In 1851 Jesse Williams and his sons in Oneida county, New York, brought their milk together from neighboring farms to be made into cheese. This is said to be the first cheese factory in America. Beginning with 1860 the cheese factory system in Ohio and Wisconsin began and in the next decade had a rapid development. In 1870 the first creameries started on the gathered cream plan, the cream that was raised by the gravity process being gathered by cream haulers who took it to the churning station to be made into butter. In 1878 a De Laval cream separator was exhibited at the London Dairy show. The com-

mittee on awards reported that it was a very interesting invention but would probably never come into use in large dairies. It is lucky that subsequent dairy history was not dependent upon English obtuseness. The factory separator did not drive out the original gathered cream factories, but gave the butter business a great impetus. In 1888 to 1890 the farm separators made their appearance. Farmers found that hauling milk to the creamery and back was expensive. The butter factory of the future will undoubtedly be on the gathered cream plan, the cream being from farm separators.

Specialization is the order of the day. A man specially trained makes the butter, while the farmer relieved from buttermaking, will have more time to specialize in feeding and caring for his cows. But while there has been a rapid growth of the factory system, four times as much butter is still made on farms in the United States as in factories. Some states are further ahead in the factory system than others. In Wisconsin where the advantages of the creamery has been emphasized, one-third of the butter is still made on farms. A large proportion of the farm butter being inferior in quality does not find people who will punish themselves by eating it. It is gathered into large quantities and does not improve by association. It is gathered for renovating factories where it is deodorized by heat and the fat churned in ripened skim milk, is made into second-hand "Renovated Butter." The United States government requires that it be branded "Renovated" in original packages, but it is constantly being cut up into smaller packages and sold for genuine creamery butter. This is a fraud and unfair alike to the producer of creamery, and to the consumer who buys it for creamery.

III. Interesting Facts About Dairy Products.—Milk is made up of water 87 per cent and solids 13 per cent. The solids are divided into fat, about 3.9 per cent, and solids not fat, 9.1 per cent. The solids not fat in the water make milk serum, illustrated by separator skim milk. The fat is suspended in fine globules in the form of an emulsion. Milk is secreted in the udder of the cow. The udder is a large gland that has been developed from the sweat glands. A section across the udder shows it to be made up of two kinds of tissue: secretive

tissue in which the milk is secreted, and connective tissue which holds it together. The teat is hollow. Just above it is a cavity, the milk cistern, holding one or two ounces. From this milk cistern tubes diverge, dividing and subdividing until they end in groups of minute cavities known as the alveoli. Each is a cavity lined with epithelial cells. It is surrounded by nerves and capillary blood vessels. The cells get their nourishment from the arterial blood brought to them by the capillary arteries, and the unused venous blood is gathered up and returned through the so-called milk veins, to the heart and lungs to be purified. At milking time, the cells, by the agitation of milking, give out the milk which finds its way down the system of milk ducts to the teat. That milk is not strained out of the blood is evident, for milk sugar is found no other place in the cow's body, and milk fat is different from the body fat. Milk fat is lighter than the surrounding milk serum and the fat globules rise. But the fat globules are not all the same size. The large globules rise faster than the small ones. This is because there is more cubical contents to lift them in proportion to the surface to retard their progress. After awhile the fat globules gather into groups and the same law that makes larger globules rise faster, makes the groups rise faster than single globules. When milk is run through a centrifugal separator the groups of globules are broken up. Separator cream 20 per cent fat does not appear as stiff as cream 20 per cent fat raised by the gravity process. This is because the fat globules in the gravity cream are gathered into groups, and the rough edges of the groups bump against each other causing more resistance to their movement.

Cream is a small portion of the milk serum into which the fat globules have been crowded. If the globules are crowded very close together the cream tests high in per cent of fat. Recently at the Ohio dairy school, a separator took cream testing 62.5 per cent fat. Fat is lighter than milk serum and therefore the same weight of fat occupies a greater volume than the milk serum. In the case of this particular cream the fat occupied 70 per cent or more than two-thirds of the space. Cream churns by the fat globules bumping together and gathering into masses. When the masses become apparent to the

eye the butter is said to break. In the process of churning, high temperatures and consequent soft fat makes the butter appear quickly. Quick churns which bring butter in five minutes appear from time to time but they are dependent upon warm cream which would churn just as quick in a barrel churn. In case the fat is soft, the grain of the butter will be greasy. The fat in the form of small globules is left behind in the buttermilk, thus causing unnecessary loss of fat. A thick cream is one in which the globules are crowded close together, and the small globules are more likely to come in contact with other globules and be gathered out in the churning process. Low temperature encourages the thoroughness of churning, and the firmness of the grain. Cream of 40 per cent fat will at first drop in the churn. After the fat globules have run together making rough, irregular masses, the rough edges catch and prevent further movement of the fat, and we have a condition in which the cream is thick like dough and revolves with the churn. It is necessary to add water until the globules are separated sufficiently to pass and complete the churning process.

Milk serum is left after the fat has been gathered out by centrifugal force in the separator. In the churn the fat is gathered out of the cream in the form of butter granules. The buttermilk is milk serum, and differs none in composition from the milk serum of the skimmilk. By ripening skimmilk and churning it to break up the curd, we get artificial buttermilk that is in no way different in quality and composition from the buttermilk from cream.

Lactic acid develops in milk and cream from milk sugar. When there is .3 per cent of lactic acid in milk it tastes sour. At .7 per cent it curdles, at .8 per cent it shows a good flavor and .9 per cent inhibits the growth of the bacteria which causes the change of sugar to acid. Milk or cream is made up of fat and serum. As the per cent of fat increases the per cent of serum decreases, with a corresponding decrease in the per cent of solids not fat, and a less per cent of acid should be developed to produce the best flavor. Separator skimmilk it will also be remembered, is milk serum, and the following table gives a comparison in skimmilk, milk, and creams of different

per cents of fat, in the relation between serum and fat, solids not fat, and lactic acid:

		Milk	CREAM			
	Skim-	5	20	30	40	50
	milk.	p. c fat	p. c. fat	p. c. fat	p. c. fat	p. c. fat
Serum, per cent....	100	95	80	70	60	50
Fat	0	5	20	30	40	50
Solids not fat.....	9	8.55	7.20	6.30	5.40	4.50
Per ct. acid for flavor	.8	.76	.64	.56	.48	.40

These things are of practical use to the buttermaker.

The President: Before we leave, all of you who have railroad certificates, please hand them to the secretary.

Tomorrow at 11 o'clock in the Court House, we will hold our election of officers, and in the afternoon and evening hold our meetings there.

Machinery hall tomorrow will also be open.

Adjourned.

THIRD SESSION.

Wednesday Morning, February 22.

11 A. M. at Court House.

Meeting called to order by the President at 11 o'clock.

The President: The meeting will please come to order. Before we take up the business of the meeting, I would like to say that the secretary says he is still short a few certificates and any of you who have them, please turn them over to him without delay.

I would also say the joint agent is here, and he don't want to touch any of them until we get the 100. If any of you have them, please give them to him. We have had to put up $17 to get him here, and we want to make him earn it.

I would like to say to any of those not at the meeting at Eau Claire last year, the secretary has a number of reports of last year's proceedings which will be handed out as long as

they last. They will be in the secretary's room at the Palmer House.

I would say I received a letter from W. K. Wright, secretary and treasurer of the Wausau Milk plant. The city of Wausau is a candidate for the next meeting place, and have pledged us $300 with the necessary halls, and everything we may need. Of course this matter has been left to the executive committee. Our meetings are now of enough importance for cities to write to get them.

We come to the election of officers. Before we proceed to that, I will call to the chair, Prof. Short, of Ft. Atkinson.

Prof. Short takes chair.

The Chairman: Gentlemen: The business before the meeting this forenoon, is the nomination of the president to take the place of the president, whose term now expires.

Mr. A. L. Parman: I wish to nominate a man, whose name I take pleasure in presenting before you. A man who is known to most of the buttermakers of the state, a good right hand man, Mr. R. C. Green, of Albion, Wisconsin.

Mr. A. J. Decker: Fond du Lac has a candidate for President of the Buttermakers' Association. A man that I have known for twenty years. I knew him as a boy on a farm, doing the milking and chores, going from the farm to the Dairy School, and he did so well the second year he was selected as assistant, and made a success; the second year after that was called to Nevada where there is a large creamery and cheese factory, where they failed to make good cheese; they wrote to the Dairy School, asking to recommend a man to send to that factory. He was recommended by Prof. Henry, and others, and he went; he made good cheese; he made a success. Later on he was called from Nevada to Vermont; they wanted a man to run their machinery and take care of it. He was there two years. He made a success, and later New Hampshire the same thing, and he made a success, and at home in his own creamery with the central skimming station he has made a success. Fond du Lac is proud of him, and I believe if you elect him the president of your association, your association will still grow stronger and while he said

to me: "I am not a candidate in the sense I would fight for it, yet I would feel greatly honored, and do everything in my power to make it a success." Mr. Mathew Michels, of Garnet. Seconded.

The Chairman: Any more nominations, gentlemen? Hearing no more nominations, we will now proceed to ballot for president. The candidates are R. C. Green and Math. Michels.

I will appoint as tellers, A. J. Wileman, H. B. Andrus, C. W. Judkins, H. C. Larson.

Gentlemen, it is understood that none but members of the association are to vote, and if you are not already members and did not get certificates, the secretary will supply you with them.

Mr. McGrane: If not out of order, I would like to ask if this man, Mr. Green, candidate for the president of the association, is a buttermaker?

Mr. Moore: No.

Mr. Duxberry: It has seemed to me, this being a buttermakers' convention, I thought perfectly right and proper to elect a buttermaker as president of the association. I understand Mr. Michels is running for the president of the association, he being a buttermaker, and one of the boys. I should like to see the vote cast in his favor.

The Chairman: Of course that is for the buttermakers to decide on entirely.

Mr. Duxberry: If any are of a contrary opinion, I would like to hear from them.

Mr. Mau: Is this to be an informal or formal ballot?

The Chairman: Informal.

Have you all voted? Are there any more wish to vote? The ballot is closed.

The total number of ballots cast	143
Necessary for choice	72
Of which Mr. Green received	58
Mr. Michels	85

This is informal. Do you wish to make it formal?

Mr. Watson: I move you that the informal ballot be declared formal.

Seconded.

Carried.

The Chairman: Mr. Michels is declared elected president.

Mr. Michels: Mr. President and Gentlemen: I am very thankful, I assure you, and I will do all in my power. I thank you very much for the kind honor you have given me.

The Chairman: The next business in order is the nomination and election of vice-president. Nominations are now in order.

Mr. Watson: I nominate Mr. Green vice-president.

Seconded.

It is moved and seconded that Mr. Green be vice-president of the association for the ensuing year.

Are you ready for the ballot?

Mr. Green: I will tell you the way I have felt all the way through, that it was for the best interests of the association that buttermakers be selected to the office, and I have felt that from the start, and I thought so all the time. I am glad Mr. Michels has received it, and consequently I do not think you had better put me in, because I do not think it is my business.

The Chairman: Mr. Green declines to act.

Mr. Watson: I did not understand Mr. Green declined the position; he simply said he did not think he ought to, but if we elect him to the position, no doubt he will act.

The nomination of Mr. Green seconded by many.

Mr. Wilson: As there is only one nomination, I move the secretary of the association cast the ballot of the association for Mr. Green for vice-president.

Seconded by many.

Secretary casts the ballot of the association for Mr. Green for vice-president.

Speech! Speech! Speech!

Mr. Green: Mr. Chairman, and Gentlemen of the Convention: I do not think it is necessary for me to speak at this time. Certainly I feel the honor that you have given me, a

position at this time, but I felt all the time it was best for somebody else to have the place, but I thank you, gentlemen.

Great applause.

Nominations are now in order for the position of secretary.

Mr. Clarke: I nominate J. G. Moore.

Seconded.

The Chairman: Are there any other nominations for secretary.

Mr. Mau: I nominate F. B. Fulmer.

Seconded.

The Chairman: Gentlemen, as there are two nominations for secretary before the meeting, you will prepare your ballots for the secretary for the ensuing year. The tellers will please pass the ballots.

Gentlemen, have you all voted? I declare the poll closed then.

Total number of votes cast,.....	153
Necessary to choice	77
Of which Mr. Moore received	81
Mr. Fulmer	69
Mr. Bowman	3

Mr. Moore is elected secretary of the association.

Great applause.

Speech! Speech! Speech!

Mr. Moore: Mr. Chairman, and Gentlemen of the Convention: In accepting the position as secretary of this association, I do so with the knowledge of the fact that a very high mark has been set before me in this office, and that it shall be my effort as the secretary of this association, to strive to do as much for your interests as has been done, and if I approach that mark, I think I will have done very well indeed, and I thank you for the honor bestowed upon me, and I will strive in every way to earn it.

Applause.

The Chairman: Gentlemen, there is yet the treasurer and the executive committee to be voted on. Those of you who are interested in electing the treasurer are requested to stay.

Mr. Wilson: Will you now announce that I think Mr.

Dodge will fill the bill admirably, and I make that as a nomination. I had not been in the town five minutes when he touched me for a dollar.

Mr. Farrington: Is this for the position of treasurer? I move that the secretary be instructed to cast the ballot of the association for Mr. Dodge.

Seconded.

Motion is carried. Secretary is so instructed.

The Chairman: A member of the executive committee to succeed Mr. Parman is to be elected for three years. Do I hear any nominations?

Mr. Dodge: I nominate for that office Mr. Parman.

Seconded. Motion is carried. Mr. Parman is elected for three years to succeed himself.

Adjourned to 2 o'clock this afternoon, to meet at this place.

Wednesday, 2 P. M.

Meeting called to order by President.

The President: The convention will again come to order. The first paper on our program this afternoon is by Mr. Larson, but as Prof. Michels is very anxious to get through his paper, so that he can leave for home, we will just call on Prof. Michels.

Prof. John Michels.

Creamery Sewage.

JOHN MICHELS.

During the past few years nothing in the domain of creamery work has received so much attention as the subject of clean, sanitary milk for butter production. This is as it should be, for it is the milk producer more than anyone else that determines the quality of the butter at the creamery. Buttermakers as a rule are thoroughly alive to the importance of clean milk, and it is largely through their efforts that the subject has received so much agitation. In many cases, however, buttermakers have

defeated their own arguments for clean milk through a failure to realize that lasting lessons of cleanliness must really emanate from the creamery, rather than from the butter-maker himself.

You cannot convince your patrons of the importance of cleanliness unless everything is absolutely sanitary in and about the creamery. The creamery will be taken as a model, and you cannot, with good reason, expect any of your patrons to have things in better shape at their farms than they exist at the creamery. Filthy surroundings not only teach the patrons habits of uncleanliness, but they are bound to lower the standing of the creamery in both the local community and the butter world outside. We also find that unclean surroundings are often accompanied with unsanitary conditions within the creamery. One would naturally expect this to be the case, if the law of environment can be considered here. It is the exterior by which we commonly judge things, and in the case of the creamery, this basis of judgment is often correct.

This brings us to a consideration of a proper means of disposing of creamery sewage, the lack of which is largely accountable for the filthy surroundings that we often meet with. Creameries located near running streams have the ideal means of disposing of their sewage. Most creameries, however, are not thus located and it becomes necessary for them to have recourse to other means of sewage disposal. A method which has been given a good deal of attention in recent years, and which has proved satisfactory where properly carried out, is the septic tank. This furnishes a means of purifying the creamery sewage through decomposition process. The word "septic" means promoting putrefaction. All inorganic matter entering the tank gradually settles and, of course, remains in it. The organic matter, especially the casein, tends to settle during the first twenty-four hours, after which it comes to the surface to be gradually wasted away by the action of bacteria.

The septic tank should be located in the ground with the top within a foot or two of the surface. It is preferably constructed of concrete. To bring out clearly the main features of the tank, I shall try to illustrate its general construction by means of a

chart. The construction is such as to cause all sediment and floating material to be retained in the tank, a feature made possible by arranging the discharges so as to permit the withdrawal of the liquid from near the middle of the tank only, where it should be practically free from suspended matter.

The tank should be air tight, except in two places, D and E. At D is an air inlet consisting of a goose-neck pipe, which renders the vent at E more effective. This vent consists of a long shaft extending beyond the top of the creamery, and its purpose is to carry off the foul gasses caused by the decomposition of the material within. One-inch gas pipe, properly fastened, will serve as a satisfactory vent.

In order to afford communication of sections A and C with the vent E, the two partitions should not be built quite as high as the tank. There should be at least one inch space between the top of the partition and the cover. A one and one-half inch gas pipe should be laid over the tank through which the water from cream vats and starter may be discharged directly into the drain at K. This water requires no purification, and, if conducted through the tank, would necessitate one of too large dimensions. Moreover, the large amount of cooling water needed in a creamery would cool the contents of the tank too much for a rapid decomposition of the sewage.

Regarding the size of the tank, this must necessarily depend upon the amount of sewage run into it. It should have capacity sufficient to hold all of one day's waste in the smallest section (C). For an average creamery, a tank twelve feet square by five feet deep will be large enough, provided the water used for cooling purposes is not run into it. It is well to remember, however, that the larger the tank the better the results that may be expected from it.

It will be noticed from the chart that section A is considerably larger than either of the other two. The reason for the extra space is to furnish room for the inorganic matter which nearly all remains in the botton of this part of the tank, and to provide for undecomposed organic matter, which gradually accumulates at the surface in this section, in spite of constant decomposition. Such an accumulation, especially of inorganic matter, makes it necessary to clean the tank once or twice a year.

Four-inch tile, carefully laid, may be used to conduct the sewage from the creamery to the tank. A trap is placed near the creamery to shut off the odors coming from the drain. At the point at which the sewage enters the tank, it is desirable to attach an elbow with an arm sufficiently long to keep the lower end always in the sewage. This prevents undue mixing of the incoming sewage with that already in the tank, a matter of the highest importance in the successful operation of the tank.

When the sewage in section A has reached the level X, it begins to discharge into section B through three-inch gas pipe. The discharge from B into C, and from C into the drain is the same as that from A into B, but the discharge pipes are of necessity lower by an amount indicated by the dotted lines.

The discharges should be arranged as shown in the cross-sectional view. This arrangement will cause the least mixing of old and new sewage. There is no discharge from A into B until the second day's sewage flows into A. Similarly there is no discharge from B into C until the second discharge into B, etc. The sewage therefore requires from three to four days in its passage through the tank. The liquid as it flows from the last section is nearly as clear as water, but has a slightly sour odor, which it seems to retain and which is in no way objectionable. The purified sewage has been kept for weeks with no sign of the development of putrefactive odors.

The cost of the tank is approximately $50.

A Member: What arrangement would you have in the creamery for dividing those waters?

Prof. Michels: Connect pipe which runs over the tank directly to starter can, and cream vat, etc., if this is possible.

Prof. Farrington: How often do you have to clean out that?

Prof. Michels: I should clean that out once, and better still, twice a year.

Mr. Jenks: How would you get the water out as you cleaned it out? Would you have to have a special pump?

Prof. Michels: I think an ordinary pump would answer.

Prof. Carson: Where does the water go when it leaves the tank?

Prof. Michels: You may run it into an open ditch.

Prof. Farrington: Is that absolutely tight?

Prof. Michels: Yes, sir.

Prof. Farrington: Isn't there some better way of disposing of water after it leaves the tank? When these underground tile get clogged up, wouldn't it be better to run over filter beds of sand?

Prof. Michels: The waste water from the tank may be run into an open ditch without giving rise to stench.

Prof. Farrington: Where these septic tank arrangements are put in for filtering sewage in cities, some kind of filter bed is put in connection with it, and you have to take care of the water as it leaves this bedding—then by conducting through tiles some distance from it. We have surveyed the land for one septic tank in connection with the sewage disposal of the Dairy School, and we expect to put it in this coming spring, and I think it has been found to be beneficial to have a filter bed in connection with the septic tank.

A Member: Suppose there is a discharge into a stream where cattle are?

Prof. Michels: I should have mentioned in connection with this tank. You know a lot of creameries are so situated as not to permit the discharge at the botton as is necessary in the Canadian tank. My tank discharges near the top, which is an absolute necessity in many places.

Prof. Carson: How do you provide against frosts?

Prof. Michels: The tank does not freeze if covered with a foot and a half of earth.

A Member: If you hold the water thirty-six hours, you can then let it run away without having any more trouble with it.

Prof. Michels: In a two partition tank of sufficient size, the water remains in the tank three to six days. Such water when discharged will not give rise to bad odors.

The President: If you are through with this subject, we will next call on Prof. Emery, the Dairy and Food Commissioner of Wisconsin, to talk to us about "What Must Wiscon-

sin Creameries Do To Improve the Quality of Their Butter."

Mr. Emery: Mr. President, Ladies and Gentlemen:

What Must Wisconsin Creameries Do To Improve the Quality of Their Product.

J. Q. EMERY, Dairy and Food Commisioner.

1. The first thing necessary to be done by Wisconsin creameries to improve the quailty of their product is to recognize the need of improvement. When every creamery in the state shall recognize that there is a real need for improvement, a very important step in the way of progress will have been taken. First, then, I say, let every creamery recognize that there is need that it improve the quality of its butter; not that it recognize that some other creamery should make improvement, but that it should itself improve the quality of its own output.

2. Let the owners of creameries which have survived their usefulness and are no longer fit to be used as a place to manufacture a food product for the public's table, tear those creameries down and in their stead, construct, on suitable sites, new and up-to-date creameries. In the construction of all new creameries, let only such sites be chosen as furnish opportunity for suitable drainage and other sanitary conditions. Let every creamery that cannot be removed a reasonable distance from pig-sties, barnyards or other nuisances, be torn down. The business of buttermaking in Wisconsin is sufficiently important and remunerative to afford a suitable, up-to-date plant.

3. Let creamery owners see to it that their creameries are equipped with such appliances as will enable the buttermaker to keep the creamery in a thoroughly clean and sanitary condition and to manufacture butter of a quality to meet the highest demands of the best markets. Then let them employ only such makers as can fulfill the above conditions and demand that those conditions be met. Let them pay such competent buttermakers a reasonable compensation for their services, and enable them to maintain a decent and respectable standard of living. No prin-

ciple of economics is more fully established than that the standard of living affects materially the quality of service rendered.

4. Let the buttermakers see to it that they themselves and that all the creameries in the state are, at all times, kept in a scrupulously clean condition, and thus furnish an example of neatness to patrons. If that one thing should be observed in every creamery in Wisconsin for the next year, the progress in buttermaking would receive one mighty step forward. Let them obey the letter and the spirit of section 4, of chapter 67, laws of 1903, which is as follows: "Any person, firm or corporation who operates a creamery or cheese factory shall maintain his premises and utensils in a clean and sanitary condition." Let every buttermaker become imbued with the maxim that in the whole realm of buttermaking, cleanliness is not only "next to" but actually is, godliness. Is there any thing more ungodly in the dairy business than uncleanliness? The gospel of cleanliness in everything connected with the dairy business needs to be proclaimed and redemption secured from everything unclean. I know of no force more potent against the aggressions of oleomargarine than scrupulous cleanliness in every process of the milk producing and buttermaking business. And I firmly believe that if we could have perfect cleanliness from the beginning to the end of this milk and butter producing process, the demand for milk and dairy products would be doubled thereby and a better price would be secured. Let every buttermaker recognize the creamery as his "holy of holies" into which as priest, he must not go without undergoing his absolutions as scrupulously as did the high priests of old.

5. Let every buttermaker obey section 3, of chapter 67, laws of 1903, which reads as follows: "No person, firm or corporation shall knowingly manufacture for sale any article of food from unclean or unsanitary milk, or cream from the same." Let him use persistently the Wisconsin Curd Test to determine the quality of the milk offered by patrons. By means of this test, the clean character of the milk offered can be as unerringly determined as can the butter fat content of milk be ascertained by the Babcock test. Let him use these tests to educate his patrons and be thereby enabled to secure from them, choice, clean milk for manufacture.

6. Let the managers of creameries, at all times, deal fairly and justly with their patrons. Let them use the utmost care at the intake, in the weighing of the milk or cream and in the sampling and testing of the same. Let them apply the Farrington Alkaline test and rigidly reject unsuitable milk; just dealing to the producer of good milk as well as to the public demands this. Let every patron, at all times, receive from the factory his just dues. In return he is likely to furnish an improved quality of milk.

7. Let every buttermaker use the very best commercial starter and all the best up-to-date means for securing and determining the proper ripening of the cream. This is a matter of the highest importance, for of all the processes carried on within the creamery, none other affects the quality of the product for good as much as does the proper ripening of the cream.

8. Let us learn a valuable lesson from the Minnesota creamery industry and exploit our buttermakers as they do theirs. Of all the many factors in the production of high quality butter the buttermaker is the most important. Let us recognize this fact and reward him accordingly. Let us ever award to him the due meed of praise, wherever and whenever butter of high quality is produced; and let us hold him responsible if unfortunately the butter is of poor quality. But let us not do the unmanly thing of holding him responsible for the poor make of butter and then refuse to give him credit for the good make. Let us encourage him in every way possible to broaden his horizon, and become more efficient in his calling.

9. Let Wisconsin butter producers refuse to become "incrusted in the knowledge of yesterday;" but instead become imbued with the twentieth century spirit of progress and use for their own benefit modern scientific dairy knowledge.

Let Wisconsin creameries do these things and not only will there be great improvement in the quality of Wisconsin butter, but there will be a corresponding increase of the profits as well.

(Great Applause.)

The President: I have a letter to read to you that I have just received from Mr. Donald, the chairman of the Dairy and

Food Committee of the legislature, in which he says: "There will be a meeting of that committee (Dairy and Food) on Friday next, before which he invites any of those interested to go and set forth their views in regard to 182 and 183 A. All that can had better try and make arrangements to go there and use their utmost endeavors to have those committees pass that legislation.

A Member: What are those pertaining to?

The President: One to the increase of the force of the Dairy and Food Commissioner, and others to amend the laws in order to have an appropriation of money for the Dairy School, for the conducting of the state scoring contests. There will be a resolution introduced later in which these bills will be read.

Notice. The Ladies' Aid Society of the M. E. Church will serve supper at the M. E. Church on Division street this evening at 6 o'clock. 25 cents.

We have secured several certificates, so we will get reduced rates.

There will be a photographer who will meet us at the steps to take our pictures, and it is hoped you will all stay there. The photographer has donated to us a cut of the picture to be used for our forthcoming report.

I would also say that this evening in connection with Mr. Jules Lombard, we will have some more readings by Miss Willmer, who so nicely entertained us last night.

In view of the fact that it is getting late, and Mr. Carson is anxious to go away on the evening train, we will call on him for his paper on Co-operation of Factories, by W. J. Carson, Ass't Dairy Husbandman, Madison.

Prof. Carson:

Co-operation.

PROF. W. J. CARSON, Assistant Dairy Husbandman, Madison, Wis.

The idea of co-operation was first developed by a Welch cotton spinner, named Owens, who applied it to industrial pursuits. The idea was first used in buying. The modern idea of

co-operation does not confine itself to buying, but is used in manufacturing and selling as well, which has helped greatly in bringing about many changes for the advancement of the various industries of the world.

Co-operative dairying in the United States, was first adopted about the year 1844, when a Mr. Newton, of Connecticut, manufactured the milk supplied by neighboring farmers into cheese, and about the year 1852, the first co-operative cheese factory was built by Williams & Son, of Rowe, Oneida County, N. Y., from this the idea has spread rapidly to other states and today co-operative dairying is carried on to the greatest extent in the United States. It is in Denmark we find co-operation in its most perfect condition, not only in dairying, but in the production and marketing of hogs, poultry and other things.

Co-operation requires the efforts of two or more persons, without this, or where self-interest is the only bond between the manufacturer and the farmer, there can be no co-operation, and the business is not a success. The fundamental principle necessary for co-operation is that there shall be mutual interest between all parties concerned.

Value of Co-operation.

Co-operation has helped to educate farmers along business lines. And besides being an educator, it is a means of augmenting their income. It is a fact that farmers, as a rule, do not apply business principles to their work. But the knowledge of business that is derived from practical experience in managing or doing business for a creamery or cheese factory has done much to enlighten the farmers and give them a better insight into the work which enables them to guard their own interests in a greater degree. It has been the means of bringing them together in frequent consultations, at which the brighter and more enterprising minds among them influenced the easier going ones to adopt better methods.

It has compelled those who have not been in the habit of keeping accounts to study the art of bookkeeping in order to assure themselves that they receive pay for all the milk they deliver, and the result is that many farmers are now able to tell the total production, the total cost, and the net profits of their herd from year to year.

Secondly. It broadens men's minds, that is, it gets them outside of themselves. There is a general tendency for all of us to stay at home and see practically nothing outside of our own work or what we read. Were it not for this fact and the fact that the careless, shiftless men whom we need most at these meetings are the men who do not attend, advancement in dairying would be much more rapid. I have said it broadens men's minds and they are now learning to speak of our creameries as "our" industry, "our" business and not "my" business.

Third. It makes men more cautious, friendly and neighborly. They become more enthusiastic and take pride in this industry. There is not a man living in the state today who does not feel proud of the position Wisconsin holds in the cheese industry and who does not feel disappointed that Minnesota is able to lead us in the quality of the product of their creameries.

Since there are so many classes who have a hand in developing this industry, progress in the way of co-operation has been slow. It is possible to get the producers of the milk and the manufacturers to co-operate, but the other two classes—the carriers and the distributors, are for some reason hard to reach. If in a year of low prices the railway companies would carry our butter and cheese at a lower rate, it would help materially to tide over hard times and prevent so many farmers selling their cows and dropping out of the business. In many cases better car service could be given. In Ontario the railway companies furnish one hundred iced refrigerator cars per week for conveying the cheese and butter to Montreal. The steamship companies have provided cold storage for dairy products also, while conveying them across the ocean. These are some of the ways in which the carrier can co-operate with the farmer.

In traveling through the state I have noticed cheese piled upon the station platform exposed to the hot sun. How long this cheese remained there I do not know. In other cases I have seen the cheese piled in the freight shed up against coal oil, etc. Cheese or butter are perishable articles and are not made for such usages.

Perhaps if our railroad companies were approached by an influential body of men representing these different associations,

they might co-operate with us in improving the present conditions.

How to Promote Co-operation.

I have already stated that it is possible to have co-operation between the producer of the milk and the manufacturer and the question now is, how to promote that co-operation. This, in my opinion depends to a large extent upon the tact and wisdom of the manufacturer.

He must first win the confidence of the farmers, for without this the business will never amount to much. He must deal honestly and fairly with them and show them that he is interested in their work as well as his own. Since the success of the creamery or factory depends to such a large extent upon the patrons, the manager must be prepared to assist them in every way possible and give them as much information regarding the management of the business as they require, in fact he must adopt the tactics of the successful politician. Farmers are generally suspicious characters, at the best, but I have learned from experience that the more you educate them the better patrons do they become and the more anxious are they to make your business a success.

Some men who own factories are very close in regard to their business and try to keep the patrons in the dark. I have known men who would not even tell what the cheese or butter sold for each week. Men who take a position of this kind with regard to their patrons, will not get the co-operation of his patrons, for as soon as another creamery is established in the neighborhood they will send their milk there.

The next point is the man who weighs in the milk. There is quite a difference in the manner and disposition of our makers. Some of them were not intended for the dairy business. In the first place he must be polite. There is a way of telling a man that there is something wrong with his milk so that he will not resent it, but will be glad of the suggestion. It is not necessary to tell him that his milk is rotten even if it be true. Secondly, he must be accurate in weighing and taking the samples. A half minute more time in doing this is time well spent. The patron is observant in some ways and he takes notice of these things. A man who is always making mistakes causes a lack of confidence

on the part of the patrons and without confidence you cannot secure co-operation.

Some makers adopt the practice of allowing the helper to weigh in the milk and it often occurs that this is an expensive place for breaking him in. I believe it pays to keep him in the background till you see how he is going to act anyhow.

The helper may be all right but as a rule the patrons will not have the same confidence in him, and might have the impression that the maker is neglecting their interests.

Now some of you may not agree with me in what I am about to say. Some say, if the milk is not right send it home. I do not want any person to go away from this meeting with the impression that I am recommending taking in milk that would injure the quality of our butter, but I have learned from practical experience that sending milk home is not the best way to promote co-operation. If the man himself comes to the factory, speak to him about it; if his milk is carried by somebody else, send him a polite note explaining if possible why his milk is not right, or if you do not know the cause of the trouble, go to his farm and locate it, it will pay you to get some person who can if you can not go yourself. By making a curd test of each cow's milk and making a close survey of the stabling and surroundings, we can usually reach the root of the evil. You may be compelled to handle the milk separately, or if you have not the facilities for doing this, you might ask the patron to keep his milk at home for a few days or until you find out what the trouble is. Treating a patron in this way will do more to promote co-operation than sending his milk home and allowing him to sift out the trouble himself. The man on the weigh stand should set an example for his patrons. His stand, scales, weigh can and everything about him should be scrupulously clean. I have seen men weighing in milk wearing a pair of trousers that would stand alone. Quite frequently such men as these are the most likely to find fault with the milk.

Pay Promptly.

The next point is that the farmer should be paid promptly. Farmers, like other people, have their bills to meet and quite frequently depend upon their factory receipts to pay them. No

doubt some of you have noticed that if the checks are delayed, the patrons get uneasy and begin to talk about keeping their milk at home. In this connection there is a good story that Booker Washington tells: A man traveling in the south came to a river. In some parts of the south there are not many bridges, and the traveler saw no way of getting across. Finally he saw a darkey in a boat, and called to him, "Sambo, can you row me over?" "Yes, sah." "I haven't any money this morning," said the traveler, "but it will be all right." Sambo said: "Ain't you got any money at all?" "No, none at all. How much will it be to row me over?" "Three cents." "Well, I haven't even three cents, but it will be alright." And Sambo said: "Well, sah, if you ain't got any money at all, it seems to me it don't matter much whether you are on this side of the river or on yuther side." And so with the farmer, if he does not get his money promptly he does not seem to care whether his milk goes to your factory or to some other person's, or whether it goes to a factory at all.

A monthly statement should be sent out with each person's check. This statement should be clear, and show on one half a factory statement, the total amount of milk received, the average test, the total pounds of butter made, the weekly sales and the total receipts, while on the other half should be shown the business carried on between himself and the factory man, how much milk was delivered, his average test, how much it is worth, if he got butter and the amount deducted for that, and the balance due to him. I have seen statements that were sent out to patrons that no man on earth could understand, and I doubt if the man who made them could understand them.

A good plan is to send out letters each month to the patrons. Some send out monthly letters with the statements, but as these letters are the same from month to month, they soon become stale and the patrons do not read them. In these letters it might be well to impress upon the patron that the success of the creamery or any improvement in the quailty of the goods depends upon their co-operation. By so doing the patrons can be made to feel that they are a part of the business and any extra pains on their part is to their own interest. In these could be given a table, showing each patron's test and the value per 100 pounds

of milk. Some men have to see what others are doing before they will put forth an effort to do anything themselves and a little information along these lines sometimes helps to waken them up. This might lead them to correct any mistakes or carelessness in handling of the milk. A great many complaints are heard from patrons about their test and I believe much of this is due to ignorauce on the part of the farmer as to the effect of different conditions upon the tests, many of which could be avoided with a little knowledge and forethought.

Offering prizes to the patrons who can send the most milk per cow or the largest average per cent of butter fat, stimulates an interest in the business on the part of the patron. It brings the manufacturer and patron into closer touch with one another which should have a beneficial effect.

There is one other point to which I wish to refer and that is the relation of education to co-operation. As a rule farmers do not adopt co-operation as readily as we would like them to and the main reason is that they do not know what is required of them.

In some of the older sections and particularly a section in which the people are not very well educated, it is sometimes a difficult matter to operate a creamery successfully. But in the newer sections, settled principally by younger men, many of whom are better educated than their fathers, co-operation is more readily adopted than among the older farmers, in the older settled districts. In this connection I believe that if the children were taught in the public schools under the head of agriculture, the value of milk as food and the necessity of cleanliness and care in its handling and management, it would have a good effect ultimately in improving the quality of the milk brought to the factory. Co-operation between the manufacturer and the patron will strengthen only with the advancement of education.

A move has been made recently to have instructors appointed to go out and instruct the farmers. This in my mind is the most important step Wisconsin has yet taken in connection with her Dairy Industry. I hope to see the factories grouped and a good man placed in charge of each group.

These men should serve as a connecting link between the patron and the maker and do much to promote co-operation.

The President: Are there any questions that you would like to ask Prof. Carson in regard to this co-operation? There is one thing I would like to say, the thought brought out to me was in reference to the fact that buttermakers and those connected with them are sorry to see Minnesota walking off with the prizes. At one time I thought Minnesota had better buttermakers than we, but I do not believe it any more. I acknowledge they have good buttermakers and good factories, but I don't say they have better milk than we have. It is reported to me that their milk needs as much care as Wisconsin; their factories are no better than Wisconsin; but it is their force of inspectors, going amongst the farmers, bringing them together, and holding public meetings. The buttermaker who took the prize at the World's Fair had an inspector at the creamery, and it was the inspector who divided the milk and butter made from the good milk was what went into the test. And the buttermaker and inspector stayed there over that milk as a mother over a sick child, and it was by those methods that Minnesota took the medal. As David Harum said, "Do to the other fellow what he is going to do to you, only do it first," and so we want a committee to go before the committee at Madison, and have an increased force of inspectors to do the same thing.

Prof. Farrington: Do you know from your visit up there how extensively this inspection was carried on? Isn't it a fact in this state that was mentioned—the inspectors only went among a few creameries. We want inspectors enough to elevate the creamery products of the whole state.

The President: At the National Buttermakers' Association Convention at St. Louis, one of the inspectors of the state of Minnesota, stood on the floor of that convention, and said he had personally visited all the factories which scored 95 and better, and I asked him why he did not visit the creameries that scored less. It will pay us to exploit the best factories the same way.

Mr. Emery: I want to say a word about 182 A. Its purpose is to provide an additional seventeen men to the Wisconsin Dairy and Food Commission. That was as low a number of men as I could possibly bring my conscience to

bear to ask for. While we are speaking of inspectors, I want to just explain a little by what is meant by that. An inspector means, to be the best possible instructor. An inspector goes to a creamery, or cheese factory, as a teacher does to a class. The teacher conducts recitations by inquiry; these inspectors find out where knowledge ends and ignorance begins, and he begins his instruction where knowledge ends. He goes to creameries to inspect milk and see its condition, and every detail of that. He must be an expert; he must know every vat, pipe, every process for making the best quality of butter, and he inspects that closely, and where conditions are not best for the production of a good product, there is the place to instruct that buttermaker how he could improve that process. He should be an expert in every way, have a large experience; he should be able to point out every phase of improvement. Our problem in Wisconsin is different from Illinois, where there are 500 factories, Michigan nearly 200 less, and Minnesota with 850. We have approximately 3,000, and it is a large number, and it is a mighty work. The dairy interests of Wisconsin are fundamental interests, and the number in Minnesota or Illinois or Michigan will not do the work in Wisconsin. Where they have fourteen in Minnesota to our four in Wisconsin, and a larger number in Illinois, and a larger number in Michigan, and with the interests not similar. The Dairy and Food Commission looks not only after the creameries, but all classes of foods on the market, and it is time for you and all of us to make a demand on the legislature that our interests should be as well provided for as those of neighboring states.

The President: Mr. Wilson, the editor of the Elgin Dairy Report, wishes to speak to you on what Elgin has done for the dairy interests.

Mr. Wilson: Mr. Emery talked along the line of cleanliness. It seems to be an object lesson brought out to you to show what cleanliness has been to the dairy industry. You know Elgin has a reputation for producing fine butter, and most of you know the Elgin market price is the best price for which you can sell the best of creamery butter.

I will give you an idea of how that was brought about.

Many years ago, when the condensing company was to be established, Gail Borden, the inventor of the condensed milk process, came to Elgin looking for a location for condensing milk. He had been in the business in the east, but believing the west to be a good field, he came out, and having heard of the Fox River Valley, from which had been shipped the first milk to Chicago by train, he looked around and found the kind of people, the facilities, the kind of grass, and good clear water, and other things were all there. He gathered the farmers together and explained his methods, and told them what they should have to do. Gave them some very rigid rules, very rigid indeed. They looked the matter over, and discussed the question and a few of them said they would comply with these conditions, and would make him clean milk. Absolutely clean. That was the thing. Then we did not know so much about butter fat. But he did know it was clean milk he wanted. He did not learn about bacteria and microbes, but he knew one thing, if there was clean milk to make condensed milk, it would always be good, so he insisted that the men who made milk for his factory should make it clean. Keep their cattle clean, stables clean, deliver the milk in certain conditions, not over a certain temperature in summer, nor under in winter; all those conditions were insisted upon, and from that grew up the system—good Elgin milk. There was the thing in a nutshell, why Elgin has got the reputation, and has always stayed at the top of the market for that class of goods.

Another thing I want you to understand, because it affects your pocket, and that is this, that the market made on the Elgin board of trade has brought into the creameries millions of dollars in the last twenty-five or thirty years. Some commission men may differ with me and say the commission men might have lone as well as the Elgin manufacturers themselves. The producers aim always to put the price at the very top notch at which the creamery butter can be sold. It is to their interest to do it. The commission men have another problem to solve. They have to sell their goods and get rid of them, and therefore are not asking the best prices for them if there seems to be a chance for the market to go

back. The prices made on the Elgin board are the highest prices obtained for that class of goods, a good many men say they get from 2 or 3 cents more a pound for the product of this northwestern dairy butter than if we had not had the Elgin market.

Now here are a few items of figures.

Our Elgin market is the best. We have a little book published every year giving prices on butter, but I want to give you some figures in regard to the amount of business done on the Elgin board. Some people think that we do not do any business down there. Some say the Elgin board don't amount to much. But if you will figure up every week all the way from 5 to 8,000 60-pound tubs of butter are made and sold at the Elgin prices, and many creameries of Wisconsin and Illinois, etc., are selling their butter based on the Elgin prices, it will give you an idea of the business of the Elgin board.

The total amount of business done since 1872 was of butter sold, 680,468,900 pounds; of cheese, 199,984,421 pounds; total value, $168,561,921.

For the year 1904, the members of the Elgin board who help to sustain and make it the valuable thing it is, sold 46,185,390 pounds of butter last year, as much as the whole of the state of Wisconsin, which brought a total of $10,068,415.67; cheese $152,303.20, making a total for butter and cheese, $10,220,718.87.

I want you to remember that, and when those commission men from New York and Chicago tell you we will contract for your butter on the basis of Chicago, tell them you would like to contract on the basis of Elgin, because Elgin is the best market in the world.

The President: Before Mr. Larson gives his paper, I want to ask if any more certificates are around. There are three here for only 50 cents, and possibly the joint agent will not take them.

We will now hear Mr. W. H. Larson, of Neenah, on "Preparation of Starters."

Mr. Larson: Mr. President, Members of the Buttermakers' Association, Ladies and Gentlemen:

Preparation of Starters.

W. H. LARSON, Neenah, Wis.

Mr. President, Members of the Buttermakers' Association, Ladies and Gentlemen:

The subject on which I have been requested to prepare a paper to be read before this convention is "Preparation of Starters." While I realize this is a very important topic, I feel that almost everyone directly interested in the manufacture of butter as it is carried on in the creameries at the present time is nearly as familiar with this subject as I am. I will, however, review a few of the points which I consider of paramount importance in the preparation of starters and hope by so doing I may be able to impart some ideas to someone who has had some difficulties along this line, someone who has been unable to make a success of making and using a starter or someone who has not yet realized the necessity of using a good starter. As buttermaking today is a science and the knowledge is not all in possession of any one man. It is the exchange of ideas of those who do some thinking and not only think, but act and get results that teaches the average man what he knows about any business.

A few years ago the cream was allowed to ripen naturally without using a starter of any kind to assist or control the ripening process. The result was the ripening was brought about by whatever organisms that happened to be growing in the cream. Whatever species of bacteria had possession of the cream controlled the ripening of it and the butter had the flavor which that kind of bacteria would produce. And as a great deal of the milk and cream delivered to creameries is produced and cared for under unfavorable conditions, it was largely a matter of chance to get high and clean flavored butter, even when cleanliness was observed in every detail at the factory. But since starters have been used in cream ripening, a buttermaker can more readily control the flavor of his product.

The nearer the cream is to being germ free, the nearer a pure media we have for the propagation of the lactic acid bacteria we wish to introduce into the cream in the form of a starter. Therefore, the better condition the cream is in the more we are able

to control and improve the flavor of the butter with the use of a starter.

The use of any starter is adding an enormous quantity of bacteria to the cream and since the object is not only to hasten the ripening process, but to control and improve the flavor, the fact arises, that the starter should be as pure as it is possible for us to get it, containing only the desirable germs, and it should be used when it contains the most of them and when they are most vigorous. And when preparing a starter we should bear this fact in mind and strive toward the fulfillment of these requirements.

Besides pure culture starters, commonly known as "commercial starters," there are in use various kinds of so called natural or home-made starters. One buttermaker uses buttermilk and calls it a natural starter. Another uses skimmed milk caught from the average milk as it comes from the separators and allows it to sour itself and he calls it a raw milk or natural starter. Some will leave a little cream in the vat and some will receive sour hand-separator cream and use it as a starter. These may all be classed under the head of natural starters. In most cases a buttermaker would get about the same results if he used no starter as he would by using the kind I have just mentioned. It is pleasing to note that this kind of starters are not used nearly as much now as they were a few years ago. As most buttermakers now realize that it is necessary to use something better in the line of a starter.

There is only one method of making a natural starter that will improve the flavor of the butter. And that is to take pint or half pint samples of several patrons that you have reason to believe will sour right, in sterilized cans or glass jars and hold at a temperature of about 70 degrees until the milk coagulates. Then select from these samples one that has the most solid curd free from pinholes and has a pleasant acid flavor and use this in some pasteurized milk in the same way as you would a pure culture. Quite a number of buttermakers are using this method and are getting fairly good results.

But in my estimation the only safe and reliable starter to use, the one that we can always depend on if we do our part, is the pure culture or "commercial starter." The cultures we receive

from the bacteriologists contain the right kind of bacteria and if properly handled we are able to introduce the same species of bacteria into our cream.

To propagate a new culture I put some pasteurized milk into a Mason fruit jar that has been thoroughly sterilized. I then add the culture, not opening the culture bottle until I am all ready to use it, being careful to hold the culture bottle close to the milk when emptying it so the culture will not become contaminated with any undesirable bacteria. I then thoroughly stir the contents of the jar and cover it by tying a piece of sterilized parchment over it. I set this at a temperature of from 70 to 75 degrees, using enough culture so it will coagulate in about twenty-four hours. It is then ready to be used to inoculate a larger quantity of pasteurized milk. I like to carry some kinds of culture forward two or three times before using it directly in the cream. But other kinds I use the first inoculation for a mother starter in the starter I am going to use in the cream. I like to carry several mother starters all the time so I will have a number to choose from when I am ready to set my regular starter to be used in the cream.

The starter should be set at a temperature of from 62 to 65 degrees in summer and from 70 to 75 degrees in winter, using from one-half to two per cent mother starter. The quantity varying according to the vigorousness of your starter. Use enough so it will ripen in about twenty hours.

A starter is in the best condition to use when it is just beginning to coagulate. It then contains the greatest number of lactic acid germs and if not inoculated in a fresh media, they lose their vigorousness and vitality. If you are not ready to use the starter when it has developed from .68 to .74 of one per cent of acidity, either add a little pasteurized milk or cool down to 52 degrees or below as soon as possible. Do not let your starter get over ripe. In spite of all the care that may be taken to keep the starter pure, there will always be some butyric acid producing germs present. When the starter becomes over ripe this species of bacteria develops very rapidly, and if the starter is allowed to become over ripe a few times they will overpower the lactic acid bacteria and control the fermentation and instead of introducing the favorable lactic acid bacteria into our cream, we

would be introducing a species of organisms that would give the butter a decidedly rancid flavor.

On the other hand if the starter is used before it begins to coagulate it will not give the very best results. There vegetates in ordinary milk in the beginning of the souring process a kind of bacteria that produces the unpleasant flavor characteristic to half sour unpasteurized milk. According to Prof. Storch when the milk coagulates these bacteria are destroyed. If the starter is inoculated one time after another without being ripe, it would be making a condition most favorable for the growth and multiplication of these bacteria, and they would be very apt to get control of the fermentation and predominate in the final product.

It is of unmost importance that the milk to be used for a starter is of the very best quality. Not the average run of milk, but milk especially selected for that purpose. And if skimmed milk is used it should be run through one of the separators by itself. Do not get the mistaken idea that because you are going to pasteurize this milk, it does not matter so much if it is not strictly first class, for it is impossible to destroy all the organisms in the milk by pasteurization. We use only a small percentage of culture or of the mother starter, so we must have the milk we wish to inoculate as pure as it is possible for us to get it. So that the bacteria we introduce will have no difficulty in getting control of the ripening process.

In pasteurizing the milk to be used for a starter heat to from 190 to 200 degrees or higher and hold at this temperature for at least half an hour. Do not be afraid of getting it too hot or of keeping it hot too long. There is far more danger of not heating it enough than of heating it too much. The efficiency of pasteurization depends upon the amount of heat applied and the length of exposure to the heat.

Either skimmed milk or whole milk may be used with good results. I prefer skimmed milk, however, for the starter made from skimmed milk breaks up more easily and is smoother than is the case with a whole milk starter. Defects in the flavor of a skimmed milk starter are more easily detected than in a whole milk starter. A whole milk starter has a rich creamy flavor which has the tendency to cover up any unfavorable flavor which it might contain. Also we usually skim off the top of the starter

and throw it away, in which case the cream rising to the top of a whole milk starter would be wasted.

In preparing a starter for every other day run, it is best to renew the mother starter every day. After the milk in the starter can has been pasteurized the first day cool down to 58 or 60 degrees and hold at about this temperature until the next morning and then pasteurize again. The spores left in the milk after the first pasteurization will then develop to a vegetative state and will be destroyed by the second pasteurization. If the milk is not pasteurized again the second day cool down to below 50 degrees.

A starter may be carried forward for as long as three or four weeks, where it is never allowed to become overripe, where the surroundings are most favorable and the utmost care is observed to keep it from becoming contaminated from external sources. But at the end of that time the bacteria seem to lose their vitality. Under ordinary conditions a starter is not kept pure enough to be fit to use more than ten days or two weeks, and a buttermaker should have a new culture every week or at least one every two weeks.

In carrying a starter we should always keep control of the fermentation as there are so many ways in which it may become infected by unfavorable germs. All thermometers, cans, jars, dippers and other utensils used in this connection should be thoroughly sterilized with live steam before using. And the hands and clothing of the buttermaker should be clean when he is working with the starter. A buttermaker should cultivate the senses of smell and taste so he will be able to tell when he has a starter that will produce a fine flavor in his butter.

In many cases the starter is the most neglected of any part of the creamery work. It should have the most careful attention and every detail should be attended to punctually.

It is asked, Does all this care and trouble pay? In reply I would say yes. It has been proven that we cannot make butter that will score high in contests or demand the highest price on the market, at the present time without the use of a good starter. And let us not depend too much on our starter and consider the starter a cure for every ailment that cream is heir to. But let us strive to get the raw material delivered to us in the best possi-

ble condition and then use the starter to assist in converting it into a high grade product.

It is encouraging that commission men and consumers are now buying and paying for butter according to its merits more than they have in the past. And the indications are they will do so still more in the future. In view of this fact let us do all we can to improve our product.

And let us not allow the neighboring states to set the pace for us in this respect. Minnesota and Iowa have been taking the lead in the point of fine butter.

Fellow buttermakers of Wisconsin, I appeal to you, let us be up and doing. Let us awake from our dormant condition. Let us enter into our work with an enthusiastic spirit. Some of the buttermakers of Wisconsin have been doing good work in recent years, but we are living in a progressive age, and there is still room for a great improvement, and it lies with the buttermaker to see to it that this improvement is made. You may say, Do not throw any more onto the already overburdened shoulders of the poor buttermaker. But the man who has chosen this calling and is going to make a success of it, is the man who will never rest until he has reached the highest pinnacle of success.

No state has better cows than Wisconsin. No state has better dairymen. Nowhere are to be found better pastures than on the clover-bedecked hills of Wisconsin. Wisconsin cheesemakers are making the best cheese in the world. Is there any good reason why we should not take the lead in butter as well?

The President: Are there any questions you desire to ask Mr. Larson on this, one of the most important questions?

A Member: I would like to ask what per cent of starter is best to use.

Mr. Larson: You mean the amount of starter used in cream? Conditions, of course, make a whole lot of difference. Now under ordinary conditions, I used about from 12 to 15 per cent; in hand separator cream I would use from 15 to 20 per cent, in order to get enough so that the bacteria you introduce into the cream will get control, and help the ripening process.

Mr. Clark: I would like to ask him what process he has of telling the amount of acidity the cream has, to figure the amount of starter necessary to use?

Mr. Larson: I do not use anything to figure by. I put in the starter in the morning, and I always use enough so I know I have enough. I don't think there is much danger of using too much, only it will ripen so much sooner.

A Member: What temperature will it ripen at?

A. Cream about 65 or 60 degrees.

A Member: How long does it take to ripen from the time of the separation until done?

A. About seven or eight hours.

The President: Suppose your hand separator cream came in so thin that the introduction of the specific amount of starter made it so thin that it would not churn within a reasonable time. What would you do?

A. I never had to contend with such a case. I think if the cream was not any too thin to churn as it came from the separator, that you could handle it by adding that amount of starter.

The President: At one factory where they got all hand separator cream, I got there in the morning, and the operator had the gates open, and there was a thin water-like whey running off, and he said he did that because the cream was thin and he could not churn it, and before disturbing the cream after it had stood over night, he would draw that off, and it would take some of the impurities off.

Prof. Farrington: Could you not in a case like that make a starter out of cream and add that instead of skim milk cream.

The President: I presume we could; when we first got B 41, that was the directions, to make it out of cream, but there was not enough sugar for the lactic acid batceria to work on.

Prof. Farrington: I think you could probably select some of the best cream that comes to your factory, and develop acidity in the cream to get the desired flavor, and in that way make a good starter out of good cream.

Mr. Larson: I think the proper way to get at a case of that kind would be to have the patron skim heavier cream.

A Member: I don't see any object sending the skim milk with the cream to the factory when needed at home.

Mr. Corneliuson: There are lots of farmers who insist on sending thin cream, no matter what it would sell for. In that case I think it is practically just as Prof. Farrington has suggested to select the best of the thickest cream and use that for the starter.

The President: Where you have all cream to handle, then, Prof. Farrington's method is the right one, but where only a part is hand separator cream, and part whole milk, and you intend to churn both together, it would seem best to skim the whole milk to a heavy cream, and then you would have a fair average of cream, and then the starter would not affect it unfavorably.

Prof. Farrington: I would like to ask Mr. Corneliuson if he has ever tried his method of ripening cream?

Mr. Corneliuson: Yes, and I got successful results with it. There is only one particular disadvantage, and that is, you have got to be very careful, because if you have starters of cream, in case it is poor, you cannot throw it away—it is too valuable—and if skim milk is used, you could throw it away. The cream starter is not quite as thick, and full and nice a flavor as skim milk.

Q. Isn't it a fact that the cream starter has more bad bacteria than the milk?

Prof. Farrington: Depends on the cream.

Mr. Corneliuson: The question is: Can a man use this method when he has no skim milk?

A. If a man has good skim milk, let him use it, and instead of buying 2 or 3,000 pounds of skim milk, he can use cream if the cream is thin.

A Member: That is my experience.

The President: Mr. Corneliuson, describe the method you used in West Salem with cream that was poor in flavor and had too much acidity.

Mr. Corneliuson I reduce acidity so it would not curd, and in that way it made good butter.

The President: What per cent of this viscogen did you use?

Mr. Corneliuson: I reduce cream to an acidity of about 3 per cent. I aim to get it as low as that.

The President: We will call on Mr. Baer, the chairman of the special resolution committee at this time to submit the resolutions that have been made up for this occasion.

Mr. Baer: Mr. Chairman, and Gentlemen: Your committee beg to submit the following for your consideration:

Resolved, That bill No. 182 A now pending in our State Legislature to provide for additional creamery, cheese factory, dairy and food inspectors for the State Dairy and Food Commissioner should be enacted into law, and that said bill meets with the earnest and hearty support and approval of this Association.

Be it further resolved, That the Secretary be and is hereby instructed to place a copy of this resolution upon the desk of each member of the Senate and Assembly.

U. S. BAER,
T. CORNELIUSON,
M. MICHELS,
Committee.

This Committee recommends that a committee be appointed to represent this association before the various committees in which this bill may come before.

Committee.

A Member: I move we adopt the resolution.

Seconded by many.

The President: It is moved and seconded that we adopt this resolution as read. Are you ready for the question?

Question. Question.

Mr. Baer: The committee is of the opinion that this association should have a committee to look after these interests in the legislature at Madison, and to appear, if necessary, before the various committees to which a number of bills, some of them long, appropriation bills will shortly come up before for discussion, and we wish to suggest that this committee be made up of your president, your secretary and your treasurer. Mr. Chairman, I make that as a motion.

Seconded by many.

The President: It is moved and seconded that the president, secretary and treasurer of this association act as a legislative committee to appear before the legislature to see to the passage of these bills. Are you ready for the question?

A Member: Will it be more appropriate to have a man living in Madison or one there; the secretary, I understand, lives in Madison, and the treasurer also, and the president is way off up here, and it would be quite an expense to go to Madison every time, and I think it should be somewhat nearer.

Mr. Baer: There are all kinds of people at Madison appearing before committees. We want to have a man from this county, this part of Wisconsin to go down there and say: "Wisconsin wants it, Fond du Lac wants it, and the buttermakers want it." There are too many of us talking down there. We want others to go down there.

Prof. Farrington: I think the association can well afford to pay the expenses of several men to go down to Madison to look after this bill.

The President: I notice by this morning's paper that the committee on Dairy and Food have favorably reported to the Assembly bill 116 A, which calls for the increase of the state appropriation of this association from $500 to $1,500. It will probably be more necessary for us to appear on behalf of that bill in the Senate.

The President: Are you ready for the question now? All in favor signify by saying aye, contrary no; the ayes have it.

The president, secretary and treasurer will appear as that committee.

A Member: Do I understand the association pays the expenses of those outside of Madison?

The President: The association pays the expenses of the officers in every respect.

Tonight we have Mr. Shilling to speak on the topic that ought to be interesting to us, the protection of our butter, also to hear Mr. Lombard sing and Miss Willmer read. Also Mr. Updike, of Madison, will speak to us.

Now as I have stated before, the photographer will be in front to take our pictures. Stay on the steps in a close group.

We secured three additional certificates, and Mr. Fulmer went down there and he and the joint agent are at work on them, and you can get yours at the hotel when you go away.

We will adjourn to 7:30 p. m. in this room.

Adjourned.

FIFTH SESSION.

Wednesday, 7:30 p. m.

(Meeting held at Court House)

Meeting called to order by the President.

The President: The meeting will please come to order. I have the pleasure of announcing that Mr. Jules Lombard will again favor us with a song.

(Great Applause.)

Mr. Lombard: I want to say something in the way of introduction: In preparing the program for this evening I have been mindful that the day is the anniversary of the birth of Washington, the Father of our Country, and we are wanting to entertain our convention friends in joining with them in honoring the name of George Washington. "He was first in war, first in peace, and first in the hearts of his countrymen." Our country has developed and strengthened with a rapidity and energy unparalleled in the history of nations, and this fruitage is the result of the action of our founders and of the long lists of honorable names in the catalogue of our benefactors, and no name holds a higher place than the name of Washington.

The song I have selected is "Columbia, the Gem of the Ocean." And I hope every one present who loves his country will join in making its rendition a success. I ask you to all join me in the chorus.

(Sings Columbia.)

(Great Applause.)

Mr. Lombard: I have been in Fond du Lac a day and a half and have not sang "Maggie" yet. All the old convention people know about "Maggie;" it has been sung by me for more than fifty years. Once I sang it at Mason City, and

Fred Kimble gave out in the notices of the convention and proceedings, and spoke of my having sung a song, and in response to an encore sang "Oh are you Sleeping, Maggie," and he said Mr. Lombard, notwithstanding his age and infirmities, sang it as well and resonantly to the audience as when he first sang it to his sweetheart on Mt. Ararat. (Laughter.)

It is a Scotch serenade where the laddie went to see his lassie late in the evening. He made his presence known to his sweetheart by his song.

(Sings Maggie.)

(Great Applause.)

Mr. Lombard: Mr. Chairman: I move that we now proceed with the meeting and have a speech from somebody.

(Applause.) (Cries for another song.)

Mr. Lombard: Well, I will do it. I have not any accompaniment, but I am going to sing again.

(Sings an encore.)

(Applause.)

The President: Before I introduce the next speaker, our secretary, Mr. Fulmer, has something he wishes to announce to you.

Mr. Fulmer: Mr. President and Ladies and Gentlemen of the Convention: The joint agent wished me to announce to you for him this evening, that he would remain at the Palmer House until 11 o'clock tonight, to accommodate those wishing to get their certificates back.

I have here two communications to read. The first is dated Milwaukee, February 21, 1905.

"Wisconsin Buttermakers' Association, in Convention.
Fond du Lac, Wis.

Gentlemen:

The Citizens' Business League takes pleasure in extending to you a cordial invitation to hold your next convention in Milwaukee. Yours is one of the state associations which has never met in our city, and we are confident that, should you meet in Milwaukee, you would have one of the largest meetings in the history of your organization, and one of the most

satisfactory from a business standpoint. Our central location and the easy access from all parts of the state, together with the large number of excellent hotels and meeting places, make our city the natural place for conventions of Wisconsin associations similar to yours. You will find convenient meeting places in Milwaukee, and you are assured that your welcome will be most cordial.

We sincerely trust that you will vote unanimously to meet in our city in February, 1906.

Yours truly,
Citizens' Business League,
R. B. Watrous, Secretary."

The second one is:

"Milwaukee, Feb. 21, 1905.
Wisconsin Buttermakers' Association, in Convention,
Fond du Lac.
Gentlemen:

As Mayor of Milwaukee, I take great pleasure in asking that you hold your next convention in our beautiful city. It has been our good fortune to entertain during the past few years, a large number of state associations, and we should take particular pleasure in welcoming your representative organization to our midst.

I assure you that if you will come here, the city will be yours and everything will be done to make your stay with us pleasant and profitable to your organization.

Yours truly,
DAVID S. ROSE, Mayor."

The President: I am very glad to note the sentiment expressed in these two letters from the gentlemen in Milwaukee, but this association has been in receipt of better offers than even Milwaukee has tendered us, and that has been from the city of Wausau, tacked to it they will give us $300.00 in cash if we will come to them, and unless David Rose gives that money, we ought to accept the other. It has been left, however, to the executive committee to be decided.

I now introduce to you Hon. S. B. Shilling, President of the National Dairy Union.

Mr. Shilling: Mr. Chairman, and Ladies and Gentlemen: The nature of my business is such that it requires that I get a little bit closer to my audience than does Mr. Lombard. I always find out that the closer I get, the more successful I am, and if I can get close enough to get my hands in your pockets, I have accomplished everything I started out for. Somehow or other I got my wires crossed as to when I was to make a speech, and I thought I was to speak this afternoon. I thought I was on for an afternoon speech, but looking over this audience composed of dairy maids and men, I think my speech will not fit. My speech is intended for the buttermakers, particularly over on this (the left) side.

I can assure you it gives me great pleasure to be able to stand before an audience of Wisconsin Buttermakers; I am from Iowa, and I think we are great over there. We held a convention a couple of weeks ago, and got our names in the newspapers, and have been talked about ever since. They accuse us of trotting in a fast class. That puts me in mind of a northern man down south. There was a prize offered for the breeders of fine stock down there, stock and cattle, and hogs, and he took an especially fine hog down there, and he expected to sweep off every kind of a premium, and he entered it in the competition with those long razor backs, and when the judges came to decide, he did not get the first prize. He thought he was entitled to it, and heard that the southern people were fiery, and he did not want to get into a fight, and so at last he went to the judges and said: "Don't think I am finding fault, but how is it I did not receive the first prize on my hog entered here? " The judge answered, "We take into consideration the speed qualities." Now that may be the way with us over there, we are trotting in a fast class.

I want to say now—I have got a subject, haven't I? I am sorry for it, because I never was known to stick to it. In the first place I want to talk principally to the buttermakers over here just the way I would talk to my boys in Iowa. I call them "my boys" over there. I am an old bachelor, but I am the father of the Buttermakers' Association over there, and I am proud, and that is all I am the father to.

Now boys, I want to find fault to start with, and it is only

along this line, and I want to give you the benefit of our experience over there. The fault I really want to find is this: With all the advantages you have got in Wisconsin, with the heavy cow population you have got centered in localities, you have not got district buttermakers' organizations in your state. We have never done anything in the state of Iowa that has been of more benefit to the buttermakers or dairymen than our buttermakers' associations. If you had the organization we have, or the organization that they have in the state of Minnesota, you would not be hesitating whether you are going to get through the measures before your state legislature today. We, today, are a tower of strength in Iowa. I believe the biggest factor governing politics in Iowa today is our dairymen's organization. It is the most farreaching and can get after the people the best. We got at the last session of the state legislature of Iowa, appropriations of $140,000; that is more than we ever got for ten or twenty years before, and I believe if it were not for the buttermakers' associations in Iowa, we would not have got 140 cents. There are all kinds of schemes put forward as to how you are to go after these people down there. The suggestions were good so far as they went. I want to say this and you must act upon it; there is nothing in the world that moves a legislature or man so quick if he knows his constituents are after him with a personal letter.

Resolutions are good as far as they go, but when he gets a personal letter, it counts. All that is necessary is to send your man down there, your representative down there and the rest of you buttermakers go home and go to writing letters. Stir up every creamery paper. Nothing is so effective, there is nothing that will do you so much good as those letters; if you want your work to count, that is the kind of work you must do. We formed these organizations in our state three years ago. We did not pay particular attention to any locality. We took railroad centers where they were easily accessible; we called a meeting there, we organized the state into six associations, and they started from these. Our idea was to interest the patronage. The buttermakers could only go so far. You get the quality of your product up to a certain

standard, and you cannot do anything further. We aid all milk producers. After giving instructions as much as we could, then we went to work to get the patrons. You will find that uphill work to start with, but we have got this condition today, if we could supply the demand made upon the state officers in our state to address the meetings of the patrons in the state of Iowa, it would take three or four times as many men as we have today. We have got the patrons so they demand these.

I want to speak now in relation to the National Dairy Union's work. I want to make this statement to you, if you were making butter today, if in Illinois, if we in Iowa, or in Minnesota, that would score 95 or better, there would be no need of the National Association. The power of oleomargarine interests today is on account of the poor butter you make. The first thing necessary to do is to convince the people of the necessity of improvement. If we can convince them it is necessary that we must improve our butter product, the battle is more than half won. I want to impress this upon you, if you will go to work and organize yourselves into county or district associations—I favor district associations—get together, and hold your meetings, you will see wonderful results.

Now we have our scoring contests in these associations perhaps six or seven times a year, every time we have a meeting, and the boys bring their butter. We have got the patrons interested in this part of it, and today there is a perfect cry from Iowa for these meetings, and if Mr. Keifer and I had not promised to be here today, we would serve our state better by being over there.

I hope I have placed that subject before you so you will take action in regard to this matter. We secured at the last session of the legislature in Iowa $140,000. We did it by taking the matter up with the officers of the State Dairy School and Dairy Commissioner's Office, and then outlined all the work, and putting it in the hands of the local organizations. They are the ones that accomplished that result. If Iowa was successful in awakening the legislature, and you would organize yourselves, I would feel paid for coming here.

You are a more favored locality. You have got more railroad centers; you have got every advantage. And another thing I know you have got, the intelligent buttermakers in the state of Wisconsin necessary to carry this movement forward and carry it forward right. I am going to leave this part of the subject.

I want to talk to you a little while on the National Dairy Union work. The work of organization, probably most of the buttermakers at least know about. It seems hardly necessary for me to enter into the detail part of the work of this organization, but I feel this, I would not be doing justice to the association if I failed to let you know of the strength of the organization; the purpose formed for, and what we have accomplished. I want to preface my remarks with a statement. I do want to say this to you, because it is something I want you to take home, I want to say this to you, in the butter product of the farms in the United States, the price is regulated by the demand and supply, and is not regulated by some trust. You should realize the high price you are getting will bear me out.

Our association was formed ten years ago, and seven years since we commenced the present fight for the sale of oleomargarine on its merits. The National Dairy Union does not today nor ever has had anything to do with the legitimate sale of oleomargarine; their business is to see that it is legitimate. They have no business to manufacture a substitute and sell it for our product. Seven years ago this organization took hold of this matter. You who have followed it know the trials we went through. How we secured the passage of the law taxing oleomargarine 2 cents a pound. How also under this law there was the incentive to the people to violate that law, and our law amounted to nothing. We had the law amended, and two years ago we secured 10 cents a pound when it was colored, and reduced that for the uncolored to one-half cent a pound. So far as what the law has accomplished I want to say this to you: The benefits to the dairymen that have been accomplished are these, that three years ago the output of oleomargarine was 126 million pounds. One-third or one-fourth of the entire dairy product of the

United States. In order to understand what this means to us, let me illustrate; three years ago one-quarter of the entire product of our dairies was thrown out of business by a substitute, 90 per cent of which was sold as butter. The law took effect the first of July two years ago, and the output last year was less than 50 millions of pounds. That shows what the law has accomplished, and what we set out to have it accomplish; all that 50 millions of pounds of last year was made in the face of the fact that for during five months of the year they were restricted in manufacturing, and placed the product on the market. They secured a coloring matter in the shape of oil that was impossible for any chemist to tell what it was, or to convict them.

Here is another thing for you to consider. After they made 126 millions a year ago, and the material is unlimited, and the capacity is unlimited, and they could manufacture that so it could be made and sold at a profit at 7 cents a pound, where would the dairymen be today if we had not curtailed that? There would have been no business for the buttermakers. We would have been out of business. We have fought this matter for our preservation. After we secured the passage of that we have had to stand law suits in all the courts of the country, from the justice court to the Supreme Court of the United States, which in every case we were successful.

It stands to the credit of the National Dairy Union; it can be shown that the association was formed and backed by the people, and carried through successfully, not only all the legislatures, but also through all the courts in which that organization has been successful in every particular. We stand today when every one of our laws has been declared constitutional, and all we have to do today is to maintain that.

Now, I tell you, that the butter product of this country was the only one protected to the farmer. I mean that. I want to go further and say this, that the beef trust is the very combination that tried to secure control of the dairy products of the country and had it not been for the work of the National Dairy Union in fighting that organization, they today would have had that control. This is what the National Dairy Union means to you, the dairymen of this country. The officers of

that organization are simply instruments of the people. They have furnished us the money, the small support, and I want to stand before you in the state of Wisconsin, and do honor to that brave fighter of dairymen, Ex-Gov. Hoard, who was at the head of this organization at the time the law was passed. I honestly believe that it was due to those two men —Ex-Gov. Hoard and Charles Knight—I don't believe two men could have been secured to fight the way those men fought and carried that through. I know that Ex-Gov. Hoard spent $1,500 of his own money, and would not accept remuneration from the dairymen of the country, and it is only doing justice in a small measure to honor them.

Here at the opening of the present session of congress at Washington, a move was made for the repeal of that law. This combination that has been formed in opposition to us, and money raised for the purpose of securing the appeal of that law. The first intimation we had came directly from a man I know there, the first man approached, Secretary Wilson, Secretary of Agriculture. That is the first intimation we had. We supposed it was talk along this line, but at the meeting of the present legislature a move was made to secure a repeal of that. They went so far as to tell the provisions of this bill. They simply asked for a modification, asked for a reduction of from 10 to 4 cents a pound on oleomargarine; that the law still remained under the internal revenue department. From the members who were instrumental in getting this bill up, we secured other information, and when we came to examine it we found if they were successful in passing the measure, it would simply nullify the law we have at the present time. You know that Mr. Knight went to Washington, but found that they could hardly have a chance for the passage of that law at this session. One of their most intimate backers said this, that if the measure came up at this session of the legislature, it would lose his support. From the fact that it is a short session of the legislature, and they did not want to be bothered with bills of that kind, we felt perfectly safe, but we have employed a man in Washington to watch this for us, but we do not fear it at the present session.

The organizations are continually flooding the country

with literature. It is a move to educate the people to change the law from the present time. That is the situation there today, and I want to say this, just so far as the dairymen of the United States give the National Dairy Union in the future, as in the past, their support, they never can change that law.

There is one thing gratifying to us at the present time, although the present extremely high price of butter has stimulated the sale of their product, it has not stimulated it nearly to the extent that we thought it would. It shows that the people when they know what they are buying, do not want oleomargarine. It means that if they cannot buy what they want, and butter is sold for what it is, and oleomargarine for what it is, they do not want the substitute, and it is gratifying to us that it is no larger than it is. I am sorry that butter has gotten as high as it has. It simply would force the taking out of lots of oleomargarine licenses which must expire before we can get the dealers back again. But the time will come, and I want to urge upon all of the buttermakers not only of Wisconsin, but Illinois, and Minnesota, and Iowa, that you take better measures to improve your product. You must do it. The public itself is becoming more discriminating. The price is gradually growing further apart, and it means the survival of the fittest in the dairy industry.

I think I could find fault with you. I said to the boys in Iowa, that if there was anything in the world to find fault with you, it is because you don't fit yourselves better for instructors to the people whose milk you are working up.

Now we are up against a class of people who receive the instruction; it is by continually being after them you are going to accomplish this great reform you must accomplish, and the sooner you fit yourselves for the position you are capable of filling, the sooner will the dairy business of Wisconsin be raised. I thank you.

(Great applause.)

The President: It gives me great pleasure to tell you that Miss Willmer will entertain you with a reading from David Harum.

Miss Willmer reads.
(Applause.)
Responds with encore.
(Applause.)
Responds second time.

The President: Mr. Lombard will again sing to us. This time a sacred song.

Mr. Lombard: It is a strong picture, but requires a strong background to sometimes bring out the picture. The song I have selected I went upon the presumption that an audience could be entertained without laughing, and I selected the sacred song entitled "I am a Child of the King."
(Sings.)
(Great applause.)

The President: Our next will be an address by the Rev. E. G. Updike, of Madison.

Mr. Updike: I hardly know why I should have been asked to speak before this Buttermakers' Association. It is sometimes a good deal of a risk for a man of one profession to talk to men of another profession.

At a banquet at which Mark Twain and William M. Everett were present, after Twain made his address and Everett came to speak, he arose with his hands in his pockets, and said, "Isn't it remarkable that a humorist should say things that will make people laugh," and like a flash came the rejoinder from Mark Twain, "Isn't it remarkable that a lawyer should stand with his hands in his own pockets."

This is a patriotic day. It is a little difficult to mix patriotism with buttermaking, yet I suppose that buttermakers are as patriotic as any other class of men. We all know that Washington took a great deal of interest in agriculture; that he had large landed estates. During the whole time he was in office he looked with longing for the time to come when he might go back again to his beautiful home at Mt. Vernon. His grounds were beautifully situated—he had an eye for the beautiful and selected one of the most beautiful places in America for his home, and in the residence at Mt. Vernon after his death, a plan of the whole estate, indicating the

place and name of variety of each tree and shrub was found, and showing his great interest in this kind of life.

It was an exposure to which he was subjected in superintending his farm work that caused his death.

But this is not an Agricultural Convention or a Dairymen's Convention, but simply a convention of manufacturers of butter, and what I have to say will be not along the lines of interest of your particular work, but something suggested by the day on which you meet.

I think that no American ought to allow the 22nd of February to pass by without having his patriotism aroused. Our nation may be the means of great educational value, and we should not gather together without proper observance. Our national ideas are of great worth to us, and every great nation has its ideals, and here in America very high ideals, and we have idealized all of our great men. We have idealized Washington—for that very reason we observe his birthday. Lincoln—and for that reason we observe his birthday; I suppose these men if we had them here today, and could understand their lives as they were understood by the men in contact with them, they would hardly be able to measure all the ideals we have of them. There is the ideal Washington, the ideal Lincoln, and the ideal Grant. But it is very beautiful that we have idealized our great men. Men we believe to be great. We never have idealized bad men, and no cases are recorded where a really bad man has secured a place in the affection of the people when his character is known.

We may wonder whether we have need of as great leaders in our political life as the people of the early days of the Republic. It was necessary in those days for men like Washington, for those great leaders who formulated the constitution of the United States, those men who led us to success in the revolt against the mother country, and again comes to us the question: Do we need such men today? The average intelligence has been greatly raised, and is there as great want of leaders as in the early days of the Republic? I think there is need. And there is need of a higher type of statesmanship today than in the days of Washington. There are problems of great importance before us, and we need men who shall

crystalize the best sentiment of our land. We think it a marvelous thing that men could gather in that convention and formulate the most wonderful production, as Gladstone said, "that was ever struck off by the pen and brain of man."

I believe there are problems that require men of greater ability than Washington's. We may not be able to find the leaders, but the problems are before us, and they need our attention. We have developed a wonderful public opinion in this country where we have eighty millions of people to think about the same thing at the same time, to have the same ideals at the same time; and because we have the telegraph, the press, we have our wonderful agencies for education, the people are trained. It is possible to get information of any kind before the whole population at the same time, and in that way we have a public spirit. And I believe our political campaigns are of great advantage—of the greatest educational value. We think elections come too often, the expenses are too great, and thus require the interest of a large number of citizens, but we never pass through a great political campaign such as last fall without the greatest educational value to the people. If they are of no other value, they are of value simply from the fact that the intelligence of the people is touched in such a way that the whole body of the population think the same things at the same time, and have a common impulse. In that way we have a public interest.

While we have made great advancement by wonderful discoveries in our economical life, I believe there has been a corresponding advancement in other things along moral and spiritual lines. Yet we must be on our guard, because the fact that we have had at our disposal these wonderful forces of nature, does not make a great nation. The fact that we produce so much silk or coal does not necessarily make a great nation. Unless there is a spiritual equivalent for these things we are not great and cannot solve the problems that are before us for solution.

We are just beginning to have a consciousness as a nation, that we belong not simply to ourselves, but to the world, and in this way we have gone beyond the ideas of Washington. Washington said we were not to have entanglements with

foreign nations. That was good advice at that time, but it is not good advice for the nation today, and if Washington were here he would be one of the first, I believe, to be inspired by the spirit which touches so many hearts at the present time. There has come to be a world conscience, a world public opinion, a world sympathy, a world spirit, and the wonderful things taking place help to bring about this.

The geography has much to do with determining the character of the nation, and the geographical opportunities are almost exhausted, and I think the last is the digging of the great canal. And what results will that have? Do you know that Liverpool is 150 miles nearer San Francisco by water now than New York, and England can send ships to the Pacific and have the advantage of any ships from New York? What will be the situation when the canal is put through? You will find the west coast of South America is on a line with the east line of North America. There were hundreds of years when the Mediterranean was the great commercial center of the world, and the civilization centered around this, and there came a change, and the Atlantic has been the center.

But do you know that in the building of this great canal all this is to be changed? There are five hundred millions of people around the Pacific, and the great undeveloped resources of the world are in the territory about the Pacific. What will it mean when the war with Japan and Russia ceases and China wakens up and develops her resources? It will mean that every Chinaman will have a producing power twenty-five or thirty times as great as now. The population of Europe is 106 to the square mile. China 95 to the square mile. Do you know the population of England is 535 to the square mile, and if you were to give China such a population as England has today, you would have a greater population than the entire population of the globe.

There are to be some wonderful developments around the Pacific. We have not commenced to find the value of Alaska. When Russia begins to waken up and take on the principles of the rest of the civilized world, Siberia alone will take the population of the whole world. The vast resources undevel-

oped of America lie around the Pacific. New Orleans will be 700 miles nearer San Francisco than New York. The wonderful valley with 5,000 miles of navigable river and all that is in close touch with the canal, will open up that territory, and the time is coming when men will not say that San Francisco is 4,000 miles from New York, but that New York is 4,000 miles from San Francisco. The great city of this continent is to be on the Pacific coast. And what does this mean?

We have a strategic point in the Philippines. At a dinner given in New York city sometime ago, when Mr. Kidd was in this country, in some remarks at the close of the dinner he made this statement, that he thought the taking of Manila was the most important event since the Revolutionary War. Another speaker arose and said that he believed the taking of Manila was the greatest event since Charles Martel drove back the Moslems in 732.

Our nation has come since the Spanish War, to feel it is a part of the nations of the world. We are beginning to have a world consciousness, and I think in settling the difficulty between Japan and Russia, it will help to determine what shall be the civilization of those nations around the Pacific, and in developing the scheme of the world, and our own country. We are not able to think what marvelous advancement will be made in the coming years. We have made a wonderful intellectual advancement and material advancement during the last one hundred years; greater intellectual advancement has been secured than in all the centuries before in the history of the world, but now everything done in the industrial and intellectual world is to have the most far-reaching results. And I like to think that this United States is to have a very important part in determining these great international problems. When it comes to a point where the whole world thinks the same thing at the same time, and we have seen that within the last week, the Grand Duke in Russia was assassinated, and the whole world has a judgment, and that judgment is the judgment of this nation and of other nations, and Russia feels the power of that opinion more than the guns of Japan, and when men who think and have consciences, when men have the opportunity to think the same

thing at the same time, and to be endowed with a world spirit, then we are on our way to the coming millennium. And now I think these changes have come about not only by the wisdom of men, but I think there is a God, and all these things are a manifestation of an Eternal God, and yet there are problems we must not refuse to face. There is danger that the interests we may secure shall be used simply for selfish purposes, and every man with a particle of patriotism should feel the re-responsibility.

"Oh Freedom, thou art not as poets dream,
A fair young girl with light and delicate limb,
And wavy tresses gushing from the cap,
With which the Roman master crowned his slaves
When he took off the gyves.
"A bearded man armed to the teeth art thou,
One mailed hand grasps the broad shield
And one the sword. Thy brow
Glorious in beauty though it be
Is scared with tokens of old wars.
Thy massive limbs are strong and struggling."

(Great applause.)

The President: I would like to announce tomorrow our sessions will be held in the Opera House. The first session at 10 a. m. I hope all will be there.

We have had a very pleasant evening, and I am sure none will regret coming here rather than elsewhere.

Adjourned.

SIXTH SESSION.

Thursday Morning, Feb. 23, 10 a. m.

(Crescent Opera House)

Meeting called to order by President Moore.

The President: I would like to make an announcement before we begin with Mr. P. H. Kieffer on "The Necessity of Good Milk and Cream for Successful Buttermaking." Mr. Friday informed me that he found a sum of money in machin-

ery hall; he holds it and if any one has lost it he will be glad to turn it over to them.

Mr. Friday: I found the owner of the money.

The President: That is settled then.

I would like to say Mr. Fulmer is at work on the scores and as soon as Mr. Michels will bring them over here, we will have them announced. We will now listen to Mr. Kieffer.

Mr. Kieffer: Mr. President, and Buttermakers of Wisconsin: I am pleased to be with you here and to make your acquaintance, and after I get through with my talk I hope that you will not feel like a fellow did who went to see his girl. He went to see his girl one evening; she was a girl that would weigh about 175 or 180 pounds, and he only weighed about 125, and some how along during the evening they got to occupying one chair, and she was on his lap. After sitting there an hour and a half, she looked down and said: "Dear, are you tired?" He said: "I was an hour ago, but I am paralyzed now." Now the subject assigned to me is the necessity of taking care of the cream and milk upon the farm. All we who are engaged in the manufacture of butter know the importance of this fact, that milk and cream must be in good condition in order to make a good quality of butter. We have a great work to perform as buttermakers. It seems that it is going to be our duty to educate our farmers to take care of this milk and cream. And after you study this subject carefully, you will find that it is not a very difficult matter to take care of this milk and cream. After you once educate the farmer and instruct him how it is done, he can very easily do it in a short time. There might be an hour and a half talk on this subject, but a few minutes will explain how to take care of this milk and cream. But we have another side to this: The side the buttermaker uses. The importance of taking care of milk and cream, and what will it lead to if we do not. If we do not furnish a good quality, it will lead to the destruction of the sale of our butter. Our butter will have to go into competition and sell for renovated butter if we allow the grade and quality of milk to deteriorate in value. We must stay away from lower grades. The butter made from your

hand separator cream is a class of butter that favorably compares with this renovated butter, and we want to make a distinction; we want to make a butter so much better, so that everybody can tell the difference; all butter made from rotten and impure cream will not keep the prices up. We must protect our business. We are compelled to make that class of butter if we are going to continue the man in milking the cows; we must make a butter that will bring the farmer his returns, and that is a butter that people will consume, and they will consume a great deal more of it than of the lower grade of butter. It injures the market price. Some of you may think that some of the plants are making good butter with hand separator cream, and I don't know why they cannot all do it. That is an erroneous idea. It is true that a couple of years ago when these centralizing plants started, they would take in all the cream delivered to them without asking the producer of the quality, whether sweet or not. All they asked of him was that he fill his can with cream, and after it was full ship it to them. They never inquired as to the quality, and they received an enormous amount of cream and worked up a large trade. The larger plants in the west—I might say in the western part of Nebraska, Iowa and Kansas —wherever they came in conflct with the smaller plants they told the farmer: "Ship us the cream when the can is full, and we will receive it," and the smaller plant said: "You must deliver that to me in good condition." It was easy to hold the cream, and he quit the smaller plant and said, "You don't understand your business. Here is a plant that knows how to make good butter out of the cream," and it kept us all guessing how they did do that. Were they actually receiving the same money for butter as these creameries which received good cream? If they got it, all this talk of taking care of cream and milk was useless. They have had their experiences for the last three or four years, and what was the result?

There are pamphlets issued by the Continental Creamery Company. They issued the pamphlets, and sent them out to their patrons all through their territory, and they say now: "The permanent success of the dairy industry demands each one maintaining good prices in butter fat." This can only be

done by making the best butter which is always in demand and at the highest prices. Now they commence to draw your attention to good cream, because they have had this experience. "Anything which tends to lower the grade of butter produced will make lower prices and consequently less profit to the producers." They have found that out by experience, and we have found it out. They found it out. They did not come to this until they had exhausted every means. They employed the best buttermakers they could. They installed the machinery, used starters, trying to make first class butter out of this old cream, and the result is they came back to you now with the statement of that kind, saying they must have good raw material. What are they doing in order to get that good material? They buy cream on grade as follows:

First grade cream, cream sweet and fresh, having no undesirable flavors and odors, and testing not less than 30 per cent butter fat. If any one of you in your creameries this morning would find milk and cream in a class like that you would find butter that would score 95, 96 and 93. You would be happy if you received cream in this grade. Must have sweet and fresh pure milk and cream, which means if it is cream, it must test not less than 30 per cent butter fat.

Why do they ask for this heavy per cent cream? For the reason that they want to have control of their cream. They want to pasteurize and produce the flavor desired by the dealers in the product. They want to inoculate this pure cream ready to receive a bacteria and wish to inoculate it and produce the flavor you desire. Such being the case we must not lose sight of this. It shows after three years of hard work, of money spent, and we know that they use every effort available to produce this butter, that they ask for the best grade of cream.

They have another grade, **second grade cream.** This is sour cream which has no undesirable flavors or odors. Also cream which tests less than 30 per cent butter fat. Any cream that would have been fresh and sweet will go in the second class; all fresh cream, sweet and clean, that would in some way or another become sour, by transit, will go in the second class. It would be a good cream. A cream sour without having

undesirable flavors or odors. A great many plants are receiving cream that will not grade in the second class. I do not say in this state alone, but in the state I came from. "Old stale cream cannot be used in making butter and it is not desired and will not be received."

There you have the last fatal sentence.

Now if all the buttermakers will take that stand in their creameries, we can solve this problem. If this sort of cream is undesirable cream for those people, and they cannot make good butter out of it, we do not want it in the smaller plants, because as a rule we are not equipped as well as in the larger plants, so it shows the important point of good butter is the raw material. If the raw material was exposed to undesirable bacteria, unclean surroundings, it becomes inoculated with them, and at a high temperature these bacteria double every twenty minutes, and if they get a hold and get control of that cream, we have found no means where we can drive them out. Pasteurizing does not drive them out. I believe in pasteurizing, but it does not entirely destroy the undesirable bacteria. It leaves the flavor and smell undesirable. It does not destroy that flavor; the old cream flavor. When we ask the creamery patron to furnish us good milk and cream, we are reasonable in our demands, and we are only simply asking of him something of financial value to him. It may mean to him the difference whether his cows are returning him a profit or whether returning him a loss. If this butter sold at the highest market price, if a good quality, so more of it is consumed, then he gets a higher price for his raw material, and the higher price he gets, the more milking he will do. The more extensive he will go into the business.

It does not seem to me reasonable, and right and fair for a man to till his land during the year, work hard, hire labor, build the large barns, buy his herd, feed them, milk them, and then on account of ignorance or slackness, that he will reduce the profit in his dairying, because he allows the cream and milk to spoil on his farm. It doesn't seem to me right, and I think after we get after them in an intelligent way, and put this question to them, that we will be able to produce a cream that will class in this first grade.

It can be done. It is a simple matter. We all know that milk when it comes from the cow is pure. That being the case, it depends wholly upon the man that is handling that milk in what condition it is when delivered to the creamery. It rests upon him whether that milk and cream is in a good condition. The cow has not spoiled it. So I say again that it depends upon the farmer that produces this milk regarding the quality whether it is of a good quality or pure quality. Now it is a simple matter for him to keep that in a good condition. If he uses hand separators, he wants to see that his hand separator is washed. That it is perfectly clean and sterilized. By running milk through a hand separator he is not going to inoculate it with any kind of bacteria excepting what would be in the air. Then it will not be the fault of the machine. Therefore it is very necessary that this machine must be washed every time after it has been used. Not once a day. Milk is pure when it comes from the cow; and easier you can start the milk on the wrong track if it is pure. And pure from the cow, it could be inoculated with undesirable bacteria. Run this clean milk into a deep can or a cooling can, and set it into cold water, and stir it for a few minutes, and while in that thin condition it will very quickly get down to the temperature of the water, about 50 degrees, and when it is down to that temperature, cover it up tight, so that no bacteria will get in there. There are a few in there now, but at a temperature where they will not work. When you skim some more cream, run that into a separate can, cool down to the same temperature, and add them together at the same temperature, and stir them, and hold them there, covered again. It depends on the skill in doing that whether the cream is in good condition or poor. The same thing with milk. After milking, it must be strained, and set into cool water, and stirred pretty well together, and pretty quick it is down to the temperature of the water. And you will find you are delivering an A No. 1 milk to the creamery. You can introduce almost any kind of bacteria into the milk when it is pure. You can introduce any flavor when it is pure. You can make that experiment yourself. You can tell the farmer and the patron to make that experiment. Tell him to take a few drops

of sour milk that has an undesirable flavor and odor, and add that into a pint jar of good fresh milk, and see what kind of flavor he has in that fresh milk. He will have the flavor he inoculated it with. In another jar put some milk, and inoculate it with a nice lactic acid bacteria and he will find it is nice and pleasant. He is the one that we must get after. I think the best way is to get after him intelligently Call a meeting, get your farmers into the creamery, or school house, or town hall, and give them some sort of talk along that line. You see it is for him to deliver to you a milk and cream that you can make the best grade of butter from, and you must make that best grade in order not to go into competition with the grades I spoke of before—for your own good and the growth of our business we must do this, and buttermakers as a rule know the importance of the quality of milk and cream, as all of us do today, in order to get the quality of butter. If the buttermaker's butter is poor why he knows immediately what to lay it to, he says: "It is the bad milk or cream I have been receiving. They did not wash their cans. They are not ventilating their barns, and many cows are in too close quarters, or they don't keep the stables clean." The buttermaker knows this, but you must get the farmer to know it, and after this we will be on the way to progress.

I close, thanking you for your attention.

The President: Are there any questions you would like to ask Mr. Kieffer?

Mr. Friday: There is a telegram for Mr. Anguish. Is he in the room?

Mr. Palmer: I think it belongs to Mr. Andrus.

The President: Mr. Kieffer has been our butter judge and it might be a good thing to ask him for his criticisms on your butter. I think some of you were present. Mr. Michels informs me that the butter scores very high, and very uniform, and so far as the maker was concerned, his work was well done. It was mainly in the flavor the score was lacking.

Mr. Palmer: I would like to ask Mr Kieffer a question:

Speaking of the centralizing plant. Is it not a fact that these pamphlets which Mr. Kieffer claims they are sending out, are only sent in certain localities? That this game has been worked for three years, and run out most of the small creameries and those pamphlets are being sent in there, and not all over. That is the way I understand it. I thought perhaps Mr. Kieffer would know whether they circulated among all the dairies or in certain localities?

Mr. Kieffer: I take it they were sent to all patrons. I am not sure about that, but you know that when they first started this business, they did not send out those pamphlets, but they are sent out now, but to what extent I am not ready to say.

The President: I think it was published in "Dairy Produce" that they were sending to all patrons.

Anything further?

A Member: I would like to ask one question in regard to the flavor of milk where silage is fed. I find that the cream —I have a hand separator—is considerably off, and he lays it to the feed, and the silage. He feeds thirty-five pounds of silage during the day. Feeds after milking, and in the afternoon at 4 o'clock, and milks at 7 o'clock in the evening.

Mr. Kieffer: My experience with cows fed with silage is very small. At Strawberry Point at that creamery, two or three fed silage, and when they commenced to feed this ensilage, we could tell it in the milk, but along in the winter we had to look for it to find it, but I think the trouble in this case is the mangers are not kept clean. Ensilage will spoil, and if the mangers are not cleaned every day after feeding it, fermentations take place and you will find the results in the milk. This man used to feed off silage, and it was spoiled, but after he got down to good clean ensilage, it was all right, and I think the mangers must be kept clean.

A Member: May it not often be the fact that if the milk stands near a pile of silage it may absorb the odor?

A. Yes sir.

The President: It seems to me one good point brought out was that he fed in the afternoon about 4 o'clock, and did not milk until 7. I have thought that is one point where the

farmer is at fault. He should not feed ensilage until he has milked. I have been talking clean milk and some places I have been in, I have been informed that the conductors of the institutes where I have been, advocated the feeding at any time. I am opposed to that. Feeding anything before milking that will give an odor, rape and beet pulp will give your milk an odor, and taken in connection with the fact that the stables must be kept clean, will help matters. It is like a great many other things, people get careless habits, and the things get spoiled.

Mr. Duxberry: I would like to ask Mr. Kieffer how he would manage to get around to his patrons for to instruct them to fetch this best quality of milk when the buttermaker is not so situated so he can see them personally. I have about seventy patrons, and the milk all comes in with five teams. These are about the only patrons I see without making a special effort to go and see them personally.

Mr. Kieffer: I think that is a good point. I think if the buttermaker will go home and explain the necessity of the good cream to his board of directors, and tell them the importance of it, and that it is important for you to personally visit each one and have them talk this up and to call a meeting of the patrons, they are usually scattered through the territory, and having your creamery officers to work with you, you can get the patrons to come in, and then you outline to them the necessity of good milk and cream, show them where it will mean money to them, and it does. And I think that would be a way to get after it. But if you could visit your patrons yourselves, I would advise you to profit by Mr. Shilling's experience when he made butter. He said when he made butter quite a good many years ago, in Iowa, there was one woman there who insisted upon the hauler taking her cream, and it was bad, and he went out to visit her. He went to the house, and took off his hat, and put it on a chair, and she asked him to be seated, and he says: "Mrs. Murphy, that cream you sent yesterday to the creamery was rotten." He said he never stopped to get his hat; it is there yet.

The President: Did he leave most of his hair there too?

Mr. Kieffer: Now he says he has learned by experience

the way to do that is to go to Mrs. Murphy and says: "Mrs. Murphy, your cream is good, but somebody else's cream is not quite right. And boys, you can get your customers all right if you try.

The President: I think Mr. Duxberry should get the farmers and patrons together, and get the ladies to get up a picnic, or a dinner, and get somebody to talk to them. Mr. Jenks just came in. Did you get much benefit from that picnic?

Mr. Jenks: I am not prepared to say how much in regard to the matter. There is an improvement over last year, and I know from the interest and the way they talk, I receive a great deal of good from that meeting.

A Member: One question I would like to ask. What effect does fall rye feeding have?

It was stated that nothing but young cattle should be allowed to have that.

Mr. Palmer: In our territory there is a great deal of rye, but in the fall we have not had trouble, but we have had trouble in the spring when rye is growing very fast, makes awful slush of butter. But in the fall we never had any trouble.

Prof. Farrington: I want to say there are two points that have suggested themselves to my mind and I want further information about. He states at these centralizing plants they divide the cream into two grades. I would like to know first, if these plants refuse cream that does not come in either of these two grades. Second, will he explain to us the method they use for grading the cream.

Mr. Kieffer: I give you this as I read it in their pamphlet, and it was reproduced in the Chicago Dairy Produce. I have not personally visited this creamery, but we know that the sentiment is among them in talking with them that they must have better quality of cream. They say that your stale cream would not be received.

Prof. Farrington: You don't know whether they enforce that?

Mr. Kieffer: I presume it is enforced in the territory where no competition is. In regard to the method they use in

grading this cream, I have only heard that, that they use an alkali solution.

Prof. Decker: Have you heard any statement as to the proportion between No. 1 and No. 2 cream delivered?

Mr. Kieffer: No sir, I have heard statements, but I think both of them are unreliable. I heard the statement that only about 10 per cent of the first grade cream was delivered, and then I have heard again that the larger per cent was the first grade of cream, but I have not got this from any authority. Just simply people who have been there.

Prof. Decker: Is it possible to get the cream aroma from second grade cream?

Mr. Kieffer: You could not make the best grade of butter. No you could not get it. You are then trying to overcome the bad flavors that are in there, and you must use a high acid starter or a coarse starter, and it gives your butter a coarse flavor.

Mr. Palmer: The young man I spoke of is a cream sampler, and the way he samples the cream, he just simply tasted it. He had what he calls grades 1, 2 and 3, and slid it off in different directions. He had a young man helping him.

The President: I don't think these western plants—I think it is a good deal as Mr. Parmen says, they didn't have an absolute rule. A man whose business it is to grade the cream and the larger per cent of the cream in any event can be graded mostly by tasting and smelling. No absolute rule about the way they will handle the different grades. Their pamphlets say they will not receive the third grade of cream, but if the cream is in the house, they have already received it, and they write a letter to the man explaining the necessity of being more careful, and warn him if it does not come better, they will not take it. I think they are discriminating very much more closely than they used to and I don't think their rule is absolute. They make it to fit the case. I think they work on the lines of education. They try to induce them to go along and make the kind of cream they want and that is the way some of the plants are so successful. They use a good deal of diplomacy, but are working up their product to a higher standard than formerly.

A Member: Do you dump it in a big vat or test every can?

Mr. Kieffer: All cream is shipped by rail, and each can inspected.

Prof. Farrington: I think this subject is of importance, since we are getting so much hand separator cream in the different sections of Wisconsin. Some method, practical and feasible is yet to be devised. I heard it suggested that each patron's cream should be sent to the factory in his own cans. That is not practical, as you are hauling tinware both ways. Another is to allow the cream helper to carry enough pint or quart bottles so he can take half a pint from each farmer, take it to the factory, and the buttermaker may examine that cream, and tell you where it is being produced. I was in hopes that this large concern that Mr. Kieffer has been mentioning had devised some practical way of grading the cream that would prove better than we have now. I think that is the way we must work out something better than we have.

Mr. Kieffer: I did not investigate that point how they did that, but the object in my quoting these people was to show you the importance of taking care of the cream and milk. They say you must have a good raw material, but I did not investigate it far enough.

The President: If there is one factory receiving hand separator cream in Wisconsin that is more successful than West Salem—and if Mr. Corneliuson is in the room I would like to hear from him.

Mr. Corneliuson: The hauler selected out the inferior cream in certain cans, and at the factory the buttermaker looks at this cream, and if he finds it inferior or useless, it is deducted 10 per cent in weight; if the man received 100 pounds of cream, he gets credit for 90 pounds. That would make for the lack of quality.

The President: Isn't it a fact if this poor cream cannot be located, that the driver is made to stand the loss?

Mr. Corneliuson: Yes sir, if the driver has it in his contract, he is responsible.

The President: Isn't this poor cream churned by itself?

Mr. Corneliuson: Yes. Before they had a pasteurizer put

in. After they got the pasteurizer in I think it is churned together.

Prof. Farrington: In that case, the drivers are the inspectors.

Mr. Corneliuson: Yes.

The President: Anything further?

A Member: In order for a man to keep his cream in the summer time he must have an ice house—don't the rules of the West Salem creamery require every man to have an ice house?

Mr. Corneluson: Their rules require that the cream must be first class, and they cannot keep cream two days or longer without having ice in summer time. And they do have ice, and nearly every patron puts up ice.

Mr. Jones: I have patrons who keep their cream three days in warmest summer without souring a bit. They stir their cream and cool it immediately after separating, and then it is kept in cold water from the well. And it has been in a better condition than some patrons who keep it in ice water without taking so much care of it.

A Member: If the cream is delivered in separate cans, it can be kept sweet longer. If the patrons are instructed to keep their milk and cream in separate cans, until delivered at least, it can be kept sweet longer.

A Member: I would like to suggest something. I think that no one should be allowed to keep cream longer than two days without delivering it. I think there should be a law passed and we should pass it. If we do that, we have the problem solved for good butter.

Mr. Dodge: I think if we pass a law of any kind we should pass a law that the farmers should take care of their cream so it would be in good condition after three days. I was raised on a farm in Illinois, where we shipped milk to Chicago, but we used to cool our milk immediately; while we were milking our cans set in water and we cooled it immediately, and we never had any ice and many times had milk three days in summer and kept it sweet, and I think if proper care is taken of the milk, it should be in good condition even when three days old.

Mr. Corneliuson: I think the question whether you need ice depends on local conditions. Some well water has a temperature down to 44 degrees, and other well water 52. I know of one creamery I operated at one time, the well water was 58; it makes lots of difference what kind of water supplies the man has. Also makes lots of difference in the care that the milk or cream receives. If everything is kept scrupulously clean, the milk in a clean manner—the cream or milk will keep much longer than otherwise.

The President: I would like to say that some people have thought to pass a law will be a panacea for all ills. It is not so, you must first create a public sentiment that will uphold any law We have a bill in the legislature to try and solve this problem. We have a little joker in that bill, and we think it will help this problem of old, sour, decrepid cream; it says, "Cream in any state of putrification is unsalable." It is unclean. I take it that any cream in the condition that it will make poor butter would go under that head. I have seen cream at the railroad stations, with the covering off, being forced off by the fact that the cream was in the sun, waiting for the train and it was yeasty, and that kind of cream will not make good butter, and we think we can say something about those farmers delivering that kind of cream to factories and factory men taking it.

Mr. Duxberry: Speaking about the loss of keeping poor milk. I will state an experience I had. When the cold weather first started in I noticed something undesirable in my butter. I kept pretty close watch of my milk, and we got a warmer evening, and the next morning I found a stale flavor in my cream. And I found the patrons were keeping their milk in the barn over night and I stopped them from that, and the milk began to be better, but according to my score yesterday, Mr. Kieffer told me my butter had a little impure flavor.

The President: If he can by just telling the patrons to remove the milk from the barns, you can get them to do more than the majority of us can. Anything further along this line?

The next number on the program is the paper on "The Licensing of Creameries and Operators," which I will now

read to you. The cheesemakers were more worked up over this subject than the buttermakers. A great many letters were published last year, expressing a wish that all oprators of creameries should be licensed. Their main purpose was to provide funds for more inspectors.

(Reads paper.)

Licensing Factories and Cheesemakers.

The dairy business, like every other business, has a great many problems demanding a solution if the best interests of those interested in it are to be conserved. We all know there is a vast amount of poor quality of dairy products made and put upon the market to the detriment of everybody connected with the business. The price received for the best grade is necessarily affected by the amount of poor, off grades offered.

How, then, to eliminate this undesirable factor becomes an important matter. It must largely be a matter of education, and the forces now at work trying to uplift the dairy business to a higher plane, while doing good work, seem to be inadequate to stop or lessen the evils complained of. Among other things that have been suggested to bring about a better condition of affairs, is the license system, applied to the factories and makers.

The power to issue a license carries with it the power to revoke the license, to make, and enforce the necessary regulations in order that the object sought may be accomplished. In order to make a license system constitutional it would have to be a part of the police regulations of the state enforcing the sanitary production of foods in order to conserve the public health, or public morals, and escape coming in conflict with the provisions of the constitution, providing that taxes must be uniform. It was suggested to license the makers only, but it would be manifestly unfair to ask a maker for certain qualifications and expect him to produce the best results among unsanitary surroundings, or from unclean, unsanitary milk. To accomplish the results sought, more must be asked

of the factory or maker than the mere payment of a fee, as is the case with the barbers of Wisconsin, as it is reported that any one having a dollar can obtain the necessary license. In the case of factories, it should be required of them that they be so located that efficient drainage can be provided, or where natural conditions do not permit, compel the installation of the septic tank and sub-sewage system of drainage. That the building be kept in a clean, sanitary condition and the equipment be of such a character that it can properly do the work required of it.

Especially is this so in the case of testers and glassware, numbers of which are antiquated, not being provided with any means for ascertaining if the necessary speed is being maintained, glassware not correctly calibrated and acids lacking strength.

Under such conditions, it is obvious that justice, as between patron and patron, or patron and factory, could not be done. Buildings it is thought could be compelled to be provided with adequate facilities for ventilation, too often neglected and the importance of which is not appreciated. A report of work done rendered monthly, so that it could be seen whether patrons were receiving their just dues, and makers reporting tests correctly. The building of new factories in neighborhoods already well provided for, could be discouraged; and the quality of milk supplied raised to a higher standard.

On the other hand it may be contended, that it could raise the standard of qualifications among makers, if proper examinations were given, before issuing the license to the applicant. I take it, that in order to obtain the best results a division into grades, similar to school teachers' certificates would have to be made. Prof. John Michels has already made this suggestion, and given an outline of the qualifications to be possessed and amount of work done or time served.

An examination board should consist, let us say, of three of the leading butter experts in the state. The requirements for the different grades should be as follows:

For third grade certificate

1. Theory and art of buttermaking.
2. Testing.

3. Bacteriology.
4. Creamery mechanics.
5. Arithmetic.
6. Composition of milk and its products.
7. One year's experience (no official inspection).

For second grade, average standing 70.

1, 2, 3, 4, 5, 6, as for third grade, with average of 85.

7. Bookkeeping.
8. Judging butter, cheese and starters.
9. Two years' experience (official factory inspection).

For first grade.

1, 2, 3, 4, 5, 6, 7, 8 and 9 as for the second grade.

10. Feeding and breeding of dairy cattle.
11. Veterinary science.

The above was not submitted as an inflexible cast iron scheme. It was offered simply as a starter.

By following this plan, or something along similar lines, it would be entirely possible, it is argued, to eliminate the poor makers by refusing them licenses. It would be necessary for the successful applicant to possess a knowledge of up-to-date methods in handling starters, acid tests, milk testing, refrigeration, sanitation and the hundred and one other things that go to make the successful maker. It is also obvious that some men could readily pass an examination of the character proposed, who might fall down when it came to the practical application of the principles involved. Vice versa, the practical man might not be able to shine in a written examination so that in order to do justice to all, a combination of the two must be had. I take it that the results of the license system, as herein contained, might be satisfactory to the many, but the largest part of the problem is yet to be discussed, and that is, the administration of the necessary rules and regulations.

South Dakota has a license system for its factories and creameries, Michigan has a system of registration that is not compulsory, Maine requires the license of all operators of the Babcock test. However, these states have a very small number of factories as compared with Wisconsin, and it necessarily follows that the larger number the greater the difficulty in

enforcing the laws. It is estimated that Wisconsin has about 1,200 creameries and about 1,800 cheese factories. Every one of these factories would have to be inspected once, yes twice or even three times would be better. As Mr. Emery, I believe has estimated that a man cannot properly inspect more than four factories per week with working fifty weeks in one year, it follows that the outside figure for one man, one visit to each factory, would be 200 factories. This is believed to be an outside figure, but even taken as a basis, it would necessitate the employment of fifteen men to do this, and if visited twice it would take thirty men; if we allow fifty factories to one inspector, which would be a more reasonable number, then not less than sixty inspectors would be required; this constitutes quite a number.

Necessarily in whatever department of state inspectors are placed, a number of clerks would have to be employed also in order to properly take care of the office work. Now suppose a factoryman should refuse to take out a license, it would take the inspector's time to visit the factory, swear out complaints, attend court and no one who has not had the experience with them can properly appreciate the amount of time consumed. Or suppose a license has been issued and upon visitation the factory was declared unsanitary or for some other reason it was deemed advisable to revoke the license, naturally this action would precipitate a conflict in court, which would entail an expense to the state and a waste of the inspector's time.

The makers who are now at work might refuse to take out a license and it is doubtful if they could be compelled to quit the business on that account.

So far I have treated the subject in a general way. I will now summarize, in part, what I have already said and will treat the subject more specifically. We are face to face with the question, shall Wisconsin cheese factories and creameries now embark upon a new, radical and revolutionary policy of requiring the licensing of factories and makers?

The first question that confronts us is: What is the purpose of such a license? What end is to be accomplished? Let us first consider the licensing of factories. In the licensing of

factories, so far I can see there are only two definite ends to be accomplished: 1. To fix a standard in the character of the factory or building itself, and in its entire equipment, including its sanitary conditions and surroundings and mode of operating, that must be maintained in order that a license be granted and allowed to continue in force.

If this is to be considered the purpose to be accomplished it does not require a sage to foresee innumerable intricacies and hindrances in the way of its fulfillment. Who is to prescribe the conditions that must be fulfilled before a license will be issued? If these specified conditions are to be insisted upon, then it seems inevitable that each one of our 3,000 creameries and cheese factories must be inspected before the license is granted. This would require a large number of inspectors and as the license, in each case, would be dependent upon the judgment of one man, it does not require a prophet to forecast an enormous amount of irritation and friction at the very outset. The meaning of this is, that a vast effort and expense would be incurred in operating this very big piece of machinery. Should we accomplish anything mare than merely run the big machine?

But it is said that license should be granted to all cheese factories and creameries upon application and then revoke the license unless the specified conditions are fulfilled. The reply must be made, that this would involve more difficulties than the former proposition.

It is a well settled principle of law that no one is to be deprived of his property without the due process of the law. No one, under the provision of the constitution of our state, can be clothed with the arbitrary power or revoking a license in such a case without the right being reserved to the person who holds such a license to appeal to the courts to sustain him in his right to continue business.

This would open the way to endless litigation. Would such a system be premature? Would such a policy at this time serve to promote the best interests of our cheese factories and creameries? May not our competition in neighboring states be wishing, with a wink of the eye, to see us set out in such an undertaking? Will endless irritation and litigation be pro-

motive of the best interests of our cheese factory and creamery interests? It is a wise people, who before going out to war, sit down and count the cost.

2. The second definite end proposed to be accomplished by such a license system is the securing of a fund to provide adequate inspection. Probably this latter purpose has had more to do in arousing interest and discussion in this question than the one heretofore stated. If factory owners pay a license, they will expect in return frequent inspection by competent inspectors. Unless this is given, endless friction is inevitable.

If the number of factories to be inspected by each inspector is limited to fifty, so that frequent inspections can be made, sixty inspectors must be employed. To be effective, these men must be thoroughly competent. If insuection is made by incompetent inspectors no improvement is to be expected. Improvement through inspection can come only when the inspectors are thoroughly competent. If the blind lead the blind, both shall fall into the ditch. But to secure and retain competent inspectors, they must be paid a reasonable salary. Estimate the yearly salary and expenses of each inspector at $1,800, and the total cost to provide sixty inspectors makes the sum of $108,000. To secure this fund from licenses would necessitate the annual payment by each factory and maker combined of $36. This calculation leads us into such figures as to make the most enthusiastic and courageous advocate pause and consider.

In discussing this question, this one proposition must never for a moment be lost sight of, that a licensing system that fails to provide ample and competent inspection, must prove disastrous.

3. Let us next consider the licensing of the makers.

The ends to be accomplished by licensing the makers must be either (a) the increasing of their efficiency; or (b) the raising of a fund to secure adequate inspection.

Let us consider the last object first. When I consider the long days, the unhygenic conditions under which most of the makers work, the many masters whom they are required to please, and most of all, the very inadequate pay which most

of them now receive, and I recall my own experience as maker I find that I rebel against standing here and advocating that we should add to the present unequal burdens of the makers by compelling out of their meager stipends, to pay an annual license fee to enhance the quality of the present product and thereby enhance the income of the producers.

Let us now consider the licensing of makers for the purpose of increasing their efficiency.

There are 3,000 of them. If licenses are to be granted only upon examination, the problem of administering such a law at once confronts us. Power to do this must be granted by some person or board. To conduct these examinations involves a great amount of work and expense. Then, too, the 3,000 makers must be put to a large expense, by loss of time and expense of travel in attending these examinations.

Then if they neglect or refuse to attend these examinations, prosecutions with their expense and irritating troubles must follow and can they be compelled to secure a license? Will the possible good that could be accomplished more than counterbalance the harm it would do? Is it sure to do even that?

But if we are to grant licenses to all makers at present employed, what improvement in efficiency is to be thereby secured? To revoke a license when once issued would involve us in the same difficulties mentioned in revoking a license to a factory.

In short, is not this license question one of those theories which sounds well when first talked about, but which when carefully considered in all its relations and effect fails to commend itself to our more deliberate judgment as a workable plan.

Instead of directing our efforts along the line of this license system, whose radical and revolutionary character seems such and whose objectionable features appear so many and so great that the practical hope of securing such legislation is infinitesimal and the prospect of any substantial progress under it if the legislation could be secured which seems improbable, is so small, shall we not, at this time be more wisely acting the part of practical business men by directing our efforts to

securing a substantial increase to the number of inspectors now employed by the state—a plan that is evolutionary rather than revolutionary, conspicuous success of which plan is afforded by the state of Minnesota.

The prospect of securing by direct appropriation by the legislature of a substantial increase of thoroughly competent inspectors at reasonable pay was never before as good as now for Wisconsin.

The governor of the state is on record as saying in public addresses and in his message to the legislature, that he is in favor of increasing the present force of dairy and food commission by such a number of competent inspectors as will afford adequate inspection to all the cheese factories and creameries in the state, and place Wisconsin in a position in this respect second to none of her neighbors. The prospect seems very hopeful that legislation can be secured this winter to secure a very substantial increase in the number of thoroughly competent inspectors to the dairy and food commission.

It is known too that the governor is in favor of such a law defining the qualifications of such inspectors and requiring that inspectors shall be practical cheesemakers or buttermakers, skilled in the technical work of cheese factories and creameries, competent judges of cheese factory and creamery products and versed in the modern scientific and practical dairy knowledge. A bill of this character will in all probability be introduced into the legislature.

Does not co-operative efforts along this line give great promise at this time of achieving the great ends for which we are striving, to-wit, adequate and competent inspection of our cheese factories and creameries than does directing our efforts to the establishment of a radically new and untried system?

We will now listen to a paper by Mr. Fulmer, on his "Experience with Pasteurized Gathered Cream."

Mr. Fulmer: Mr. President, and Gentlemen of the Convention:

Experience With Pasteurized Gathered Cream.

F. B. FULMER, Ettrick, Wis.

My experience in pasteurizing gathered cream began on April 18th, 1904, and has continued every day that we have received cream up to the present time. Without attempting to go into any theoretical details, it will be my purpose to relate observations from our ordinary practical work.

Before we commenced to pasteurize, it had been our practice to grade the cream as it was received. This we found necessary, as considerable of it contained an undesirable flavor, being contaminated with a variety of barn, kitchen and vegetable odors. The amount of low grade cream received was approximately one-third of the whole bulk delivered. For the butter made from this low grade cream, we received from one to five cents per pound less than for the other two-thirds of the butter, the price varying from week to week as the quality varied, the average being, perhaps, about two, to two and one-half cents per pound.

As soon as the pasteurizer was installed all the cream was pasteurized and put in the cream vats without grading, the process of pasteurization eliminating, so far as could be detected, all of the undesirable or foreign odors present in the cream when received.

At this point the question of the starter entered into consideration. Digressing for the moment, permit me to say that upon this subject we ventured with some misgivings, as it was not practicable for us to obtain skimmilk in desirable or necessary quantities for starter purposes. After some experimenting, our uniform practice has been to secure about two quarts of fresh skimmilk and pasteurize it at a temperature of 160 degrees Fahr. for half an hour; if the temperature should go up to 180 degrees or the time be extended to 40 minutes, no harm would follow. After the skimmilk had been subjected to the desired temperature for the required length of time, it was cooled to 70 or 75 degrees and the contents of an ounce bottle of commercial starter added. The temperature was then maintained at a point which would cause the

inoculated skimmilk to develope the desired degree of acidity in about 24 hours, the desirable degree of acidity being about 0.45 to 0.5 of one per cent or just about at the point where the skimmilk would coagulate into a soft curdy mass.

Care should be exercised in allowing the starter to develop that it does not get over ripe; it should not be allowed to ripen to the point where it will begin to "whey off," as it will then be very apt to impart a sharp or strong flavor. This "startoline" was then added to six or eight gallons of skimmilk which had been previously pasteurized by the same method as the two quarts just described. This larger amount of skimmilk was then maintained at about 65 or 68 degrees of temperature, or at a point which would cause the inoculated skimmilk to develop the required degree of acidity in about 24 hours, the same as described before in speaking of the "mother starter." When this stage was reached, the skimmilk starter was added to some pasteurized cream which had been carefully selected for this purpose. The two quarts of skimmilk we pasteurized in a common shot-gun can; the six or eight gallons in a ten gallon milk hauling can and the selected cream in a 100 gallon Farrington Cream Ripener which we used for a starter can. The amount of selected cream which we pasteurized varied from 40 to 80 gallons, depending on the amount of starter that we needed. The selected cream was heated to 160 degrees and held there for 20 minutes and then cooled to 60 or 65. This inoculated cream would in turn develop into a cream starter in about 24 hours, which would then be used as our regular starter for the cream which was pasteurized each day as received. From the cream starter we would take out from two to four gallons each day to inoculate the succeeding lot of selected cream which was pasteurized for starter purposes. The cream starter would be carried for one week, when a new bottle of culture would be developed in skimmilk as before, to build up a new starter. If proper care and precaution are observed, the cream starter can be carried for two weeks or longer, but it is better practice to build up a new one each week, especially during the warm season.

The "startoline" could be carried along from day to day in

skimmilk if desired, but as we had considerable difficulty in securing skimmilk more than once each week, we never attempted to follow this method.

On a few occasions we selected a few 20 gallon cans of the best cream as it arrived at the creamery and added this raw cream to the pasteurized cream in the cream vats for a starter, but this method did not appear to give as good results as when the pasteurized cream starter was used. The raw cream starter did not give us a uniform flavor from day to day and was not used to any extent.

After we started to use the pasteurizer a marked improvement was noticed in the butter and it sold for a uniform price. This state of affairs prevailed up to the approach of warm weather in the latter part of May, when a portion of the cream received began to show the results of considerable acid development, at which point a set of new, and in some respects, a perplexing set of conditions arose.

The first objectionable feature observed after the high acid cream had passed through the pasteurizer, was the presence of clots of curd in the cream as it ran into the cream vats. The higher the per cent of acid in the cream before pasteurizing, the larger the number of clots observed. If the cream was very sour, so as to be thick or curded before entering the pasteurizer, there would be enough of the curdy clots in the cream to hinder its free passage through the strainer into the churns. This would present a twofold objection: First, a direct loss of fat in the creamy clots which would not go into the churn, and second, some of the clots might break up and go through the strainer and when in the churn, they would not "take color" evenly with the rest of the cream, thus causing white specks in the butter. A larger fat loss would also be sustained in the buttermilk from such cream.

Use of Viscogen.

After carefully considering this point and with a little preliminary experimenting, it was decided to adopt the use of viscogen in connection with high acid cream. The viscogen that we used was prepared in the following way: Ten pounds of good clean lime was put into a 60 pound butter tub and slowly slacked in thirty pounds of water, which usually re-

quired from two to four hours. A fifteen gallon hand barrel churn was purchased and into this churn was placed fifty pounds of water and about twenty-two pounds of granulated sugar. The amount of sugar used was regulated so that practically all of it would be dissolved and held in solution so that none of it would be lost in the sediment that would collect at the bottom of the churn after the clear viscogen had been taken out. After the lime was all dissolved and well stirred it was strained into the sweetened water in the churn and the cover securely fastened down, and revolved a few minutes at a time for an hour or two. After standing for 24 hours or longer, the lime not held in solution would be deposited at the bottom of the churn and the clear viscogen could then be taken out to use as needed.

Much care should be exercised in the use of viscogen for treating sour cream previous to pasteurization. No attempt should be made to neutralize any great amount of the acid present in the cream. By first titrating and afterwards experimenting, we found that, for a cream having an acid test of about 0.5 of one per cent, it would require about one quart of viscogen for each one hunderd gallons of cream pasteurized. This would reduce the per cent of acidity in the cream from 0.5 per cent to near 0.42 per cent to 0.45 per cent. With a cream having a higher degree of acidity, a little more viscogen should be added. In our work, the point to which we used the viscogen, was to get a smooth and even cream, free from all clots when it left the pasteurizer. The use of viscogen fully eliminated all of the curdy clots observed in the high acid cream, which in turn very materially reduced the fat loss in the buttermilk. Speaking in a general way, the use of viscogen would reduce the fat loss in the buttermilk from 1.5 per cent to 1.75 per cent with untreated cream, to 0.6 per cent to 1.0 per cent with cream which had been treated with it. Care should also be exercised in using viscogen, for if used in large or excessive amounts, the flavor of the butter will be affected. When used as before noted, no deleterious effect was noticed, but on the contrary, it is our humble opinion that in using a limited amount of viscogen, the flavor of the butter was somewhat improved.

When buttermilk from raw cream and from pasteurized

cream was put into test tubes and allowed to whey off and settle, it was found that the pasteurized cream buttermilk contained approximately twice as much curd in the bottom of the tube as the raw cream buttermilk showed. As the whey from both tubes showed no perceptible difference, it seems reasonable to conclude that the fat loss of the buttermilk was in the curdy portion and that pasteurization of cream, especially cream with a high degree of acidity, tends to produce a viscous curd which entraps the small fat globules, which in part, may explain the larger loss resulting from pasteurization. The sweeter the cream was when received, the less curd there appeared to be in the buttermilk and as a result a smaller loss of fat.

In making and putting up in one pound prints from 10,000 to 12,000 pounds of butter per week we did not find as much time as we would have liked, in which to make observations and to experiment; however in a few trials wherein we churned some of the high acid cream without pasteurizing and checking the butter made from it against the butter made from the same quantity of cream that was pasteurized, our commission men reported a difference of two cents per pound in favor of the pasteurized cream butter.

Pasteurizing sour cream seemed to reduce the acidity somewhat, but in no case observed was it more than 0.1 of one per cent. Some of the cream that we received tested as high as 0.72 of one per cent acidity; during the warm weather considerable of it would average 0.5 of one per cent or better.

Our cream, as received the past season, would range in butter fat test from 17 per cent to 23 per cent per load. Whenever the poorer cream was being pasteurized it required a little more viscogen to keep the cream running smooth from the machine than when the richer cream was being pasteurized. If this observation is at all suggestive, it would seem to support the contention, that with a very rich cream the loss of fat in the buttermilk would be greatly reduced.

In pasteurizing we varied the heating temperature from 150 to 185 degrees Fahr. When we received sweet cream there did not appear to be any perceptible difference in results. When we received the high acid cream there appeard to be a

slightly larger loss in the buttermilk when the higher temperature was used. Practically no difference was noticed in the flavor of the butter.

During the warm season when the cream contained a high acidity we used only a small per cent of starter; we used a small amount of starter all the time, believing that a little good starter helped to "tone up" the pasteurized cream, even though it contained considerable acidity when received. At present we are using from a 12 per cent to a 15 per cent starter.

Another peculiar matter that we observed was, that when cream testing 0.4 per cent acidity was pasteurized and a starter added, no matter how much more acid was developed, the cream would remain thin; on the other hand, when cream testing less than 0.4 per cent acidity was pasteurized and a starter added and the proper degree of acidity developed, the cream would have a heavy consistency like thick syrup, or like raw cream when ripened and ready to churn.

In conclusion permit me to briefly state that the experience of the last ten months appears to demonstrate:

First—That sour cream can be pasteurized.

Second—That there is no economy in pasteurizing exceedingly sour cream, containing a low per cent of fat, so far as the yield of butter is concerned.

Third—That the use of viscogen appears to be necessary when the cream contains upwards of 0.35 per cent acidity.

Fourth—That pasteurization of sour cream will improve the quality of butter made from it.

Fifth—That by selecting good, sweet cream to build up with, and using a small amount of skim milk for the first two propagations of the culture, a cream starter is successful.

The President: My watch says it is about ten minutes of twelve. I presume we can put in a little time discussing this question.

Mr. Michels: I would like to have Mr. Fulmer explain to us what viscogen is. I heard it was a combination between whisky and gin.

Mr. Fulmer: I would say the gentleman got hold of a

different brand from what I am accustomed to use. (Laughter.) Viscogen is dissolved sugar and lime held in solution with water. It has a bitter taste. It would nearly raise a blister on your tongue, it is so bitter. But when diluted, one quart to one hundred gallons of cream, it is almost imperceptible to the taste and smell; it is nothing but lime and granulated sugar and water.

Prof. Decker: The object of the sugar is to help dissolve and hold the lime in solution. What pasteurizer do you use?

Mr. Fulmer: The one we put in is the Duplex or disc machine. I am not in a position to say what other machines would do.

Prof. Decker: What proportion of your cream is hand separator cream?

Mr. Fulmer: Nearly all of it is.

Mr. Michels: What cause the clots?

Mr. Fulmer: The high acid cream coming in contact with heating surfaces.

Mr. Fulmer: I would say that some of our skimmed milk was heated to 190 and we never noticed any barn flavor. We never get much above 160 in cream.

The President: Anything further?

A Member: What I was in doubt about, would it be as successful with an ordinary starter can as the ripener?

Mr. Fulmer: I never used one, but think it would.

Prof. Farrington: Does the cooked flavor in the butter disappear after the butter is made?

Mr. Fulmer: In using the pasteurizer you must be very cautious. You must watch it to see that it does not get scorched. We never had any cooked flavor in the butter. It is true that the cream as it comes from the machine may show a slightly heated flavor or cooked flavor, but when you ripen it over night, the next morning it will not be detected at all.

A Member: What is your object really in pasteurizing the cream? If you by this means can make a better quality of butter, or if you have a nice quality of cream, can't you make as good from the raw material?

Mr. Fulmer: I think it better to pasteurize and secure a uniform product.

Mr. Shucknecht: That question of burnt flavor causes many discussions connected with pasteurizing since it was started. I happen to be able to give you the experience of a man who has a pasteurizer and is perhaps as successful with it as any man in this country; I refer to Mr. Soudegaard, of Minnesota; he is very observing in all that he does, and he pasteurizes, and has for more than a year, at about 190 degrees the cream for buttermaking, and we all know his butter has not a burnt flavor, or any other objectionable flavor, and he told me that you can pasteurize at a very high temperature without being at all afraid of a burnt flavor, provided you cool that very thoroughly directly after pasteurizing; have it cool when it runs into the vat. Cream runs into the vat at about the temperature of the water in the coils. If that is only borne in mind, there would be no trouble at all about it, but too many people think the heating of cream is the pasteurizing of it. It is only one part of it. The cooling is one part of the process, and that coming from so good an authority as Mr. Soudegaard ought to satisfy us.

A Member: I would like to ask what kind of starter he uses?

Mr. Fulmer: We are using the Douglas at the present time.

A Member: I would like to know what method he is using in mixing viscogen with the cream. Is it poured into the cream vat?

Mr. Fulmer: The cream as received was dumped into a receiving vat and the viscogen was put in with the cream, and the amount determined by the amount of cream, and thoroughly mixed through.

The President: We have some very important subjects this afternoon, one of which is very important in my opinion to the buttermakers of the state, and that is by Mr. Benkendorf, and that is on the "Economical Management of the Creamery Boiler and Engine." Many boilers are ruined, because they do not know how to care for them. In one factory where I worked, they have only operated ten years, and they are putting in their third boiler now. In order to prevent loss

of life and lengthen the service of these things, we ought to know more about it.

I hope you will all be prompt at 2 o'clock.

Adjourned.

SEVENTH SESSION.

2 p. m.

The President: We will have the report of the resolution committee to start with, and we will now listen to Mr. Dodge, the chairman of that committee, read his report.

Mr. Dodge:

We, the Wisconsin Buttermakers' Association, in this our fourth annual meeting, at Fond du Lac, Wisconsin, February 21, 22 and 23, do adopt the following resolutions:

Resolved, That we extend our sincere thanks to all of the citizens of Fond du Lac for the royal manner in which they have welcomed and entertained this Association. Every promise made they have more than fulfilled, their hospitality has been generous, their courtesy sincere. We assure them that every member of this Association will long remember and always appreciate their gracious kindnesses.

Resolved, That the thanks of this Association be, and are hereby extend to the musicians who have aided in our entertainment. That our special thanks are hereby extended to Mr. Jules Lombard, the "grand old man" of song, for his presence and help; we extend our thanks to Miss Willmer, the musicians and others for their courtesy and we assure them that all our members have been delightfully entertained.

Resolved, That we extend to the National Dairy Union, our heartfelt thanks for the efforts they have exerted in behalf of this industry and that we pledge them our hearty and continued support.

Resolved, That we express our hearty approval of the effort being made to secure state aid for the purpose of conducting an annual Butter and Cheese scoring contest or exhibit.

Our Association has been constantly striving to obtain the

benefits of such an educational opportunity in years past, and we think the time has come when something should be done.

The Bill, No. 116 A, introduced by Mr. Ekern at the present session of our state legislature, has our unqualified endorsement, and we urge every buttermaker in the state to do everything in his power to secure its passage.

Resolved further, That the secretary be instructed to send a copy of this resolution to each member of the Senate and House of Representatives at once.

Resolved, That we commend to the people of this state the faculty of the Wisconsin Dairy School in their earnest efforts to advance the cause of dairying and that we solicit the active support of every citizen of this state in its behalf.

Resolved, That the thanks of this Association be and are hereby extended to its officers for the faithful manner in which they have advanced our interests the past year.

Resolved, That the thanks of this Association be extended to Mr. P. H. Keiffer, judge of the butter entries, for his services in judging our butter exhibit.

Resolved, That we extend our sincere thanks to all of the contributors to our premium fund, to the supply houses and their representatives for their support, and also for the fine exhibit they have made of their goods.

Resolved, That this Association demand of the legislature, the passage of a bill to organize a railroad commission, with full power to compel the railroads to remove the unjust discriminations, that are a positive injury to most of the shippers of dairy products of Wisconsin.

Resolved, That whereas through the generosity of the Pennslyvania Railroad we have had the great pleasure of listening to the songs of Mr. Jules Lombard, that we extend to them our thanks and assure them of our deep appreciation of their courtesy.

Resolved, That we extend our thanks to Prof. John W. Decker, for his presence and instructive lecture.

Resolved, That we express our appreciation of the untiring efforts and careful attention to details in every part of the

work connected with the office of Secretary of this Association, that has been performed by the retiring secretary, Mr. F. B. Fulmer. We realize that he has been instrumental in a large measure in building up the Association to its present successful condition, and that as a slight token of our appreciation, that this body by a rising vote shall express our satisfaction with his work as secretary of this Association.

E. C. DODGE,
JAMES VAN DUSER,
GEO. HANSEN.

Prof. Farrington: I move the adoption of the resolutions.

The President: Gentlemen, you have heard the resolutions read; also heard the motion that they be adopted. Are you ready for the question?

(Question.) (Question.)

A Member: I move an amendment that we adopt them by a rising vote.

The President: Do you accept the amendment, Professor?

Prof. Farrington: Yes sir, certainly.

Motion carried. The action is unanimous.

The first paper on the list is that of Mr. H. B. Andrus, of Neillsville, on the "Care of Creamery Machinery."

Mr. Andrus: Brother Buttermakers, Ladies and Gentlemen: I have not got any funny story, so I will omit that.

Care of Creamery Machinery.

H. B. J. ANDRUS, Neillsville, Wis.

In some ways buttermaking is a mechanical operation; there are at least, mechanical features about it. Therefore our worthy secretary hatches out our subject, "Care of Creamery Machinery."

In this, the care of creamery machinery, we are taken from the mechanical covers of the composite sample jars clear through the creamery to the guy wires on the smoke stack; including the jack-knife and false teeth (if he has any) of the

buttermaker. I can take up this subject in a general way only. To go into details would require a whole chapter on each step or department of the creamery work. About all I can do is to ramble around in an ordinary manner, leaving the details to specialists of each department.

A convention paper dealing with every detailed step of the mechanical end of buttermaking would be too long for a three days' meeting. This, however, is a live subject and one that is constantly before us. Creamery machinery is changing so rapidly from year to year that our attention cannot be called to it too often, both generally and specially. In all modern methods, systematic economy is the watchword, the keynote, we might say, and there is no place in which it is any more forcibly demanded than in the practical creamery.

Business experts in every line tell us that it's the "small leaks" that cause the mischief. If we were to deliberately dump a few cans of cream in the road, what would our patrons and managers say? If we were to do this but once in a whole year what would they say? Each one would say something different, but it would all amount to the same and they would belabor us sorely. Yet, we can send ten times that amount down the sewer or up the smokestack and a hundred other places and no one says a word; we don't notice the small things. But they count on the balance sheet at the end of the year's work. The plant itself is responsible somewhat, but the buttermaker is also responsible for the effectiveness of the plant. Make the most of everything; you can do it by constant care and watchfulness of the little leaks. As my experience has been wholly with steam power, and in view of the fact that nearly every creamery is dependent on steam, I will confine myself to steam equipped plants. Fuel costs money, and if you are wasting it, it costs you extra time and labor in addition to the first cost. A poor grate, clogged flues, leaking hand holes and sizzling valve stems are eating up your fuel. When leaks appear, give them your immediate attention; you can work balance sheet wonders with a monkey wrench, emery, packing and patience. It takes but a very few such sizzles to waste the energy of a ton of coal or a cord of wood.

Your engine is a constant companion, and what a patient, half-human creation a steam engine is, anyway. Was there ever a man, that would test four per cent in mechanical sense, who could stand and watch an engine laboring under difficulties without feeling queer? The reason I mention stand and watch an engine, it was not so very many years ago, but quite a while, I used to live over here on the lake shore, and it was the event of the season for me when we had a chance to come to Sheboygan, and we would get down there about 10 o'clock and have to leave for home about 5 or 6 o'clock in the afternoon. While the folks were trading I put in my time otherwise. I had an acquaintance in doing this, I was well acquainted with one of the first engineers on one of the first Goodrich boats connected with the Jenkins Mch. Co. and the Mattoon Mfg. Co., and they gave me a welcome. I was welcome to go to those places. I would go to the dock and go through the steamboat, and I would go to the various factories, and I would have the best time you ever heard of, and in that way I think I learned as much in regard to steam engineering as I have in any other way. Cylinder oil is as essential to its welfare as butterfat is to a farmer. Keep your lubricator in perfect order. Use good oil in the cylinder and on all bearings; its cheaper than to buy extra parts and fuel.

If the governor has an automatic stop, know for sure that it is in stopping condition before you turn on the steam. Every unnecessary noise connected with your steam plant costs money, and money, vulgar as it is, looks well on the profit side of the balance sheet. Direct the energy of your fuel on the work at hand. Save a little fuel every day and when you stop to think how many days there are in a year, you will neither be surprised nor feel guilty when you get your raise of wages.

Belts and shafting must be looked after, and at a time when there is the least creamery activity; during the morning when the yard is full of anxious patrons is a very poor time to lace a belt. This can be avoided by looking over the belts in the afternoon before you go fishing. And by looking carefully at the pulleys, tightening the loose keys and set screws every time you oil the bearings on the shafting, will save you time

and trouble. Separator belts will break during the run and there is no help for it, but by having an extra one on the machine no trouble is caused and only a minute wasted; during the summer's heavy run two extra belts on the machine are none too many.

Now we come to the separator, the real pleasure of the whole day's work. I think there is nothing more pleasant in our work than the company of a happy, "easy-going" separator. In the care of a separator, as well as other special machinery connected with creamery work, there is but one thing to do, and that is to follow to the letter the rules and instructions given out with the machine by the manufacturer. There is no buttermaker wise enough to deviate from these rules and secure a material benefit, but to follow them and do yourself and the machine justice is the question. After you have mastered the rules (they are really a part of the machine), which may take you a few minutes and, perhaps, a few years, you are safe to be left alone with the "Monarch" of the creamery. You are told to set the separator level. Now that means just what it says, LEVEL and nothing else, and a fifteen cent instrument is an unworthy tool to level it with. Use a reliable instrument. The book of rules says level, and this is my way of obtaining results. (Here the speaker explained his way and demonstrated it. That is, perhaps, old to some of you, but I have used it for three years and a half on our separators; we have four of them, situated in this method, and they run fine, and we have never known such a thing as a bolt getting out of place. We use it, it happens to be where we set our machines is a wood foundation, but that don't matter; this can be made instead of lag screw, a lug bolt. That is placed about two and one-half inches above the floor or sills, about like that (indicating). Where we use the machine screw this nut as low as you can, and if a rubber cushion or thick belt leather is all right to use. Then level your machine with these lower burrs, and it will stay there. You can level it to a hair, and then tighten this top burr down.

A Member: Don't you need to have a lock nut under that lower one?

A. No sir. It has proven very satisfactory to us. I bring

this out. Perhaps some of you have used something similar. Another nice feature about it, here is a space of at least three inches from the base of your separator down to the floor, and you can clean it out every day. There is room for a brush.

Right now and always we must have in mind what we are after, and that is butterfat. We want it all, and I believe we will get the last trace of fat from the milk long before Peary has a good cool look at the North Pole. With your machine set at an angle you cannot expect results that are pleasing when you use the double neck test bottle. This matter of clean skimming has been so thoroughly thrashed out by the separator agents that we all know what a little daily waste of butterfat amounts to in a year. That brings to mind our balance sheet again and the relation of level and the balance sheet is very close.

Now, in this level frame don't put anything but a clean bowl, it matters not the make of the machine, KEEP IT CLEAN. Every part must be cleaned and cleaned every day or every time, and immediately after it has been used. A lick and a promise won't clean a separator bowl. This takes time, and when a buttermaker says he can clean a separator in a "jiffy," I consider his conduct unbecoming a member of the profession. It must be washed thoroughly, scalded and laid aside where it may dry quickly. When you have done this you have bound yourself to your duty and your separator by sacred ties that will never be broken by anything but a general strike in the soap factories. The speed of the machine must be uniform and regulated to the rating in the book of rules. Never attempt to run your separator faster or slower than the rules call for. Adjust the engine to this speed and maintain a uniform boiler pressure. The lubrication must be perfect; it requires but very little oil, but that little is very important.

The same methods may be applied to the churn and tester; follow the instructions and keep things clean. It might be well to put in a great big don't while we are talking about these things, and that would be, DON'T TINKER with your machinery—make the necessary repairs and stop at that.

The creamery pumps are a source of trouble when out of repair. It is well to keep on very familiar terms with the

pumps, and when one fails to work in the morning be able to locate the trouble at once and have the necessary repairs close at hand.

A very serious waste of time appears when you keep a whole yardfull of busy farmers waiting for anything but the regular creamery work. Not many years ago I happened to be a delegate to one of the largest political conventions that the state affords. We were kept waiting upon the committee on resolutions for several hours. On our way home one of our party counted up the time wasted while waiting upon the committee and it would have kept one man idle for over eleven years. Send your patrons home as soon as possible, that they may get their work done and be on time the next day.

While others are talking about the "simple life," let us mention the "simple arrangement." Place your machinery in such a way that the arrangement of shafting, belting, pumps, conductors and piping will be as simple as possible and also plainly visible from the weigh room, for that is the place for the buttermaker during the receiving hours. I have seen machinery so arranged in creameries that it would remind one of a "two ring" circus.

I consider the mechanical part of the testing very important and it is very essential to have a test room, a small, well lighted room, independent of the other parts of the creamery. For winter testing the room must be warmed with a steam coil. It would be full as satisfactory to take out your "skies" in July as to try to test milk in a cold room. This testing business is a delicate art and should be dealt with seriously. Your testing machine must be level and well oiled, also capable of making as satisfactory a run as the separator. I am mentioning a few of the mechanical requirements only. Testing milk is a chapter of its own and should be dealt with separately.

Another thing that requires constant care is the tinware of the creamery. This is something that will rust as well as wear out. There is a great difference in the quality of tin. A few leaks in the vats and various utensils will soon waste enough to buy a lot of tin. As a matter of economy it is well to buy the best, and the most satisfactory tin for vats and the various uses is the No. 20 gauge IXXXXXXXX charcoal

plate. It costs a little more, but it will wear for years and never rust.

In our subject we must not forget the scales, for they are very important. We find them in all parts of the creamery and incorrect weights in any department of our work would put us to a serious disadvantage. We find in nearly every creamery a receiving scale, skim milk scale, butter scale, salt scale, cream scales and "scales" on the buttermaker's overalls, all of which need more or less attention. Correct weights are imperative. Balance the receiving scale every morning and be positive enough of your weights that you would feel justified in backing them up with the "manly art" if necessary.

Again allow me to say, keep your machinery clean, well groomed and in perfect condition.

The President: Any questions to ask Mr. Andrus? Mr. Andrus is kind of a genius along some lines. I was up there, and he said he bought 40 cents of string leather in long pieces, and cut off one-half of one string, and a fellow swiped the whole bunch. The next day he saw one string on a fellow's whip, and when the time came to pay the next dividend, Mr. Andrus charged him up for the whole price of the string leather, and he said the fellow came back the same afternoon and asked for $10.00 advance on the next payment.

Our next paper is on "The Creamery Manager," by Mr. Jas. Watson, of Fond du Lac.

Mr. Watson:

The Manager.

JAMES B. WATSON.

It is a moot question as to who should be the manager—the buttermaker or one of the stockholders, or some outsider selected by them on account of his particular business qualifications.

Some say the buttermaker should be the manager on account of the fact that he is the one possessed with expert knowledge

as to what should be bought in the way of equipment and supplies. From his position as buttermaker, I do not believe that he should be given unlimited authority on account of the fact that he is liable to be biased in his views and thus be unable to take the proper view of all the questions that are liable to come up between him and his patrons.

The stockholder or other outside man who accepts the position of manager should appreciate this job, if not with fear and trembling, then with the idea that he must work in harmony with the maker and adopt his suggestion, if from his experience in business they are likely to be successful. He should make a study of the various kinds of machinery and supplies to see what will be best adapted to the particular wants of the creamery in question. He should keep in touch with the various markets of the country in order to be able to sell the product of the creamery to the best advantage. To this end he will need to read the best creamery papers and inform himself also, on the best ways of handling milk and cream, that he may intelligently talk with the maker on these subjects; especially is this knowledge needed when the necessity arises for hiring a new maker. When it comes to hiring the second man the maker should have the entire say, as he is the one who will come in closest contact with him.

Our manager, if not a farmer himself, should know enough of dairy subjects to be able to converse with the patrons on the breeding, feeding and care of dairy cattle and the care that milk should receive.

He should work in harmony with the maker in order to build up the business and have an eye out for the small leaks that so frequently sap the life of the creamery; in case of friction between the maker and patron, he should act the part of peacemaker.

If he has a good man at the creamery he should be broad-minded enough to see that he is paid a salary sufficient to keep him contented with his place and mindful of the large interests in his charge. A raise of five dollars a month now and then after years of faithful service will be better appreciated, than more money secured only after a kick or threat of leaving.

The manager himself should have enough salary paid him to at least partially compensate him for his time, which in the aggregate amounts to a great deal more than most patrons are aware of. He should be enough of a bookkeeper to know whether the accounts are correct and see that an intelligible statement is rendered each patron.

In the securing of new business he should not permit the maker to raise or lower the test, a practice that is not only unlawful, but is bound to react sooner or later to the creamery's detriment.

The stockholders are not always willing to put in the hands of a stranger the entire control of what has cost them a great deal of money, and whoever is selected as manager should, other things being equal, be allowed to retain his position from year to year; he will be able to do them greater service as his experience grows larger.

If a farmer, he should be the leader in the community in having his barns, herd and milk in first class shape, so that his criticisms will be taken by the patrons in a proper spirit.

The President: Any questions to ask Mr. Watson?

A Member: I would like to ask Mr. Watson what a manager had ought to get?

Mr. Watson: I don't know what he ought to get. I know what I was getting. I was manager of our creamery. The first year I got nothing. The third year I got $25, and this year I hire a young lady, an extra bookkeeper, and I pay her $4.00 for making out the divident statements. Along this line it would take four or five days to do the actual work of a where they are making 2,000 pounds a month.

The President: We will next hear of the "Economical Management of the Creamery Boiler and Engine," by G. H. Benkendorf, Instructor Agricultural Experiment Station, Madison.

Mr. Benkendorf:

Economical Management of the Creamery Boiler and Engine.

G. H. BENKENDORF
Instructor Agricultural Experiment Station, Madison, Wis.

The question of economy in the management of a creamery is of the greatest importance. Competition in this line of business has now become so great that the margin of profit between the cost of production and the net receipts from the sales is so small that it behooves the creamery manager to be very careful, otherwise the annual balance sheet will show the net returns to be so small that to continue the business, if unable to make a satisfactory change, would be folly. Possibly he may be tempted to hire a buttermaker who will agree to work for less wages, to use a cheaper grade of tubs, or to postpone the introduction of machinery, that he knows is necessary. It is not for us to judge, not knowing the true conditions with which he must contend. It is expected that the manager is a man of good judgment and is able to distinguish between true and false economy.

Considering the economical management of a creamery boiler and engine, we may say that in general the same observations apply to any boiler and engine.

The subject necessarily divides itself into three distinct phases, first, losses due to delay for lack of power; second, economy in what may be termed the wear and tear of the boiler and engine; and third, the cost of fuel to produce the power.

It is very apparent that any suspension of work in a creamery necessitating the shutting down of the separators, delaying the churning, etc., is very annoying and at the same time does everything but promote the confidence of the patrons. They are probably quite ready to excuse the first transgression, grumble at the second and break out in open rebellion at the third. It is ruinous economy to shut down a creamery on account of repairs to an engine or boiler if it is at all possible to provide power in any way. Many times it is entirely feasible to get the loan of a traction engine, and by

running it to the side of the creamery, the necessary connections can be made thus enabling the buttermaker to make the usual runs and keep his patrons together; whereas if he did not do this the patrons would take their milk to a neighboring creamery and cheese factory and it would indeed be surprising if all came back. The extraordinary increase in the test, overrun, etc., which we all know how to explain, will tempt many to continue hauling to the new place. Hence, should any occasion arise such as putting in a new boiler, etc., by all means if possible, provide power some way or other, rather than shut down temporarily.

There is no question but what machinery having good care will last longer than that which is neglected. An engine that is well oiled, that is located as it should be in a place where every whiff of air that enters the creamery does not strike it and cause sand and grit to get into the bearings, will last for years before showing any appreciable wear. It is not use but misuse that causes an engine to wear out. It must be remembered that oil is cheaper than friction and three or four drops a minute, if fed regularly, is ample for the cylinder of the ordinary engine. Far more preferable than flushing a cylinder with oil and then allowing it to run until it will fairly groan before giving it more. Once in a while it is good policy to flush a cylinder by using kerosene to clean out the old gum, especially if the lubricating oil used was not of the best kind. This is a common practice among locomotive engineers and can be adopted with profit by creamery men.

It is claimed by men high in authority that what is termed "external corrosion" is more destructive than any other agency that tends to deteriorate a boiler. Very many times a boiler is found to be only half protected from the elements without, a water tank is so placed that its leakage is constantly coming in contact with the iron, soon causing a patch to be necessary. Ashes under the grate, owing to their ability to absorb moisture from the air, are particularly destructive if they come in contact with any iron, hence it is advisable to remove them frequently. Should a boiler, no matter how good it may have been originally, receive such treatment as suggested, it is just a question of a few years and a new boiler will have to be installed.

For the prevention of scale within a boiler we hear of many remedies, slippery elm bark, potatoes, lye and buttermilk, etc. Probably the most satisfactory on account of its availability, its cheapness, and its efficiency as well as its non-corrosive effect on iron, is common ordinary sal soda, costing only about two cents a pound if bought by the barrel, and for sale by all supply houses. Buttermakers should be cautioned that many compounds now on the market are positively injurious. They no doubt remove the scale, but at the same time so seriously attack the iron as to make a bad matter worse.

Coming now to the third division, the fuel required to produce the power, it is probably here that a skillful buttermaker can show the best results. The economical management of a boiler and engine so as to occasion no loss of time and no serious wear and tear of the machinery, are what we may call unseen savings. They are nevertheless very important. But let a buttermaker by skillful firing, by using the exhaust steam from his engine, if possible for him to do so, effect a saving of two or three hundred pounds of coal a day and it will in the course of a season amount to a snug little sum.

We all know that some men accomplish the same results, fire more economically, using the same grade of fuel, than others will. Why? Because one man may depend solely on his muscle, pay little attention to his method of firing, whether his fire has too much or too little air. It is easier for him to throw quite an amount of coal on his fire at once. By this method he does not have to fire so often and hence has more time to go out and discuss what the policy of our legislature at Madison should be.

The other realizes that no fixed rules can be laid down for firing. He depends not so much on his muscle as on his brains. This is the man that will have a small fuel bill charged against him.

It is wasteful to put on more coal than necessary. The object of burning coal is not to get rid of it, but to get the heat that is available out of the coal. Suppose we do not give the fire sufficient air, the resulting product of combustion will be (C O) and the heat units obtained from one pound of coal will be about 4,000. If we give it as much air as necessary, the car-

bon of the coal can combine with more oxygen of the air and the resulting product will be CO^2. From one pound of coal under these circumstances we get 14,000 heat units or about three and one-half times as much as the other way, the amount of coal being the same.

Hence we see how wasteful it is not to have a good draft because the smoke stack is too low or the grates being covered with clinkers. When using coal that clinkers badly, it is not advisable to carry a thick fire, probably four inches at the most. At this depth clinkers can be easily and quickly removed without seriously chilling the fire. Coal should never be thrown in in large lumps for it is almost impossible then to keep the fire from having holes through which large amounts of air can rush in, chilling the fire and carrying a lot of heat up the chimney.

Coal of nut size is the most economical and will give the best satisfaction. If smaller sized coal than this is used there is usually so much dirt with it as to make it expensive firing, much of it being very apt to fall through the grates unburnt.

To manage a boiler so as to fire economically, it is necessary to know the relative cost of the different kinds of fuel. It sometimes happens that a creamery gets into the habit of using a certain grade of fuel, whereas another grade may be cheaper. I have a case in mind where a creamery manager was in the habit of using a certain grade of fuel. Owing to circumstances he could not obtain this grade when he wanted it and had to order another kind. The change showed a saving of about $11.00 in one week, surely enough to persuade him that the new grade was decidedly preferable.

I would like to say just a word or two to those just starting out in the management of a boiler. By all means see that the flues are kept free from soot. You will be surprised to see what an amount of fuel you will save by having the flues cleaned each day. The coating of soot retards the draft and is also a good nonconductor of heat, so that the heat cannot pass into the boiler as readily as if the flues were clean.

Not long ago there were quite a number of buttermakers who pasteurized their skim milk by using the exhaust steam from the engine for this purpose. Unless I am misinformed

this practice has fallen into disuse and the exhaust steam is allowed to be a total waste. Many creameries have tried feed water heaters and report a saving in the fuel. Such a saving can amount to as much as eight to ten per cent which is well worth looking after.

Parties not having heaters can run the exhaust steam through pipes running through a tank containing water and obtain hot water enough to do the washing up. The only care that must be observed is not to cause any back pressure on the engine. This, however, can easily be avoided by having the exhaust steam expand into several large pipes within your water tank and let these have a free outlet. I have no doubt whatever that many buttermakers would find this constant source of very hot water to be very convenient.

Did you ever stop and think that a man from his neck down is only worth about one dollar and a half a day at the most? That if he draws three, four or five dollars a day it is because he realizes that it is easier to work with his head than with his muscles? A celebrated painter was once asked how he mixed his paints in order to get such beautiful shades. His reply was, "With brains, sir."

Should the question be asked, "How can a man effect economy in the management of a boiler and engine," we might reply—by paying attention to details and becoming impressed with the thought that in order to become skilful it is necessary for him to work with his head, and we are quite sure that the weekly results will correctly indicate to what extent the exchange of muscles and brains have taken place.

The President: Any questions to ask Mr. Benkendorf?

A Member: I would like to ask him if it is advisable to stir a fire, that is to stir it after the coals have been put in on the grate. One of my employers claimed by raking over the top of the coal is sufficient, and I claimed you should rake down on the grate.

Mr. Benkendorf: I suppose you use coal with clinkers. You cannot get the clinkers out by raking over the top. You must get the clinkers out. The purpose of the grate is to

allow air to pass underneath to the fire, and you will not get enough air to the fire, and you will only get about one-third of the heat from the fire.

A Member: My practice is to just stir up when necessary, and my idea is the flame should be carried into the flues.

Mr. Peterson: There is another phase of economical ways. To allow scales to accumulate in the boiler. I wish to ask the gentleman who read the paper what he considers the best method for removing scales. And different kinds of feed water and different kinds of compounds.

Mr. Benkendorf: There are many kinds of compounds, buttermilk, and saw dust, potatoes, lye, kerosene. The ordinary salsoda is the best thing, because it does not affect the iron, and yet it helps remove the scale, and the most suitable for most kinds of water. Some waters it may be better to use other kinds of compounds. Some compounds eat the iron. It removes the scale, and is not very injurious. The matter of scale is much overestimated. You will hear it said that one-eighth inch of scale will cause so much more fuel to be burned. The fact is, a little is of benefit, if not too much.

A Member: What end of the boiler is best to inject the feed water in?

Mr. Benkendorf: Nine boilers out of ten feed through the blow feed pipe, but the best is the front end of the boiler. My reason is you feed in the front end and the water there is supposed to be a pipe then running to about the middle of the boiler, and the water inside of that pipe will warm up before it gets inside the boiler.

The President: Anything further? We will call upon Mr. Fulmer to read the paper of Mr. Austin on "The Hand Separator," which we were unable to hear this morning.

Mr. Fulmer: I want to call your attention to the railroad certificates. Understand me. Any of you who have handed in your certificates to me, or to the others who have collected them, for my signature, can now find at the joint agent's desk in the Palmer House. He is in the writing room. Any one who may be here now, who has come in today, who has not handed in his railroad certificate, must do so immediately,

and go to the Palmer House and get the joint agent to stamp it.

The Hand Separator.

W. A. AUSTIN, Kewaunee, Wis.

In considering the subject that has been assigned to me by your secretary, allow me to say that we are dealing with a question that has been widely discussed and we are apt to find about as great a variety of opinions existing on this as on any subject under discussion by the dairy world today.

Right or wrong the hand separator appears to have come to stay, and while it has undoubtedly proven a God-send to many producers of milk and cream, there has also appeared many objections, which at the first introduction of the system, were largely theoretical, are today practically forcing themselves upon our attention.

Where the hand separator is used in creamery practice there seems to be a large chance for "abuse" and judging from reports in certain quarters we commit no violence to candid opinion in saying that the "abuse" has been practiced nearly up to the possible limit. This condition has logically appeared, due partly to the patron and partly to the creamery.

The patron may have been influenced by some over-zealous hand separator agent to neglect to thoroughly clean the separator immediately after each separation; he may not have considered it necessary to keep each separation of cream in a can by itself until thoroughly cooled before mixing it with cream from a previous skimming; he has probably been very negligent in the care of the cream any time after separation, thinking that so small a bulk needed little or no attention, and depending upon the creamery to accept the cream irrespective of its quality at the time of delivery. It has also been the practice of many patrons to have their separators set in the barn, especially during the cold season of the year, and too often the separator is found in the stable, as that is usually the warmest place inside the barn. Where the patron follows

the practice of merely flushing the separator with a little water after having separated the milk at night and leaving the machine uncleaned till after the morning separation, the slime in the bowl will absorb untold odors during the night and when the milk is separated the next morning it is absurd to expect an untainted cream. Is it any wonder that we have so much complaint from the creamery, of hand separator cream containing a strong, rank, stable odor? Allow us to say that a cream producer who offers for sale such unsanitary cream, ought to have it condemned by state authority and he himself be prosecuted to the full extent of the law.

The creamery on the other hand, has too often been over anxious to accept any sort of a substance that had a semblance to cream. The creamery may have accepted this inferior product from the patron hoping that after due time conditions would improve, but the usual result has not been an improvement, but a stationary or worse condition. The acceptance of such cream by the creamery has not tended to encourage the production of a first class article, unless the cream has been graded and prices paid in proportion to quality.

Where low grade cream is received it should be kept separate from the good cream and manufactured into butter which should be sold on its merits and the cream producer paid the net results. This will encourage the patron who produces a good quality of cream to keep up his standard of perfection and will also offer an incentive to the producer of the low grade cream to raise the standard of his production.

Creameries that receive hand separator cream should cooperate to discourage and wholly eradicate the production of low grade and unsanitary cream before they are driven to it by an indignant consuming public or forced to do so by the strong arm of the state law. The consumer should be protected from an unsanitarily manufactured butter as from that gross fraud,—colored oleomargarine.

In sections where the patron has taken good care of his cream, where intelligent methods have been followed, the hand separator creamery has returned as much, if not more money, to the patron than the whole milk creamery. However, local conditions have a large influence in matters of this sort and it

is not best to draw too rigid conclusions from points too widely apart.

It is doubtful if the hand separator system should be encouraged in a given territory where the whole milk creamery has been well established; but in a rough or broken section or in a sparsely settled dairy region the hand separator seems to be well adapted to meet the local conditions.

It is also significant that the general practice shows the dairymen who have once used a hand separator very seldom discard the machine and return to the whole milk system.

It would appear that in this great dairy country of ours each system can find room to develop and flourish without bitterly combatting the other.

The President: Mr. Fulmer, are you ready to announce the scores of the winners?

(Fulmer reads scores.)

The President: Is Mr. Styker here? It is supposed to be more blessed to give than to receive, so here it is.

Mr. Styker receives medal.

Mr. Styker: Mr. President, Fellow Buttermakers: If there are any here who know much about me, know I am not much of a talker. But I will do the best I can. The day I made this butter I received at the creamery about 4,000 pounds of milk. It was separated at a temperature of 85. I diluted this with about 100 pounds of skimmilk, that is morning milk, and used very near 30 per cent commercial starter, Douglas. The cream was a little heavier than 40 per cent, and I ripened this at a temperature of 65. It took seven or eight hours to ripen and cool it down to about 54, and by morning it was cooled down to 49. The temperature of the room was about 40. I meant to warm it up to about 53, but I warmed the water under the ripener and it was only 51, and I let it go at that. I churned it about one hour, the buttermilk was 53. I fllled the churn with a little more water than there was cream, and revolved it perhaps half a dozen turns. The salt I got about the same temperature as the butter. I dampened it to

help dissolve it. I first put in the salt, and gave the churn several turns, and worked at intervals for two hours.

Q. Did you get milk every day?

A. No sir. It was two days old. Perhaps some of it was older than that.

Q. How many years have you been making butter?

A. A little over six years I have been at the business.

Q. Was the cream pasteurized?

A. No sir.

Q. What was the acidity of the cream?

A. 56-100 per cent.

Q. Have you been in this creamery five or six years?

A. Yes sir, with the exception of five or six months.

Q. How long since the butter was made?

A. Two weeks today that butter was made.

Q. Was there any hand separator cream in that?

A. No sir.

Q. Have you ever attended the dairy school?

A. No sir.

Q. Why didn't you?

A. I didn't have time.

Q. Would you like to have had a little hand separator cream?

A. No sir, I was thankful I did not have any.

Q. Did you ever make any prize butter before?

A. No sir, I have won no prizes. I have sent butter before but I never won a very high score before.

Q. How many times have you sent butter for prizes?

A. I sent to the state convention I think a year ago, with a score of 91, and I sent to the state fair, twice, I think, and I was in the contest one year, but I did not get a very high score.

Q. Why did you get a better score this time than before?

A. The main thing before I always had to heat my milk with live steam, and this fall we put in a heater. And then I think I had better milk than ever before too.

Q. Are you satisfied with the score that you won and the outcome of it?

A. Yes sir, I am perfectly satisfied.

The President: Is Mr. Paulson in the room?

A. He went home this morning.

Mr. Styker: I thank you, gentlemen, for your kindness.

The President: Gentlemen of the Convention, is there anything further to come before us? Any other business? Have we forgotten anything?

Q. Are you going to read the scores of the whole thing?

The President: No, we will not. We will have the stenographer write off enough copies to give to you tomorrow. We will mail them to those interested.

A Member: I would like to ask where that man is located that is talking about septic tanks?

The President: Mr. Michels is attending the University of Wisconsin at Madison. A letter addressed to him there will reach him.

In closing this our fourth annual convention, I think I can say that we all have received a great deal of benefit from it, and I think we can be proud of the fact that our convention has turned out so successfully. Of course it has been largely due to your efforts in co-operating with the efforts of your officers in bringing this result about, and when we leave here I think we can go away pleased with the results.

I now adjourn this meeting without day.

Adjourned.

GENERAL FUND.

RECEIPTS.

Balance as reported at convention	$ 115.50
Advertising in program	290.00
Membership fees	305.00
Miscellaneous receipts	51.50
	$762.00

EXPENSES.

Convention expenses, hotel bills, R. R. fares of speakers, etc.	144.38
Balance on hand April 1, 1905	617.62

BUTTER ACCOUNT.

2,583 pounds butter @ 32c		$ 826.56
Membership fees	$ 126.00	
Express, refund on overweight, postage, Butter Judge, etc.,	138.29	$ 264.29
Balance		$ 562.27

PREMIUM FUND.

Butter Fund	$ 392.13
City of Fond du Lac	300.00
Creamery Package Mfg. Co., Chicago, Ill	25.00
The Heller & Merz Co., New York, N. Y	25.00
The T. L. Brundage Co., Cleveland	25.00
E. W. Ward Co., St. Paul, Minn	25.00
Vermont Farm Machine Co., Bellows Falls, Vt	20.00
The De Laval Separator Co., Chicago, Ill	20.00
Cornish, Curtis & Green Mfg. Co., Ft. Atkinson, Wis	20.00
Wisconsin Dairy Supply Co., Whitewater, Wis	15.00
Worcester Salt Co., New York, N. Y	15.00
Wells & Richardson Co., Burlington, Vt	15.00
The Sharples Co., Chicago, Ill	15.00
Colonial Salt Co., Akron, O	15.00
Mower-Hardwood Co., Cedar Rapids, Iowa	10.00
J. B. Ford Company, Wyandotte, Mich	10.00
Farnsworth, Benjamin & Mills, Boston, Mass	10.00
Diamond Crystal Salt Co., St. Clair, Mich	10.00
M. H. Fairchild & Bro., Chicago, Ill	10.00
National Creamery Supply Co., Chicago, Ill	10.00
Empire Cream Separator Co., Chicago, Ill	10.00
Elgin Butter Tub Co., Elgin, Ill	10.00
Leserman Bros., Chicago, Ill	10.00
Chapin & Adams, Boston, Mass	5.00
McCanna & Fraser Co., Burlington, Wis	5.00
S. B. Friday Co., Milwaukee, Wis	5.00
Total	$1032.13

STATE APPROPRIATION TO THE WISCONSIN BUTTERMAKERS' ASSOCIATION.

1904.		
June 6. Received from the State Treasurer		$500.00
July 2. F. B. Fulmer, postage and express	$ 56.11	
July 14. W. J. Hyne, traveling expenses	2.36	
Aug. 3. Eau Claire Leader Pub. Co., stationery	10.50	
Aug. 3. F. B. Fulmer, traveling expenses and postage	21.06	
Sept. 30. F. B. Fulmer, traveling expenses	16.69	
Dec. 19. F. B. Fulmer, postage and traveling expenses	28.89	
Dec. 24. F. B. Fulmer, traveling expenses	17.43	
1905.		
Jan. 25. Schwab Stamp & Seal Co., badges	37.50	
Jan. 25. Western Passenger Assn., Joint Agent fees	17.00	
Feb. 8. William G. Morstrom & Co., Medals	22.00	
Feb. 11. F. B. Fulmer, postage, express, etc	34.09	
Feb. 21. P. B. Haber Printing Co., programs, entry blanks, score cards, etc	96.45	
March 2. F. B. Fulmer, expenses of speakers at Fond du Lac	139.92	
		$500.00

State of Wisconsin,
County of Trempealeau—ss.

I, F. B. Fulmer, Secretary of the Wisconsin Buttermakers' Association, do solemnly swear that the foregoing statement of expenditures is true and accurate to the best of my belief.

F. B. FULMER, *Secretary.*

Subscribed and sworn to before me
this 24th day of March, 1905. J. J. BLUE, *Notary Public.*
(SEAL) My commission expires March 11, 1906.

State of Wisconsin,
County of Jefferson—ss.

I, E. C. Dodge, Treasurer of the Wisconsin Buttermakers' Association, do solemnly swear that I have paid out the sums of money as indicated above and that they are just and accurate to the best of my belief.

E. C. DODGE, *Treasurer.*

Subscribed and sworn to before me
this 25th day of March, 1905.

C. S. GREENWOOD, *Notary Public.*
(SEAL) My commission expires July 7, 1907.

LIST OF OFFICIAL ENTRIES

FOURTH ANNUAL CONVENTION, WISCONSIN BUTTERMAKERS' ASSOCIATION.

NAME	ADDRESS	SEP. OR G. C.	SEP.	STARTER	VAT.	CHURN	COLOR	SALT	SCORE
F. Anderson	Summers	Sep.	A	Doug.	Twin	Barber	Ald.	Lib.	92
E. L. Adams	Coloma	Sep.	A	Hans.	Open	Vict.	W. R.	.....	94
F. W. Ashman	Lime Ridge	Both	A	Eric.	Farr.	Vict.	W. R.	Wor.	93½
B. G. Bursch	Lamar	Sep.	A	Doug.	Com.	Vict.	Ald.	Cad.	91
F. Boss	Edgerton	Sep.	A	Milk	Twin	Vict.	W. R.	Wor.	93½
W. C. Bragg	Stanley	Sep.	A	Hans.	Open	Vict.	W. R.	Col.	95
F. Bartling	Orfordville	Sep.	A	Milk	Farr.	Vict.	Ald.	Lib.	94
F. E. Boettchler	Waukesha	Sep.	A	P. D.	Farr.	Vict.	W. R.	Wor.	94
E. Bingham	Hustler	Both	A	Eric.	Open	Vict.	W. R.	Col.	91
H. H. Benthien	Sandwich, Ill.	Sep.	A	Hans.	Twin	Vict.	W. R.	Col.	95
H. C. Casperson	Glenwood	G. C.	...	Hans.	Open	Sq'zr	Ald.	Cad.	93
C. J. Chapin	Omro	Both	A	Eric.	Open	Vict.	Ald.	Col.	94½
R. C. Diekow	Wausau	Sep.	A	Skim	Open	Vict.	Ald.	Col.	91
J. G. Demarest	Waupaca	Sep.	A	None	Com.	Vict.	W. R.	Wor.	92
E. O. Dasch	Cashton	G. C.	A	.....	Com.	Vict.	Ald.	D. C.	91
E. L. Duxbery	Green Bay	Sep.	A	Hans.	Open	Vict.	W. R.	D. C.	93½
L. Dabareiner	Hortonville	Sep.	A	Hans.	.....	Vict.	Ald.	Lib.	94
H. R. Duell	Sandwich, Ill.	Sep.	A	Com.	Open	Vict.	Ald.	Col.	96½
M. Engbretson	Scandinavia	Sep.	A	Com.	Open	Vict.	Ald.	Col.	91
R. Engelhart	Arland	Sep.	A	Eric.	Boyd	Dis.	W. R.	D. C.	.....
R. J. Else	Johnsons Creek	Sep.	A	Eric.	Open	Vict.	Ald.	Col.	93½
A. Erickson	Amery	Sep.	A	Com.	Twin	Vict.	Ald.	D. C.	95
B. J. Ellis	Stoughton	Sep.	A	Doug.	Open	Vict.	Ald.	Wor.	90
M. S. Fauver	Blue Mounds	Sep.	A	Milk	Open	Vict.	W. R.	Col.	92
H. Fassbender	Greenville	Both	A	Hans.	Open	Disb.	Hans	Col.	92
W. J. Feind	Jefferson	Sep.	A	P. D.	Open	Vict.	Ald.	Col.	93½

LIST OF OFFICIAL ENTRIES—CONTINUED

NAME	ADDRESS	SEP. OR G. C.	SEP.	STARTER	VAT.	CHURN	COLOR	SALT	SCORE
L. A. Goodchild	De Pere	Sep.	A	P. D.	Open	Disb.	W. R.	B. C.	93
H. A. Goetsch	Money Creek, Minn.	Sep.	A	Eric.	Farr.	Disb.	Ald.	D. C.	94½
C. Gerlach	Grafton	Sep.	A	Milk	Open	Vict.	Ald.	Col.	93½
E. E. Hammond	Baraboo	G. C.		None	Open	Vict.	W. R.	D. C.	93½
H. J. Halverson	Eleva	G. C.			Boyd	D. Q.	W. R.	D. C.	93
F. W. Huth	Elkhorn	Sep.	A	Doug.	Farr.	Vict.	W. R.	D. C.	95½
C. C. Holm	Fall River	Both	A			Vict.	W. R.	Lib.	
E. Hermanson	Northland	Sep.	A	Com.	Twin	Vict.	W. R.	Gen.	93½
T. H. Hart	Symco	Sep.	A	Eric.	Open	Vict.	W. R.	Col.	94½
W. Harrison	Green Bay		A	Hans.	Twin	Vict.	W. R.	Wor.	93
C. B. Harbaugh	Berlin	Both	A	Com.	Open	Vict.	Ald.	Cad.	94½
F. H. Harms	Loganville	Sep.	A	Eric.	Twin	Vict.	W. R.	Wor.	93
J. I. Dale	Clinton	Sep.	A	Hans.	Open	Vict.	W. R.	Col.	94
J. J. Jackson	Union Grove	Sep.	A	Com.	Open	Vict.	W. R.	Col.	95
M. Johnson	Rosendale	Sep.	A	Eric.		Vict.	Ald.	Col.	92½
H. Jackson	Clintonville	Sep.	A	Doug.	Fargo	Vict.	W. R.	D. C.	92½
C. W. Judkins	Van Dyne	Sep.	A	Hans.	Open	Vict.	W. R.	Wor.	93
A. H. Jenks	Berlin	G.C.		Eric.	Open	Vict.	Ald.	Wor.	91½
F. H. Jacquith	Dartford	Sep.	A	Milk		Vict.	W. R.	Wor.	92
J. E. Jensen	Luck		A	Hans.	Jensen	Sim.	Ald.	D. C.	93
F. H. Kelling	Berlin	Sep.	A	Eric.	Open	Vict.	Ald.	Col.	93½
W. F. Krohn	Whitewater								94
Paul Knoll	Johnsons Creek	Sep.	A	Com.	Farr.	Vict.	Ald.	Col.	93
C. M. Kates	Custer	Sep.	A	Eric.	Twin	Vict.	Ald.	D. C.	95
J. A. Klokker	Peru	Both	R	Eric.	Open	Vict.	W. R.	Wor.	94
C. L. Kittleson	Ettrick	G. C.		Doug.	Open	Disb.	W. R.	D. C.	93½
Kielsmeier Bros	Manitowoc	Sep.	S	Doug.	Com.	Sq'zr.	W. R.	Col.	
W. F. Kahl	Troy Center	Sep.	A	Hans.	Boyd	Vict.	W. R.	Cad.	94½

LIST OF OFFICIAL ENTRIES—CONTINUED

NAME	ADDRESS	SEP. OR G. C.	SEP.	STARTER	VAT.	CHURN	COLOR	SALT	SCORE
C. Koemmer	Almena	Sep.	A	None	Com.	Disb.	W. R.	D. C.	93
H. W. Larson	Neenah	Sep.	A	Eric.	Open	Vict.	Ald.	Wor.	94
C. Lund	Larson	Sep.	A	Hans.	Com.	Vict.	Ald.	Col.	94
P. L. Laurene	Winneconne	Sep.	A		Open	Disb.	W. R.	Col.	
C. McComb	Eau Claire	Both	A	Home	Twin	Vict.	W. R.	Cad.	92½
G. W. Mullen	Wales	Sep.	A	Hans.	Boyd	Vict.	Ald.	D. C.	93
L. F. McLean	S. Byron	Sep.	A			Vict.	W. R.	Wor.	91
F. E. McCormick	Almond	Sep.	A	Home	Com.	Vict.	W. R.	Col.	94½
M. Martin	Hazelgreen	Sep.	A	Home	Com.	Vict.	W. R.	Wor.	92
E. C. McCormick	Plover	Sep.	A	Eric.	Com.	Vict.	Ald.	D. C.	94½
A. McLane	Whitewater	Both	A	Com.	Boyd	Vict.	W. R.	D. C.	93½
M. B. Mattson	Chetek	Sep.	S	Hans.	Twin	Vict.	Ald.	D. C.	93½
J. F. McGrane	Rusk	Sep.	A	Doug.	Boyd	Vict.	Ald.	Wor.	94
T. Netland	Deerfield	Sep.	A	Eric.	Open	Vict.	W. R.	Wor.	91
H. Nolan	Poy Sippi	Both	A	Doug.	Open	Disb.	Ald.	D. C.	93
H. N. Olson	Arnott	Sep.	A	Hans.	Open	Vict.	W. R.	D. C.	94
L. A. Olson	Almond	Sep.	A	Home	Open	Vict.	W. R.	Wor.	93
O. Olson	Mt. Horeb	Sep.	A	Eric.	Barb.	Vict.	W. R.	Wor.	94½
H. O. Potter	Kendall	Both	A	Home	Open	Vict.	W. R.	Wor.	92½
E. A. Paddock	Elkhorn	Sep.	A	Hans.	Boyd	Disb.	W. R.	Wor.	93
E. S. Pyburn	Hanover	Sep.	A	Eric.	Farr.	Sym.	Ald.	Col.	95
P. C. Petterson	Amery	Both	U.S.	Doug.	Boyd	Vict.	Ald.	D. C.	93
C. L. Passmore	Iola	Both	A	Doug.	Open	Vict.	W. R.	Cad.	91
J. S. Peterson	Maridean	G. C.				Vict.	W. R.	D. C.	92½
C. Paulson	Middleton	Sep.	A	Com.	Open	Vict.	Ald.	Wor.	96½
W. Remmel	Mayville	Sep.	A		Twin	Vict.	Ald.	Wor.	92 2
J. A. Romer	Hortonville	Sep.	A	Hans.	Open	Disb.	Col.	Col.	9 ¾
W. A. Stewart	Eagle	Sep.	A	P. D.	Open	Vict.	W. R.	Wor.	9½

LIST OF OFFICIAL ENTRIES—CONTINUED

NAME	ADDRESS	SEP. OR G. C.	SEP.	STARTER	VAT.	CHURN	COLOR	SALT	SCORE
J. W. Sprecher	Camp Douglas	Both	A	Hans.	Farr.	Vict.	W. R.	D. C.	93½
I. W. Striker	Lomira	Sep.	A	Com.	Open	Vict.	Ald.	Wor.	97
O. P. Safford	Oconto	Sep.	A	Hans.	Open	Vict.	W. R.	Col.	
J. P. Sorensen	Milltown		A	Eric.	Jens.	Vict.	Ald.	D. C.	94½
D. A. Sheldon	Lake Mills	Both	A	Doug.	Open	Vict.	Ald.	Col.	93½
F. E. Snyder	Whitewater	Sep.	A	Skim	Farr.	Vict.	Ald.	Wor.	
R. E. Tamblingson	Watertown	Sep.	A	Eric.	Com.	Vict.	Ald.	Col.	94½
V. E. Taylor	Lake Mills	Sep.	A	Hans.	Com.	Vict.	W. R.	Col.	92
E. H. Tucker	Marshfield	Sep.	A		Twin	Vict.	Ald.	Col.	93
E. Korb	Boyd	Sep.	A	P. D.	Farr.	Disb.	W. R.	Col.	
C. O. Thomas	Osseo	G. C.			Open	Vict.	W. R.	Wor.	90
W. O. Titus	Neillsville	Sep.	A	Skim	Open	Wis'd	W. R.	D. C.	91½
G. Trager	Mazomanie	Sep.	A	Doug.	Open	Vict.	W. R.	D. C.	94½
C. Tyler	West De Pere	Sep.	A	Home	Open	Vict.	Ald.	Col.	93
P. S. Utridge	Cadott	Both	A	Eric.	Open	Sq'zr	W. R.	Col.	93
J. Van Duser	Hebron	Sep.	A	Hans.	Open	Box	Ald.	D. C.	92
F. A. Viergutz	Neillsville	Both	A	None	Open	Vict.	W. R.	D. C.	94
G. C. Whitney	Poy Sippi	Both	A	Doug.	Open	Vict.	W. R.	Col.	92½
F. Wuethrick	Mayville	Sep.	A	Hans.	Open	Vict.	Ald.	D. C.	94½
A. E. Weaver	Darien	Sep.	A	Hans.	Open	Vict.	W. R.	Wor.	96
A. J. Wileman	Milton Jct	Sep.	A	Keith	Farr.	Vict.	W. R.	Wor.	93
J. C. Weber	Fond du Lac	Sep.	A	None	Open	Vict.	W. R.	D. C.	
G. Winner	Clintonville	Sep.	A	Eric.	Open	Vict.	W. R.	D. C.	92
T. J. Warner	Rosholt	Both	A	B. M.	Open	Vict.	W. R.	D. C.	94
G. H. Weber	Columbus	Sep.	A			Vict.	Ald.	Wor.	92
S. C. Wollensch	Kewaskum	Sep.	A	Eric.	Open	Vict.	Ald.	Col.	91½
W. R. Wigginton	Cashton	G. C.		Home	Open	Box	W. R.	Col.	93
J. F. Weber	Hartford	Sep.	A	Com.	Open	Vict.	W. R.	D. C.	94

LIST OF OFFICIAL ENTRIES—CONTINUED

NAME	ADDRESS	SEP. OR G. C.	SEP.	STARTTR	VAT.	CHURN	COLOR	SALT	SCORE
F. O. Waddell	Baraboo	G. C.		None	Wiz.	Vict.	W. R.	D. C.	93½
F. W. Zastrow	Princeton	Sep.	A	Milk	Twin	Vict.	Ald.	Col.	94
E. J. Alexander	New Franken	Sep.	A	P. D.		Vict.	W. R.	D. C.	94
A. E. Dixon	Evansville								94
J. Schiller	Marytown								94½
A. F. Strebe	Brothertown								91
John Schield	New Richmond								93½
A. L. Vesper	Waupun								92½
W. W. Wilson	Malvina	G. C.		Home	Com.	Sq'zr.	W. R.	D. C.	92
B. J. Ellis	Stoughton								93½
A. F. Guelsow	Fond du Lac								92
W. Hagg	Garnett								93
W. V. Hine	Evansville								96
O. E. Knope	New London								90

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