Proceedings of the eleventh annual meeting of the Wisconsin Buttermakers' Association : held at Green Bay, Wisconsin , February 6-9, 1912.

Wisconsin Buttermakers' Association
Milwaukee, Wis.: Butter, Cheese, and Egg Journal, [s.d.]

Proceedings of the Eleventh Annual Meeting

of the

Wisconsin Buttermakers' Association

HELD AT

GREEN BAY, WISCONSIN

February 6—9

1912

Compiled by G. H. BENKENDORF

O. B. CORNISH
Ft. Atkinson

J. G. MOORE
Madison

A. C. SCHULTZ
Platteville

MEMBERS EXECUTIVE COMMITTEE 1911—1912

List of Officers 1911—1912

S. B. COOK, President ..... Cumberland
F. W. BOWAR, Vice President ..... Cazenovia
G. H. BENKENDORF, Secretary ..... Madison
A. W. ZIMMERMAN, Treasurer ..... Norwalk

Executive Committee

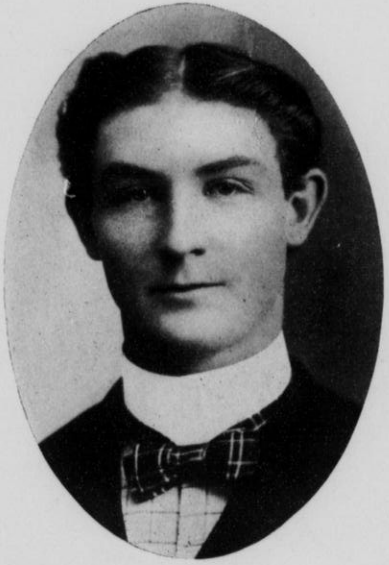
O. B. CORNISH ..... Ft. Atkinson
J. G. MOORE ..... Madison
A. C. SCHULTZ ..... Platteville

List of Officers 1912—1913

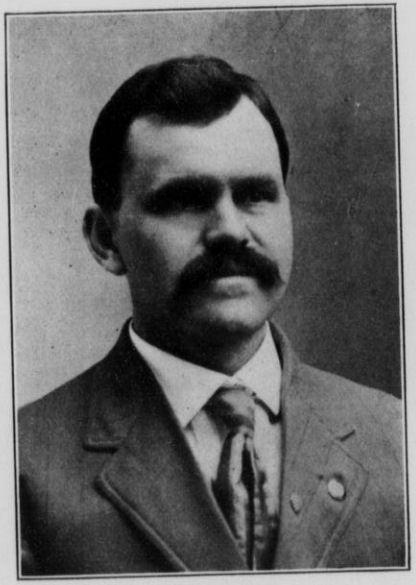
LAURITZ OLSEN, President ..... West De Pere
F. W. BOWAR, Vice President ..... Cazenovia
G. H. BENKENDORF, Secretary ..... Madison
A. W. ZIMMERMAN, Treasurer ..... Norwalk

Executive Committee

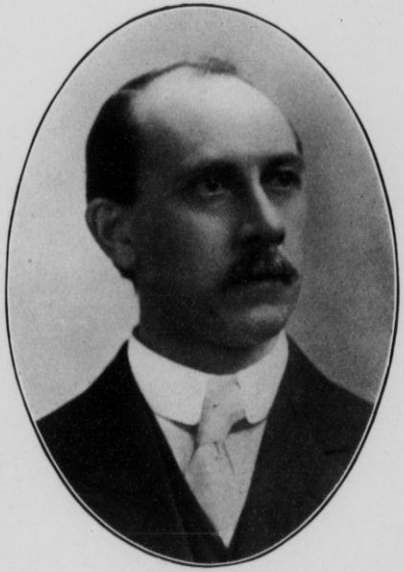
O. B. CORNISH ..... Ft. Atkinson
A. C. SCHULTZ ..... Platteville
ALLEN CARSWELL ..... Clear Lake



S. B. COOK
Cumberland
President



F. W. BOWAR
Cazenovia
Vice-President



G. H. BENKENDORF
Madison
Secretary

LETTER OF TRANSMITTAL

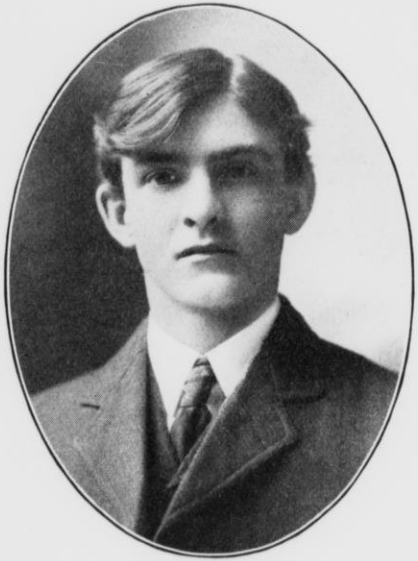
Office of Secretary Wisconsin Buttermakers' Association, Madison, Wis., 1912.

To the Officers and Members of the Wisconsin Buttermakers' Association: I have the honor to herewith submit the report of the proceedings of the Eleventh Annual Convention held at Green Bay, Feb. 6–9, 1912.

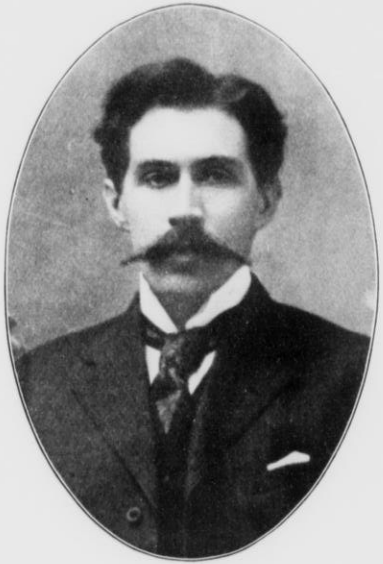
Fraternally yours,

G. H. BENKENDORF,

Secretary.



A. W. ZIMMERMAN
Norwalk
Treasurer



ALLEN CARSWELL
Clear Lake
New Member Executive Committee

Names of Members of the Wisconsin Buttermakers' Association, 1912

Anderson, A. J. ..... Otisco, Minn.
Andreason, C. P. ..... Shennington.
Aderhold, E. L. ..... Neenah.
Aggen, E. A. ..... New Holstein.
Austin, W. A. ..... Green Bay.
Alexander, J. M. ..... 309 So. Van Buren, Green Bay.
Alexander, A. B. ..... Star Union Line, Chicago.
Axlen, L. ..... De Sota.

Brunner, M. E. ..... Ft. Atkinson
Blumenstein, Frank ..... Sullivan
Berndt, F. O. ..... No. Prairie
Bolstead, L. L ..... Basco
Bolstead, E. T. ..... Deerfield
Bowar, Frank ..... Cazenovia
Brye, R. O. ..... Readstown
Brye, C. T ..... Newry
Berthold, Wm. ..... Dodge
Buchholz, F. C. ..... Marathon City
Borchert, Geo. E. ..... Green Bay
Braun, John P. ..... Malone
Benson, C. J. ..... Reeve
Beck, John P. ..... Stanton
Bjerking, J. L. ..... Beldenville
Boettcher, Wm. C. T. ..... Menomonie
Borschinger, John ..... Cecil
Barker, A. R. ..... R. 29, Shiocton
Behling, Albert ..... R. 1, Abrams
Bennet, W. F. ..... 504 Fisher Bldg., Chicago
Bull, G. W. ..... Room 207—231 No. 5th Ave., Chicago
Bunke, P. F. ..... D. C. Salt Co., Milwaukee
Brighten, Frank ..... Shawano
Busse, H. W. ..... Pulcifer

Barber, A. H. ..... Chicago
Benn, F. C. ..... Medford
Bowman, H. S. ..... Sauk City
Bingham, E. G. ..... Arcadia
Benkendorf, G. H. ..... Madison
Baer, U. S. ..... Madison
Bornheimer, H. ..... Green Bay
Blood, F. J. ..... Chetek
Bishop, Chas. ..... De Sota
Becker, Chas. ..... Germania Bldg., Milwaukee
Befay, Dennie ..... R. 3, Brussels

Clark, W. J. ..... Lake Beulah
Conway, W. F. ..... Sharon
Christensen, Hans ..... Burlington
Cross, Alvin ..... Thiensville
Christensen, Walter ..... Klevenville
Christensen, Henry ..... Tomah
Christensen, Odin ..... Nelsonville
Carver, C. A. ..... 114 Wis. St., Milwaukee
Christenson, Christ ..... Amherst Jct.
Cross, M. R. ..... Humbird
Cleaves, R. C. ..... Northland
Christensen, R. P. ..... Milltown
Colwell, R. P. ..... River Falls
Collyer, A. C. ..... 200 W. S. Water St., Chicago
Coyne, D. J., Jr. ..... 119 W. So. Water St., Chicago
Cannon, J. D. ..... New London
Carlson, Robt. ..... Amery
Cross, H. J. ..... Oshkosh
Cromer, C. E. ..... 1533 Michigan St., Chicago
Carswell, Robt. ..... Clear Lake
Chapin, B. J. ..... St. Croix Falls
Christensen, Chris. ..... Rose Lawn
Cornish, O. B. ..... Ft. Atkinson
Cook, S. B. ..... Cumberland
Carswell, F. E. ..... Richland Center
Credicott, H. J. ..... Chicago
Cole, C. L., Jr. ..... 422 Guaranty Loan Bldg., Minneapolis, Minn
Crump, J. L. ..... St. Paul, Minn
Collyer, W. D. ..... Chicago
Carswell, Allen ..... Clear Lake
Corneliuson, Thos. ..... Washington, D. C.
Campbell, A. ..... Beaver Dam

Dresser, Val. ..... Louisburg
Dale, N. E. ..... Blair
Dufner, S. J. ..... Sparta
Dahlberg, Arnold ..... Madison
Dehn, W. J. ..... Bonduel
Dillon, H. P. ..... Oshkosh
Davis, W. E. ..... 220 W. So. Water, Chicago
Disbrow, L. A. ..... Owatonna, Minn.
De Costei, J. F. ..... Cushing
Dodge, E. C. ..... Lake Mills
Deischer, J. R. ..... 225 E. So. Water, Chicago
Drier, Clarence ..... Norwalk
Dibble, C. A. ..... 1218 Majectic Bldg., Milwaukee

Engebretson, M. ..... Scandinavia
Esker, Ole ..... Dallas
Enerson, Hilbert ..... Comstock
Eichoff, H. J. ..... Hortonville
Englebert, Henry ..... Brussels
Emery, J. Q. ..... Madison
Einfeldt, H. B. ..... 96 Reservoir Ave., Milwaukee
Eldred, H. S. ..... 21 Waverly Place, Milwaukee
Engelbretson, H. ..... Ogdensburg
Eiden, A. ..... Stevens Point
Ennison, W. J. ..... La Crosse

Fargen, M. M. ..... Plain
Fehling, E. A. ..... Shawano
Fenn, August ..... R. 3, Hilbert
Fisler, H. C. ..... c/o Morton Salt Co., Milwaukee
Fox, C. L. ..... Leon
Fox, M. E. ..... 168 W. S. Water, Chicago
Frieders, Chas. ..... Antigo
Farrington, E. H. ..... Madison
Frank, H. J. ..... Neenah

Groth, O. J. ..... Cedarburg
Griffin, H. E. ..... Mt. Horeb
Griese, E. C. ..... Kilbourn
Gregory, R. ..... New Franken
Garlid, Geo. ..... Knapp
Gerland, C. ..... Rice Lake
Goble, C. C. ..... Hersey
Grosser, John ..... Clinton Falls, Minn

Grab, Henry ..... Luxembourg
Grell, F. W. ..... Johnson Creek
Guse, Paul ..... Madison
Green, R. C. ..... Edgerton
Gallagher, Thos. F. ..... Chicago
Gilchrist, G. R. ..... Oconto
Glover, A. J. ..... Ft. Atkinson
Gehrke, F. J. ..... Manawa
Guth, C. R. ..... R. 2, Forestville
Galloway, A. W. ..... Sentinel Bldg., Milwaukee

Hofacker, Ben. O. ..... Zenda
Hildemann, E. J. ..... Lake Geneva
Higgins, M. J. ..... Sullivan
Halliday, E. E. ..... Mauston
Husband, Fred. J. ..... Wausau
Huth, C. W. ..... Seymour
Hill, W. F. ..... Brandon
Hoppe, L. F. ..... Rio Creek
Houdek, F. J. ..... Waupun
Haag, Wm. ..... Green Bay
Hanson, J. M. ..... New Auburn
Haberstich, A. C. ..... Medford
Hostak, Ed. ..... R. D. 2, Oconto Falls
High A. ..... Berlin
Hass, B. A. ..... Steuben
Hayes, H. J. ..... 134 La Salle St., Chicago
Henderson, J. T. ..... Birnamwood
Halverson, A. L. ..... Spring Valley
High, John ..... Berlin
Harless, W. A. ..... Stanley
Hanson, Eugene ..... Milwaukee
Hart, C. E. ..... Milwaukee
Hutte, Fred. W. ..... Seymour
Hutte, Forest ..... Seymour
Hanson, Geo. ..... Oakfield
Hine, R. H. ..... Pulaski
Hanson, H. C. ..... Beaver Creek, Minn.
Hilman, C. F. ..... Cedar Rapids, Iowa
Hutchinson, P. J. ..... Gilmanton
Hummer, A. C. ..... 1533 Michigan Ave., Chicago
Hanson, Hans K. ..... Caryville

Jeffers, D. E. ..... Westby
Johnson, S. J. ..... Ettrick

Jenks, A. H. ..... Loyal
Juul, John ..... Wrightstown
Jacobsohn, Thos. ..... Cadott
Jorgenson, Fred. ..... Comstock
Jones, F. E. ..... Rockford, Ill.
Joslin, J. C. ..... 208 N. 5th Ave., Chicago
Jahnke, H. E. ..... R. 1, Abrams
Jennings, A. A. ..... 157 N. Adams St., Chicago
Jenks, G. E. ..... 33 Kinzie St., Chicago
Johnson, E. W. ..... Gen. Agt., N. Y. Cent., Chicago
Jensen, Fred. ..... Stanley

Kelling, F. H. ..... Johnson Creek
Kottke, Paul ..... Cedarburg
Kubat, W. H. ..... Eagle
Kipp, Henry T. ..... Albion
Kretzschmar, Julius ..... New Lisbon
Kothlow, G. H. ..... Edgerton
Karls, Nick ..... Stockbridge
Kielsmeyer, Otto A. ..... Manitowoc
Kristensen, Axel ..... Luck
Kristensen, P. ..... Cushing.
Kelley, J. W. ..... Fond du Lac
Knappmiller, Theo. ..... Little Suamico
Kachel, J. C. ..... Whitewater
Kolb, F. J. ..... 180 N. Dearborn, Chicago
King, Harvey ..... Boston, Mass
Kelley, A. J. ..... 119 W. So. Water, Chicago
Kelley, F. W. ..... Y. M. C. A., Milwaukee, Wis

Lee, Sever ..... Modena
Longfellow, A. N. ..... Wilton
Lee, Vinton D. ..... Neillsville
Le Mere, S. G. ..... Green Bay
Limp, Walter ..... Bloomer
Longteau, Earl ..... Green Bay
Lee, C. E. ..... Madison
Linn, Geo. R. ..... Chicago
Laabs, Arthur ..... Peshtigo
La Court, Louis ..... Suring
Linzmeyer, J. B. ..... Green Bay
Lukenheim, J. ..... Mankato, Minn.
Larson, H. C. ..... Madison
Lounsbury, J. M. ..... Co-op. Cry. Supply Co., Milwaukee

Merryfield, F. V. ..... Tory Center
Meyer, J. R. ..... Slades Corners
Mortenson, John ..... Camp Douglas
Miller, J. H. ..... Baraboo
Melsby, O. ..... Durand
Moldenhauer, A. J. ..... Neillsville
Miller, A. E. ..... Budsin
Moersch, Quirin ..... Peebles
Melgaard, H. O. ..... Ellsworth
Magrane, J. T. ..... Oconto Falls
Marty, Fred. ..... Monroe
Moore, J. W. ..... Gay Mills
Mott, Perry ..... R. 2, Oconto Falls
Manley, A. R. ..... Montfort
Meyer, M. H. ..... Madison
Michelson, Wm. ..... Arkansaw
Moore, Mrs. E. B. ..... Madison
Moore, J. G. ..... Madison
McCready, A. D. ..... Marshall
McKinney, E. ..... Barron
McHugh, J. S. ..... Little Suamico
McNeil, Chas. ..... 71 W. So. Water St., Chicago
McCormick, J. ..... Green Bay
McKerlie, J. G. ..... Stiles
McManners, H. S. ..... Madison
Meinhardt, F. ..... N. Y. Despatch, Chicago, Ill.
Munshaw, F. A. ..... Elgin, Ill.

Nichols, Harty D. ..... Elkhorn
Nurell, C. A. ..... Soldiers Grove
Nachtwey, Anton ..... Dorchester
Nedvidek, F. J. ..... Bloomer
Nachtwey, R. ..... R. 2, Dorchester
Newgard, W. S. ..... 439 Gillfillin Blk., St. Paul, Minn
Netland, Thos. ..... Burket, Indiana
Nichols, W. R. ..... Amery

O'Conner, J. M. ..... Union Center
O'Hearn, Frank ..... Melrose
O'Dell, Claude ..... Wild Rose
O'Keefe, R. J. ..... De Pere
Olson, L. A. ..... Waupaca
Otto, George ..... Black Creek
Olsen, Lauritz ..... W. De Pere

O'Conner, C. F. ..... Eau Galle
Olsen, H. P. ..... Milwaukee, Wis.

Perschbacher, A. ..... West Bend
Polzin, R. H. ..... Minnesota Jct.
Paul, E. N. ..... Greenwood
Prust, C. H. ..... Princeton
Peterson, Louis ..... Bonduel
Passmore, C. L. ..... Iola
Phipps, J. H. ..... 106 Wisconsin St., Milwaukee
Purvis, J. T. ..... Berlin
Preservaline Mfg. Co. ..... Brooklyn, N. Y.
Peterson, E. O. ..... Amherst
Pheatt, H. D. ..... Milwaukee

Ringger, Jacob ..... Durand
Roou, Ben ..... Bangor
Rugotzka, C. F. ..... Wautoma
Roegner, Arthur ..... Chilton
Roch, F. J. ..... Chippewa Falls
Rosser, Matt. ..... Sister Bay
Rank, J. P. ..... Marshfield
Reckner, Geo. ..... Beaver Dam
Raven, Herman C. ..... 786 Melrose Drive, Portland, Ore.
Risdon, R. R. ..... De Pere
Russell, F. C. ..... Boardman Hotel, St. Paul, Minn.
Ruhlands, F. H ..... Oakfield
Rentz, Henry N. ..... Viroqua
Radtke, A. R. ..... Clintonville

Stryker, I. W. ..... Nashotah
Sauer, G. P. ..... Cedarburg
Stewart, W. A. ..... Eagle
Stewart, G. M. ..... Mazomanie
Sinkler, E. F. ..... Black River Falls
Seyforth, J. W. ..... Mondovi
Sleyster, R. V. ..... Cochrane
Sanford, C. M. ..... Amherst Jct.
Smith, I. H. ..... Montello
Sibilsky, E. H. ..... Algoma
Scheel, E. W. ..... Turtle Lake
Shager, Emil ..... Elk Mound
Seagren, O. ..... 1247 Irving Ave., Chicago
Somerville, T. A. ..... 35 Kinzie St., Chicago

Shilling, S. B. ..... 136 W. Lake, Chicago
Sellnow, Arthur ..... Underhill
Southard, R. B. ..... Marshfield
Skinner, D. P. ..... Milwaukee
Seyfert, G. S. ..... Oconto
Sandholt, H. ..... St. Paul, Minn
Senty, C. W. ..... Waumandee
Steingraber, Ed. ..... Wilton
Schultz, A. C. ..... Platteville
Smith, Geo. ..... 1906 Dayton St., St. Paul, Minn.
Shepherd, W. P. ..... Green Bay
Swits, Geo. ..... Ft. Atkinson
Smith, J. R. ..... 4938 Winthrop Ave., Chicago
Schumacher, J. J. ..... Green Bay
Strong, G. R. ..... 616 Great Northern Bldg., Chicago
Smith, L. C. ..... 29 S. Market St., Boston, Mass.
Shelton, A. C. ..... Green Bay
Somerville, J. S. ..... 35 W. Kinzie St., Chicago
Sadler, E. T. ..... Waterloo, Iowa
Schneider, W. ..... Johnson Creek
Schultz, R. A. ..... 115 Western Ave., N., St. Paul, Minn.
Speich, Ed. ..... Dexterville
Speich, Abraham ..... Greenwood
Schiller, J. ..... New Holstein
Smith, James ..... East De Pere
Schield, Jno. ..... Bloomer

Thompson, F. C. ..... East Troy
Thiede, A. R. ..... Beloit
Thelen, P. J. ..... Saukville
Titus, Chas. B. ..... Muskego
Thym, A. E. ..... Manchester
Tucker, E. H. ..... Lodi
Tucker, Leslie M. ..... Montfort
Tamblingson, Mrs. R. E. ..... Wilton
Tamblingson, R. E. ..... Wilton
Tyler, Clay ..... West De Pere
Tank, W. ..... Van Dyne
Teske, H. J. ..... Forestville
Trexall, W. L. ..... Winneconne
Taylor, D. ..... 2451 Orchard St., Chicago
Truesdale, S. F. ..... 87 Michigan St., Milwaukee
Tipler, F. L. ..... Neenah

Uhrlettig, John ..... East Troy

Von Liere, Martin.....Troy Center
Van Mehren, Paul .....Merrill
Van Duser, James.....Hebron, Ill.
Von Haden, C. L.....Pepin, Wis.
Vansistine, L. .....De Pere

Wurster, H. H. .....Browntown
Wileman, F. V.....Milton Jct.
Wilson, T. G.....Hazel Green
Whiting, H. H. .....Cedarburg
Werner, F. M. .....Waterloo
Wollensak, S. C. .....Kewaskum
Warnke, Wm. .....Kingston
Weber, J. F. .....Hartford
Wuethrich, Fred. .....Doylestown
Winter, L. H.....Eau Claire
Warner, T. J. .....Rosholt
Windfeldt, J. J. .....Almond
Wagner, Robt.....Sumner, Iowa
Winner, Grant.....Black River Falls
Wellinghoff, Fred.....Cry. Pckg. Co., Chicago
Wunsch, John .....Viola
Walker, F. C. .....Mosling
Whitemore, E. J.....Owantonna, Minn.
Watson, E. A.....Briggs House, Chicago
Williams, C. H.....Lake Mills
Wright, H. R.....Des Moines, Iowa
Woldt, Chas. .....Hortonville
White S. S.....10 Iglehart Ave., St. Paul, Minn.
Webster, P. J. .....Troy
Williams, C. A. .....Augusta

Yates, R. A.....Fond du Lac
Young, Geo. .....Abrams

Zimmermann, Otto .....Fennimore
Zimmerman, A. W. .....Norwalk
Zastrow, Aug. .....Algoma
Zandtke, G. .....Ft. Atkinson

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, Wis.

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 cor-

poration 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. The board of directors shall consist of three members of the association. The term of the officers of the association shall be for one year beginning July 1st, 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 July 1st or 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 treaasurer. 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, provided 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 may accept such special side premiums as in the judgment of the executive committee, may seem for the best interests of the members.

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 privilege of the association's butter contests are open to exhibitors outside of Wisconsin for complimentary score only and any exhibitor exhibiting butter at these association contests for complimentary score shall, after deducting express charges and $1.00 membership fee, have returned the balance for which the butter sold.

ARTICLE FIFTH. The association shall give such prizes for the tubs of butter scoring first, second and third as may, in the

judgment of the executive committee, best suit the times and be of greatest service to those who receive the same.

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.

The following resolutions were passed at the Fond du Lac Convention, Feb. 3, 1910:

Be it resolved: That the Butter, Cheese and Egg Journal be made the official paper of this Association.

Whereas; the judging of butter at the Wisconsin scoring exhibitions and conventions by three judges, working independently, has given universal satisfaction,

Be it resolved: That this association in annual convention assembled, commend this system; and, be it further resolved: That this method of judging the butter at the National Creamery Buttermakers' Association be employed in the future.

Whereas; Parties having entered more than one tub of butter from the same creamery have caused the judges and officers of the association unnecessary trouble,

Therefore, be it resolved: That in the future, any buttermaker or creamery, sending more than one tub to compete for the prizes and premiums offered by this association, is to be barred from competing again for a period of three years.

Whereas: The Wisconsin Buttermakers' Association is now giving silver cups to County Buttermakers' Associations for the ten highest scores at the meeting of the State Association:

Be it resolved: That in case any such county association in possession of any such cup, shall for any reason discontinue their organization, said cup shall be returned to the State Association.

J. B. LINZMEYER
Green Bay

LAURITZ OLSON
West DePere
Chairman and Newly Elected President

LEO VANSISTINE
West DePere

COMMITTEE ON ARRANGEMENTS

ELEVENTH ANNUAL MEETING

OF THE

Wisconsin Buttermakers' Association

The sessions of the Eleventh Annual Meeting of the Wisconsin Buttermakers' Association were held at the Elks' Club House, Green Bay, February 6 to 9, 1912. On account of Governor McGovern being scheduled to appear on the program Tuesday evening, the session for that day was held at the Green Bay Opera House.

OPENING SESSION, TUESDAY EVENING,

February 6, 1912.

The meeting was called to order at 8 o'clock with President S. B. Cook, of Cumberland, in the chair.

THE CHAIRMAN: The first on the program is music by The Elks' Boys' Quartette.

The boys' singing was cordially applauded.

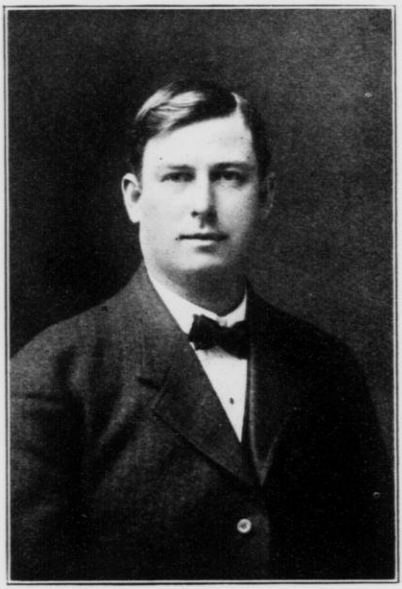
THE CHAIRMAN: The next on the program will be an address of welcome by the Honorable Winford Abrams, Mayor of Green Bay.

ADDRESS OF WELCOME.

By Hon. Winford Adams, Mayor of Green Bay.

MR. ABRAMS: Members of the Wisconsin Buttermakers' Association, Ladies and Gentlemen: After receiving the hearty encore which I received before I said anything I do not know as it behooves me to say anything. Sometimes, you know, it is far better for us to keep our mouths shut after we have gotten about as good as we expect we can get. I will illustrate that by telling a little story. In a small village neighboring onto a big city there was an

old gentleman of considerable wealth, and he had a very wayward son, who caused him and the boy's mother a great deal of trouble. The news came one day that in a street car accident his son was supposed to be killed and very badly mangled, and he was asked if he wouldn't come over and identify the remains. The old gentleman didn't want to go, so he told his other son to "go over and see if it is your brother, and if it is, your mother and I will go over."



W. J. ABRAMS.

The undertaker was very much excited, for he thought he was a son of this wealthy man. He prepared the body for the best possible burial, which means a good deal. The most expensive coffin was none too good; the best shroud was none too good.

The old gentleman came over to identify the body. The undertaker said, "Walk in there." The old gentleman looked at the body and then he said, "That is not my son, my son didn't have false teeth." It seems the undertaker in his haste had removed the bandage from the jaw a little soon and these false teeth had fallen

down between the jaws. The old man said, "That is not my son, and I am not going to pay for anybody that doesn't belong to me." That of course meant a pauper's burial. The undertaker took the body out of the expensive coffin, and as he grabbed up the remains he said, "There, if you had kept your — mouth shut you would have had a decent burial." (Laughter.)

Several days ago I received a communication from your organization stating that it was the desire to hold their eleventh annual meeting in our city. I can assure you that it was a pleasure to me as well as the citizens of this city to know that we should be so highly honored, that you should have selected our city as your place of meeting.

The duty of welcoming guests to our city is a pleasant formality which each Mayor in his turn is called upon to observe, and I do it as a host opening his own door to bid his guests welcome, for I feel that whatever I may say to you to bid you welcome will only add to the good things our people propose to do.

Wisconsin is a great state, one of the greatest in the Union. Its people are among the most prosperous of all the states. This prosperity is brought about largely by the farmers on their small farms, and their prosperity is due in a large part to the excellence and high reports of the dairy products of Wisconsin. I know of no body of men who deserve more credit for this good representation and for this prosperity than the buttermakers of Wisconsin.

One of the men who is directly responsible for this position of Wisconsin as a dairy state is to address you tomorrow. For years he has advocated scientific dairying, and now we are getting the results of his teaching. In those days we thought Governor Hoard was visionary, enthusiastic, now we say he had a wonderful foresight. He had his troubles in teaching advanced dairying, but it must have been a pleasure to the Governor, even in those days, to anticipate the results which his teachings were accomplishing, for there is a great deal of pleasure in anticipation.

I will illustrate that by telling you another little story. A Hebrew, reading the evening paper, ran across this advertisement: "For sale cheap a horse and a two seated buggy." Turning to his wife he said, "Listen, Rebecca, here is a buggy for sale cheap and

I think I will buy it." Little Isaac, playing on the rug, spoke up, "I want to ride in the front seat." His father said, "You ride in the back seat." "Father, I want to ride in the front." "Isaac, you get right from off the buggy."

From this meeting Green Bay will receive a good deal of advertising, particularly so when the dairy products are held as high as they are today. This reminds me of another story I read the other day. A minister, visiting a Sunday School class of infants, asked them what they should do before they partook of any meal, expecting them to say the blessing. He pointed to one little boy who was the son of a deacon of the church, and he said, "What does your father always say before eating, Johnny?" The small boy replied, "Kids, go easy with the butter, it's worth fifty cents a pound."

Green Bay, the city of your choice for your 1912 convention, was the first point of discovery in the state of Wisconsin, being discovered by one Jean Nicollet who was commissioned in 1634 to explore and enter into treaties with the Indians, the history of which is written all along the shores of the Great Lakes, Green Bay and Fox River. Green Bay has also figured greatly in the building up of the great Northwest.

A few hundred feet from the site of where the Chicago and North Western Depot now stands there is a flag staff which marks the site of the old fort which was so successfully held by the French, by the English, again by the French and by the United States. Green Bay has had many public buildings which figured greatly in our early history. The building which is known as the Tank Cottage and which once stood on the banks of the Fox River, in recent years was moved from its former site to Union Park and is now used for historical and library purposes. Those of you who have read the book "Lazarre," written by Mary Catherwood, will remember that she mentions this old building, and while she was writing this novel she made Green Bay her home so as to be familiar with certain characters and surroundings. This novel was dramatized and presented for its first appearance in Green Bay by Mr. Otis Skinner, the noted actor. But the place where once the mighty Indian ruled supreme is now changed and his familiar haunts are now replaced with manufacturing industries. For the last few years

Green Bay has made a great stride in growth and prosperity. This has been brought about by our shipping facilities. We have at this time two lines of railroad from the north, three from the south, one from the east and one from the west, and being on the Great Lakes we enjoy like shipping privileges to our neighboring cities, Milwaukee and Chicago. The government statistics show that within the last ten years Green Bay has gained in population over thirty-five per cent, a growth only equalled by two hundred cities in the United States of our class. New streets have been built, public buildings have been erected and the appearance of old Green Bay has been changed.

While you are in our city I desire that you inspect our public buildings and our many enterprises, of which we are proud. From time to time as you parade the streets you will see men dressed in blue uniforms with a star in the lapel of their coats. We do not keep these men for what they seem, for the citizens of Green Bay are an orderly set and love their city, but should you desire to know the name of some street or the location of some old friend, do not fail to ask them, for we keep them for that purpose and not for what they would seem.

We are sorry that you cannot remain with us longer, but we know your own people desire your early return, but while you do remain with us, let me say to you that you are welcome to everything we have, the freedom of the city is yours, and in behalf of the citizens of Green Bay I extend to you a hearty welcome and I hope that your pleasure in being here will be as great as ours is in having you here. (Applause.)

THE CHAIRMAN: We will now have the response by Mr. Clay Tyler, of West De Pere.

RESPONSE.

By Mr. Clay Tyler, West De Pere.

MR. TYLER: Mr. President, Ladies and Gentlemen and Buttermakers: It certainly is a pleasure for the members of the Wisconsin Buttermakers' Association to be greeted with such a kind and earnest welcome, so graciously extended by the Mayor in behalf of the generous citizens of the city of Green Bay. I wish to

earnestly thank the Mayor for the kind greeting we have received. Of course we did not expect to be received with open arms and worshipped as Father Marquette, to whom we are so greatly in debt, was by the uncivilized Indians of this territory when he first came to Green Bay in 1673, but I assure you that, although the welcome was not in the same manner, still the expression and feeling was fully as great which we received.

CLAY TYLER

Although it is somewhat early in this meeting to make predictions, yet, judging from the numerous successful conventions held at Green Bay during the last year, and the special inducements which it has offered the buttermakers in the way of prizes, I dare say, that this meeting will be one of the best which the buttermakers of Wisconsin have ever held. The progressive work of the people of Green Bay in seeking conventions and entertaining visitors is making it one of the most popular convention cities in the state. I should not be surprised if this city was made the annual meeting

place of the Wisconsin Buttermakers' Association. This city is one of the most progressive cities in the state and the people are certainly deserving of great credit for the success that has been obtained and the many good things which the future holds in store. I am informed that the Chicago and Northwestern Railway Company has decided to move its machine shops from Chicago to Green Bay which undoubtedly will prove very beneficial. If the charms of Green Bay are strong enough to draw these machine shops from Chicago, then it seems needless that we should attempt to resist, if they should perchance use their magnetic power on us.

We fully expect to be well cared for in every way as Green Bay has rebuilt and greatly enlarged two of her hotels during the past year for our special accommodation, so that now it has two of the finest and most commodious hotels north of Milwaukee. However, if this were not the case we would not dispair as we still have our own Cook with us.

In behalf of the Association I again wish to thank the Mayor for the hospitality shown us. I thank you. (Applause.)

THE CHAIRMAN: The next will be a solo by Mr. Kerr.

Mr. Kerr sang several selections and was vigorously applauded.

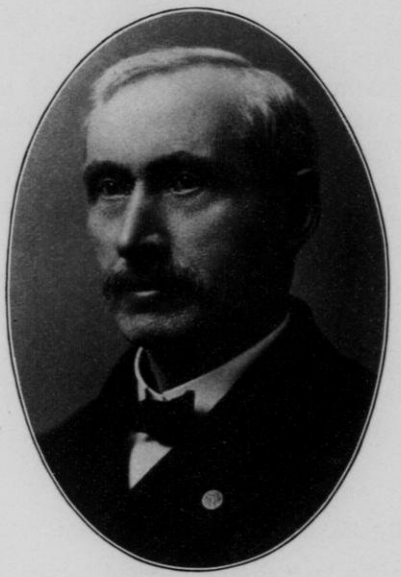
THE CHAIRMAN: The Governor cannot be with us tonight, but we have with us his private secretary, Mr. Duncan McGregor, who will address the meeting.

ADDRESS.

By Mr. Duncan McGregor, Madison.

It is certainly a keen disappointment to you as it is a matter of great regret to me that you are not to have the pleasure of listening to an address from our eloquent and popular executive. He directs me to assure you that he foregoes with reluctance the anticipated pleasure of meeting you and that his failure to take the place assigned to him on your program in due to official demand that could neither be foreseen nor postponed. He has appointed me as his proxy, with instructions to present his sincere regrets, and to bring you his good wishes together with his pledge of hearty cooperation in your praiseworthy efforts to keep Wisconsin in the

lead as the greatest butter producing state in this Union. Let me assure you, too, that it is the Governor's interest in the social and material welfare of the state that is directly responsible for this unwelcome change in your program. You doubtless know that Governor McGovern is President of the Board of Public Affairs, a new Board whose mission is to ascertain what ought to be done to improve the social and industrial condition of our people, and whose members, because of their interest in the work, serve without pay.



DUNCAN McGREGOR

He is giving much of his time to the affairs of this Board that has in it immense possibilities since it has under consideration numerous questions involving the upbuilding of the Badger State. The Board convened yesterday in the Capitol, and is probably in session to day, was in session last night until 6:30, convened again at 7:30. Under the direction of this Board many experts are making at the present time surveys covering such interests as rural life, reformatory management, education, co-operation in buying and

selling, the problem of unimproved property, immigration, sanitation and many other subjects of similar bearing.

I notice from the proceedings of Buttermakers' Conventions in other states that the merits and demerits of co-operation as compared with centralization are receiving attention and are made the subjects of warm discussion. This very matter is now under consideration by the Board of Public Affairs, and I am very sure that the Board would be pleased to know your opinion either as an Assiciation or as individuals. A letter giving your views, addressed to the Executive Office, will be promptly laid before the Board and will receive the most careful consideration. The Board has in mind the most practical results and it may be greatly to your interest to make your views known.

It was Macauly who declared that of all inventions, the alphabet and the printing press alone excepted, those which abridge distance, and we presume that implies time as well as space, have done the most for civilization. Macaulay was fifteen years of age when Fulton died and nineteen when Watt died. These two men had given to civilization a most wonderful impetus by inventions that were rapidly annihilating time and space. Intercourse between remote regions had been made by them both quick and comfortable, and tedious delays and risks in transit promised soon to be all but abolished. A wonderful change was wrought by Watt in means of transportation, when he fitted the flanged wheel to the continuous rail, and broke refactory steam to harness for his motive power. When Fulton substituted for the fickle winds and leisurely oars the untiring and impatient energy of steam, civilization made a tremendous leap forward. No wonder that Macaulay looked with admiration upon the results achieved even in his day. That was fifty years ago and during that time steam had been turned to myriad uses. To steam has since been added gasoline and electricity, both so tractable, so easily applied and so abundant that we are constantly on the outlook for new ways of utilizing them in contributing to our wants or our pleasure. Since Macaulay's day the problem has changed from inventing means for transportation to manufacturing larger amounts and greater varieties of materials to be transported, or to finding a more remote market for materials on

hand. So in this day production wields greater influence than transportation, the manufacturer plays a more important part than the carrier. However, transportation and manufacturing, like the well-assorted couple, contribute most to prosperity when both work in harmony and each for the common good. But you have never seen manufacturing when transportation did not reach out and find it. There are many cases, however, of provision for transportation failing to command sufficient business for the carrier. Manufacturing leads, transportation follows. Wherever the smoke stack of the factory is seen, the whistle of the approaching locomotive is heard in the near distance. This relationship leads to the legitimate inference that of the two manufacturing is the greater civilization today, while in Macaulay's time it no doubt was transportation. I venture the statement that creameries, butter factories if you please, have in recent years wielded more influence upon our civilization, especially in rural communities, than any other agency. Enthusiastic buttermakers, and only the enthusiastic attend such a gathering as this, are not epected to take issue with this statement.

Whatever removes drudgery advances civilization. The drudgery of the rural housekeeper who not many years ago in addition to the care of the milk, skimmed it and churned the cream, worked the butter and packed or prepared it for market, the drudgery, I say, was immense; we would say today it was intolerable. Think of that old time churning process, undertaken not unfrequently, several times a week. So uncertain were results that, like many other processes that seemed to obey no law, superstition took control and even witchcraft was held responsible when the churning failed. The lucky hand was eagerly welcomed to start the process, and through that subtle influence the labor was supposed to be lightened, the returns quickly realized. On the other hand, the envious vixen was supposed to cast her unlucky spell over the contents of the churn, and work and worry as you might no butter would appear. Refractory churning was misunderstood churning. Misunderstanding leads either to failure or to absurdity, to what is lamentable or to what is laughable. Ignorance has ever been the fertile mother of superstition. So on account of want of accu-

rate knowledge the churn was plunged into hot water or hot water poured into the churn according to whether the operator desired slow or quick action. If this treatment did not bring butter cold water was used instead of hot, and that again failing milk would be added to the stubborn cream. Should any boy be drafted into service, his remedy, boylike, was marked variation in the speed of the dasher. Fast or slow, as the mood came, but when no butter appeared in the cup of the cover the speed and energy were increased until floor and boy were well covered with the escaping cream. Should time, patience and muscle at last prevail, as they generally did, the product was a pale, sickly looking caricature, a very woe begone, abused looking product which might well pass as showing the baleful effect of some witch's spell. Even the palest oleomargarine would fairly blush in such presence. Though it was known that agitation was necessary and that temperature had something to do with the outcome the extent of the agitation as well as degree of temperature were left to guesswork with the ever present probability of failure. The working, salting and packing or patting of the butter followed, with plenty of hard work and the risk that it would not be palatable when finally it appeared on the table of the consumer.

Modern devices with the knowledge that the creamery has furnished has removed buttermaking from most homes to the factory, and has immensely lightened the work even when it is undertaken in the home.

But you buttermakers have not only brought relief to the house keeper, you have also brought wealth to her and to her husband, the dairyman. The man who has cream to spare, let it be much or little, can sell it at any creamery for what it is worth in the market, and get his check with the most perfect regularity. A steady income is assured, its amount conditioned not more upon the investment than upon his own intelligence and industry. Should this income be unsatisfactory or not up to reasonable expectations, he is driven to make a survey of his own management. Efficiency is the motto of twentieth century business. Efficiency demands adequate returns for investment, sufficient volume of product, too, to repay for care and keep, and a fair margin of profit over the

entire amount chargeable to the industry. Cow census means cow book-keeping. When the creamery check is unsatisfactory or is found to be shrinking, something is wrong, either with the cow or with the cow owner. If with the cow, she must give place to one better suited to dairy purpose, and she must take her place where she will show efficiency, probably in the fattening stall, in the pasture, or may be among the canners in the stock yards. If the owner is at fault he must look to breed and feed, care and keep, probably resort to the silo and alfalfa. If these cannot save him, his case is desperate indeed. The ledger account of each and every cow must show a balance every year in favor of the owner. The account the creamery keeps with its patrons forces the patron to keep a strict account with his cows with the result that cow efficiency is constantly increasing. Hence it has come about that stock has greatly improved, feeding and keeping are gradually attaining the dignity and value of science, returns are becoming more certain and the business of dairying has assumed in the mean time enormous proportions. Think of it. In 1909, the states of California, Colorado and Nevada, the three leading gold producing states in the Union are reported as yielding gold valued at $58,-135,000. What is considered a fair estimate makes the products of the dairy industry in this state for 1910 $80,000,000. Add to the gold product of the three states named the output of the mines of Alaska, and their aggregate falls short by about $1,000,000 of what the Wisconsin cow yielded in dairy products alone in the year 1910. The byproducts of increase and fertilizer are not here considered. The Wisconsin cow is a bigger bonanza than the Homestake or any other gold mine, bigger even than all the gold mines in several of the richest gold producing states of the Union taken together.

The dairy business will still further increase with increasing demand, and under the stimulus of devices or machinery that lighten the labor and increase the output. Only a few weeks ago Hon. Niel Nielson, recently a member of the government of New South Wales, visited the State and the University of Wisconsin with a view of comparing the agricultural methods of Wisconsin with those of Australia. Himself a practical farmer and dairy-

man, he told of milking machines in use in his country, and the labor they saved. Within a few days this item was clipped from one of our daily papers: "The milking of cows by machinery has been in vogue in New Zealand for over four years. Over one hundred cows may be milked by one of the machines in less than two hours." That is from four to five times what your best milkers do now. The dairy maid, however sweet her song, is not in it with the machine. Before many years I imagine that Wisconsin dairymen, too, will be doing their milking by machinery. Wisconsin is noted for being responsive to the legend on her coat of arms, which is "Forward."

No industry stands alone. Improvement in any one line of business means at least some improvement in some other line, and some times in many lines. Improvements in dairying have led to improvements in the homes and on the farms. The dairy has made the home keeping easier, put intelligence into the care of cows and their product, and aided materially in conserving the fertility of the soil. You buttermakers have made it possible for a host of farmers to live more comfortably, to improve their homes and barns, and to send their children to college, and to the University, even to own and operate high-grade and high-priced automobiles. This week many farmers and, I presume, dairymen and buttermakers are attending the short course given by the University, where they are learning, among many other things, care of dairies and their products, and probably how to make high-grade butter and cheese and pass intelligent judgment on the same. Only last week one of these pupils, a well developed lad of sixty years or more, remarked while in the office that something was said or done every day in their discussions that gave him a new view of something relating to his business. You buttermakers are compelling your patrons, in their own interest, to build silos, grow alfalfa, and see that stock is well supplied with good water. You are making it possible for your patrons not only to improve their buildings, but also to increase their real estate holdings. Look about you and see if it is not true that your patrons are buying out their neighbors who foolishly persist in raising scrub stock, milking scrub cows, and in trying to live on the income of the scrub farmer. Who has

ever known of a live Wisconsin dairyman following Greeley's advice beyond the limits of our own state. The Canadian Northwest has no attraction for him, Wisconsin is good enough.

The business of buttermaking requires no eulogy from any one. All know something of what it has done and is still doing for our civilization. It has much yet to do in the same line, and this meeting of your Association is for the purpose of taking counsel among yourselves as to what ways and means may be adopted to increase your knowledge of the business and the interest of your patrons in promoting this valuable and successful industry.

I wish that I were qualified by experience or observation to give advice to any one of you, but I am neither a dairyman nor a buttermaker, neither a producer nor a manufacturer, only a humble consumer, but I believe I can say without boasting that I play that part well. I can say also that I am very partial to the family cow that gives good cream and plenty of it, and will not keep a cow that does not meet these requirements. Most dairymen and buttermakers share with me in that partiality. Over twenty years ago I took a liking to the Jersey cow, long recognized as the queen of the dairy and still the queen of the urban pasture, and since that time I have never been without a pretty fair specimen, pure bred and generally registered. Permit me to say that she pays me in being a good looker no less than a good milker. On account of that partiality I might be considered a near dairyman. As to my relation to the buttermaking fraternity, it is one of location rather than experience. My home property is separated only by a fence from the property of one of the best and most successful creameries in the state. This factory is managed by the President of the National Buttermakers' Association (I am not sure of the exact title of the organization) who is at the same time an efficient and worthy official of this body, Mr. A. C. Schultz of Platteville. You see that if I cannot claim to be a near buttermaker I can claim to be near to one of the very best buttermakers in this country.

My friends, you have my most hearthy thanks for your kindly attention and marked courtesy, and I must now bid you good-by. (Great applause.)

THE CHAIRMAN: As we haven't anything more on the program tonight I will give an announcement that the Machinery Hall will open at eight to eight-thirty and the Starter Demonstration by Mr. Meyers and Mr. Ericson will take place there.

There being nothing more, the meeting adjourned.

WEDNESDAY MORNING.

Wednesday morning, eleven o'clock, meeting called to order by the President.

The President called Vice-President F. Bowar, of Cazenovia, to the chair.

THE CHAIRMAN: Ladies and Gentlemen: The first on the program this morning will be an address by President S. B Cook, of Cumberland.

PRESIDENT'S ADDRESS.

S. B. Cook, Cumberland.

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

I am not going to detain you long this morning with an extended address because there is a full program arranged for. However, I have some things to say and some suggestions to make which, if followed, I believe will work out to the advantage not only of the members of this association, but will bring about better conditions in the branch of the great dairy business of the state which we represent. I want to congratulate you on the showing made thus far, both in the exhibit of butter and in the attendance. However, there are over 1000 buttermakers actively engaged in the business of buttermaking in this state and the butter exhibit and the attendance of buttermakers should be much larger. The arrangement of the programs for these annual meetings, designed to benefit the buttermakers, should prove to be a sufficient drawing card. I take it that every buttermaker in this state really desires that improvement be made along all lines of the dairy business which would tend toward manufacturing a better article of butter.

In this direction the work of the butter scoring contest, carried on by the dairy department of the college of agriculture at Madison, under the able and efficient management of Professor C. E. Lee is to be commended. When sending butter to that contest, the importance of properly and honestly filling out the method blank as to how the butter was made, cannot be urged too strongly, because if the exhibitor is to receive the desired benefit, the man in charge must have the information called for on the blanks. Then he can compare the judges' score and criticism with the method of manufacture and suggest how improvement may be made.

That the practices of many of our dairymen, and that many of our dairy herds can be improved, is conceded. The buttermaker's opportunities to assist in this great work are many. As the patrons are met from time to time, instead of the conversation that is often heard at the weigh-room, such as "Good morning, Brown, how are you? Do you think it is going to rain or snow? Do you think we will have warmer or colder weather tomorrow?" or some such conversation just as unimportant, let each buttermaker acquaint himself with the individual needs of his patrons, and when they drive up to the creamery, suggest to them some of those needs which aid in producing better and more milk or cream, such as the building of a milk house or a silo, whitewashing the barn, or putting in cement floors, more light or a system of ventilation; also the importance of testing the individual cows so that the poor and unprofitable ones may be culled out, and suggest how to breed and feed the profitable ones to make them more profitable. Such continued agitation among the creamery patrons of the state would bring about wonderful improvements.

I had planned to say something about the necessity and importance of the organization of county associations to work in connection with this association, but the address by F. D. Currier of Nicollet, Minn., at the Minnesota Butter and Cheese Makers' Association held at Albert Lea, Minnesota, is right to the point and to be commended. Through the courtesy of the management of the Dairy Record of St. Paul, Minn., this address has been republished and a sufficient number of copies of that paper have been furnished so that each member can have one. I urge you to read

and study this address with the view of forming such associations as Mr. Currier suggests. He says in part:

> "There has never been a time, in the history of dairying * * when there was greater need of co-operation among our local creameries than right now; and if those creameries are to survive and continue to be the important factors in the future that they have been in the past, in the development of the dairy industry, they must realize the dangers confronting them and be prepared to meet them—be prepared to meet emergencies, and this can only be done through co-operation or a united effort. It can never be done by listening to flattering promises which are made only to be broken."

The oleomargarine situation is serious and demands our most careful attention. A bill known as the Lever Bill H. R. 18493 has been introduced into congress by Congressman Lever.

Under the terms of that bill, the name of the article now recognized by national and state law as oleomargarine, is changed to that of "margarine," and is so framed as to repeal the present provision of the national oleomargarine law which gives the state control over oleomargarine as soon as it comes into the state.

It also specifies one-half and one pound prints as "Manufacturers' Original Packages." If such a law is to be enacted and held to be constitutional, then any one in any state may sell all the oleomargarine possible in spite of any state law, no matter how dishonestly colored.

The bill also provides that before a penalty could be imposed for its violation, it would have to be proven that the law had been knowingly or wilfully violated, which is practically impossible to do.

The bill provides for a flat tax of one cent per pound on all oleomargarine or "margarine" as they propose to call it. The oleomargarine people are behind this bill and argue that it would reduce the cost of oleomargarine to the consumers on the ground that the tax will be reduced. Such argument is misleading and false because as shown by the following which is taken from the report of the commissioner of Internal Revenue for the fiscal year ending

June 30, 1911, as found on page 16: There were withdrawn, tax paid, 115,448,006 pounds of oleomargarine at the rate of ¼ cent and 2,764,971 pounds at the rate of 10c, or a total of $118,212,977 pounds for which the total collections were $284,262.94, from the stamp tax at the rate of 10 cents per pound and $286,895.81, at the rate of ¼ cent per pound, or a total of $571,158.75 from both classes.

There evidently is a misprint in the commissioner's report in some of the figures given above, because the total tax from both stead of $571,158.75. However, that is only a matter of a few sted of $571,158.75. However, that is only a matter of a few thousand dollars. The point I desire to make is that if there had been collected the tax rate of 1 cent per pound on all oleomargarine as is provided in the Lever Bill, there would have been collected on the 118,212,977 pounds of oleomargarine, $1,182,129.77, or a difference on the basis of the tax of more than half a million dollars that the consumers of oleomargarine would have had to pay for the same amount of oleomargarine were the Lever Bill in force.

There is a certain amount of agitation in this state relative to the 82.5% butter fat standard which this association favored at the meeting held at Wausau in 1907, and which standard was later enacted into law by the legislature of the state. We all know that the centralized creamery interest is opposed to this standard and will make every possible effort to have it lowered. Now it may be that the standard of 82.5% fat for butter is too high, but if it is, we have now a very easy way of finding that out ourselves, and every buttermaker should hold himself responsible, and I urge you to make the necessary investigation.

Accurate determination of the butter fat content of butter can be made by the Babcock method. This method is fully reported in the bi-ennial report of the Wisconsin Dairy and Food Commissioner for the period ending June 30, 1910, on pages 353-358. This work was done with the use of the "Wright Butter Test Bottle."

I want to urge the buttermakers to procure some of these butter test bottles and make fat determinations of the butter manufactured. Do this throughout the coming year and then when we meet in annual convention next year, you will have data which will

enable you to decide whether or not the present fat standard should or should not be changed.

This association has always stood firm for the local creameries, and in so doing we have no apologies to offer for there is no institution connected with the dairy business that means so much to a state as does the local creamery. But right in the face of the great advantage of the local creamery there is an organized and determined effort on the part of the centralized creamery interest *to do* the local creamery.

Right here I want to say that the centralized creamery interest is to a very great extent responsible for the poor cream that the local creamery butter makers are forced to accept. You know as well as I do that practically all the creamery patrons in the state have had their minds poisoned by the advertising matter sent out bidding for cream, wherein the highest market price has been offered and paid for butter fat in cream, no matter how bad the quality. The result has been that just as soon as the local creamery buttermaker refuses or even complains to the patrons about the poor cream, he is met with the statement, "Well, if you don't want the cream, we will ship it," so the local creamery buttermaker has been forced to accept a lot of cream that he would not have accepted had it not been for the demoralizing interest of the centralizer.

Fellow buttermakers, this is your association and I trust each one of you will do all you can for the association and what it stands for. Remember, if you fail to put forth your best efforts in behalf of your own business, nobody else will do it for you, and your failure will prove an opportunity for the enemy. (Applause.)

THE CHAIRMAN: We will now have the report of our Secretary, Prof. G. H. Benkendorf.

SECRETARY'S REPORT.

G. H. Benkendorf, Madison.

SECRETARY BENKENDORF: Mr. President, Ladies and Gentlemen:—The Secretary's report is quite a voluminous affair and I do not know that you care to hear all of its contents at this time. It will be printed in the annual report, and if any newspaper man

wants it he may copy it here. There are, however, a few things I would like to explain. At the La Crosse convention we reported:

Receipts	$1652.41
Expenditures	1497.89
Leaving a balance of	$ 154.52

When the books were turned over to Mr. Cook there was a difference of $8.65 between his books and the Secretary's books. There is still a difference of $8.65. We do not know how long this difference has existed. It might be due to several immaterial errors that crept in in the early history of the society. I don't know of any reason why the books should continue to show this difference, and therefore I made this statement at the end of the report: "After carrying this difference for two years there is still a difference of $8.65 between the Secretary's books and the Treasurer's books, it is better an allowance of that sum should be made." If you make that allowance it carries a balance of $145.87, which was the amount reported by the Treasurer at the La Crosse convention. It seems a little better on the face of it, and when you consider that heretofore no systematic effort has been made to draw a line and check up, it is remarkable that no greater differences have accumulated in the ten years existence of the society. The reports show that everything is all right, yet the above difference has crept in.

I may say that these accounts were checked over last night and approved by the Executive Committee.

(Secretary read the report.)

GENERAL FUND.

RECEIPTS.

1911.		
Feb. 1,	Balance on hand at La Crosse Convention	$ 145.87
Dec. 1—10,	D. E. Wood Co	5.00
Dec. 6,	Fitch, Cornell & Co	10.00
Dec. 15,	Colonial Salt Co	10.00
Dec. 21,	American Butter & Cheese Co	5.00
Dec. 24,	Martin H. Meyer	5.00

1912.

Jan.	1, Leserman Bros.	5.00
Jan.	3, Booth Fisheries Co	10.00
Jan.	6, Gude Brothers, Kieffer & Co	5.00
Jan.	10, Currie Hardware Co	5.00
Jan.	23, Eau Claire Commercial Club (Bal. due)	60.00
Jan.	28, S. A. Cook, Membership and Donation	10.00
Jan.	30, Gleason & Lansing	10.00
Jan.	30, Spangenberg & Co	5.00
Jan.	30, Latshaw Feerst Co	5.00
Jan.	30, H. C. Christians Co	5.00
Jan.	30, Geo. C. Mansfield Co	5.00
Jan.	30, Wisconsin Coal Co	5.00
Jan.	30, Worcester Salt Co	10.00
Jan.	30, J. G. Cherry Co	10.00
Jan.	31, Northey Mfg. Co	5.00
Jan.	31, Coyne Bros.	5.00
Jan.	31, Ditman & Co	5.00
Jan.	31, A. H. Barber & Co	5.00
Jan.	31, Morton Salt Co	5.00
Jan.	31, De Laval Separator Co	15.00
Feb.	1, Gallagher Bros.	5.00
Feb.	1, Vilter Mfg. Co	10.00
Feb.	1, Jensen Mfg. Co	10.00
Feb.	1, S. S. Borden Co	5.00
Feb.	2, American Steam Pump Co. (Balance allowance	9.80
Feb.	2, Wells & Richardson Co	10.00
Feb.	3, Wisconsin Dairy Supply Co	10.00
Feb.	3, Cornell Bros.	5.00
Feb.	3, Standard Oil Co	10.00
Feb.	3, Christ. Hansen Laboratory	10.00
Feb.	4, Hunter Walton & Co	5.00
Feb.	6, Collyer & Co	10.00
Feb.	6, Elgin Butter Tub Co	10.00
Feb.	7, A. Martin & Co	10.00
Feb.	7, American Box Co	5.00
Feb.	7, Indiana Refrigerating Co	5.00
Feb.	7, Elov Ericsson	5.00
Feb.	8, Creamery Package Mfg. Co	5.00
Feb.	8, J. B. Ford Co	10.00
Feb.	9, A. H. Barber Supply Co	10.00
Feb.	10, Geo. W. Linn & Son	5.00
Feb.	10, H. W. Johns-Manville Co	10.00
Feb.	15, Fred. C. Mansfield Co	5.00

Feb. 16,	International Harvester Co	10.00
Feb. 16,	Quincy Cold Storage	20.00
Feb. 20,	Union Storage Co	5.00
Feb. 22,	Creamery Pkg. Mfg. Co., Chicago	10.00
Feb. 25,	O. B. Cornish—Machinery Hall rent	20.00
Feb. 1—3,	Membership:	
	O. B. Cornish	18.00
	Geo. Swits	19.00
	Miss Henwood	22.00
	G. H. Benkendorf	71.00
	F. W. Grell	11.00
	S. B. Cook	3.00
	P. A. Larson	16.00
	J. G. Moore	43.00
	M. H. Meyer	6.00
Mar. 11,	P. F. Brown & Co	10.00
Mar. 16,	Roy Bros.	5.00
Mar. 20,	Interest on $600 at Bank	9.00
April 1,	Fox River Butter Co	10.00
April 4,	Sturges & Burns	10.00
April 27,	Co-operative Cry. Supply Co	10.00
May 5,	Empire Separator Co.	5.00
June 29,	G. H. Benkendorf—Memberships	6.00
June 30,	Transfer 181 Exhibitors Memberships	181.00
Sept. 5,	State Appropriation	600.00
Oct. 19,	D. E. Wood Butter Co	5.00
Oct. 19,	W. J. Hartzell Co	5.00
Oct. 19,	Gude Bros. Kiefer Co	10.00
Oct. 19,	Fox River Butter Co	10.00
Oct. 19,	Standard Oil Co.	10.00
Oct. 19,	Johnston & Coughlin	10.00
Oct. 19,	Fitch Cornell & Co	10.00
Nov. 20,	S. T. Pratt	5.00
Nov. 20,	Jones Dairy Farms	2.50
Nov. 28,	L. A. Disbrow	5.00
Dec. 12,	Hunter Walton Co.	5.00
Dec. 12,	Sherwood Hotel	5.00
1912		
Jan. 8,	Uncollected Checks from S. B. Cook (Treas.)	14.27
Jan. 20,	Wm. J. Haire Co	5.00
Jan. 30,	Latshaw-Feerst Co.	5.00
Jan. 30,	J. G. Cherry Co	10.00
Jan. 30,	Geo. C. Mansfield Co	5.00
Jan. 30,	H. C. Christians Co	5.00

Jan. 30,	W. D. Collyer & Co	10.00
Jan. 30,	Leserman Bros.	5.00
Jan. 30,	Geo. W. Bull & Co	10.00
Jan. 31,	Spangenberg & Co.	5.00
Jan. 31,	Worcester Salt Co.	10.00
Jan. 31,	Currie Hardware Co.	5.00
Jan. 31,	A. H. Barber & Co	5.00
Jan. 31,	Gleason & Lansing	10.00
Jan. 31,	Wells & Richardson Co	10.00
Feb. 5,	J. B. Ford & Co	10.00
Feb. 5,	Morton Salt Co.	10.00
Feb. 5,	Chr. Hansen Laboratory	10.00
Feb. 5,	Coyne Bros.	10.00
Feb. 5,	Wisconsin Dairy Supply Co	10.00
Feb. 5,	Merrill & Eldredge	10.00
Feb. 5,	Dittman & Co.	5.00
Feb. 5,	S. S. Borden Co	5.00
Feb. 5,	Gallagher Bros.	5.00
Feb. 5,	Torsion Balance Co.	10.00
Feb. 5,	Eck, McNeill & Co	5.00
Feb. 5,	Lorenz Model Co.	10.00
Feb. 5,	Vilter Mfg. Co.	10.00
Feb. 5,	Laabs Bros.	5.00
		$1987.44

1911 EXPENDITURES.

Feb. 25,	C. E. Lee, Convention expenses	$ 15.57
Feb. 25,	Miss E. M. Henwood, Convention expenses	30.62
Feb. 25,	E. H. Farrington, Convention expenses	8.82
Feb. 25,	C. J. Dodge, Convention expenses	8.14
Feb. 25,	C. L. Passmore, Convention expenses	13.96
Feb. 25,	John Schield, Convention expenses	8.30
Feb. 25,	J. D. Jarvis, Convention expenses	22.00
Feb. 25,	O. B. Cornish, Convention expenses	23.89
Feb. 25,	Walter Mayer, Printing	26.50
Feb. 25,	H. P. Olsen, Germania Pub. Co., Printing Program	146.20
Feb. 25,	Walter Mayer, Stationery	27.50
Feb. 25,	Schwaab Stamp & Seal Co.	100.00
Feb. 25,	Jennie Boning, Stamps, Stenographic Work	29.05
Feb. 25,	Expenses Preliminary to La Crosse Convention	74.67
Feb. 25,	Expenses incurred at La Crosse Convention:	
	Mrs. Carpenter's Expenses $22.40	
	G. H. Benkendorf, Hotel Bill 17.75	
	Signs, Car Fare, Express, etc. 33.52	73.67
Mar. 22,	Mrs. Carpenter, Reporting Convention	75.00

Mar. 22,	Theo. Dresen, Convention Prizes	67.31
Mar. 22,	S. B. Cook, Convention Expenses	27.46
Mar. 22,	G. P. Sauer, Convention Expenses	32.60
Mar. 22,	Miss Henwood, Clerical help	21.51
Mar. 27,	F. W. Grell, Convention Expenses	14.44
April 1,	O. B. Cornish, Salary Mchy. Exhibition	25.00
April 1,	S. B. Cook, Salary as Treasurer	25.00
April 28,	G. H. Benkendorf, Sec., Salary 1910-11	250.00
June 29,	Schwaab Stamp & Seal Co., 200 extra fobs	25.00
June 30,	G. H. Benkendorf, Stamps, printing, etc	38.97
Aug. 26,	Tracy, Gibbs & Co., Printing	23.00
Aug. 26,	G. H. Benkendorf:	
	Expenses to Milwaukee $5.88	
	Engraving cup 1.15	
	Stamps 8.00	
	Telephone, express, etc 3.02	
		18.05
Aug. 28,	A. C. Schultz Expenses attending committee meeting at Madison	5.18
Aug. 26,	S. B. Cook, Expenses attending committee meeting at Madison	22.03
Aug. 31,	Jennie Boning, Clerical work	3.60
Sept. 5,	Tracy, Gibbs & Co., Printing	16.00
Sept. 5,	A. W. Zimmerman:	
	Expenses attending committee meeting at Madison $5.30	
	New account book 1.75	
		7.05
Oct. 18,	Stamps for sending out report, etc	36.38
Nov. 1,	P. B. Haber Printing Co., Printing 800 copies Annual report	194.00
Jan. 18,	Germania Printing Co., sending out convention announcements	22.00
Jan. 18,	H. P. Olsen, Mailing programs, stamps, etc	36.00
Jan. 18,	Schwaab Stamp & Seal Co., 500 convention fobs	100.00
		$1694.47

RECAPITULATION.

Balance on hand as reported at La Crosse convention	$ 145.87
Receipts	1841.57
Total	$1987.44
Expenditures	1694.47
Balance on hand as reported at Green Bay convention	$ 292.97

BUTTER ACCOUNT 1911.

1911 RECEIPTS.

Feb. 3,	3418 lbs. butter @ 19¼c, sold to Hawley Commission Co., La Crosse	$657.95
Feb. 3,	90 lbs. butter @ 19¼c, sold to Hawley Commission Co., La Crosse	17.40
Feb. 3,	Butter sold by J. G. Moore to private parties, 8 packages	33.00
		$708.35

1911 EXPENDITURES.

March 4,	Excess Butter—		
	M. J. Ashdown	$ 1.73	
	R. O. Brye	8.08	
	W. A. Galstad	2.12	
	A. C. Haberstich	1.73	
	W. H. Kubat	1.73	
	Merrill Cry. Co.	7.12	
	Q. Moersch	1.92	
	R. A. Yates	1.92	
	Univ. of Wisconsin	11.93	
			$ 38.28
March 4,	Complimentary score butter returned to exhibitors, less $1 membership:		
	Fred. Allen	$2.46	
	S. B. Cooksley	2.85	
	G. E. Day	2.87	
	A. G. Dunker	2.66	
	Guy Jordan	2.85	
			13.09
April 1,	J. G. Moore ,expenses, salry and express		136.28
June 30,	181 Exhibitors' memberships transferred		181.00
June 30,	Balance transferred to 1912 premium fund		339.70
			$708.35

PREMIUM FUND 1912.

1911.

April 20,	Salary O. B. Cornish, 1911 Convention	$ 25.00
June 30,	Transfer undivided 1911 Premium account	20.60
June 30,	Transfer 1911 Butter account—net proceeds	339.70
June 30,	Guy Jordan, returned check La Crosse Convention	2.85
Oct. 19,	Diamond Crystal Salt Co.	10.00
Oct. 19,	D. E. Wood Butter Co.	5.00
Dec. 12,	Fox River Butter Co.	25.00
Dec. 12,	Chr. Hansen Laboratory	15.00

1912.

Jan. 30, J. G. Cherry Co. 25.00
Feb. 5, J. B. Ford Co. 10.00
Feb. 5, Morton Salt Co. 10.00
Feb. 5, Wisconsin Dairy Supply Co. 10.00
Feb. 24, Creamery Package Mfg. Co. 25.00

April 5—Up to this date the Commercial Club of Green Bay have failed to forward the amount of their subscription for the premium fund, which was $300.00.

Checks were issued Feb. 9, 1912, to the amount of $802.62 and were sent along with the scoresheets to the parties exhibiting butter at the convention. A detailed statement of the amount sent each exhibitor is found in the latter part of this report.

The President resumed the chair.

THE CHAIRMAN: You have heard the report of the Secretary. What will you do with it?

MEMBER: I move that it be accepted.

Which motion was seconded and unanimously carried.

THE CHAIRMAN: Next will be the report of the Treasurer, Mr. A. W. Zimmerman, of Norwalk.

TREASURER'S REPORT.

A. W. Zimmerman, Norwalk.

MR. ZIMMERMAN: Mr. President, Ladies and Gentlemen: You have all heard the financial standing of Wisconsin Buttermakers' Association, only it is detailed a little different in my account.

Norwalk, Wis., Feb. 7, 1912.

Balance reported at La Crosse meeting	$ 145.87
Total received for advertising, etc	845.57
Received on Premium fund for 1911	866.80
Received, Memberships	396.00
Received State Aid from State Treas	600.00
Total Receipts	$2854.24
Paid out orders issued by the Secretary and countersigned by the President	2063.12
Net Balance at date	791.12

SUMMARY.

General Fund	292.97
Premium Fund	498.15
	$791.12

THE CHAIRMAN: You have all heard the report of the Treasurer. What will you do with it?

MEMBER: I move that it be accepted.

Which motion was seconded and unanimously carried.

SECRETARY BENKENDORF: Mr. President: There is just one statement I think I made that might lead you a little astray. In saying that everything in the premium fund had been paid let me say that I have reference to the donations. The city of Green Bay has not paid us $300 for that premium fund, but I have every reason to believe that they will do so within a few days.

THE CHAIRMAN: Before we go on with the election of officers. Mr. Speirs would like to have something to say, not as a creamery owner, but as a buttermaker.

MR. GUY SPEIRS READ THE FOLLOWING LETTER

Mr. Chairman and Gentlemen of the Convention:

In asking you for the privilege of the floor I am doing so as a member of your association, In reading this statement I am doing so as president of the Wisconsin Creamery Owners and Managers Association.

I believe that a statement at this time would help to clarify the atmosphere that seems to prevade the convention halls at this time and in justice to your secretary and to the other officers, I wish to say that if any mistakes have been made they are not to blame. They are not to blame for our meeting being held here at this time. Article 8 of our by-laws provides that the president and board of directors shall call a meeting each year to be held at the same time and place as the Wisconsin Buttermakers' Association may meet.

This provision was made as a matter of courtesy to our friends the supply men as well as a matter of economy to the Creamery Owners and Managers. By holding both meetings at the same time

we believed it would increase the attendance at both associations. It would also induce the supply men to put up an exhibition, which exhibition always proves so attractive to the buttermakers who attend and without which the convention always seems to be incomplete.

We also believed it would be a benefit to the buttermakers, owners and managers could we all meet together at the same time and place and talk things over. Many buttermakers also like to attend meetings where managers are present in order to get acquainted with men that employ buttermakers and in this way better themselves. Acquaintances formed here may be the means of very materially helping both buttermakers and managers who would have no other way for getting in touch with each other.

Now the Owners and Managers had no idea of trying to capture your program. It was merely arranged so that parties attending this convention could attend both meetings without having two separate sessions and programs running at the same time and thus split the attendance. On account of these meetings being held here it is very evident that your secretary was able to get an increased number of pages of advertising in the Buttermakers' program, which I believe is the largest program by about thirteen to fifteen pages that has ever been issued, and this means that from $130 to $150 more money will be turned into the general premium fund to defray the expenses of the Buttermakers' Association.

The conventions of the Wisconsin Buttermakers' Association are noted for their large attendance, lively interest and splendid programs. This is due to the fact that they have always tried to get the best talent available regardless as to whether that talent was outside the state or not.

Mr. E. C. Dodge, who is on that part of the program under the heading of the Wisconsin Creamery Owners and Managers' association, is well known to all of you. He has been with the association ever since it started; for years he has been a member of your executive committee; also has served several terms as president of your association, and you certainly have nothing to fear from good old Ed.

Professor Farrington, you know, is with you boys heart and

soul. E. C. Jacobs, who is running a small creamery on his own farm will not be here. He is at present with the institute workers preaching to the farmers the gospel of the dairy cow, good feed and silage. He certainly would not do you any harm had he been present to read his paper at this meeting.

Now, as for the paper that I have prepared to read, I will not infringe on your time—not one particle.

This misunderstanding in a way is unfortunate but I believe that in looking at it in an other light, it is fortunate, because the sooner that we, the Creamery Owners and Managers, feel that the Buttermakers prefer to hold their sessions separately there certainly is no organization that is more willing to co-operate with you to that effect. We believe that we all have one purpose in view and that is to better the creamery conditions of Wisconsin.

We therefore beg to announce at this time that we will not hold our meeting tomorrow afternoon as stated in the program, but now as a member of your association, I will ask as a matter of courtesy to Mr. Dodge and Professor Farrington that you give them a place on your program as was originally intended they should be. (Great applause.)

MR. A. C. SCHULTZ: I would move that the request of Mr. Speirs that Mr. Dodge and Mr. Farrington be allowed their place on the program under the name of the Wisconsin Buttermakers' Association be granted.

Motion seconded.

THE CHAIRMAN: It has been moved and seconded that Mr. Dodge and Mr. Farrington be on the program of the Buttermakers.

MR. SPEIRS: I do not think we should say that Mr. Dodge and Prof. Farrington are to be allowed to talk. Mr. Dodge and Prof. Farrington were originally on your program. It is just a matter of filling in the time, that is all. Do not place on your records that we are going to allow Prof. Farrington to address us. It is a privilege.

MR. SCHULTZ: I coincide with Mr. Speirs views and I will withdraw my motion.

MR. BOWAR: I agree with Mr. Speirs in that point that we will put that as a request—"Kindly request your presence and read

your paper at our convention." I believe that would sound better than to say "allow." I think Prof. Farrington is well worth having here.

THE CHAIRMAN: I understand that is not put in the form of a motion.

ELECTION OF OFFICERS.

The next is the election of officers. I will ask Mr. Shilling to take the chair.

MR. S. B. SHILLING, Chicago: I have my old job back, for which I am duly grateful. I want to say, however, that I feel privileged to stand before you. I never have time to make a speech. It is now five minutes of twelve and you have to elect your officers before dinner.

Who will have for your president? Nominations are now in order.

MR. CLAY TYLER, West Depere: As I understand that Mr. Cook is not a candidate, and as we have with us a buttermaker that scarcely needs an introduction, who is an executive officer of the Brown County Buttermakers' Association and also vice president of the National Buttermakers' Association, I will nominate Mr. Lauritz Olsen of West De Pere.

The nomination was seconded.

As there were no other nominations the nominations were declared closed and the chair entertained a motion to suspend the rules and instruct the secretary to cast the vote of the Association for Mr. Olsen as president.

MEMBER: I move that the rules be suspended and that the secretary cast the ballot of the Association for Mr. Lauritz Olsen as president.

Motion seconded and unanimously carried.

VOICE: Speech, speech.

MR. LAURITZ OLSEN: Buttermakers and Members of the Wisconsin Buttermakers' Association:—I assure you that I thank you very much for the honor and confidence that you have placed in me. I realize that I have a very hard position to fill. During my term of office as President there will many things come up that

will have to be decided and I may make the wrong decision, but it will not be intentional, it will only be because I don't know any better.

I invite the buttermakers through the state to send suggestions and they will receive attention in the office. Unless he has the help of every member a president can do little. It is the members all out through the state who are in touch with conditions. They can write in and give suggestions and those suggestions will have due consideration. If they are good they will be heeded.

Now during the coming year there will be many things you will have to decide and you will have to work. The feeling against buttermakers in the daily press is very strong. They say so much against the prices of butter and then make the people believe that oleomorgarine is just as good as the butter. Of course, as buttermakers we want to fight this.

There is something that is not very well known in this state, and that is the centralizing movement. I am a co-operative man, I have a co-operative creamery and I am looking at things from a co-operative standpoint. The centralizing system as carried out in several of the states is a detriment to industries. It has probably done just as much if not more harm than good. We don't want it to get a foothold here.

Again I thank you for the honor you have shown me. I will do the best I can during the coming year. (Applause.)

THE CHAIRMAN: The next officer is your vice president. Who will you have?

MR. J. G. MOORE, Madison: I nominate Mr. Frank Bowar of Cazenovia.

The nomination was seconded.

As there were no other nominations the nominations were declared closed, and the chair entertained the same motion.

MR. MOORE: I move that the rules be suspended and that the secretary be instructed to cast the vote of the Association for Mr. Bowar as vice president.

Motion seconded and unanimously carried.

THE CHAIRMAN: The next officer is your secretary; are there any nominations?

MR. MARTIN H. MEYER, Madison: I have in mind a man that is well known to you all, who has already given much dignity to your Association by his affiliation with you through his official position, which he now holds at the Wisconsin Dairy School, and therefore I shall place in nomination Professor G. H. Benkendorf of Madison, Wisconsin. (Applause.)

The nomination was seconded.

As there were no other nominations the nominations were declared closed.

MR. MOORE: I move that the rules be suspended and that the chairman cast the ballot of the Association for Prof. G. H. Benkendorf as secretary.

Motion seconded and unanimously carried.

VOICES: Speech.

PROF. BENKENDORF: Mr. Chairman, I do not know that I want to take up very much of your time. I heartily endorse what Mr. Olsen has said, that a person is apt to make very many mistakes. I am not human— (Laughter and applause).

MR. J. Q. EMERY, Madison: That proves that you are.

PROF. BENKENDORF: I want to say there was only one Man who was not human and He lived two thousand years ago, and He was crucified.

As I said before, if I have made any mistakes it is not because I wanted to make them. I can look every man straight in the face and say that I did the best I could.

I thank you for the hearty endorsement you have given me. (Applause).

THE CHAIRMAN: The next officer to be elected is your treasurer.

MR. THOMAS CORNELIUSON, Washington, D. C.: I nominate Mr. A. W. Zimmermann.

The nomination was seconded.

There being no further nominations the nominations were declared closed.

MR. J. G. MOORE: I move that the rules be suspended and that the secretary cast the vote of the Association for Mr. A. W Zimmerman as treasurer.

Motion seconded and unanimously carried.

VOICES: Speech.

MR. A. W. ZIMMERMAN of Norwalk: Gentlemen: I very much appreciate the honor you have done me in re-electing me for treasurer, and I assure you you will have the best of my ability at your service.

THE CHAIRMAN: The next in order is the election of a member of the Executive Committee in the place of Mr. J. G. Moore. Are there any nominations?

MEMBER: I nominate Mr. Allen Carswell of Clear Lake.

The nomination was seconded.

There being no further nominations the nominations were closed.

MR. MOORE: I move that the rules be suspended and that the secretary be instructed to cast the vote of the association for Mr. Carswell as member of the Executive Committee.

Motion seconded and unanimously carried.

The President resumed the chair.

THE CHAIRMAN: I have the appointment now of the Resolution Committee. I will appoint on that committee Mr. Allen Carswell, Clear Lake; Mr. John McGrane, Oconto Falls, and Mr. W. F. Conway, Sharon.

I will appoint on the Legislative Committee Mr. H. C. Larson, Madison, and Prof. G. H. Benkendorf, Madison.

SECRETARY BENKENDORF: Mr. President: I have one motion I would like to make, and that is that a committee be appointed by the president to look over the constitution and by-laws and see if there are any alterations that are necessary. There are several minor points I think should be changed. According to the constitution not one of us is a member of the Wisconsin Buttermakers' Association. For instance, in order to be a member we must sign the Constitution and By-laws. According to the constitution we can change the same by giving twenty-four hours notice. This constitution was adopted ten years ago. I think if some changes were made it will be a little more flexible. If a committee is appointed now it could report in the morning and we could act on its recommendations on Thursday morning.

MR. FRANK BOWAR, Cazenovia: By the way, I understand there are lots of buttermakers the same as myself who have to go home tomorrow afternoon or Friday morning anyhow. I make a motion that the committee report this afternoon and we take action on the report Thursday afternoon after Professor Mortensen's address so that the results can be acted upon while the buttermakers are all present.

MR. LAURITZ OLSEN: Doesn't it state in the by-laws that we will have to have the Resolutions Committee's report lay over twenty-four hours before we probably can change them?

MEMBER: There is nothing in the by-laws that provides that the Resolutions Committee shall report on the changes to the constitution.

SECRETARY BENKENDORF: Mr. Olsen's remark is in regard to the change of the by-laws. You can ask the Committee on Resolutions to report in ten minutes.

MR. BOWAR: I move that the Resolution Committee report after the address by Mr. Mortensen on Thursday afternoon.

Motion seconded.

THE CHAIRMAN: It has been moved and seconded that the Resolution Committee report changes after the address of Professor Mortensen on Thursday afternoon. Are you ready for the question?

VOICES: Question.

THE CHAIRMAN: All those in favor signify by saying aye; opposed, no. It is a vote.

In regard to this changing of the by-laws, I have not heard anything in regard to it before and am not prepared to appoint a committee.

MR. THOMAS CORNELIUSON: I would like to say a few words. I think it is a very good thing to have the constitution and by-laws looked over and revised if necessary.

MR. H. C. LARSON, Madison: I make a motion that the president take this under advisement. I move that he appoint that committee this afternoon and that they shall report tomorrow afternoon.

MR. CHARLES COLE, Minneapolis: I second the motion.

The motion was carried.

MR. J. G. MOORE, Madison: In connection with this changing the by-laws, I would like to say that there has been a feeling that the Creamery Owners and Managers wanted to interfere, and I suggested to a buttermaker that the constitution and by-laws be amended so that the Creamery Owners and Managers should have no vote in or control the affairs of this association. Have the amendment read, "None but active buttermakers can vote on the affairs of the association and hold office." I think it would be a good thing in Wisconsin if such a thing was brought up here and voted on. I make that as a suggestion.

MR. COLE: If it is a motion I will second it.

MR. H. C. LARSON: I think that is out of order. It would appear that this is really a motion to amend the constitution.

MR. MOORE: That is all very true, and while this committee may make such suggestions as they see fit to this Association, there is nothing to hinder any motion from being made at this particular time and bringing it out twenty-four hours later. I didn't start it as a motion, but simply as a suggestion.

MR. COLE: I will withdraw my second to that motion.

THE CHAIRMAN: Mr. Shilling, what have you to say on the subject?

MR. SHILLING: If I was in the chair I would rule that the position was well taken and that the matter had been referred to this committee and that it was up to them to act.

MR. COLE: Did you ever hear the story of the straw vote that was taken in the Pullman palace train?

THE CHAIRMAN: Go ahead, Mr. Cole, and tell it.

MR. COLE: A man went through the train taking a straw vote, when he finally came across an Irishman. He said to Pat, "Well, sir, we would like to know what your political views are, what party you vote for." Pat said, "I am a dimicrat." "Well," said the man, "you are the only democrat on the train." Then Pat says, "You just wait till the gravel train comes along." I think you buttermakers should have a right and the privilege of voting on your own affairs without bringing in a carload or two of transportation men. (Applause.)

The meeting was then adjourned.

WEDNESDAY AFTERNOON SESSION.

Meeting called to order by the President.

PRESIDENT: I will appoint on the commitiee to revtse the by-laws Mr. Lauritz Olsen, Mr. H. C. Larson and Mr. F. Bowar, and according to the motion they are to report tomorrow, but in order to have time they will have to report right after this meeting. They can't get that resolution in in time—that is, their report.

The first on our program this afternoon is a paper by Ex-Governor W. D. Hoard, Ft. Atkinson.

SECRETARY BENKENDORF: Governor Hoard, or rather Ex-Governor Hoard, cannot be with us today. He is getting quite old and feeble and the trip would be too strenuous for him. He has, however, kindly consented to prepare a paper for us, which I will read to you. It has two messages in it. One is the message in regard to stock raising, and the other is rather a new way of determining the value of skim milk. I thought I would mention this beforehand because it might be of interest to you.

Secretary Benkendorf read the paper as follows:

WHAT MUST THE CREAMERY DO FOR ITS FUTURE EXISTENCE?

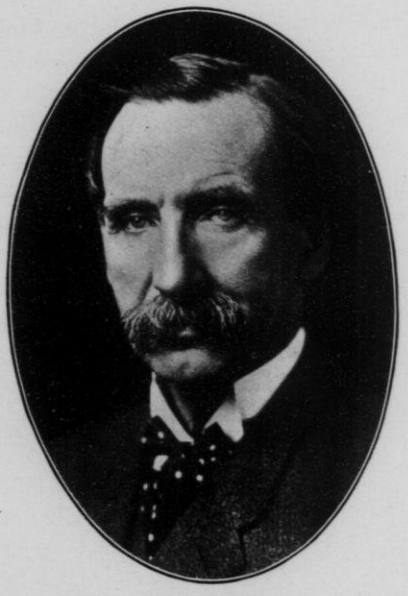
(*By W. D. Hoard, Editor Hoard's Dairyman.*)

There is always a right and a wrong standpoint from which to view things; a leading and a misleading standpoint. There is also in human nature a peculiar quality, that unless guarded against, narrows every man's vision to an inside view of his own vocational interests. Things outside may be never so important for his well being and the well being of his chosen occupation, but, unless he sees them, weighs them, and uses them, they are of no account to him.

I have been an interested student and something of a worker in this Wisconsin dairy field for nearly fifty years. I was at work when there were only about ten cheese factories and not a creamery in the state. I did not know much then; could not see very far, and have held my own in that particular ever since. But as I see

it now, I did know enough to stick to certain well established principles of economic truth, and I have never forsaken them.

To illustrate: With others I fought the Filled Cheese heresy. Not because we could not make some money by being dishonest, for we could, just as long as they did not find out that we were cheats and they believed in us. But, I felt certain that the punishment that follows a cheat costs more in the end than what can be



W. D. HOARD

made out of it. *AND IT DID.* No blow ever came to the cheese industry of Wisconsin like that which we inflicted on ourselves. That is what we got by fooling with the buzz saw of well settled principles. Some of these principles are ethical, others economic. I want to speak to you today from the standpoint of co-operative creamery dairying and what I believe to be the true economic foundation for its prosperity and permanancy.

The cheese factory and creamery are not primary; they are but secondary. They are not fundamental. Therefore they can flour-

ish only when the things that are fundamental are well looked after, and are most prosperous; I mean the farm end of the business.

What are the things that are disturbing your stability most today? It is (1) a lack of true dairy judgment in the farmers about you; a lack of true understanding of the relative value of the creamery by-product as a food for farm animals. (2) A lack on their part of stock raising ambition and how best to use the skim milk in the most nourishing, sanitary and profitable way for the growth of calves and pigs. Some of the primary ideas in this respect are but little understood even by farmers who have milked cows for creamery use twenty years. Then follows an ignorance of the real commercial value of improved dairy blood, the value of the pure-bred sire. All this serious deficiency of knowledge stands in your way and to your hurt as well as that of the farmer. It is this lack of right understanding of those things that constitutes the chief reason why so many farmers and patrons of creameries can be persuaded to forsake the creamery, for milk shipping and the condensory. If they understood the creamery and its reaction on the fertility of the farm; if they properly estimated all the values involved they could not be persuaded to turn their milk into other channels for what they got.

If the patron is offered ten to fifteen cents more than the butterfat value of his milk at the creamery, he is too apt to think that that is all there is to it. You creamery men do not sieze hold of this most important lever because one end of it lies in his hands over on the farm. Yet your existence is bound up in the farmer who is your patron. If he goes wrong you are bound to suffer badly.

It seems to me that you are taken up too much with the butter end of the question to see the real situation. You fail to see that your own salvation as an institution, its future usefulness and stability lies absolutely in the promotion of better dairy intelligence among the farmers and the larger profit that comes from the production of improved dairy cattle by them. In a word the creamery and the production of good cattle and swine are indissolubly bound together. Because the farmer does not see clearly the live

stock end of the question as he should redounds to your serious detriment. Show me a farmer who knows what skim milk is really worth as a food; who knows how it should be handled and fed; who knows the value of improved dairy blood over the ordinary scrub, and shows that knowledge by the use of a pure-bred sire and who has an ambition to produce good cattle and swine, and I will show you a man who is always a firm and intelligent friend of the creamery.

Cultivate that kind of man. Do what you can to increase his tribe. Use the creamery as a center for the promotion and advancement of sound co-operation in many ways and in every way you can to enhance the profits of the farmer in a broader and more intelligent form of live stock farming. This will prove a sheet anchor to the creamery. You will find when you dig down to the foundations of your own existence that just in proportion as the business of raising well-bred dairy cattle and the production of superior swine and poultry flourishes, there the creamery is the main guy. And just in proportion as you have intelligent live stock producers about you are enabled to stand up against the competition of milk shipping and condensing.

The buttermaker can strengthen his hold on his cummunity in no way so well as to do what he can to teach the farmers about him how to make the best and most profitable use of all that good dairy farming means. That is the keystone to this end and he must send out each day the skim milk in its best feeding condition. But he must not stop there. He is the one man who can show the farmer how to care for that milk in a sanitary way. Thousands of calves die yearly because the owners do not know that a foul pail for example, is just as deadly to an infant calf as a foul nursing bottle is to a human infant.

To this end, and as a means of strengthening the hold of the creamery in its profit making to the farmer, every pound of skim-milk from the creamery should be pasteurized and cooled so that it will come to the calf and pig on the farm, in the least hurtful condition possible.

Every farmer who separates his milk at home should either

feed it at once or pasteurize and cool it to prevent it from becoming a poison rather than a food.

Now the creamery *for its own sake,* and for its own life, if for nothing else, should become a dairy center from which should radiate important live stock knowledge among the farmers. Depend upon it, that just in proportion as his knowledge has free course, do you flourish. Just in proportion as it weakens and subsides does the creamery fall into disuse.

Put this statement to the fore: That for the past ten years no milk shipper or condensory has paid for milk what the cream is worth at the creamery for butter making, and the skimmilk is worth on the farm in the raising of good live stock. That any farmer if he will be intelligent can in a ten year trial, make more clean money by keeping the skimmilk on the farm, raising well-bred heifers and cows for sale, than in any other form of dairying. If the creamery does not see what it has to do with this problem, then it is not big enough for its place. Stop fighting the farm separator and go at work to teach the farmer better how to deal with the milk and cream at the farm end. Remember that the farm separator and calf and pig raising is the main defense of the creamery against the competition of milk shipping and condensing.

Now a word, if you please, as to the real money value of good skimmilk for calf and pig raising. Of course, much depends on the kind of calves and pigs one raises and so does the price you get for butter, depend on the kind of butter you make and sell.

Here is an experiment of my own calf raising. I took ten grade Guernsey heifer calves such as any ordinary farmer can produce, part of them bought right after birth of neighbors. I kept them till they went ten months old and sold them for $25 apiece. That is not a big price for fine heifer calves of *desirable* blood. I fed each of those calves a dollar's worth of oats; alfalfa hay to the amount of $1.50 and 50c worth of blood meal. That made $3.00. I allowed $3.00 for the carcass. That made a total of $6.00 leaving $19.00 to be credited to the 3,000 pounds of skim milk each consumed. Understand, I charged the calf with the market value of the other food it consumed; the balance went to the skimmilk because it was the skimmilk that made all the rest available. Fig-

uring that way the skimmilk returned 63c a hundred. The butter fat in the milk averaged at that time, if I remember correctly, $1.50 per 100 pounds of milk. That made the whole milk worth in cash to me $2.13 per hundred pounds. Do you wonder that I say no milk shipper or condensory would pay me what my milk is worth even in raising nothing better than grade heifer calves? The skimmilk is worth over $3.00 a hundred when fed to pure bred calves.

Take it in pig feeding: It is well established that 100 pounds of skimmilk will make five pounds of growth when fed alone to pigs weighing from 75 to 150 pounds. Multiply this growth by the price of pork and you have the minimum value of the skimmilk. Feed it in conjunction with corn meal and you add 20% to its value or cash return, all as a result of the combination. These are well settled principles of feeding. Yet, how few farmers really and truly know and practice them. That knowledge is mighty important for the welfare and future stability of the creamery. Yet, how many creameries in Wisconsin have ever entered upon a campaign to drive that knowledge home to their patrons so it would stick? As I see the situation the creameries have not done what they should to enlighten their patrons in these things, and they are bound to suffer because of a lack of knowledge among their own people. It is astounding what educational influence a creamery buttermaker possesses in a community of farmers if he is a man big enough for the place. In your efforts to promote the future welfare of the creamery don't leave this view of the case out of your calculation.

(Applause.)

THE CHAIRMAN: If there are no questions we will go on with our next paper.

THE HANDLING OF STARTERS IN A SMALL CREAMERY.

By Mr. B. A. Hass.

The subject assigned me "The Handling of Starters in a Small Creamery" is by all means one well worth considering because, as a rule, conditions are not nearly as satisfactory there for carrying this work on successfully, as they are in a large factory, at least

during the cold season, and for this reason I consider it more important to discuss the problem of the small creamery than that of the large one.

During the summer months or as long as the small creamery receives milk or cream every day and churns every day, conditions are practically alike and also favorable in both factories, everything works well, but as soon it turns cold and the milk or cream supply drops off, the small factory will receive milk or cream every other

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day only, or as a rule three times a week, and in a good many cases only twice a week. As soon as these changes are made, the method of handling the starter must be changed also, if satisfactory results are expected.

While it is evident that conditions are just about as favorable in the summer months or during the warm season as they could be, due to the fact that the room temperature is just about that required for successful starter making, conditions are just as unfavorable during the winter months, or during the cold season. Taking

these two facts into consideration, it can be readily seen it is unnecessary to spend any time discussing conditions during the warm season, and for this reason will devote all my time to discussing conditions during the cold season.

Although any amount of small creameries are having all kinds of trouble in the way of getting their starter ripe, or uniform in acidity from time to time or of a good quality, or even going as far as not using any starter at all, I believe that a little extra effort and good judgment on the part of the buttermaker would result in overcoming such conditions in every case to a great extent at least.

Suppose a factory receives milk or cream, or both on Monday, Wednesday and Friday only and churns the cream on the days following, the starter milk whether whole milk or skim is used, should be pasteurized on the day it is received and pasteurized on the following day. I might mention that in order to economize, (which should be borne in mind at all times,) the pasteurizing of the starter milk should be done while the engine is being run and steam used for other purposes, unless separate power is used expressly for the starter can and that steam had to be kept up for something else at all times, which, I believe, is very seldom the case in a small factory.

After heating the starter milk the first day it should be cooled to 50 degree F. or lower, in order to check the bacterial growth as much as possible. The following day, (which is, as a rule, the day for churning,) the milk should again be heated and cooled and should be done during the churning process, in order to avoid running the engine extra for the starter can, as stated before. This time the milk should only be cooled to the temperature at which the starter is to be ripened, and as soon as it gets to this point, the mother starter should be added immediately, because the starter milk or culture media is never so free from undesirable bacteria as it is immediately after completing pasteurization. By adding the mother starter immediately, the lactic acid bacteria in the sample added will multiply very rapidly and give the undesirable ones very little chance; first, because the temperature is such that is most favorable for the rapid development of the lactic bacteria and a detriment to the development of the undesirable ones, and second,

because the lactic bacteria get such a good start and thereby overcome the others, which makes the first part of the ripening process the most important part. By so doing the most important part of the ripening process is over by the time the room gets cold again, or at least too cold for successful starter making. This has been my experience, and I believe the experience of every one else who has worked in a cold factory, and this, as a rule, pertains to small factories built years ago.

I have followed this system of inoculating the starter milk for the last two years and am very strongly in favor of it. The starter may be pretty cold the next morning, but if it is coagulated, (which it should be,) the temperature is such that there is very little danger of overripening, in case it cannot be added to the cream at once, which might be the case if the cream was to be pasteurized first, and not necessarily either, because by making systematic observations, the amount of mother starter added can be so regulated that the acidity of the starter is almost always uniform on the following morning.

There is no secret involved in the making of a first class starter. All that is necessary is to carefully observe the following three factors, which apply to any creamery, large or small. The factors are: "Cleanliness," "Proper Temperature," and "Avoiding Overripening" which apply to the handling of the large starter as well as to that of the mother starter.

The first factor, "Cleanliness," applies to the milk as well as to all utensils used from the time the milk is drawn until the starter is ready to be added to the cream. No milk should be used for a starter which has not been produced under the most sanitary conditions. By using milk not produced under sanitary conditions the buttermaker is handicapped at the very start, and it is immaterial how skillful he is, or what methods he applies. It is simply impossible for him or any one else, to make a first class starter from second class milk. Furthermore, it is an undisputed fact that a good starter will improve the quality of any cream that is not absolutely free from taint. It is also a well known fact that a poor starter is worse than none, because it is apt to develop a flavor in the cream that is worse than that of the cream itself. If this is the

case, it is evident that, unless one can produce a good starter, he is better off not to use any and thereby save the extra cost of the starter milk as well as the extra labor involved in the making of the starter. Although this may sound discouraging, it, is, however, true. Any one who is troubled with a poor starter, is, I believe, in most cases, responsible for it himself, and might just as well have a good starter if he only makes an effort.

In regard to the second factor, "Proper Temperature," it is important that the milk be cooled immediately after it is drawn, as well as the proper temperatures applied during the process of making the starter at the creamery. Every manufacturer of pure culture starters furnishes complete instructions as to the proper methods to be used in order to obtain the best results from that particular culture. By comparing those instructions somewhat with conditions in the factory, a careful observer will be able to get good and uniform results without much trouble.

The third factor, "Avoiding Overripening," is also very important, because an overripe starter produces curdy, sour and high acid flavors, and renders the bacteria less active, and if separated a few times, kills the bacteria and therefore renders the starter useless and even harmful.

Since conditions in no two creameries seem to be exactly alike, it is impossible to lay down a rule that will give perfectly satisfactory results in every case. In order to meet the various conditions successfully, every operator must judge by the conditions as they exist in his particular factory, and then apply such methods as may best suit his case.

Now in regard to the propogation of starters, no one should make the mistake of taking the small amount of starter, (which is to represent the mother starter,) from the starter can after the starter has coagulated. If taken from the starter can at all, it should be done immediately after the milk has been inoculated. If the inside of the starter can is not well tinned all around and the inside of the faucet is not enameled, it is best not to use this method at all.

By saving the mother starter from the large starter after it has coagulated, or even a number of hours previous, one is apt to

spoil a good starter in a very short time, because, if for any reason the large starter should be off-flavored in the morning, there would be no good starter on hand to fall back on in order to produce a good starter for the next batch of cream. To grow a new mother starter would require too much time in order to inoculate the next batch of starter milk with it, and would also be an unnecessary expense as long as it would have been possible to keep the first one in good condition longer.

Conditions for growing a large quantity of starter are generally not as satisfactory as they can be made for a small amount, which can be set in the most suitable place in the factory. The best and safest way to carry on a mother starter is to carry a number of samples entirely independent from the large starter. At the time of inoculating the large starter, the best one of the small samples should be selected and used to inoculate both, the milk in the starter can as well as for propogating the milk for the next mother starter. After the best sample of mother starter has been selected, it should be set aside, and the other samples emptied out. The utensils should be thoroughly washed, rinsed and sterilized and then partly filled with the fresh pasteurized milk in the starter can. Next a small portion of the selected mother starter should be added with some convenient, sterilized utensil, like a spoon or a pipette, and the quantity added should be varied somewhat, so that if one should get overripe and another not quite ripe enough, the third might be just as desired, and should therefore be set aside and used for the next propogation. After the samples of milk for the mother starter have been inoculated and well shaken up, the necessary amount of mother starter should then be added to the milk in the starter can and well mixed, taking for granted that the temperature had already been adjusted.

The utensils used for carrying on the mother starter should be either glass ware or first class enameled ware. While there is nothing quite as sanitary as glassware, this is to be preferred. If enameled ware is used, care must be taken that the enamel does not chip off, because this will render it insanitary and therefore harmful.

In order to get the very best results from the mother starter,

it should immediately after being inoculated be placed somewhere where the air and the surroundings are perfectly clean, and where it is possible to maintain a pretty even, as well as the desired temperature. To accomplish this, various methods may be used with good results. One method that is practiced a good deal, is to use a tight double walled box arranged so that a small lamp may be set inside with which to regulate the temperature. Any one can make such a box, and they can also be bought from creamery supply houses. A thermometer should be kept right in the box among the samples of mother starter so that the exact temperature may be seen at a glance at any moment.

Although the method just described is a very good one, it, however, is not the best.

It has occurred to me and I firmly believe that any creamery would be well repaid by arranging a separate room in which to do their testing, keep their cream testing scales, moisture scales, test bottles, in fact everything in this line, and also the mother starter, and an office desk. We all know that all these things need a dry clean place, as well as a place where there is no danger of ruining or breaking them while doing the regular work in the creamery. A small stove, or a radiator could be set up in such a room and conditions made very agreeable, and this, I believe, would go a long way towards keeping the buttermaker interested in the details of his profession, and I believe it is safe to say that these little details, in a large measure at least, constitute either the success or failure of any creamery.

In a room of this kind the buttermaker can make out his daily report, attend to his correspondence, look after the mother starter at any moment without any inconvenience whatever, in fact, he can almost do his whole afternoon's work there. It is evident that in order to get the most accurate results in weighing out cream samples while testing for fat, or weighing out butter samples while testing for moisture, it is absolutely necessary to do this work somewhere where there is no draft and where the desired temperature is easily obtainable. If this is the case then there is no question but what a small room like the one in question would be just the thing to have. Furthermore, the consequences are that many a

buttermaker would spend a good portion of his time in this little room, and do it with pleasure, for the benefit of both the creamery and himself, which he would otherwise spend in loafing around, simply because he finds his creamery just as comfortable a place as any other. The fact that a room like this need not be very large would make it a very easy matter to keep it warm or about 70° F. That temperature feels most comfortable while doing such work as outlined and it is at the same time the most desirable temperature for developing a good starter.

I thank you. (Applause.)

MRS. J. G. MOORE, Madison: As a member of this Association I would like to suggest that the speakers mount the rostrum. We can hear much better than when they stand on the floor.

DISCUSSION.

THE CHAIRMAN: This is a very good subject we have on here, and I find there are buttermakers in the state who are not using starters. We want to get a good discussion on that starter. If you don't understand it, here is the place to find out.

MR. THOMAS CORNELIUSON, Washington, D. C.: I would like to have him explain how he gets good starter milk.

MR. HASS: We probably had to pay a better price than for other milk. If anybody is getting the whole milk at his factory, I think he will have no trouble in getting good milk by paying a little better price. I know I found it that way. I had to pay a little higher price last summer.

MR. W. J. ENNISON, La Crosse: I would like to ask Mr. Hass the acidity of the milk he uses. What acid has the starter?

MR. HASS: Milk that does not contain over .15 of 1% of acid can be used to good advantage, and it is easy to use such milk. I found that a starter with an acidity of six or seven per cent gives the best satisfaction. I don't like it over 7%. I would sooner have the milk under ripe than over ripe.

MEMBER: How often do you prepare new mother starter?

MR. HASS: As soon as the old one is off. I have a standing order with the laboratory of four, sometimes of five samples a

month. Sometimes we would not use that many, but to be on the safe side I think it better to have them come along and pay for an extra starter than to run the risk of being without one for three or four days.

MEMBER: That is when you use liquids?

MR. HASS: I have only used liquids.

MEMBFR: Did you ever try holding it longer than a week?

MR. HASS: Yes, I have had it ten days, almost two weeks, and then there are times when it would be off in two days. Sometimes they get off in a very short time. Supposing I would have to be absent for something from home and conditions would be such that it would get over ripe, it might be off. Then again I might be successful to hold it ten days, even two weeks.

MEMBER: I would like to state before the convention that we made a starter the first day of December, 1910, and we carried it until the 1st of May without making a new one. At that time I could not see but that it was just as good as it was when it was four days old. I don't think if a man has proper milk he has to change it every week. There is no reason why he could not keep it indefinitely. About twelve years ago I carried a starter for eighteen months, that was prepared with Hanson's culture. I think any of the good cultures would do the same thing.

MR. HASS: Mr. Chairman, four years ago when I took a dairy course at the University we carried forward a number of samples, I think eight in all. We carried them from the time that the school started until it finished, that was a period of three months. There used to be as many as forty different samples, I believe, and from them we selected the best out of the whole bunch, and at the end of three months we still had a good starter.

MEMBER: I would like to ask Mr. Hass what he used as a receptacle for holding the starter.

MR. HASS: I would much rather use the ordinary milk bottle, and the glass stoppered bottle would be better. The ordinary milk bottle that you use for city trade is very sanitary and it isn't so apt to break.

MR. A. D. MCCREADY, Marshall: I have been using quart milk bottles with a common drinking glass inverted over the top.

MR. H. E. GRIFFIN, Mt. Horeb: I use these Thermos bottles for that purpose and they hold the temperature. No matter what the temperature of the room is it don't change over two degrees. They are expensive, but they are the thing for holding starter.

MEMBER: Mr. President, I would like to ask these gentlemen if they would use a starter if they got 5,000 pounds of cream that has about five per cent of acid when you get it.

VOICE: You want a stopper.

PROF. C. E. LEE, Madison: It is true when the cream has all the acid in it that it needs the adding of starter is not necessary. However, a starter will improve your butter, even if your cream is acid. Use about one gallon of good starter to three gallons of cream.

CHAIRMAN: I agree with Prof. Lee on that. I found that by using a starter, no matter how acid the cream was, it improved the butter.

MEMBER: I try to keep my acid down to fifty and I believe I can get better results.

PROF. LEE: I don't thinik you should add your starter and try to ripen it any further. I believe you should cool it right down.

MR. GRIFFIN: I have had considerable of that acid cream to contend with, and I have simply dumped the starter in it and cooled it down to fifty or forty-eight and I believe I get better results.

MR. C. M. SANFORD, Amherst Junction: Mr. President, if you had a thin cream, with one gallon of starter to three gallons of cream you would not get very good results.

THE CHAIRMAN: Couldn't you get your patrons in some way to deliver a heavier cream than that.

SECRETARY BENKENDORF: I would like to ask you if you had experience with skim milk powder. A good many people are using that and I would like to ask about it.

MR. GUY SPEIRS, Eau Claire: We have tried it. We have better results with condensed cream.

MR. CREDICOTT: I think there are a lot of buttermakers that do not realize the benefit the starter will do the butter. I have seen a lot of butter that is flat in flavor that would come under the head

of extra and would easily go in with the grade of extra if a little starter was used, and that would mean three cents a pound more. I don't know of anything that will affect the selling value of the butter more than the addition of a good live starter, even though the cream might have had acid when it was churned. It will give it a rich flavor that you cannot get in any other way.

THE CHAIRMAN: Anything more along this line? If not we will take up the next subject. The Pasteurization of Cream for Buttermaking, by Mr. Martin H. Meyer.

PASTEURIZATION OF CREAM FOR BUTTERMAKING.

Martin H. Meyer, Madison, Wisconsin.

MARTIN H. MEYER, Madison: Mr. President, Members of Wisconsin Buttermakers' Association, Ladies and Gentlemen: The last speaker has told you how the quality of your butter is increased by using a starter. I shall attempt to tell you a few little things regarding how pasteurization might help you. I shall tell you a few things I have found from my experience, and I shall also attempt to give you the impressions, as I have received them, from what others found not only in Wisconsin, but outside of Wisconsin.

Pasteurization is believed to be profitable by some, and again we find that others believe it is not profitable. As I am a firm believer in the pasteurization of cream, I come here as an exponent of the process of pasteurization.

In handling this subject, we must view the pasteurization of cream not only from the standpoint of practical application, but must also take into consideration the sanitary aspect as it may appear to the manufacturer and the consumer of butter.

I shall present to you some facts, impressions and sentiments as seen through the practical public eye, combined with my own practical work and the impressions it left upon me.

Since various conditions affecting the dairy industry may give cause to the pasteurization of cream, I have divided my discussion into two parts, one part dealing with the sanitary side, and the other part with the practical side of pasteurization.

It is conceded that facts and arguments as presented herein are not based upon very bad cream, nor on cream with excessive acidity, but upon reasonably good cream handled intelligently.

Pasteurization of cream is not confined to any one locality, state or nation. It is one of those movements that grow and expand in the same ratio as education pertaining to pasteurization spreads.

MARTIN H. MEYER

It is a noticeable fact that profitable pasteurization is closely identified with intelligence and knowledge pertaining to dairy and creamery problems. By this I mean that we cannot have successful pasteurization, unless the operator has acquired sufficient practical and scientific knowledge pertaining to pasteurization in all its phases. Therefore, pasteurization of cream moves hand in hand with modern dairy methods: is in line with our ideas on dairy sanitation and stands approved by a large percentage of creamery men as a good method of handling cream used in the manufacture of butter.

At this time, pasteurization is international in scope and therefore needs little argument for its support. Still, in view of the fact that I champion the pasteurization of cream as a good method for handling cream for butter making, I offer for a verification of my position a few facts concerning the importance of pasteurization to the creamery industry and its relation to public health and possible wealth.

PASTEURIZATION AND SANITATION.

There is a very close relation between pasteurization and sanitation. Since pasteurization as a method implies cleanliness it always leads movements for sanitation. When we realize that disease germs, as well as obnoxious fermentative organisms are present in dust nearly everywhere, we are impressed with the need of the pasteurization of all cream used in the manufacture of butter.

The extent to which the disease germs have been found in butter by early investigators is clearly shown in the following table, taken from Modern Butter Making and Dairy Arithmethic. Chapter 12, page 181. Table No. 13.

Names of Investigators	No of Samples Tested	No. in which Tubercle Bacilli was found were	Percentage	REMARKS
Brusaffero	9	1	11	
Roth	20	2	10	
Schuchardt	42	0	0	
Obermueller	14	14	100	Obtained from 1 Source
Groeing	17	8	47	
Patri	102	35	32	From Berlin & München
Robinowitsch	80	0	0	30 samples from Berlin 50 " " Philadelphia
Hormann & Morgenroth	10	3	30	
Robinowitsch	15	2	13.3	Obtained from 14 Shops
Korn	17	4	23	Obtained from 22 Shops
Ascher	27	2	7	
Weisenfeld	32	3	9	
Hellstrau	12	1	8	
Bonhoff	39	0	0	
Marke	49	0	0	
Augeszky	17	3	17	
Total	502	76	15.1% Averages	

From the foregoing table it will be seen that the tuberculosis germ may be found in raw cream market butter, and pasteurization as a means for its destruction is recommended.

Some cows may have garget, some may give bloody milk and still others may have udder tuberculosis; also some dairymen may have contageous disease in their families or the water supply may be contaminated with typhoid and other germs. This brings again to our mind the need of pasteurization as a safe method for guarding against the infecting of man with contageous diseases through dairy products.

Is not even at this time the sanitary awakening strong enough to force the pasteurization of all cream to be manufactured into butter? Imagine cream coming from uninspected farms, hauled ten to fifteen miles in hot and dusty weather and in all sorts of worn out cans. Now pasteurize one lot and then order one dish of cream from each vat, raw and pasteurized, for your breakfast food and coffee. Would you not rather partake of the pasteurized than the raw cream?

OPPOSITION TO PASTEURIZATION.

It is gratifying to note, thanks to education, that opposition to pasteurization is growing less, especially among members of the medical profession. Some men in this profession have in the past persistently opposed pasteurization, for reasons they themselves could hardly explain satisfactorily. On the one hand they condemned pasteurization and on the other hand they recommended its application in their own practice. Such selfish opposition reminds us that the truth of a principal outlives the fiercest opposition. Let us recognize this truth and work in harmony with it.

The opposition to pasteurization that is coming from some creamerymen we find is largely due to two reasons: first, they may not be well enough informed on methods of pasteurization and second, that butter houses do not recognize by a sufficient difference in price paid for pasteurized cream butter to warrant pasteurization. On the other hand we find that lots of butter made from pasteurized cream is not made well enough and therefore not so

acceptable to the dealer as raw cream butter is. We also find consumers who want butter with a great deal of taste, of the high acid kind, which, as a rule, is not found in pasteurized cream butter.

I believe that as education in respect to pasteurization increases opposition to pasteurization will decrease. Just as soon as our American dairymen are fully awake to the advisability and necessity of pasteurization from a sanitary point of view they may ask for a law compelling the pasteurization of all cream used in the manufacture of butter. Does it not seem absurdly inconsistent to be forced by law to pasteurize all the skimmed milk at creameries before it is returned to the farmers for feeding purposes, while the cream from such milk is manufactured into raw cream butter, and this buttermilk is used both for feeding and drinking purposes?

Does it need a very wide awake creameryman to see the fundamental truth that underlies the pasteurization of cream for butter making? At this stage in practical dairy development and modern dairy sanitation, combined with our conception of the spreading of disease-producing organisms, through milk and cream, we are justified, for the preservation of the principles of pasteurization, in viewing unwarranted opposition to pasteurization as illogical, especially when considering the educational, practical and scientific truths before us.

I wish to again emphasize the fact that any opposition towards pasteurization is largely due to misinformation, limited practical knowledge regarding pasteurization and a traditional belief that pasteurization is measured only by the cost of pasteurization and under certain abnormal conditions, a possible greater loss of butter fat in the buttermilk.

To verify that the principle of pasteurization is found correct when properly applied, I wish to mention that recently at the Rockefeller Institute it was found in observing the feeding of 250 babies, divided in groups and fed raw milk, pasteurized milk and mother's milk, that the pasteurized milk stood next in importance in healthfulnes to mother's milk.

Does not this point suggest to your mind that pasteurization of cream is correct in principle and sound in its application? Must we not step out and break away from the out-grown methods of the

past, and accept with a clear vision the teachings of the new order of things?

CONCERNING THE PASTEURIZATION OF CREAM—OBJECT OF PASTEURIZATION.

The first thought that comes to us when we think of pasterizing cream for buttermaking is to free the cream as much as possible from undesirable flavors and odors. Our second thought following the anticipated results of the first thought, is to produce a more uniform product of increased keeping quality; both of these thoughts are fully realized if all processes connected with pasteurization are carefully carried out. By pasteurization, the cream is left practically free from bacterial growth, and is placed in the best condition for the addition of a pure lactic acid starter. It is only in pasteurized cream that we can hope to realize the full effect of a good starter, also the full effect of a poor starter.

Aeration of cream during the pasteurization is one of the most important steps in pasteurization. Odors that pass off by agitation and aeration are such odors that first affect the aroma and secondly the flavor of butter. By pasteurization we accomplish first, ridding cream of undesirable fermentation, and second, making a purer cream by the elimination of various odors. We also thereby insure uniformity of quality and increase the keeping quality of butter. In addition to this, it tends to assure us a more staple market.

CREAM RIPENERS AS PASTEURIZERS.

The test of a machine is its usefulness as a pasteurizer and not its make, or its origin. It is the results that can be obtained with it. Financial remuneration, which include total results, is the only commercial test that will determine what kind of a machine should be used. Individual factors such as a little extra work, or a little better personal training and a heavier financial investment are all subservient to the one important factor, satisfactory results.

And I wish to emphasize this fact, that satisfactory results are now obtained by creamerymen who are making the best use of what they have on hand, namely, cream ripeners. It seems that

cream ripeners can be used to advantage under various conditions; it is known that first prize convention butter has been made from cream pasteurized in ripeners. It is also known that ripeners are used to advantage throughout the year in furnishing the market with pasteurized cream butter. These creamerymen claim that under no conditions would they go back to making raw cream butter. A few qualified this statement by saying that perhaps they would not pasteurize for a short time during the flush of the season, but would always pasteurize in fall, winter and spring of the year.

The temperature used for pasteurizing in cream ripeners is between 140 degrees Fahr. to 150 degrees Fahr. and for continuous pasteurizers about 160 degrees to 190 degrees Fahr. The temperature and time to be used with each kind of machine varies according the conditions of the cream and the skill of the separator.

FAT LOSSES IN BUTTERMILK.

Fat losses in the buttermilk vary greatly with different creameries that apparently work under the same conditions and with about the same quality of cream. The fat test of buttermilk in some creameries runs as low as .06% and in other cases as high as .43%. Upon inquiry they seem to agree on one essential point, that is, that fat losses vary, other things being equal, in proportion as the cream varies in acidity and age. The fat losses in buttermilk from sweet pasteurized cream should not be any higher, rather less than from sweet raw cream buttermilk, that is, both creams supposed to have been ripened before being churned.

I have found that those who use cream ripeners for pasteurizing cream of average good quality, do not lose more than from .06 to .25 percent of fat in the buttermilk when the ripening, cooling, of the cream and churning is properly done. When losses to the extent of .43 occur, we find that they are two reasons for it. One is that the cream was not handled properly and the other one is that the cream was too bad to be made into butter, irregularities preventable by the separator.

To avoid excessive losses in pasteurized cream buttermilk, we must bear in mind that fat losses can be reduced by proper hand-

ling and increased by improper handling of all processes incident to pasteurization. When a cream ripener is used, mix the cream thoroughly and then heat carefully to the desired temperature. Hold the cream for 15 to 20 minutes at that temperature or any desired and then cool to nearly the same temperature as the starter, then add the starter, mix both thoroughly. Never add the starter when the cream is not cooled to 75 or below, as higher temperatures easily cause the starter to coagulate into flakes and thereby reduce the beneficial effects of it. If the per cent of starter added was small, and the cream sweet, ripen the cream a little first and if acid when the starter is added, cool down at once to 50 degrees, or whatever temperature is desired and hold until ready to churn.

KEEPING QUALITY OF PASTEURIZED CREAM BUTTER.

A contributor to the Irish Homestead writing about the necessity of manufacturing fine butter with good keeping quality says: To produce such butter, pasteurization is indispensable whether in "Irish Creameries or those of other countries and the propagation of pure lactic starter must go hand in hand with pasteurization to control and complete the ripening process."

The following is an expression of the results of an investigation of 100 creamerymen in answer to this question: Do you favor pasteurization of cream for butter making?

A very small percentage of the answers do not favor pasteurization, but qualify their statement by another one stating that if the cream was not of best quality, pasteurization would be desirable; 94% are highly in favor of pasteurization, 95% claim that their knowledge of their experience with pasteurization shows that the butter had increased keeping quality.

That pasteurization of cream when properly performed with the kind of cream one now receives may raise the score of butter two to three points as well as increase the keeping quality is conceded to be a fact by practical creamerymen who have made pasteurization a success. On every hand we see creameries that are successful in pasteurization, on the other hand, we also find some who fail in finding pasteurization profitable.

Several creamerymen told me that first they failed in getting satisfactory results but on continuing studying their conditions, they finally succeeded, and now they say: We would not go back again to raw cream butter making and our product is more uniform and our market more stable.

Mr. E. H. Baldwin, Manager of Belle Fourche Creamery of Belle Fourche, South Dakota, found that the butter he made from hand separated cream at about the 15th of October, 1911, was pasteurized at 190 degree Fahr. and immediately cooled to 60 degree Fahr.; a heavy starter was added, the cream slightly ripened at 60 degrees Fahr., then cooled to 50 degrees Fahr. and soon after churned. The butter made from this cream scored 91 points at the National Creamery B. M. Convention at Chicago about October 25th. On December 6th, 1911, butter scored 93 at Aberdeen, South Dakota, and on December 16th, 1911, at Albert Lea, Minnesota, the butter scored 94 points.

ADDITIONAL EVIDENCE.

Mr. J. W. Engel, of Pratt, Minnesota, who is one of the champion buttermakers of Minnesota, receiving the highest average score last year of 95.5, adopted some of my methods in handling his cream. I also wish to say that I agree with Mr. E. H. Baldwin's methods in the handling of the kind of cream they receive.

Mr. H. H. Whiting, of Cedarburg, Wisconsin, and one of Wisconsin's best buttermakers, found when pasteurizing winter cream as generally received at his factory that when compared with the results of December cream delivered under similar conditions and not pasteurized, that the raw cream butter when exhibited at the Wisconsin Dairy School exhibit scored 92 points, and the butter made from the cream that was pasteurized as stated above in January scored 94.83 points. He claims that he found repeatedly that pasteurization raising the score of butter 2 to 3 points which would also mean that the keeping quality of butter has been improved by the pasteurization of cream. The cream was pasteurized at 140 degrees Fahr. and held at this temperature for about 20 to 25 minutes, then it was cooled to about 70, the starter added, ripened be-

tween .45 and .5 acidity and then cooled to about 50 degrees Fahr., either churned the same day, or the following morning.

That pasteurization of cream improves the quality of butter made from it, regardless of how fine, or how poor the cream was before pasteurization is the belief of those who have succeeded in pasteurization.

Inquiring further into the advisability of pasteurizing cream for buttermaking, hundreds of creamerymen have expressed in like manner in answer to the following questions:

Further investigation regarding the pasteurization of cream for buttermaking I have received the following results, the following questions and answers is a typical copy of a large number of answers received in reply to the question asked.

(1) Do you pasterize and, if so, why?

(A.) Yes, because it improves the quality of the butter.

(2) At what temperature do you prefer pasteurizing, mentioning the system used?

(A.) We use flash heat pasteurization. Temperature is between 165 to 175, depending upon the nature of the cream.

(A.) We use the holding system pasteurizing between 140 to 150° Fahr.

(3) Do you find that pasteurizing increases the keeping quality of butter as well as its general quality?

(A.) Yes, indeed.

(4) Does your market prefer pasteurized cream butter?

(A.) Yes.

(5) Since you pasteurized have you less complaint from your dealers or consumers?

(A.) Always did this, hence no trouble in this respect.

(A.) Since pasteurizing, we have less trouble and market is more stable.

(6) Do you find the loss of butter fat in pasteurized cream buttermilk greater than raw buttermilk?

(A.) Yes. Some no.

(a) What is the average per cent of fat test?

(A.) .02 to .07. (A.) From 1 to .25, etc.

(b) If abnormally high, under what condition?

(A.) High acid cream irregularly pasteurized cream—overchurned at a high temperature, or cream not properly handled.

(7) Does the increased market stability outweigh the cost of pasteurization?

(A.) It certainly does with us. (A.) Yes, I think so. (A.) Absolutely.

(8) Consider our present commercial dairy conditions, together with the advanced attitude of the public towards sanitary and disease germ free dairy products, do you believe that pasteurizing all cream for butter making is commendable, necessary and profitable?

(A.) I certainly do, in fact, we consider it absolutely necessary and all cities will eventually demand it.

(9) In general, what do you consider are the greatest advantages and disadvantages of pasteurization?

(A.) It helps greatly the uniformity of the product manufactured thereby increasing the financial welfare of the creamery and it safeguards to some extent against disease, etc.

(10) What is the estimated cost of pasteurizing per pound of butter?

(A.) 1/8 to 1/4 of a cent per lb. of butter.

To my knowledge there is only a very small percentage of creamerymen who claim that pasteurization does not pay, while those who favor pasteurization are many indeed.

I wish to ask these questions: Why is the United States Department of Agriculture, Dairy Division, allowing only pasteurized cream butter to be put up for the navy? Why do they not use raw cream butter? Is it not possibly due to the fact that they do not want to run any risks of putting up unpasteurized cream butter? Are they moved by the same idea of facts that seems to be back of the movement for pasteurization in this country? Is all this evidence favoring pasteurization based on the imagination that pasteurizing really improves the quality of butter? If this is only imagining a result, then in justice to this great cause and in fairness to the dignity of our great dairy country, let the Department

of Dairying at Washington be a leader and help to discard the mask of imagination that clouds the intellect of the believers in pasteurization, as well as those who do not believe that pasteurization is profitable.

Practical creamerymen are asking themselves these questions: In so far as I can see and am able to find out from the financial returns of my own business, from the increased stability of the market I now enjoy, to my mind what constitutes dairy sanitation and creamery buttermaking, what dangers that may arise from the consumption of raw cream butter in addition with the evident increased keeping quality of my butter, together with the pleasant sensation which comes over me, feeling that I can truthfully say, that my butter is practically free from obnoxious fermentation, he now asks: Am I right! Or is it only a dream?

When we find millions of dollars invested in pasteurizing machinery in actual operation; when we find creameries after creameries adopting pasteurization; when we find that buttermakers are trying to win out in scoring exhibitions, by the pasteurization of cream and then succeed; when we find that the general opinion is that as soon as a creamery begins pasteurizing, there is less complaint from the butter buyer and the consumer;—do we not feel that this is not all a dream? There must be a fact that has not yet been discovered by either the opponent or as the supporter of pasteurization. Some claim that pasteurization is not profitable and does not improve the quality, nor the keeping quality of butter; they certainly are right according the results as they find them, but are they finding the right results? That is the question.

I wish to say further, that I stand squarely on these questions and believe in pasteurization as I have presented it to you. This is in accord with my honest conviction through facts as I have found them myself and saw them. While we do not all agree that pasteurization is profitable, still we must admit at least, in these dairy states that pasteurization of cream for butter making is gaining favor.

In order that we may get closer to the truth of applied pasteurization, I ask in all fairness to our association and in justice to the cause of pasteurization that more extensive trials should be

carried on by dairy schools and the Department of Agriculture, not only considering the mechanical phase of pasteurization but also the bacteriological phase, both in respect to numbers and kinds of bacteria in market butter under various conditions.

DISCUSSION.

THE CHAIRMAN: This is a very good subject and I think it ought to bring out good discussions. I would like to hear from lots of members here.

MEMBER: Last spring I was looking up data to pasteurize, and there was a commission man came along about that time and he said, "don't pasteurize." He said it would develop a metallic flavor. I want to ask Mr. Meyer if that is so.

MR. MEYER: I would rather not answer that question.

MR. GALLAGHER, Chicago: I have had a great deal of experience in the marketing of butter. There are times that pasteurization develops a flavor, we call it metallic because there are some very peculiar things about it. It is a flavor that will develop in butter just about as fast as a fishy flavor, and it is about as objectionable. We find that very often the butter will go off three or four points in as many days sometimes in cold storage, and the flavor seems to grow with age. But I think it is due very largely to the fact that they are trying to handle a cream which is so poor that it will not make good butter under any circumstances. I think pasteurization is a good thing, but use a fairly good quality of cream. I think a great deal of the trouble that has come to the creameries is due to the fact that they do not get and insist on a good quality of cream, and furthermore to the fact that they did not have apparatus of large enough capacity. I think if the machines used were large enough for the work to do that there would not be very much of that trouble. The machines are not large enough, and in order to heat the cream through they will have the heating surface too hot. This cream that comes in contact with the heating surface is overheated and there is some of that cream that never comes in contact with the heating surface at all. In consequence some of the cream is nearly cold or only luke warm while some of it is pretty nearly to the boiling point.

I personally know of a number of cases where trouble in pasteurization ended when a larger machine was installed. I think that will end trouble with pasteurization.

MR. CHARLES E. HART, Milwaukee: I would like to ask Mr. Meyer at what temperature you would break it up?

MR. MEYER: That depends on the machine and your kind of cream.

MR. HART: I would like to ask if you don't take into consideration the kind of cream.

MR. MEYER: I shall ask Mr. Lee to answer that.

MR. C. E. LEE, Madison: Judging from the state of the cream in the state of Wisconsin I don't think there is any danger of getting a cream too rich. It is true that we cannot handle the heavy cream and pasteurize at such a high temperature. I am speaking now of a cream over 36. Skim cream averages 30. It is true that you can't go so high with that rich cream. The cream should be heated to a point about 160 to 180, that is a cream running under 36, and where you are using a ripener a temperature running from 140 to 150.

While I am on the floor I want to say this, that during this past winter and fall I have written to several of the men that have sent butter to Madison. I have been a little careful in giving them advice, because I find it very easy to misunderstand anything that is put on paper or even in an address. On cream testing from 20 to 25%, the price of butter fat at 30c a pound, the loss practically amounts to one cent a pound. It is impossible for buttermakers to handle cream that holds over 25% without having an excessive loss of fat in the butter. I think we ought to pasteurize our butter from a sanitary viewpoint. I think, where the men of Wisconsin are interested in the creamery industry and the quality of the butter, the thing for them to do is to get busy with the farmers to get cream that will average over 30% of fat so that we can pasteurize this cream and handle it to a much better advantage.

MR. CREDICOTT: I would like to ask if there are any figures as to the cost of pasteurization?

MR. MEYER: I have found that all the figures I could get

hold of say that they estimated the cost between one-quarter and one-eighth cent a pound of butter.

MR. E. L. ADERHOLD, Neenah: I would like to ask why the inspectors don't see that we get that cream.

MR. MEYER: That is a very good question, but tell me how many inspectors did you ever find in the state of Wisconsin that were able to get that good cream? (Applause.)

MR. LEE: We don't want to put the blame on the inspectors. It is up to the buttermaker whether he is going to take that poor cream. (Applause.)

MR. J. MORTENSEN, Camp Douglas: I have four cream wagons. They leave at six o'clock in the morning and don't come in until five o'clock.

MR. LEE: If your farmers are taking care of their cream as they should the cream ought to be in fairly good condition. Three times is not often enough in seven days. Any farmer, if he takes any pride in his business at all, if he understands that he has got to, will produce cream, even though holding it forty-eight hours, that will give good satisfaction.

MR. GEORGE HANSON, Oakfield: Isn't it better for a buttermaker to send his teamster out every day in the summer time? We have found that to be so in our business. In the summer time we go every day; we don't even stay at home Sunday, and we have avoided a good many losses in so doing. I could refer to some creamery men who are gathering up three times a week, and if we were to figure out their losses we would find that they could put on two more teams to travel the routes simply with the losses they have had.

MR. LEE: Mr. Hanson has raised a very good question. There is no doubt we can make a better butter out of better cream. Let the commission men pay us enough more for the butter that costs us more.

MR. HANSON: I would say furthermore that I think the butter buyers will pay more. They are too anxious to get good butter. We make an agreement with the farmers to go every day in the summer and every other day in the winter timer.

MR. A. J. GLOVER, Ft. Atkinson: I would like to ask Mr. Hanson what success he has in getting his cream haulers to advise his patrons about the proper care of their dairy utensils.

MR. HANSON: I don't know as I have had any success. I don't ask our cream haulers to check the farmers. That is my only line of business. I do that as much as I can.

MR. GLOVER: Do I understand, Mr. Hanson, that you take that part yourself?

MR. HANSON: I take that part myself.

MEMBER: It is not possible for the state of Wisconsin to have a sufficient number of inspectors to visit each farm, but if the creamery sent wagons out to gather its product it could look after the cream better. The hauler could see the stable, the conditions under which the milk was kept and the utensils. A great many of these people who are doing this work haven't the least conception of what cleanliness is. It has been one of my beliefs that when the time comes when we could have co-operative creameries we could reach the farmer and help him, and then we will be moving along the right direction. The creamery should be this central place.

MR. ADERHOLD: I think we are drifting away from pasteurization. Several years ago I was reading an authority on milk where this statement appeared, that pasteurization prevented contamination. I would like to ask Mr. Meyer if he thinks that pasteurization is a complete remedy for contaminated stuff.

MR. MEYER: No, I don't think it is. But the question arises, how can we get that quality of material where we don't need to do pasteurizing?

MR. ADERHOLD: By simply refusing to take anything else.

MR. MEYER: I am afraid we would have no butter. (Applause.) The statement was made at Chicago that enough sanitary milk or certified milk could never be produced for all that is needed for consumption, and I don't think we will ever live to see the day where there will be enough pure milk produced so that we can all have our share, and therefore because we haven't got it we have to deal with the poorer article, and if we have to heat it twice we have to do it until conditions change.

THE CHAIRMAN: The next will be a few remarks by Prof. Benkendorf.

SECRETARY BENKENDORF: I have no set remarks to make this afternoon. If you will read over the conditions in regard to the district prizes you will notice that one of the conditions mentioned is that some one from the creamery must be present at these meetings. We have the 10 state prizes on the platform and in the case. These go to the parties getting the ten highest scores in the state. Then we have divided the state into ten districts and have two prizes for each district. If a buttermaker is here with his tub we want him to come and see me; I will be in this corner at the table, and will have you sign your name to this entry blank. If someone else from the creamery is here that will answer just as well. I think I stated in these conditions that the prize goes to the buttermaker, even though the manager is here, but we want to be sure that the buttermaker here puts his name on the entry blank, because we don't want you to say afterwards you were here but you didn't have time to put your name on the entry blank.

The scores will be announced tomorrow evening at the smoker, or mixer, at ten o'clock. You are not obliged to be present at the smoker, but if you have your name on that entry blank that will be taken as evidence that you were present at the convention.

(Owing to the unavoidable absence of Mr. Hayward and the lack of time on account of an already crowded program, this paper was not read, but because of its excellence is published as a part of the report.)

PREVENTION OF MOTTLES IN BUTTER.

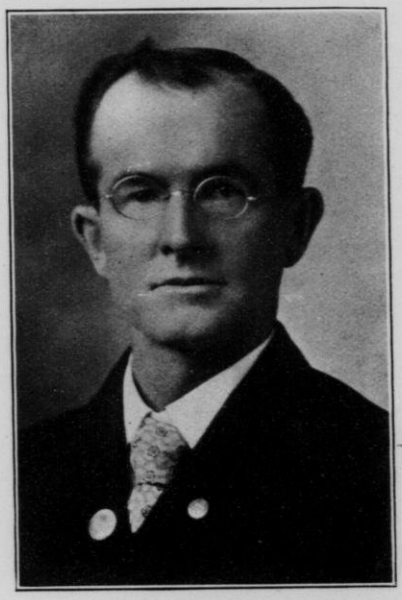
By C. H. Hayward, Ontario.

Mottles in butter are well known to the buttermaker of today. The term applies to that difference, or uneveness in color which is sometimes seen in butter. It is noticed in the deeper color of certain portions; but generally the outlines of these portions are not clearly defined, and the difference in color appears simply as irregular, wavy, lighter and darker portions, spots and streaks.

To make a uniform product one must have absolute control of temperatures. If the creamery is equipped with modern machinery—temperature is the greatest thing in making, not only a good quality of butter, but a uniform product.

Uniformity of the product is of great importance.

A creamery can better hold the trade among its customers with a uniform line of butter, from one year to another, (even



C. H. HAYWARD

though that butter is not as good) than it can if the quality is varying all the time.

Nothing displeases customers, like having some gilt edge butter, and then to get from the same creamery a churning that is rather poor. If the two could be mixed together,—even though the quality of the butter is a little lower—it would suit the trade better.

The principal reason why creameries are shifting from one commission house to another is because of the fact that the butter varies in quality—and one of the greatest causes is mottles.

The commission man puts the butter out to a certain trade—and after establishing a fine line of customers—along comes a lot of mottled goods; "the customer kicks." "The commission man has to kick" and then a cut in prices begins.

Several conditions combine to produce this mottled appearance. Years ago we had no trouble with mottles when we separated all of the milk at the creamery. Now with the handseparator and all kinds and conditions of cream—it is the skilled operator who does not have his butter show mottles.

We strain all of the cream into the weigh-can, then again as it goes into the vat, and again as it goes into the churn. In doing this we remove everything that is or might be a cause for mottles.

After taking the temperature of the cream, see that the color is of the same temperature, and of good strong quality—so it may be relied on at all times. After churning, find the temperature of the butter-milk.

Be careful and have all the butter-milk thoroughly drawn off. Right here is the place to look out.

If portions of the granules are chilled below, or heated above the mass of butter, by the addition of too cold or too warm water, you will find little hard granules after the butter has been worked, for hard and soft butter will not work together evenly.

It is well to know the temperature of the salt at all times, and to warm or cool as the condition of weather demands.

A very good way is to moisten the salt. The water in the butter holds the salt in solution, therefore, if there is not enough moisture to dissolve the salt—and if it is not worked sufficiently—a mottled condition will result.

When butter is too cold at time of salting, some portions will remain practically unsalted—and mottles are sure to be seen.

The season of the year, whether the cows are fed on dry or succulent feed; the effects of this upon the percentage of hard and soft fats in the butterfat, and the changing of churning temperatures to meet these conditions should be taken into consideration.

Watch all the operations thoroughly.

Then the working principally should result in an elimination of mottles.

THE CHAIRMAN: The next on the program is an address by Mr. Thomas Corneliuson.

BUTTERMAKERS' ASSOCIATIONS AND THEIR USEFULNESS.

By Thomas Corneliuson, Dairyman.

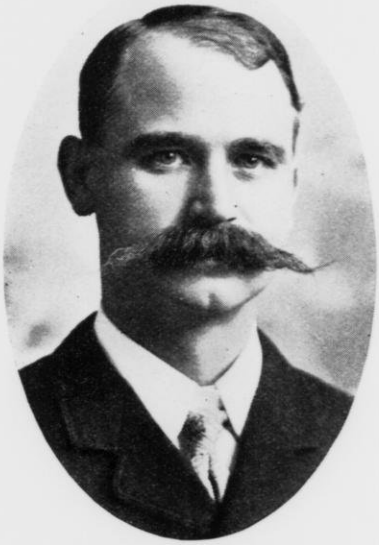
Dairy Division. Bureau of Animal Industry, U. S. Department of Agriculture.

MR. CORNELIUSON: Fellow members of Wisconsin Buttermakers' Association: A short time ago Prof. Benkendorf asked me to prepare a paper to present to you at this convention, but at that time I did not have time to decide on a subject to present, and that is the reason why it was not announced in the program. Before I did decide the program had been printed. I wish to present to you the subject of Buttermakers' Associations and their Usefulness.

It is well known that there is strength in union and that, therefore, things which are otherwise unattainable can be accomplished through united organized action; hence, men in many walks of life have formed and maintained societies of many kinds and for various objects. Thus, guilds, as the trade associations of earlier times were called, flourished more than a thousand years ago and continued their service well into the nineteenth centry. These societies, however, were somewhat narrow in scope and devoted their efforts only to such work as would benefit their own membership. It remained for the present age to develop a class of trade associations the aim of which is not only to benefit their own members but society in general, and I believe it can be truly said that The Wisconsin Buttermakers' Association belongs to this class.

Your association has given valuable service in the past. The various problems which have appeared from time to time have been

met in a creditable manner, and the many interests and needs of the dairy industry have in your association a central representative force through which much good can be accomplished. It should be remembered, however, that no society of this character can accomplish very much unless it receives loyal support not merely from a few faithful members and officers but from all or at least from



THOMAS CORNELIUSON

a majority of all persons interested in the welfare and further development of dairying in its territory.

Heretofore, buttermakers and other persons have given freely of their time as well as substance for the support of the work of this association. I, however, regret to say that there have been too many who have held aloof and who have refused or neglected to help in this work. There are in Wisconsin a thousand creameries. But, as a rule, less than one-fifth of these is represented at your butter exhibits. There appears to be no reason why at least one-half of all the creameries in this State should not take part in your

butter exhibit. To be sure, a few of the plants, are, perhaps, closed during the winter or working with a very small supply of milk or cream; sometimes the quality of the butter may be so poor that it would be best not to exhibit; and accidents or unusual happenings may occur in a number of other instances. But, as already stated, there should be no difficulty for at least half of the creameries in the State to be represented at the butter exhibit at your annual convention. Moreover, I fail to see any reason why the creameries should not furnish the butter instead of the buttermakers who in most instances are not paid too liberally and would at best receive but little of the material benefits accruing from the better conditions which it is hoped to bring about by the efforts of this association. If the management of the creameries, be it individual or cooperative, will come forward and give the support mentioned, your association will have funds with which to carry out important work —work which must be done if the creamery industry as we know it today is to continue and prosper.

I shall not attempt to point out in detail what this work is but shall mention only a few things which I believe are worthy of serious consideration. When creamery butter reaches the consumer it has passed through three distinct stages,—namely, the farm, the factory and the market. In the past, you have chiefly directed your efforts to factory problems and things connected therewith. In spite of the importance of these, the time has arrived when your association should extend its sphere of influence. Your chief product, butter, meets strong competition in the markets of this country. The following figures show the production of oleomargarine for a number of years beginning with the year 1899 (Bureau of Statistics, U. S. Department of Agriculture):

Year.	Lbs. of oleomargarine
1899	83,130,474
1900	107,045,028
1901	104,943,856
1902	126,316,427

For two years from 1902, the production of oleomargarine decreased. This is no doubt attributable to the Act of May 9, 1902,

which went into effect July 1 of that year. During the following nine years the production of oleomargarine was as follows (Annual Report, Commissioner of Internal Revenue, 1911):

Year.	Lbs. of oleomargarine.
1903	73,284,096
1904	50,199,642
1905	51,987,336
1906	55,434,900
1907	71,366,775
1908	81,525,600
1909	92,282,815
1910	141,862,280
1911	121,162,795
Total	739,106,239

Of this total amount, 52,874,983 pounds were colored and the rest was uncolored. There were withdrawn 683,992,567 pounds which were taxed one-fourth cent a pound, and 28,682,644 pounds were withdrawn and taxed ten cents a pound. Thus, 3.88% of the total production during these nine years paid the tax of ten cents a pound, and if we consider only the amount withdrawn of both colored and uncolored it will be found that the ten cent tax was levied on 4.19% of the total amount. From 1904 to 1911 the production of oleomargarine increased 141%. I have quoted these figures for the purpose of showing that you have formidable competitors—competitors who are not losing ground nor standing still. For instance, from 1908 to 1910—that is, during the two year period 1909 to 1910—the production of oleomargarine increased 74%. At that rate of increase, it will not be so very many years before a large part of the butter will be displaced by oleomargarine. It, therefore, if for no other reason, behooves us to take all proper measures to retain our place in the markets.

There are, no doubt, several reasons for the increased consumption of oleomargarine but I shall here mention only one,—namely, the poor quality of a large part of the creamery butter. Perhaps most, if not all, of you have been able to obtain the highest prevail-

ing price for your butter and will, therefore, be justified in thinking that the butter is as good as it ought to be. But let us consider for a moment what the Federal butter inspectors in New York and Chicago have found during the last year in connection with their inspection of Wisconsin butter.

In New York there were 49 shipments inspected, aggregating 1672 tubs which at 62 pounds to the tub, amounts to 103,664 pounds.

3 shipments	aggregating	10,230 pounds graded Specials.
3 shipments	aggregating	6,820 pounds graded Extras.
30 shipments	aggregating	65,906 pounds graded Firsts.
13 shipments	aggregating	20,708 pounds graded Seconds.
Total		103,664 pounds.

Forty-two of these shipments consisting in the aggregate of 94,860 pounds or 91.5% were scored off on account of poor flavor. Thirteen shipments consisting of 34,782 pounds or 33.5% were scored off on account of defective workmanship.

In Chicago there were 1246 shipments of Wisconsin butter inspected, consisting in the aggregate of 1,755,592 pounds.

22 shipments	aggregating	41,384 pounds graded Extras.
339 shipments	aggregating	485,150 pounds graded Ex. Firsts.
771 shipments	aggregating	1,031,742 pounds graded Firsts.
144 shipments	aggregating	197,346 pounds graded Seconds.
Total		1,755,592 pounds.

Of this amount 1,557,874 pounds or 88.73% were scored off on account of poor flavor and 773,946 pounds, or 44% were scored off on account of defective workmanship.

In view of these facts it seems desirable to redouble our efforts to improve conditions. The time is near, in fact it is here now, when it will be imperative that every farmer furnishing cream for buttermaking should understand that when he delivers impure, stale, sour cream to a creamery he is helping to destroy his own business. It is time to provide a suitable dairy house or at least a cream refrigerator on every dairy farm from which cream is sold and to abandon the kitchen, the cellar, the woodshed, or the barn

as a storage place for cream. The time is at hand when the buttermaker as well as the management of every creamery should realize that it is damaging to the dairy industry to allow mottled, weak-grained butter to go on the market. The time is ripe for the beginning of a campaign for the production and delivery of fresh, sweet, pure cream to the creameries, for only from that kind of cream can we expect to produce the highest quality of butter. (Applause.)

In this campaign your association should be able to take a leading part. The production of pure sweet cream is in realty a simple matter provided the proper facilities are at hand. During winter "cold" is furnished free of charge anywhere in Wisconsin and "cold" is one of the essentials in caring for cream. There are few dairy farmers in this State who could not cheaply and conveniently provide an abundant supply of ice for the use of their dairy during summer. The whole question seems to hinge on whether or not we shall be willing and able to make proper use of nature's gift. Let the aim for the future be, an abundant ice supply for every dairy farm in the State. With the realization of this, much of the trouble and vexations of the present would no doubt disappear.

Help and guidance are needed in other directions. Many of the small creameries are hard pressed because they are small; that is, they are unable to transact their business on as advantageous terms as larger factories. Here the remedy lies in co-operation—co-operative buying of supplies, co-operative selling of the finished products, and other co-operative action which from time to time shall appear expedient. The butter market is another important field which is worthy of more attention that it has received. Recently, a food show was held in a large southern city. The first objects to catch the eye of the visitors were two elaborate exhibits of oleomargarine. Apparently, there was not a pound of butter exhibited. Yet, here was a city consuming thousands of pounds of butter daily; but not one single effort was made to remind the people of the fact that butter is one of the most wholesome foods we have, nor to teach them the characteristics of fine butter so that they would be able to distinguish the good from the poor. No edu-

cational work could be undertaken, I believe, which would be more valuable to the dairy industry than teaching the consumers to exercise proper discrimination when they purchase their butter. This could be done by arranging suitable exhibits at state fairs, dairy and food shows, or wherever a large number of consumers congregate. Such exhibits should show the chief characteristics and differences of the various grades of butter by actual demonstrations.

In view of the foregoing considerations, it is important that your association receive the loyal support from every one interested in the success of dairying in Wisconsin so that it may be enabled to serve you in an adequate manner. Let it be understood that the problems confronting you today are economic and that they must therefore be solved by actual work, executed in an intelligent and practical manner. If this is done, we need not fear for the future of dairying or the creamery industry. (Great applause.)

DISCUSSION.

THE CHAIRMAN: Are there any questions you would like to ask Mr. Corneliuson?

MR. J. Q. EMERY, Madison: I think, Mr. Corneliuson has given us a paper this afternoon that we ought to consider most carefully in relation to almost every sentence that he has given. There is certainly a great problem confronting the butter making business today, and he has pointed out those salient features. When butter rises in price from different causes to the point of thirty-five and forty cents a pound it becomes prohibitive. It behooves those who engage in this business to ascertain what are the causes that bring the sudden rise and forces oleomargarine on the market so that some of the best families of the country will purchase it instead of purchasing butter. I know those are the conditions. I know that Mr. Corneliuson has stated the absolute truth when he says that it is fundamentally necessary to improve the quality of the butter. Oleomargarine cannot compete successfully with the highest quality of butter, but its price bars butter from the market. The public has taken this matter into its own hands in dealing with this question.

There is systematic work to bring about those conditions, I am fully convinced on that point. Some of those forces are at work to force oleomargarine upon the market. But I will say this, that if the oleomargarine people do have large quantities of butter in store, and if they force up that price and then send out their oleomargarine for high prices, they are making prices in two ways.

I believe that Mr. Corneliuson has given us a paper here that ought to be read by every dairy farmer in the State of Wisconsin, that ought to be considered. Gentlemen of this convention, we are meeting a crisis in the creamery butter business, and I repeat again that Mr. Corneliuson has sounded the true note of this matter. We must devise some means, some way to improve the quality of creamery butter. When we have recognized that as a fact as Mr. Corneliuson has recognized it today—that it must be done as a means of preserving the industry—we shall go at it in some way and we shall accomplish better results. (Applause.)

MEMBER: I was interested in a creamery at Shawano and we had a great deal of farm separated cream, and the cream came in in poor condition. We did considerable soliciting at that time and we found in most cases the cream was kept in the cellars, very little of it in good milk houses, and the result was that the cream came in with a flavor. We tried some scheme to get the cream out of the cellars and out of the houses and at the same time get a system that would cause the farmer less trouble in taking care of his cream. We contrived what might be called a "poor man's refrigerator." It was simply a cover for a cream can. It stood over the opening of the can, and while the cream was cooling it kept out the dust and dirt and insects, and also no microbes could get in it. After it was cooled it could be taken to the well in a half barrel and the whole can submerged, and in this way the cream was shut off from the air. The average temperature of water is about 50° so that the cream would soon attain that temperature and could be easily kept at that, and it could be kept eight days.

I do not know as this is the proper time to do any advertising, but at the same time I have a sample here that I will bring up tomorrow if anyone would like to see it.

MR. CORNELIUSON: Do you advise the farmers to use the well?

MEMBER: No, in a half barrel that is the simplest way. Anything would do and is better, but a half barrel is cheapest. Any ordinary shipping can will do. The cover will fit any can.

MR. CORNELIUSON: Do you use well water?

MEMBER: Yes, well water. The average temperature of well water is 40 or 50 degrees.

MEMBER: This device consists of a cover for the ordinary can by which you can use the old submerged system. This cover fits any vessel.

MR. CORNELIUSON: I believe that if we are to have any assurance of a good cream supply we must have a different way of taking care of the cream on the farm, and if it is done by simply putting the cream in a barrel the water must be changed often during the summer, and you know enough about human nature to know that it will not be done on any farm. They may intend to do it, but they have many other things to attend to and they forget it.

While it is better to know a way of cooling, I believe the better way for Wisconsin dealers is to get ready and provide ice and provide some kind of a cream cooler where the cans can be kept in ice water. Have an arrangement where it can first be thoroughly cooled and then put in water at a temperature of 45 degrees. If you can get the farmers to do that we can be sure of good, sweet cream. If the conditions are kept clean on the farm we will have a good cream. If you could get it cooled down to 45 degrees as soon as possible after it is separated and keep it at that temperature after delivered to the creameries you could, by using a system of pasteurization, and a good commercial starter, get butter that would not score less than 94.

MR. DAMOREL: I would suggest that the cover that has just been spoken of would be one of the first things that would help the farmer to get that very point.

MR. C. E. MCNEILL, Chicago: Mr. Emery has taken up the price side of the market. He has referred to the extreme prices that ruled recently on butter. We know that last year the market started very high. The weather conditions were such that at this

time last year butter was very low. This year the conditions have been very different and throughout the country the butter market was very short, so that we started in this season with a short supply. The first of the year all that excess supply had vanished. Following on top of that condition came the coldest weather we have had for thirty years. Naturally under these conditions the game not only played itself into the hands of butterine people, but also the supply and demand regulated the price. There is a loss that comes to the dealer following an extreme advance that is never made up on the natural advance.

There is one thing I would like to call to the attention of the creamerymen, and that is this, they have played into the hands of the butterine people by selling them uncolored butter. (Applause.) The best butterine contains a good big percentage of uncolored butter. If you were to put a little of your color into that they could not use it. When it comes the time of the year when the market is lowest they buy up the butter and put it into butterine and force the market up on their fresh goods. When you sell uncolored butter to those fellows who sell butterine you are cutting your own throats. You are taking just that much butter away from the consumer at the time when he needs it and you are putting it into butterine. They can put that butter they bought last June into butterine and sell it where you can't sell them fresh butter. (Applause.)

MR. H. C. LARSON, Madison: I am somewhat surprised at Mr. McNeill's remarks. The present condition, in my judgment, never warranted the price of butter going to forty cents a pound. According to Mr. McNeill, when the butter went up to that price it cut off his output.

There are other forces behind this thing than the commission men. If I only had the facts—if I could only picture to you the forces you could see the things something as I do. There are interests behind this movement that are making over twenty per cent profit on a pound of oleomargarine, and those are the interests that are manipulating this thing.

About that color proposition, that is all rot, gentlemen. If

you put an ounce of color in the butter and put it upon the market it takes a chemist to find it.

MR. MCNEILL: Do I understand you to say that it is all rot that oleomargarine manufacturers will buy uncolored butter?

MR. LARSON: They will buy anything they can get.

MR. MCNEILL: Can't you put such a small percent in it that they can't use it?

MR. LARSON: No, sir, you would have to prove your case.

MR. MCNEILL: About fifteen per cent of their product is uncolored butter.

MR. LARSON: They don't put two or three or four per cent of butter in oleomargarine.

MR. MCNEILL: That may be, but they do use as much as twenty per cent, and I am telling you this, if you people would not sell them the uncolored butter you would be helping yourselves; you can't get away from that. There are lots of people willing to take your butter without selling it to the butterine people. You make butter and the butter dealer is there to buy butter. Of course he has got to stay in the business because he is competing with the butterine men. If you would not make it uncolored there would not be any without color.

MR. H. J. CREDICOTT, Chicago: I am a little surprised at Mr. Larson. He will find oleomargarine that runs as high as 33 1/3 per cent butter. I do not know that the difference is shown between the butter fats and the oleo fats. As a Government inspector of butter in Chicago I submitted quite a report and asked as to the percentage, and they refused to give any idea of percentage. They give as high as 33 1/3 per cent. Now as to that color. I do know that the packers don't buy any uncolored butter as such without a chemical test on it to determine whether it is colored or uncolored.

MR. J. Q. EMERY: I want to say in regard to the different kinds of colors. From the standpoint of the chemical test, however, in the case which we took to the Supreme Court Dr. Fisher said from his experience in making the oleomargarine himself it was less than one per cent, and when the expert witness went upon the stand he confirmed Dr. Fisher's testimony exactly.

I want to say further that of course in Wisconsin the law that we have carried to the Supreme Court and got an interpretation on makes it unlawful to sell oleomargarine in the state, and we have not found very much oleomargarine that had any butter in it. As a rule the butter has been conspicuous by its absence.

That is like Mr. Curtis. He was exhibiting his little triangular butter worker. I came along and I said, "Mr. Curtis, won't you tell me what all these forms are on the lever." Mr. Curtis said, "Well, now, I want to tell you, those are something to talk about." I believe this butter in oleomargarine that we find in Wisconsin is something to talk about. (Applause.)

THE CHAIRMAN: It is getting late and we will have to go on with our program. The next subject is Alfalfa and Silage: Their Importance to Dairymen, by Mr. A. J. Glover.

ALFALFA AND SILAGE.

By A. J. Glover, Fort Atkinson.

MR. GLOVER: Mr. Chairman, Ladies and Gentlemen, and Members of the Wisconsin Buttermakers' Association: Alfalfa was grown in Rome more than 2,000 years ago and valued very highly then as a forage crop. It has been grown in all parts of Europe for hundreds of years, but it is only recently that the American farmer began to value it as our greatest forage crop. Probably the slowness with which this product has come to the front is due to the lack of understanding its value, the difficulty under which a stand is obtained,—unless proper methods are used in preparing the soil,—and the diseases which prevent its development.

More than fifty years ago some of the German settlers in Carver County, Minn., began growing alfalfa from seed brought with them from Germany, and it has been grown ever since in that county. It has become locally known as "Everlasting" Clover. The name indicates its persistence when once established. Seed has been saved in that county and has been quite well distributed throughout the United States but the general value of alfalfa is not generally known even at the present time.

For seven years it has been my good opportunity to note the success Hoard's Dairyman farm has had in growing alfalfa. About

fifteen years ago, former Governor Hoard began to experiment with the growing of alfalfa. W. A. Henry, then Dean and Director of the Wisconsin Experiment Station, also made some feeble attempts to grow this plant. The results were discouraging, and the conclusions were that it was almost useless to attempt to grow this plant under Wisconsin conditions. But Ex-Governor Hoard did not despair and as he had a number of vacant lots in Fort Atkin-

A. J. GLOVER

son, he began a detailed study of the plant. Finally, after mastering a few of the fundamental principles, he was successful in growing it on his farm. It is now grown with as much assurance, if not more, than red clover. At the present time the farm is growing 60 acres. For a while wood ashes, as well as manure, were used freely upon land on which alfalfa was to be sown, but after we learned what Dr. Hopkins of the Illinois Experiment Station had to say of the value of ground limestone and phosphorus for alfalfa these materials have been used according to his directions.

It is the practice now on Hoard's Dairyman farm to apply eight or ten loads of manure to an acre, using 40 to 50 pounds of raw rock phosphate to each load. Where it is possible, the land is plowed in the fall, turning the manure under. In the spring before seeding alfalfa, about two tons of either ground limestone or marl are applied per acre.

It was my good fortune last summer to attend the Illinois Alfalfa Growers' Ass'n. where they discussed different methods of preparing the soil for growing alfalfa, cutting and curing it and feeding it to livestock. One of the fundamental things to consider in the successful growth of alfalfa is to prepare the soil for growing this crop. No hard or fast rule can be laid down as to which method is best. What may be a proper practice in this locality would not be in some other. There are, however, a few fundamental principles that must be considered in all sections, and to ignore them means a failure of crop.

Mr. A. P. Grout, President of the Illinois Alfalfa Growers' Association, has been raising alfalfa for twenty years and his method of preparing the soil for the growing of alfalfa is briefly stated as follows:

I have always had the best success in seeding on the richest land which, of course, was to be expected. From my experience and observations, I am satisfied that the application of some manure at the time the ground is being prepared for seeding is most desirable, in order to give the plant a good start and assist it until it becomes well and deeply rooted. I think that the manure applied at this time is a most important element in securing a good stand, and when the stand is secured, three or four crops each year for several years is assured. It is most important, therefore, that a good start and a good stand is obtained.

LIMESTONE.

I have obtained very good results without the use of ground limestone, but on the other hand, I have obtained better results with it. There is, I think, no question that for best results on most soils, limestone is necessary. No doubt there is so much acidity

in some soils that alfalfa cannot be grown successfully without it. It is a condition that should be ascertained by test.

PHOSPHORUS.

I can say the same of phosphorus as of limestone, that I have grown good alfalfa without it, but I have grown much better alfalfa with it. I do not know that it is necessary after the plant roots have extended down below the soil that has been exhausted of much of its phosphorus by frequent croppings, but I do believe it is just as essential and necessary in the beginning as any of the other elements of plant food.

INOCULATION.

I am frequently asked if inoculation is really necessary. I can most emphatically say that it is, if immediate and satisfactory results are desired. When my first attempts at growing alfalfa were made, I knew nothing about inoculation, in fact, had never heard of it. My first sowing never grew very rank and only lasted three or four years. When this field was plowed up and reseeded with additional ground I soon discovered that the reseeded part was much thriftier and better than the other. It was about this time I learned about inoculation and tried it and obtained a good healthy growth from the start.

It is probable that inoculation would have come to my fields in time, but it would have taken years to obtain the result I obtained in one season by applying inoculated soil.

After a start has once been made and alfalfa hay has been fed upon the farm and the manure applied to the fields to be sown, there will likely be sufficient inoculation for all purposes, but in the beginning, inoculation is absolutely necessary for best results.

PREPARATION OF SEED BED.

Alfalfa is a deep rooted plant and therefore the ground should be plowed and thoroughly pulverized to a considerable depth in order to give the plant a good start. It is better to plow some time

before seeding and give the ground frequent disking and harrowing until it is thoroughly and finely pulverized. I have never seen a seed bed too well prepared. It is one of the most important things in sowing alfalfa.

SUB-SOILING.

I am not absolutely sure that sub-soiling is necessary in all soils, but it was a part of the method employed when I obtained my best results, and without more information on the subject I would hesitate about giving it up.

TIME OF SEEDING.

My best results have been obtained by sowing in September. I have sown as late as the first of October and secured an excellent stand. There may have been something in the season that aided in the result. I believe an earlier date is to be preferred. The only advantage in the later date is in avoiding the weeds. In Wisconsin spring seeding has been more successful.

I think that it is desirable that the plants get a good start and become well rooted before cold weather. If there is sufficient moisture to enable the seed bed to be properly prepared, I expect to sow in August this year, however, I do not consider the middle of September too late for sowing in this latitude.

QUALITY OF SEED.

I have always sown the best seed I could buy and cannot recommend any other. For the small difference in price no one can afford to take chances with poor seed. With well fertilized soil, thoroughly prepared seed bed and good seed sown at the proper time, I have never known of a failure.

QUANTITY OF SEED.

I have usually sown 20 lbs. to the acre, but am now convinced that when all the conditions named have been completed with—a fertile soil, limestone, phosphorus, inoculation, good seed, and well prepared seed bed, a much less quantity will suffice.

METHOD OF SEEDING.

I have always used a small hand seeder, broadcasting and cross sowing, which plan has always secured for me a uniform and even stand. A light harrowing is given after the seed is sown and on my last sowing I followed the harrow with a double disk roller apparently with the best of results. I believe the rolling is important especially in a dry time.

I understand that disk drills are being made for sowing alfalfa in rows three or four inches apart. I have never used nor seen one, but think the idea a good one, as the seed could be distributed more evenly and covered to a more uniform depth.

To those who sow alfalfa for the first time, I can only say, "If at first you do not succeed, try, try again." It is worth the effort and success will surely come with a thorough understanding and employment of right methods.

It is not uncommon for men to think that soil does not need inoculation. It is hard for them to understand why it is necessary. It has been proven beyond doubt that a soil which does not contain nitrogen-gathering bacteria which live upon the alfalfa roots and gather nitrogen from the air, must be inoculated with soil taken from a well established alfalfa or sweet clover field. I cannot emphasize the importance of inoculation better than to quote the remarks of Mr. Funk, a large and successful Illinois farmer.

"I have tried growing alfalfa for 15 years. I have been persistent. One day Doctor Hopkins was on my farm taking some samples of soil, and I was telling him about my failure with alfalfa; he said, "Let us go and look at it." We drove out there, and it was the same old story. It was burned and yellow and I told him this was the last year; that I would stop trying to grow alfalfa. This must have been 10 or 11 year ago. Dr. Hopkins said, "Don't you remember when you were at the university a few weeks ago we went into the hot house and looked at those pot cultures and talked about bacteria?" I said, "Yes." He said, "Here is an ideal place to try it in a practical way." I had about seven or eight acres in alfalfa then. I said, "How shall I try it?" He said, "The

only way I know of is to get some dirt from an old alfalfa field." I said, "There is none in this State that I know of." He said, "Haven't you got some friends that live in Nebraska or Kansas who can furnish you with it?" I told him that I knew a gentleman who has a large acreage of alfalfa out in Kansas, and how they told big stories about it. So I sent out there and got some of the dirt. I asked him how much I should put on and he said that a hundred pounds to the acre would be enough to try it out. Well, I had known the doctor for some time, and I had never caught him in a story, so I had some faith in him yet, but I said, "Doctor, there is no other fellow in the State of Illinois that could get me to send to Nebraska to get dirt to put on an Illinois farm, but I will go you just once."

I got two grain sacks full of Kansas dirt. The boys around town has learned that I was getting some dirt from Kansas to put on my soil in Illinois. I didn't attempt to go into town in the day time, but I drove up one evening and got those two sacks from the freight house and put them in our barn. I had about 15 men on the farm, and they nearly run me off the place the way they joked me, and even the girls in the kitchen joked about it.

One day there was a circus in town and I told the boys they could all have a holiday and go to the circus.

They were a surprised bunch, but they went to the circus, and I stayed home to attend to the farm and look after things. When the boys got away, I went out to the barn and got the old pair of mules, hitched them up, and took those two sacks of Kansas dirt out in the wagon and sowed it on the alfalfa field. I sowed that dirt in two different strips about 30 feet wide and 150 feet long, leaving an open space between. The first strip I disked and the other I didn't.

I had a habit of taking my wife for a drive around over the farm Sundays and it happened that I would go to the alfalfa field every Sunday, so she began wondering why I was going over there so often. Finally she asked me and I said, "I won't tell you." There was no sign of any encouragement from that bacteria at all that fall. I said that there was one time I had caught the doctor and I decided that I would plow it up the next spring, but when

the spring opened, the frost went out of the ground, and I found a little alfalfa where I put that dirt: it was four or five inches high and the rest of the ground was barren. The next Sunday I took Mrs. Funk out driving and we rode out through the alfalfa field and she said, "What makes it look so green? And then there is a strip that is not." She added, "What have you been bringing me out here for?" I said, "There it is." I told her about the sacks and the boys joking me about them. You could see the difference there plainly. When we cut the hay from that field, I used one of those fancy hay loaders, and it was a blessing to me, for it dragged the dust over the rest of the field and inoculated it. Now, I am sure we have to inocculate in some soils in Illinois."

The Illinois Experiment Station, to show the importance of having nitrogen-gathering bacteria live upon the roots of alfalfa, made the following experiments: One piece of ground was sown to alfalfa, which was not inoculated and it yielded 800 lbs. of hay. A field beside it and of equal size was inoculated and produced 2600 lbs. of hay. The treatment of these two fields were exactly the same, except one was inoculated and the other was not.

While inoculation increases the production of alfalfa, it has been found that calcium and phosphorus are also necessary to many of the soils in the Central West and, undoubtedly, to most soils throughout the United States. To show the benefits of lime and phosphorus, an experiment was conducteted by the Illinois Station, and it was found that inoculated soil produced 10,800 lbs. of alfalfa hay; when phosphorus was applied 13,900 lbs. were produced and when calcium and phosphorus were applied, 17,000 lbs. These results indicate plainly that many soils will produce greater yields of alfalfa if the land is inoculated and rock phosphate and ground limestone added before seeding. It is folly to spend three or four dollars for seed and then fail to prepare the seed bed so that it will grow alfalfa. Dr. Hopkins of the Illinois Experiment Station has said that ¾ of all the alfalfa seed is wasted, owing to the poor way the seed bed is prepared.

It would perhaps be well for me to give a few statements made by Mr. A. N. Abbott, one of the Directors of the Illinois Farmers' Institute. Mr. Abbott attempts to show the value of alfalfa by

comparing it with other crops and also to show in a brief way its relation to soil fertility.

Enough, however, is known of the value of this wonderful plant to safely predict that it means much to the farmer of the future and particularly to the livestock farmer. That it will to some extent dispute the supremacy of "King Corn," there can be no doubt. To determine this extent is a question of evolution and readjustment of present methods.

TWO QUESTIONS TO SETTLE.

Before the average farmer will change his farm methods there are two questions which must be answered in the affirmative—1st. Is it practical? 2nd. Is it profitable? The answer to the first is that all soils that will produce red clover will produce alfalfa, and such soils which by reason of their sandy or gravelly character are not well adapted to red clover will produce alfalfa profitably.

I venture the assertion that there is a smaller per cent of failures from alfalfa properly sown than from red clover as usually sown.

The limited space allotted will not permit of detailed discussion of the preparation of seed beds. I can only say that the well known methods should be followed. The seed bed should be finely prepared and that it should be remembered that failure to inoculate the soil is but an invitation to disappointment.

The second question—as to the value of alfalfa—is an interesting one, particularly when compared with the value of corn. A yield of corn of 72 bushels per acre, which is twice the average yield of the state, and is a large and satisfactory yield, (72 bushels of corn is two tons of grain,) will at 40 cents per bushel bring $28.80. The same soil and season which will produce two tons of corn per acre will produce five and six tons of alfalfa which, at $15 per ton, will return not less than $75 per acre and that too with much less labor.

A COMPARISON.

On the State Experiment field at Union Grove last year, equal areas were in corn and alfalfa. The proceeds from the alfalfa crop were over three times that from the corn.

Comparing the amounts of plant food removed by the alfalfa and the corn, we find that a ton of alfalfa removed 50 lbs. nitrogen, 4 lbs. phosphorus and 24 lbs. potassium, worth at market price, exclusive of the nitrogen, $1.92 (the nitrogen is not taken into account because the alfalfa gets its supply directly from the air, through the bacteria on its roots).

A ton of corn, equal to 35 5/7 bushels, contains 35 5/7 pounds nitrogen, 6 1/14 pounds phosphorus and 6 11/14 pounds potassium, worth at market value $6.37.

The nitrogen in the corn must be considered since this plant does not and cannot secure a supply of this element except through the soil. A crop of corn, therefore, depletes the soil of this element. For a 72 bushel crop of corn the value of the plant food removed will be $12.74 and for a 5-ton crop of alfalfa the value of the elements taken from the soil is $9.60.

The Illinois and Wisconsin State Experiment Stations have issued bulletins stating that for the production of milk, a ton of alfalfa is equivalent to a ton of bran, thus making the value of alfalfa hay near $25 per ton for the production of milk.

A farmer in Whiteside county realized $181 per acre during 1910 from a 6-acre alfalfa hog pasture.

$400 TO $700 LAND.

Money being at five per cent, what is land worth that yields a revenue from $75 to $150 per acre? If the yields of corn in the corn belt of Illinois fix the price of land, as is generally conceded, then a re-adjustment and higher range of land values is inevitable when fixed on alfalfa basis.

Mr. Fred. L. Hatch, a successful farmer in Northern Illinois, has been very successful in growing alfalfa and I quote here in part his statements in reference to his experience in growing his crop.

I went to the University of Illinois over forty years ago, while yet in my teens, it was my good fortune to be left in charge of the experimental work one summer. Professors Bliss and Flagg had charge of the experimental work at that time. They had some eight plots of clover, one of alfalfa, the same kind that I am rais-

ing now. I took a great fancy to alfalfa, we had to keep the little plots numbered and in shape. We cut them, some once, some three times. I thought the alfalfa was the nicest thing there. At night when I offered it to the stock in the barn, they did not seem to care much for it, but I would often take it in and let them smell it; once in a while they would taste it and finally the horses would whinnow for it when I came near the barn.

I came home and went on to the old homestead; I began to raise alfalfa; I also put up a silo, then an unheard of thing, and you can hardly imagine the kidding and guying I received. It didn't hurt me and I kept pegging away; finally I took up two forty acre pieces, they were back from the highway and had been used for raising sweet clover for making ornaments. I took all the fences away around which sweet clover was growing and put in 80 acres of alfalfa. I got a good stand on the 80 acres and my barns would not hold it. I commenced to get ahead a little bit then, and have continued to do so while I have grown alfalfa, I have put it on one piece of land after another and have often had 150 acres at one time. My tenants raise alfalfa and think it is great. I have tried everything you have talked about this afternoon except to plow a good crop under, that, I have been very loathe to do. I am wondering, however, if it wouldn't be the greatest thing that could happen to the land? Alfalfa does not become badly infested with blue grass in less than 7 or 8 years. Most of the land in Illinois will grow alfalfa; you may have to encourage it. I have a piece in mind now, on a farm that a tenant works, and we have had a lot of hard work there. Before the tenant came, I sowed about 25 acres in alfalfa and it was a miserable failure. I have sometimes sown timothy with it, (a bad practice) I did with this. I put the sheep on it and let them eat it clean. Later in the season we cut a crop and decided it was not worth while, so we manured it and plowed it under. The following season, put in corn, the next year my tenant sowed alfalfa again and I have never seen such a piece of alfalfa in my life. It was clay land, reasonably level, but hard and baked. You would not know the land today. Alfalfa will stand much rain while in the cocks. If you grow alfalfa right and cut it right, the leaves will not come

off, although they fall very easily the first cutting after sowing. I think there is no other plant that we grow that the more you grow it and the more you know of it and the more you feed it and use it, the more you will think it is your salvation, and I believe these farmers who are growing this great acreage of corn, will eventually grow alfalfa. It would take me until midnight to tell you my individual experiences and the trouble I have had in growing alfalfa in the spring and had it looking the finest. Along toward fall, there would be bad places in it. If it was not too late in the season, I would put my mower on it and cut it and leave it on the ground. Next season, if the crop looked bad, I would make hay of it as soon as possible and if the bad places did not revive and spots turned yellow in it, I would put manure on it with a spreader —these places are sure to come if treated rightly.

CURING ALFALFA.

The feeding value of alfalfa depends to no small degree upon the process of curing. If it is permitted to dry in the swath the sun dries the leaves and bleaches the alfalfa which carries off some of its nutrients or at any rate makes them less usable and makes it less palatable. In handling it, after it is cured in the swath, a large amount of the leaves is lost and the leaves are the most nourishing part of the alfalfa.

On Hoard's Dairyman farm, alfalfa is cured in cocks weighing from 70 to 80 lbs. each. It is cut in the forenoon and raked up into windrows and put into cocks in the afternoon. The cocks are then covered with a quality of "A" sheeting, torn into strips 40 inches square; to each corner of the square or cap is tied a small weight which may be made of cement, or nuts weighing 4 ozs. may be used. These weights are attached to the corners of the cap to prevent the wind from blowing them off and to hold them firmly over the top of the cock of hay so that it will shed water. It will take from two to three days to cure it sufficiently in this manner. An hour before it is time to draw the hay to the barn the cap should be removed and the cock opened up to permit the air and the sun to take up the surplus moisture. Alfalfa cured in this

way produces the very best quality of hay. If it rains the cocks do not become soaked and the sun does not destroy any of the nutrients.

THE YIELD OF ALFALFA AS COMPARED TO CORN AND TIMOTHY.

When we come to chemically analyze alfalfa, we at once begin to realize its value to the dairy industry. On land that would yield 50 to 60 bushels of corn per acre, it is not unreasonable to expect it to produce from 3 to 4 tons of alfalfa hay. In 4 tons of alfalfa hay there are 4,000 lbs. of digestible nutrients of which 880 lbs. are digestible protein.

Professor Fraser, of the Illinois Experiment Station, found by experience that alfalfa hay was practically equal to bran. The cows fed on alfalfa were in better physical condition than those receiving bran. Of course, he fed a very high grade of alfalfa hay. It was cut at the right time and cured properly. It should be observed that alfalfa hay is rich in the element protein and, therefore, supplements corn silage very well which is comparatively rich in the element carbohydrate. An acre of land that will produce 50 to 60 bushels of corn will yield in the neighborhood of 10 tons of green corn per acre. In ten tons of corn silage there are 3440 lbs. of digestible nutrients of which 280 lbs. are digestible protein. It should be observed that the alfalfa produced 4,000 lbs. digestible nutrients of which 880 lbs. are digestible protein. For a moment let us consider these crops with a few others. It requires pretty good land to produce 1½ tons of timothy hay per acre. In 1½ tons of timothy hay there are 1443 lbs. of digestible nutrients, and 84 lbs. digestible protein. It is not unreasonable to expect that an acre of alfalfa will produce 10 times more protein than an acre of timothy.

MAKING A RATION OF SILAGE AND ALFALFA.

Perhaps it will be interesting to learn the kind of a ration that may be made of silage and alfalfa. It has been found that an animal fed nothing but these feeds will consume about 40 lbs. of

silage daily and 16 lbs. of alfalfa hay. In the following, I tabulate the pounds of feed used, dry matter in them and digestible nutrients.

Name of Feed	Lbs.	Dry Matter	Protein, Lbs.	Carbonhydrates	Fat, Lbs.
Silage	40	10.6	.56	5.6	.28
Alfalfa	16	14.8	1.77	6.3	.10
Total nutrients.....			2.33	11.9	38

According to Professor Hæcker's feeding tables a cow producing 25 lbs. of 4 per cent milk requires 1.9 lbs. digestible protein, 12.82 lbs. digestible carbohydrates and .5 lbs. digestible fat.

It will be noted that a ration of silage and alfalfa supplies more protein than necessary for 25 lbs. of 4 per cent milk and not quite as much carbohydrates or fat as the animal needs, but since protein will take the place of carbohydrates, the ration contains enough nutrients to produce 25 lbs. of 4 per cent milk.

When there is an abundance of grain at reasonable prices, it will pay, as a rule, to feed some when cows are producing 20 lbs. or more of milk per day, but when less than this is produced it is very doubtful whether it pays to feed any concentrates when there is plenty of good silage and alfalfa at the farmer's command.

PASTURE VS. SILAGE AND ALFALFA.

There is another point which we might consider. One acre of ground yielding four tons of alfalfa will supply an animal with 16 lbs. per day for 500 days. One acre of land yielding ten tons of corn will supply an animal with 40 lbs. of silage for 500 days. In other words 1.37 acres of land on which is grown corn and alfalfa will produce enough feed to keep a cow 365 days; 1.37 acres of blue grass pasture supports an animal on the average but 78 days.

The severe drought of the past summer is not so long ago but that most of us remember the difficulty of supplying cows with succulent feed during that period, but farmers who had grown

alfalfa and provided themselves with silage, did not notice the effects of the drought like those who were depending entirely upon pasture to feed their animals.

ALFALFA AND CORN SILAGE PROVES A GOOD RATION.

The question may be asked: Will cows do well if fed the entire year upon silage and alfalfa? To this it may be said that in experiments carried on by the Illinois Experiment Station cows fed entirely upon silage and alfalfa for a year were at the end of that time in good physical condition and produced creditable yields of milk.

Cow No. 1 produced 8735 lbs. of milk containing 351 lbs. of fat; she consumed 14,880 lbs. of silage and 1672 lbs. of green crops and 6396 of alfalfa. In other words, for each 100 lbs. of milk produced she consumed 170 lbs. of corn silage, 19 lbs. of green crops and 73 lbs. of alfalfa hay. Cow No. 2 produced in one year 7434 lbs. of milk containing 259 lbs. of fat. She ate 14,862 lbs. of silage, 1612 lbs. green crops and 5588 lbs. of alfalfa hay.

In comparing the relative value of timothy hay and alfalfa it was found that when milk was worth $1.30 per hundred and timothy hay valued at $10.00 per ton, that alfalfa was worth $20.85 per ton and gave a return per acre of $68.44 more than an acre of timothy.

In briefly summing up this subject, I can say:

First: There are no crops grown upon the farm more important to the dairy farmer than alfalfa and corn.

Second: Alfalfa will produce more digestible nutrients per acre than any other agricultural crop. A yield of 4 tons of alfalfa hay per acre produces 4,000 lbs. of digestible nutrients, 880 lbs. of which are digestible protein.

Third: Corn comes next to alfalfa in the production of nutrients for the cow. An acre yielding ten tons of green corn will produce 3440 lbs. of digestible nutrients, 280 lbs. of which are digestible protein.

Fourth: No crops complement each other better for feeding the dairy cow than silage and alfalfa. The silage furnishes suc-

culence for the cow and a large amount of heat producing elements. Alfalfa provides the dry roughage; is rich in the element protein and mineral matter which are so important to the growing of animals and to cows producing milk.

In short: Alfalfa and silage have a productive feeding value that cannot be excelled by any other combination of roughage grown on the farm.

Fifth: When alfalfa is used properly in a rotation, it is beneficial to the soil but it is a mistaken idea to think that the alfalfa plant enriches the soil. It must be fed to livestock on the farm if the greatest value is to be obtained as a soil improver.

I thank you. (Applause.)

DISCUSSION.

MEMBER: I would like to ask the gentleman one question in regard to feeding silage and alfalfa. You said the cow is supplying the same amount of milk all the year around. Do you think the cow will last as long as others? A good cow will only last five years.

MR. GLOVER: I don't believe in forcing cows. You won't injure your cow if you feed her all the alfalfa hay and ensilage she will eat.

MEMBER: Don't you honestly think, though, that the ensilage has a certain per cent of acid and that it will affect the teeth of the cow? Neighbors in my vicinity that have tried this claim this to be a fact.

MR. GLOVER: I fed silage twenty-one years ago this winter, and in all my experience I have never seen an animal show any injurious results from the feeding of ensilage. I visited twenty-one farms when I was in Illinois, and on one farm they had 225 cows that they had been feeding silage for fifteen years and the owner said he had never experienced any injurious results.

MEMBER: What effect does frozen silage have upon a cow while it is frozen?

MR. GLOVER: It has been reported that it is dangerous to feed while it is frozen, but after it is thawed out it is all right.

MEMBER: Does the freezing process injure the silage?

MR. GLOVER: Not if it is used right away. It doesn't hurt it very much but I don't believe it improves it.

THE CHAIRMAN: Is that committee ready to report?

MR. L. OLSEN, West Depere: I want to say at this time that we had a meeting and we feel that you haven't given us time to revise the by-laws. We didn't want to be responsible for it. We thought it would be far better to let it go and take it up the next annual meeting.

MR. C. E. LEE, Madison: I move that we grant the committee a year's time to revise the by-laws.

This motion was seconded and carried.

THE CHAIRMAN: There is no program on tonight. There is a show at the Opera House to which you are all invited. Tomorrow there is no program on in the hall here. There will be the educational exhibit of butter by Mr. Carswell that takes place, I believe, in Machinery Hall; also Machinery Hall will be open for the inspection of machinery.

THURSDAY AFTERNOON SESSION.

Thursday afternoon, two o'clock, meeting called to order by the President.

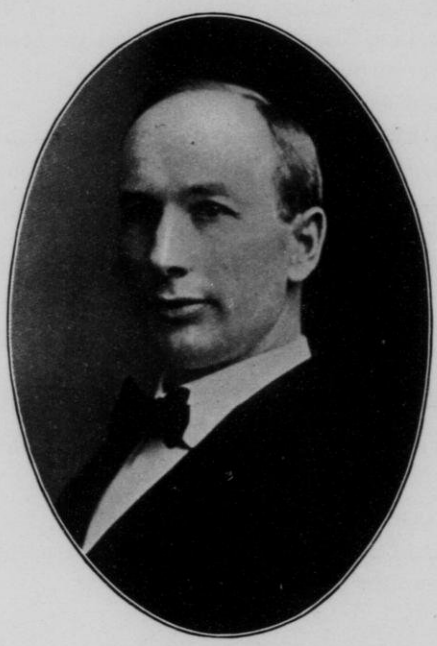
THE CHAIRMAN: The first on the program for the afternoon is The Making of Butter from Sour Hand Separator Cream, by Prof. M. Mortenson.

SOUR HAND SEPARATOR CREAM.

By Prof. M. Mortensen, Ames, Ia.

PROF. MORTENSON: Mr. Chairman, Fellow Buttermakers and Ladies and Gentlemen: In discussing this subject it may naturally be divided into two parts, 1st, methods by which to manufacture the best butter from sour hand separator cream, and 2nd, the advisability of manufacturing butter from sour hand separator cream.

We realize that cream which sours before it is received at the creamery cannot at all times be converted into good butter. We can safely make the statement that most often an inferior article is manufactured therefrom, for it is a well known fact that we may use all the lime and saltpeter available and all the purified hot air that can be produced with our most up-to-date United States machinery, nevertheless we find that it is absolutely impossible to



PROF. M. MORTENSEN

produce a piece of butter which is of high and uniform quality unless the ripening of the cream from the time it is sweet is under the care of a skillful operator.

We all agree that it is possible for the skillful buttermaker to improve somewhat the average sour cream as it is received at the creameries. We have found that it is possible by pasteurization to improve it from one to three points but as pasteurization

of cream has already been discussed we shall not give it further consideration at this time.

Promptness in caring for the cream upon receipt thereof is of great importance. The poor quality of cream produced during recent years has caused some of our buttermakers who are handling gathered cream to have become somewhat careless. They leave the cans containing the cream stand around in the creamery for hours before caring therefor. They do not seem to realize that such cream, the same as sweet cream, will become poorer the longer it is left without care. We have quite frequently observed that a buttermaker will receive cream for the entire day pouring it all into the same vat and in the evening making the first attempt to mix and cool it. Cream handled in such a careless manner and perhaps churned the following morning without even the addition of a starter cannot be expected to produce good butter.

The cream should immediately upon receipt thereof be cooled to about 50 degrees F., unless it can be pasteurized when received. The cream should furthermore be graded and sweet and sour cream pasteurized separately and kept in separate vats even if only one grade of butter is to be made. The sweet cream should be transferred at ripening temperature from pasteurizer to cream ripener. A big starter should be added to it and it should be allowed to ripen properly. The sour cream after pasteurization should be cooled to a temperature below 50 degrees Fahrenheit and held at such a temperature until the sweet cream has been ripened and cooled. The two lots of cream may then be mixed and held for one or two hours and churned. In experiments the sour cream together in the same proportion. Then we took another lot and we ripened the sweet cream separate and then treated it in the way I have just explained, and there was from two or three points difference. Then we added the sour cream to it later on and we usually scored from two to three points above the butter manufactured in the other way. Suppose you have 50% sweet cream. It is just the same as if you had 50% starter, and you fully realize the more starter you have for the cream the better butter you will have. I consider that every creamery ought to have a starter. The sweet cream which has been properly ripened

answers the purpose of a big starter. This method will improve the cream up to three points as compared with cream which is not graded but is mixed before pasteurization.

The value of a good big starter is so well understood that it is scarcely worth while to devote any time for discussion thereof. If it is found to be impossible to secure a sufficient amount of skim milk for starter, very satisfactory results can be obtained from condensed milk or powdered milk. It may be more expensive, but at the same time it is very desirable to use it. We find that it is possible for many creameries to make arrangement with farmers living nearby the creamery to exchange with them giving buttermilk for skim milk.

Butter manufactured from cream of inferior quality should be thoroughly washed in order to remove as much as possible of the old flavor. Some buttermakers after thoroughly washing the butter will work or churn it in a good starter. By incorporating this into the butter the flavor is materially improved and during the winter season, if the butter is consumed while fresh, this method may give good results, but the increased curd content of the butter will tend to decrease materially the keeping qualities of the butter. Therefore this method cannot be recommended as applicable during the summer season or for butter that has to be kept for any length of time before being consumed. We are often asked if cream which is quite sour at the time of pasteurization should be ripened to a higher degree of acidity after pasteurization. In accordance with our experience it is impossible to give a definite answer to that question, for in some cases we are able to ripen the cream to a higher degree after pasteurization while at other times cream of the same acidity and of the same richness will acquire undesirable flavors if allowed to ripen after pasteurization. It depends largely on how many germs in the cream will resist the pasteurizing temperature. We find that this number in pasteurized sour cream will range from 30,000 to 160,000 per cc. If ripening after pasteurization not less than 10% starter should be used and the buttermaker should watch the ripening process very closely so that he may cool the cream immediately if he notes any undesirable flavors developing. In some places in our state

they have three separators. They first let it go through one separator where they remove some of the curd, then through another separator, and finally through the third separator where the cream and the skim milk or buttermilk will be separated. They will skim 60% cream and they will reduce that with good starter until they have it down to about 30 or 40%, and then they will churn it. That method is one of the best methods by which you can improve the quality of the cream, at the same time it is quite expensive. It will amount to about a cent a pound ordinarily.

As to the advisability of accepting sour cream we believe that 50% of the creameries receiving sour cream today could just as well receive sweet cream if they would make an effort.

The experiments conducted at Algona, Iowa, by the Dairy Division in Washington proves that by paying three cents more per pound of butter fat in sweet cream than for butter fat in sour cream the sweet cream increased from about 10% to 90% of the amount delivered. What has been accomplished there can be accomplished in other localities, but the trouble is you are always so afraid of competitors. We shall not attempt to state that the difference of three cents per pound would be most satisfactory to all other communities for in that matter local conditions should be carefully considered, but we do claim that every creamery can receive the greater part of their cream sweet if they pay for quality and we also claim that there is not a creamery patron who will not be in position to deliver at least part of his cream sweet at each delivery.

A physician who is honest will give advice for preventing discases in preference to giving medicine as a cure for diseases. It is the most logical method by which to keep people in good health. That reminds me of a story. A man was taken sick and he went to a physician to be examined. The physician, after making the examination, said, "Well, Mr. Steiner, I believe you have appendicitis. We will have to operate on you." Mr. Steiner said, "Wouldn't you please examine me again, because I don't believe I could ever take such a fashionable disease." So the physician examined him once more, and while he was making the examination he felt the pocket book of Mr. Steiner, and he said, "No, Mr.

Steiner, I don't believe you have appendicitis." And so it is with cheap physicians.

The same is true and even more so in reference to our cream supply. In taking that old stuff and being satisfied with it and converting it—using your medicine for trying to doctor it up—you are really taking the place of that cheap physician. You are trying to make something out of it just for the sake of holding your job. We are spending time, money, and energy in the matter of improving the quality of sour cream after it has been received at the creamery. If the same energy was expended on caring for cream on the farm and while on the road to the creamery it would be unnecessary to study the problem of how to improve sour cream.

We all realize the importance of improving the cream supply. We are willing to do all that can be done. The great number of our creameries have not started to buy on quality basis so far, fearing that they may lose patronage to their competitor who is considered as opposed to all kinds of reform.

Would it be possible that the buttermakers' association of a state could hasten the introduction of the grading system by the following method. Appoint a committee of three members noted for their activity. This committee should appoint their secretary from among the members of the committee. This committee will then appoint subcommittees in each county. It should be left to the county committees to secure some agreement from all creameries operating in that county to buy cream on quality basis. The state committee through their secretary should be in constant touch with the county committees and on finding that the creameries of a county cannot be organized, then apply to the State Dairy Commissioner for his support. Put it up to this committee and have the State Committee report at your next annual meeting what has been done, and the sub-committees are held responsible to them, and it will be up to the sub-committees to make some arrangements to have the county organized so that the creameries there are all willing to buy on a quality basis. It seems to me that by that method and talking the matter over it will be possible for you to make some agreement so that you can make some difference in price between sweet and sour cream.

This is merely a suggestion and it may not be practical, but we believe that it will be to the interest of all who are engaged in the creamery business in our country that we inaugurate a vigorous campaign which will lead to improvement of the quality of cream as it comes from the producers. The mere talk about it will not be of much value. We must start some action.

I thank you. (Great applause.)

DISCUSSION.

THE CHAIRMAN: You have heard this paper, and I think it is a good paper, worthy of quite a lot of discussion.

MR. H. C. LARSON, Madison: I have a resolution here that I want to read before this Association:

Whereas, Article Fourth of the By-Laws of the Wisconsin Buttermakers' Association reads as follows:

"The privileges of the Association's butter contests are open to exhibitors outside of Wisconsin, but such exhibitor 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."

Therefore, in accordance with Article Seventh of the Articles of Incorporation, notice is hereby given that a motion will be made in due time to amend Article Fourth of the By-Laws to read as follows:

Article Fourth: "The privileges of the Association's butter contests are open to exhibitors outside of Wisconsin for complimentary score only and that any exhibitor exhibiting butter at these Association Contests for complimentary score shall, after deducting express charges and $1.00 membership fee, have returned the balance for which the butter sold."

A motion will be made in due time.

MR. O. F. FULLER: Did I understand you to say that this sour hand separator cream is improved by water or milk being added to it? If it was, what is your loss on separator?

PROF. MORTENSON: I know of places where they are getting in milk to mix with it, but if you have no milk to mix with it

I should prefer not to dilute it in any way, for if you use water part of it will replace part of the milk serum and produce a watery flavor. We found in the work that we have done (I worked along that line for six months one winter) that even the curd in the separator will contain up to 16 and 18 per cent of fat. You will usually have from 4 to 5 per cent fat.

MR. GEORGE YOUNG, Comstock: In case of pasteurizing this cream, would you dilute it, or pasteurize it with the high per cent of fat?

PROF. MORTENSON: Dilute it with milk before you pasteurize, or else it is apt to acquire a mealy body.

MR. H. D. NICHOLS, Elkhorn: I would like to ask if you can use a little sweet cream for a starter?

PROF. MORTENSON: Well, you can do that. I would prefer, though, to use the milk, but in case you cannot get the milk, it is all right to use the cream starter. In ripening the sweet cream first is really to prepare a starter, and it would be all right, I should think, to prepare a starter in that way.

MR. E. C. DODGE, Lake Mills: Do you notice any difference in the test of the buttermilk between pasteurized cream and raw cream?

PROF. MORTENSON: Yes, we find that the test is higher from buttermilk from pasteurized cream, and usually the test will run up from one to two-tenths per cent in the buttermilk. You understand that the pasteurized cream has to be churned so much cooler than the other. We are churning pasteurized cream at about 50 degrees; the other cream at 56 to 57.

MR. A. H. JENKS, Loyal: If you would be using starter would you prefer a skim milk starter to a whole milk starter?

PROF. MORTENSON: There are a good many reasons for using a skim milk starter.

MR. H. H. WHITING, Cedarburg: Don't you find that in pasteurizing sour cream that the temperature has a good deal to do with the wheying off of the buttermilk?

PROF. MORTENSON: No, we haven't found very much difference there. We can get just as good results from cream that

has been heated to 185 degrees as from cream of 140 degrees with .3 or .4 per cent of acidity.

MEMBER: Why do you consider skim milk better than cream for a starter?

PROF. MORTENSON: You are not losing so much if your starter spoils when using skim milk. If you have a skim milk starter it is easier for you to tell the true flavor. You know more about what kind of a starter you have, what the quality of it is. It is advisable to reject a small portion of the upper part of the starter because there are always a good many undesirable bacteria in the upper layers. If you use a whole milk starter you will in this case reject the cream. You are apt to have a little different flavor in the upper layers than in the lower layers. If you are going to market a real fancy piece of butter I would consider that a skim milk starter would be the thing to use.

MEMBER: I would like to ask if there is an actual loss in churning hand separator cream when it is pasteurized?

PROF. MORTENSON: You have more casein in the butter, but will lose more fat in the buttermilk.

MEMBER: On account of the casein carrying off the fat, that is where the fat goes to. The more sour your cream is the higher it is pasteurized. The more acid you have in the cream after it is pasteurized the more loss you have.

PROF. MORTENSON: The acidity changes the character of the curd. The casein is combined with the calcium salts in the milk, calcium casein. This Prof. Farrington might explain better. As the acid is produced you have eventually calcium free casein, as the acid combines with the calcium acid. When more acid develops it combines with the casein and forms what is known as sour milk curd. After the latter point has been reacted in cream we find that the loss of fat is less by pasteurization than when we are dealing with the other curd. We obtain the greatest loss when pasteurizing cream containing from .3 to .4% acid.

MR. H. H. WHITING: Don't you find that where you have real sour cream that by using the continuous pasteurizer and increasing the speed of it and heating it at a higher temperature you get better results?

PROF. MORTENSON: We are carrying on a series of experiments in pasteurization. We have at the present time close to 100 samples in cold storage, but we find that the highest scores we are getting are from cream that has been heated at about 145, and we are getting the lowest scores from cream that is heated by the flash heat up to 185. We are having chemical analyses made from all of those tubs. It looks to me that it is possible that the curd content will be different, that is what we are also watching. There is one thing I will say about pasteurized butter we have found that the pasteurized butter has a less pronounced cold storage flavor, so it shows that it has better keeping qualities.

MEMBER: Is it possible to develop a lactic acid flavor in butter without producing lactic acid?

PROF. MORTENSON: The starters we have worked with have produced lactic acid. I have not seen a single one that does not produce acid.

MR. E. ERICSSON, St. Paul: No, I have never found any. I am sure that the bacteria we want in butter produces lactic acid in pretty good amounts. Of course it would be a very good thing if we could get lactic acid bacteria without the acid. We don't want the acid, but we want the bacteria in the butter.

MR. P. MARTIN, Genoa: Isn't lactic acid a good thing in cream ripening?

PROF. MORTENSON: Yes.

MR. CHARLES E. MCNEILL, Chicago: Mr. Mortenson, what is this storage flavor you refer to in the butter?

PROF. MORTENSON: This is a flavor peculiar to storage butter, very little is known in reference to it. Some of the butter has a pronounced storage flavor two months after it has been left in storage. A good deal of butter manufactured from raw cream had a pronounced cold storage flavor.

MR. MCNEILL: That was not on the order of the fishy flavor at all?

PROF. MORTENSON: No, fishy flavor often develops in butter immediately after it has been made.

MR. E. L. ADERHOLD, Neenah: What percentage of bacteria are destroyed in pasteurization?

PROF. MORTENSON: I could not say. In accordance with the work that they have done in Denmark from 95 to 99 per cent of the bacteria are destroyed in the pasteurization of sweet cream. Now, notwithstanding that we have had such a high bacterial count in the sour cream, at the same time we destroyed by pasteurizing the sour cream from 96 to 99.99 of the bacteria present. The most of the bacteria we have in the sour cream are lactic acid bacteria. There are, however, many spore bearing bacteria that will remain active after being exposed to 185 degrees of heat.

MR. ADERHOLD: Take sweet cream that has been produced in a reasonably clean way, to what extent is that seeded with bacterial germs?

PROF. MORTENSON: You ought, by pasteurization, to reduce the count to two or three thousand.

MR. ADERHOLD: Do you think there will be less by washing the separator once a day instead of once every other day?

PROF. MORTENSON: This reminds me of a story. There was an old bachelor that was living on the Iowa dairy and he was cooking his own meals. He had a couple of plates, and in the morning he would use those plates, and at noon and in the evening without washing them, and the next day he would turn them over. A woman will never think of putting the same plates on the table more than once before they are cleaned. She would not, if she understands the relation between the two, think of using the separator twice without washing. She will never think of using without washing the separator in the morning that has been used in the evening for skimming the cream. I think this is a matter we can easily make plain to the farmers.

MR. H. H. WHITING, Cedarburg: How would you run the acid for storage butter?

MR. MORTENSON: I would not run the acid as high for storage butter as for butter that is to be sold soon. I would ripen 20% cream to .6% acidity when ripened for storage; to .7% acid if it has to be consumed immediately.

MR. WHITING: With 30% butter fat you would want it a little lower?

PROF. MORTENSON: Yes.

MR. WHITING: Have you had any experience with that oxidizing system?

PROF. MORTENSON: It didn't look good to me on the face of it so I left that for somebody else to work out. I don't pay as much attention to it as I used to. We have come to that point in Iowa where we can insist that the farmer improve the sour cream.

MR. ADERHOLD: I am very glad to hear that in Iowa they are washing their cream separators twice a day. It makes me feel encouraged. You know, I believe, if Mr. Mortenson were to call on a hundred dairymen in Iowa unexpectedly on a certain day that from one-third to two-thirds of these men would tell him that they just happened to skip washing on that day. (Laughter and applause.)

PROF. MORTENSON: I am an Iowa man and I have a whole lot more confidence in Iowa people. (Applause.)

MR. ADERHOLD: So far as I know the Wisconsin farmers are washing their separators twice a day.

PROF. MORTENSON: I believe that the Wisconsin farmers are. If I had more time I should certainly like to stay here for two weeks and visit the farmers and their wives. I believe that 95% of the Wisconsin people are washing their separators twice a day. When coming here last evening, I made up my mind that if I had to leave Iowa this is the state that is most like Iowa. (Laughter.) I have confidence in Iowa people and I have the same confidence in the Wisconsin brothers and sisters.

MR. M. H. MEYER, Madison: Especially the sisters.

MR. H. C. LARSON, Madison: I want to bring out one thought that Prof. Mortenson suggested in his address, and that is this, that if every buttermaker would bring it to the patron's attention and to the attention of his wife, to make the comparison of washing the dishes every time they are used, I think the separators would be washed every time they are used.

MR. GUY SPEIRS, Eau Claire: There is another point I would like to call to your attention. We hear a good deal about quality and you can't get the cream. We have used this year about 40,000 gallons of sweet cream and I don't have one bit of trouble in get-

ting all of the sweet cream I want when I pay three cents over the price of the sour cream. (Applause.)

SECRETARY BENKENDORF: I have a few things I want to call your attention to. You all know Mr. Wolff. He is down in Arkansas and he sends this telegram:

Camden, Ark., 2-18-12.

"Wisconsin Buttermakers' Association,
Green Bay, Wisconsin.

My sincere regret not being with you at this your annual meeting. Accept my best wishes for your future.

J. T. WOLFF."

I have a letter from Mr. Cannon, secretary of the Citizens' Business League, in which he says:

Milwaukee, Wis., February 2nd, 1912.

MR. G. H. BENKENDORF, Sec'y.,
Wisconsin Buttermakers' Ass'n.,
Madison, Wis.

Dear Sir:

The Citizens' Business League extends a cordial invitation to the Wisconsin Buttermakers' Association to hold its next convention in Milwaukee. We feel that from many points of view this invitation should appeal to you.

It is now a number of years, since your organization met at Milwaukee. We believe your members enjoy a trip to the metropolis from time to time. A city of the city of Milwaukee, has many attractive features, which are appreciated by the delegates to conventions. Within recent years, it has become the habit of many of the state organizations, to meet in Milwaukee annually.

Milwaukee has every accomodation and facility to care for your convention. Our hotel accomodations are ample and excellent. Our beautiful new Auditorium is an ideal structure for meeting and exhibit purposes. It has numerous small halls and committee rooms. Our hotels all have meeting halls, also.

We believe there is a strong sentiment among your membership, in favor of meeting here, and we hasten to assure you that

Milwaukee will be glad to provide all the requirements necessary, in the way of donation to the premium fund, free halls, etc., which your organization is in the habit of receiving.

Wishing you a successful convention, we are,

Yours very truly,

F. A. CANNON, Secretary.

Milwaukee, Wis., Feb. 7th, 1912.

G. H. BENKENDORF,

Sec., Wis. Buttermakers' Association, Beamont Hotel,
Greenbay, Wis.

Don't forget that Milwaukee wants you to meet here in 1913, you owe a return visit to the metropolis; we guarantee you usual contribution to premium fund and free hall for exhibit and meetings.

F. A. CANNON,

Sec'y., Citizens' Business League, Milwaukee, Wis.

According to the program it is necessary that all parties that want to be eligible to district prizes, register at the Secretary's office immediately after this meeting. If anybody has not registered, we shall be glad to have him do so.

The Chairman of the Entertainment Committee wishes me to announce that if any supply man has not been asked to contribute toward the entertainment they will be glad to meet him and accept a contribution. This donation will be printed in the annual report, and the part of the money refunded which is not used.

Mr. Dillon is making special arrangements for the ladies.

MR. BECKER: I move you that the letter of invitation extended by the Citizens' Business League of Milwaukee be not acted upon immediately, but that a referendum vote be taken so as to give your Executive Committee an idea where they are at. That the Secretary be instructed to receive his bids to hold the convention and to notify the members.

Which motion was duly seconded.

MR. C. TYLER, West Depere: That belongs entirely to the Executive Committee.

MR. H. C. LARSON, Madison: Mr. Tyler's statement that it belongs to the Executive Committee applied to the Executive Board, which is composed of the officers of the Association and the Executive Committee.

MR. BECKER: In making that motion I only want to get an idea where the boys want to go, and that is the only way you can have a successful convention.

THE CHAIRMAN: I believe that was most thoroughly thrashed out in Madison, and that is all left to our Executive Board.

MR. E. J. WHITMORE, Owatonna, Minn.: I think that with all the other buttermakers I received a card which asked us to indicate our choice for the convention, Green Bay or Milwaukee, and I believe all the other buttermakers got the same thing. I don't know who sent the cards out.

MR. BECKER: The idea of the motion is to give the Executive Committee an idea from the rank and file where they would like to go, then it gives them a chance to decide the best thing for the Association. For instance, if Madison was bidding for the convention and Milwaukee, we might send a letter out stating what the different cities were offering and then they could be guided by the majority, but it would give them an idea.

MR. C. O'DELL, Wild Rose: I would like to ask Prof. Benkendorf whether the majority wanted to go to Milwaukee?

SECRETARY BENKENDORF: The vote stood 180 votes in favor of Milwaukee and 160 votes, something like that, in favor of holding a winter meeting. But in looking over the votes there were quite a number of supply men and men not really buttermakers, who voted and some of the Executive Committee believed that it was according to the best judgment of the majority of the buttermakers that the vote was practically even. That is the way the matter stood. Personally I voted in favor of Milwaukee last October for the simple reason that I was guided by the 180 votes, but others of the Executive Committee voted in favor of the winter meeting because they thought the majority of the boys wanted the meeting held some time during the winter.

THE CHAIRMAN: Are you ready for the question. It is moved that a referendum vote be taken where to hold the next convention and the Secretary be instructed to get inquiries what cities want this convention so that each buttermaker may know what he is voting for. That is to guide the Executive Committee in selecting the next meeting place. Where the majority wants to go would naturally be the next meeting place.

Motion carried.

THE CHAIRMAN: The next on your program will be The Fat Standard of Butter, by H. R. Wright

THE BUTTERFAT STANDARD, SHALL IT BE 80 PER CENT OR 82.5 PER CENT?

By H. R. Wright, Des Moines, Ia.

MR. WRIGHT: I never did begin an address with an apology, but I am going to. This is not my usual speech. I have a speech that I have inflicted on Iowa, but that is not the one I have on hand today. I am going to read it. I hope you will give me some credit for some of the things I have left out. If you are expecting a lot of figures you are going to be disappointed. Everybody knows that the National Creamery Buttermakers' Association has a committee engaged in looking after this question. When that Association gets together again that committee will report, so that I am not attempting to determine the matter finally.

Just at this time the question of a butterfat standard is purely an academic one. We are not now required to commit ourselves irrevocably to any particular percentage, nor indeed to any butterfat standard at all. But we shall do well to discuss it nevertheless for the reason that we now face a situation in Congress with the oleomargarine people wholly in the ascendancy, and we may be called upon most any day to declare ourselves for or against some particular standard that they, the enemy, may try to force upon us. We cannot afford, under the circumstances, to differ widely among ourselves. We cannot afford to devote ourselves so closely to some family quarrel that we shall have no time to give attention to the wiles of the oleomargarine supporters. So we shall do well to get a few things on the subject of standard fairly well in mind.

This is not a question to be settled upon the basis of enthusiasm, nor can it be settled properly upon the basis of bickerings or strife. It is a business question and to be settled right must be settled by the application of our reasoning powers calmly applied to well known facts. With this thought in mind let us formulate statements of the facts upon which we are all of us practically agreed, whether we like the facts or not. I am sure that we must

H. R. WRIGHT

agree upon several things so closely that I shall not spend time trying to prove them, but will state them and proceed on the theory that they are facts and not fancies.

First. The only real standard now enforced in regard to butter, the only standard that up to this time has had any effect upon our making of butter is the standard that places a limit of 16% upon the water in butter. We now operate under that standard and have never operated under any other.

Second. In normally made butter, the salt and the casein usually aggregate about four per cent, though varying widely. It

therefore follows that a 16% water standard is consistent with an 80% fat standard. We have been, for all practical purposes, operating upon the basis of an 80% fat standard, for a number of years.

Third. All the constituents of butter are variable. None of them is wholly and mathematically under the control of even the best buttermaker, much less under the control of the average buttermaker. So that whatever the standard we cannot make butter that conforms to it absolutely and accurately.

Fourth. Various analyses of lots of butter usually show wide variations in its butterfat content, from 78% to 88% or more, but the average is usually not far from 82.5% fat.

Fifth. Since no one advocates a standard lower than 80% nor higher than 82.5%, this discussion should be confined to consideration of a possible standard within these limits.

Let us next consider the arguments,—there are only three of them,—that have been suggested by the advocates of an extreme standard.

These arguments are, briefly stated, that the consumer has a right to require us to furnish him butter containing 82.5% of butter fat; that a lower standard will give advantage to the centralizers; and that the higher standard is conducive to the making of the best quality of butter.

It is quite apparent that the consumer has some rights in the matter. But what is the basis of that right? There must be some reasonable basis why he may demand just 82.5% rather than 75% or 90%.

It seems to me that the consumer has a right to get under the name of butter, just what he always got under that name. If we sell him a product as butter which only contains 60% of fat, he has a right to object because that is not what we have taught him to think of as butter, it is not what we have heretofore sold him as butter. But if we sell him butter on the first day of February and all the other days of February, and upon analysis of the 28 samples it is found that they vary in butterfat, he cannot object to that because he never did get butter that was all alike. If the analyses show that the variation is from 79% or 80% up, he can-

not object to that on the theory that we are now selling him something different than we sold him in 1907 or 1900 or 1890. On the other hand he certainly would have the right to object if we sold him butter that contained only 60% or 70% or 75% of fat, because we have by years of commerce established the meaning of the word butter as something that contained more butterfat than the percentages just suggested. When the buyer says, "Send me a pound of butter," "Deliver a hundred tubs of butter at my store," or "We use butter at our house," he means, if he means anything at all, that he wants what he has heretofore been getting, that is, a variable product and above a certain limit. What sort of a product is he talking about this year? What sort of a product did he want last year or ten or twenty years back? What sort of a product does he demand if he lives in a butter importing nation? What is butter, anyway, in regard to its butterfat? If there is a legally enacted standard we must conform to it, of course, and the only standard that any butter importing nation has is an 80% butterfat standard. That's what butter is in England and Europe generally. It is true that the buyer of butter has given little attention to the butterfat in butter. That's not because he has been densely ignorant, but because he was satisfied. He buys butter to suit his taste and smell and sight. He has been suited with what he has been getting not only in butter but in some other variable products. He buys potatoes and vegetables and fresh meat, well knowing that they vary in solids without the possibility of the interference of human agencies. He buys such relishes as radishes and celery, and he buys such manufactured articles as catsup and chili sauce, well knowing that they are mostly water and not very valuable as food and that the manufactured articles are just about what the maker desires them to be. He buys such manufactured articles as flour and bakery products in which the water content, and hence the percentage of solids, is well under control, and he well knows that they vary in solids and in nutritive elements. So that whether he buys our variable product for its nutritive properties alone, or whether he buys it wholly as a relish, as some contend, or whether he buys it as a food and a relish both, he does buy it just as he buys most everything else that he eats, well knowing that within

rather narrow limits it is variable, and he is not at all deceived or cheated or defrauded by the fact. The theory that we have lately been stealing 2.5 parts out of 82.5 parts from our butter arises within our own ranks and is without foundation in the history of our business. It is without foundation in the minds of those of our enemies who would be most glad to see us in trouble, and it is without foundation in the minds of the lawmakers of butter importing nations, who acting perhaps wholly from the standpoint of the buyer of butter and not at all from the viewpoint of the seller of butter, have established a minimum butterfat standard of 80%.

We shall not therefore establish our standard upon the basis that the consumer has a right to now increase the butterfat in butter because no such right exists.

It has also been alleged that we ought not to "play into the hands of the centralizers" by a standard lower than 82.5%. After seven or eight years under the 16% water standard, which is at least no more severe than an 80% fat standard, we shall vary far from the truth if we still say that the centralizers have been shown to have any advantage that has enabled them to overcome the local creameries. None of the disasters prophesied have happened in the last five years. We shall not therefore establish our standard on the theory of preventing one system from having an advantage, nor on the theory of giving the local creameries the advantage, because we cannot do so even if we would.

It has also been urged that a high fat standard is "conducive to the making of the best quality of butter." It was said that butter with more than 13 or 14 per cent of water could not have a good body and that it would not keep in storage. Our judges used to say that the butter had too much water or too little water, but we now know that what they found was a fault in workmanship only, and that no man can at all tell how much water is in butter by the use of the senses. You have only to read the scores and analyses of your last years' scoring contest to see that the "best quality of butter" is frequently made with much less than 82.5% of butterfat. Whatever may be the facts in regard to alleged butter with 60% or 70% of fat, time and experience have shown that within the limits of 80% to 82.5% fat, the water and the fat content have

little or nothing to do with the quality of the butter that is made by a competent buttermaker.

It therefore follows that whatever the standard within the limits of 80% to 82.5%, we shall not violate any right of the consumer, we shall not give an advantage or otherwise to the centralizer, and that we shall not alter the quality of our butter.

A standard enacted into law is for the sole and only purpose of prosecution. Its enactment, and even its suggestion, means that somebody ought to be punished and that somebody else ought to punish him. Punishment and prosecution are words that presuppose some crime, some violation of the rights of others, some infraction of law. Fines and imprisonment are the proper portion of the lawbreaker. The sole reason for a butter standard is because some of our number have in days gone by cheated the buyers of our product by furnishing them, under the name of butter, a mixture loaded with salt and water beyond the natural limits of variation. We now need a standard to restrain by prosecution and punishment that extremely small number of us who deserve and require restraint. That's the sole and only basis for our standard, and if you answer the question "Who ought to be prosecuted?" you will set the butterfat standard upon the only sound and a reasonable basis.

On January 1, 1907, the national food law went into effect. There existed certain food standards, the exact legal effect of which has always been questioned, and among them was an 82.5% butterfat standard for butter. Just about this time an Illinois Station Bulletin which dealt with Wisconsin butter was quoted to the effect that 75% of the creameries in Wisconsin were complying with that standard. Later a still wider investigation was said to show like results. It did not seem to me then and it does not now that the other 25% of the buttermakers of Wisconsin were criminals, but if they were it did not seem to me to be a very startling basis for congratulation. I did not think then and I do not believe now that 25 per cent of the buttermakers of this State were willfully cheating the consumers of butter. But if you were, I think it can be shown that crime is on the increase in Wisconsin. Read the scores and analyses of your December scoring contest.

Nine exhibits had from 15% to 16.2% of water; 17 had from 14% to 15% of water, 7 had from 13.6% to 14%. That is to say that 33 out of 58 exhibits had a greater amount of water than is consistant with an 82.5% standard. Of this number 21, or 36 per cent of the whole number actually had less than 82.5% of fat and the makers of these exhibits were theoretically law breakers. So that in four or five years the number of our buttermakers that are violators of the 82.5% standard has apparently increased from 25 per cent to 36 per cent. I was afraid to compare the analyses of these same buttermakers for the other months for fear that I should find that still others had violated the law last spring and last summer, and that some of you were habitual criminals in violating the 82.5% standard.

Now that's where we stand under the 82.5% standard. That's where we'll all get to under that 82.5% standard when it is actually enforced. We are not violating any right of the consumer, we are still giving him what he has always received, but because some lawmakers have been over eager and anxious we find that from one-fourth to one-third of us on any given date ought to eb punished, ought to be fined, ought to be put in jail. We must wake from that dreamy repose in which we have been so long. We must quit throwing bouquets at ourselves long enough to find out that a food standard is not a perfumed flower bedecked generality, that it is not a mere high sounding definition of average butter, but that when it is put on the statute books it will be a *law* with good sharp teeth that will unpleasantly affect the unfortunate who gets into its clutches.

There have been those who strenuously contend also for an 81% standard, largely on the theory that good butter cannot be made with less fat than 81%. I do not believe that the facts warrant any such conclusion, but even if they did, we should still have a standard less than 81% for the reason that the sampling and analysis of butter is not done perhaps, cannot be done with assolute exactness. There is a constant element of error in both processes and these errors on the part of the executive of the law ought not to be charged against the maker of the butter. This margin of error amounts to a half per cent or more and hence the nominal

standard ought to be that much less than the real minimum aimed at. If this be not so then the maker of butter who thinks he is barely above the standard will find that some other analyst places his product quite a little below the real standard and that he is a criminal.

Whatever the standard, the buttermaker will have to work at least a half per cent above the nominal standard in order to be safe from the unavoidable error of even the capable inspector who takes the sample and the competent chemist who might make the analysis upon which the prosecution is to be based.

We have heard a good deal about uniformity in food laws in this country and it is alleged to be desirable to have such uniformity. I'm not much impressed with the authority of what other people have done or said unless I can see some good reasoning back of their statement or their action. I am not much impressed with a butterfat standard enacted by the states of Nevada or Florida because I don't think they are or can be authorities upon the subject of butter. But if we are to have uniformity in buttermaking and if we are to effect that result by fixing a minimum butterfat standard, then we shall do well to make our standard like that of the butter importing nations whose market we hope some day to supply. We shall do well to offset the action of the great butter producing state of Wisconsin by the action of the great butter producing states of Minnesota and Iowa, both of which states have an 80% butterfat standard. Our proposed 80% standard violates no right of the consumer and it is liberal enough so that the creamery buttermaker who is reasonably careful can keep inside of it. It is liberal enough so that the *farm butter* maker will probably not be unduly oppressed by it. Such a standard corresponds to the standard of England and other butter importing peoples and it is for all practical purposes the standard upon which all American butter is now made without a single exception. It is a standard to which no one ever yet objected in any serious fashion. It is a standard that is suitable for purposes of prosecutions. To establish a higher standard will result in numerous prosecutions and penalties inflicted upon those whose worst offense will be inability to know what they are doing and who will be wholly innocent of any in-

tentional wrong doing. When proper apparatus is invented for the quick and reasonably accurate determination of the fat content of butter, let us then establish by law both in all our States and at Washington an 80% fat standard for butter and then let our food authorities everywhere enforce it to the letter. Then we shall be able to say to the world that we are making butter on the *world* standard, that it is made by buttermakers that have to be competent to a large degree in order to escape prosecution, and we shall gain the credit that comes to the business man who operates his industry upon a sound, reasonable, practical and practicable business basis. (Applause.)

DISCUSSION.

THE CHAIRMAN: You have heard this paper. Now we will spend a few minutes in discussion, if there are any questions you would like to ask.

MR. J. G. MOORE, Madison: Do I understand you that the states of Minnesota and Iowa have a butterfat standard law?

MR. WRIGHT: They have an 80 per cent fat standard. That is true in regard to Iowa, and I am pretty sure it is in regard to Minnesota. Somebody told me the other day that Minnesota had a 16 per cent water standard. I am claiming that they are about the same thing. Still my statement may not be absolutely correct, yet it is to all intents and purposes.

MR. H. J. CREDICOTT, Chicago: I would like to ask Mr. Wright how he would test this butter to get the most accurate results.

MR. WRIGHT: I doubt some whether there is any system for testing butter for butterfat. It should be in the hands of the buttermakers in the creamery.

I started in by saying this is wholly an academic question. We ought to discuss it. Your chairman suggested in his opening address yesterday morning that the matter ought to be investigated by the buttermakers. That is the best suggestion that has been made on the subject. I have no doubt that some of the scientific gentlemen are working on the subject. The only thing that I know of other than the chemical analysis is the butterfat standard bill. That could be improved upon.

MR. A. J. GLOVER, Ft. Atkinson: What is the Dairy Division at Washington doing to determine what the butterfat standard of butter should be?

MR. WRIGHT: I don't know, Mr. Glover.

MR. GLOVER: You know, Mr. Webster had collected the analyses of several thousand samples.

MR. WRIGHT: In the spring of 1907 Mr. Webster was then the chief of the Dairy Division, and some of us in Iowa were seeking to have the Iowa legislature enact an 80 per cent standard in butter. Incident to that I had a correspondence with Mr. Webster on the making of butter and the fat standard. At any rate this was the trend of the story. You remember Mr. Gray who invented the "Gray's Moisture Test." Mr. Webster's story was that Gray, at that time in the employ of the department, put in a very considerable amount of time experimenting with different methods of draining butter, and he claimed that Gray had found it impossible to incorporate 20 per cent of water, with the single exception of working the butter and water, but any other system that Gray knew of would not incorporate more than 15 per cent of water, and the conclusion to which Mr. Webster arrived was that we should have an 81 per cent standard. There may be something to that. I am not a buttermaker, but still I have had some scores this summer, and especially that to which you gave the highest score in this state.

MR. THOMAS CORNELIUSON, Washington: For the information of the members of Wisconsin Buttermakers' Association I wish to state that the Department of Agriculture, the Dairy Division, has conducted some investigations during the last year for the purpose of learning the composition of American creamery butter as it is found on the market and as it is made under average, every day conditions in the creameries, and agents or inspectors representing the department have during the past year collected samples in nearly every dairy state in the United States. About 600 samples collected under these conditions have been analyzed and the result of these analyses has been compiled, but not yet published. It will not be so very long, I hope, before we shall have

this material ready, which possibly may throw some light on this subject we now have under discussion.

MR. WRIGHT: Mr. Corneliuson, may I inquire whether those samples which you refer to have been collected at the creamery.

MR. CORNELIUSON: They were taken out of the churn, direct out of the churn, some of them taken from butter one or two days old. It is not always that they had butter on hand, so it was taken from the churn.

MR. WRIGHT: Have any samples been taken from butter as it goes on the market?

MR. CORNELIUSON: Yes, we have taken quite a large number of samples on the market,—that is on the Chicago and New York market. Mr. Fryhofer has analyzed a considerable number of samples and he has also tested a large number for moisture and the same is true for our Chicago office. I regret to say that I have not the results ready to state here. The findings as to this were that it was not at variance with ordinary results found by butter investigators.

MR. WRIGHT: Still the result of that investigation will be very valuable because it has been done more carefully than the ordinary investigation, and I am glad to know that the Government has undertaken it. It occurs to me that that will be the most valuable work that has been done on the subject.

MR. H. J. CREDICOTT, Chicago: At the time I was an inspector in the division under Prof. Webster we gave the matter a great deal of thought and study. I tested several hundred samples taken in the Chicago market as the butter came in, to determine what the average content of moisture was. We decided on the basis of that and the work done by Mr. Carr that an 81% standard was fair. I do not know what position Mr. Carr now takes, but I have changed my mind. I will tell you why. We didn't take into consideration at that time the extreme difficulty of securing an average sample that would show the actual fat content, and we did not take into consideration the fact that those samples which would be taken by the ordinary food inspectors or the inspectors of the Internal Revenue of the United States might be taken in many cases wrongly, so that the reasonable variation might be exceeded

very greatly. As a matter of fact that thing as worked out established, I believe, that many creameries of this country have been prosecuted and fined heavily when there was not excess moisture in their butter. The trouble comes in in the sampling of the butter, and if you are going to have a standard that runs up the minimum of the butter you are going to be in hot water all the time. For that reason I have changed my mind from the 81% standard.

MR. WRIGHT: Just when was this analysis made?

MR. CREDICOTT: That was about four years ago.

MR. WRIGHT: The point I want to make is this. You learned at that time that you could not take samples twice alike, and for that reason I am a little unwilling to accept analyses that were made years ago. The chemist, I think, was accurate, but I am not willing to accept the sampling of that butter. You remember ten or twelve years ago that Mr. Alvord was in the Department and they made some tests. I happened to know the chemist that did that work. He said to me, more or less publically, that those analyses were not worth a continental. While he was willing to say that the butter that he analysed, that the figures on that were correct, he was very free to say that so far as representing the butter made in the creamery, that it was wholly unreliable.

MR. CREDICOTT: How did it happen that Wisconsin had an 82½% moisture law?

MR. WRIGHT: The legislature enacted that.

MR. CREDICOTT: Who asked them to do that?

MR. J. Q. EMERY: May I answer that question? At the convention at Wausau the standard was brought forward by your secretary and urged upon you, and in that discussion it was pointed out by practically every speaker that they didn't know how to make butter to compete with the centralizers, and that the local creameries of Wisconsin would suffer a great injustice if the standard fat was lowered below 82½%, that it would wrong the Wisconsin creameries. They didn't know how to do this work. This Association passed a resolution and demanded that a standard be adopted, and in response to that a bill was brought before the Wisconsin Legislature wherein the standard of the United States was

proposed which standard was adopted in harmony with the vote of this body and in response to the request and demand of this Association, and that resolution stands upon your records. That is the history of the 82½% butter standard.

Mr. J. G. MOORE, Madison: My recollection is very clear that no one, least of all myself, had any idea of advocating for the protection of Wisconsin creameries a state law for 82½% fat outside of the state. We do not sell the bulk of our Wisconsin butter inside the state. Mr. Wright, I believe, was one of those who went down to Washington to get Secretary Wilson not to enforce the law, if it is a law, making butter 82½% fat. The centralizers at that time were the only people who were in a position to know what they were doing with their butter. The local creameries had no means of knowing what was in their butter. The big centralizers are doing enough business to hire chemists. In the years that have passed since the Wausau convention conditions have changed. We know better now. We know more then we did then. Every creamery in Wisconsin either has or can with very little expense get someone to test their butter for moisture and fat and salt, and we don't care what the standard is as long as we are on the same basis as the other fellow. I think the Wisconsin buttermakers can hold their end up with anybody. I would like to know who get the high price of butter. The 82½% standard law for Wisconsin is an injury to the Wisconsin buttermakers as I see it. Mr. Green said that in his opinion and in the opinion of the creamery men in that part of the state might just as well shut up because the fellows on the other side of the water could make butter with 80%. (Applause.)

MR. J. Q. EMERY: I would like to say one thing more, and that is that we ought not to lose sight of the fact that whereas you put up a certain action here four or five years ago, it is true that we do know more than we did then. Mr. Credicott has found out something since then and so have the rest of us, and in view of that increased knowledge perhaps it would not be impossible to do the thing in a little bit different way.

MR. A. J. GLOVER, Ft. Atkinson: I was one of the members of that Resolution Committee. At that time we acted on our best

judgment. It was my judgment at that time that we ought to have an 82½% fat standard, and I think I can remember why. Prof. Harry Snyder and Dr. Babcock have said that the average butter contains 85% of fat. My experience as an inspector taught me that it was not safe to have a standard right up to the limit and we thought that a standard requiring 2½% less fat than the average fat content of butter would be enough to protect all honest buttermakers. I never have and I do not now believe that we should incorporate water into butter just for the sake of increasing its weight. I believe it is just as dishonest to put water into butter for increasing the yield as it is to sell oleomargarine as butter or to incorporate oleomargarine in butter and then sell the product as butter. On the other hand if it is necessary to make a standard 75% fat in order to protect honest manufacturers of butter, then I am in favor of the 75% standard. Our increased knowledge leads me to believe that the 80% fat standard would be fair to all and afford ample protection to honest manufacturers of butter. I am not concerned about the big creameries, for they are capable of looking after themselves, but I am concerned about the smaller creameries that are not in position to do as exacting work as the larger concerns. Persons operating a home dairy are more likely to feel the clutches of the law than the creamery, especially if the present method of enforcing the law is continued. When the resolution in question was passed I believed the 82½% fat standard was correct, but experiences since then lead me to believe that an 80% fat standard would be better. I still think that butter should contain 82½ per cent fat, but to protect the manufacturers from prosecution for unintentional incorporation of water, and believing too, that the standard must, for the sake of justice, be a little below the average fat content of butter, I now favor the 80 per cent fat standard. We are really operating under a lower fat standard than this, and it would be better to have an 80 per cent fat standard than a 16 per cent water ruling. (Applause.)

REPORT OF RESOLUTION COMMITTEE.

THE CHAIRMAN: The next will be the report of the Resolution Committee:

MR. ALLEN CARSWELL, Clear Lake: Mr. Chairman, Ladies and Gentlemen and Members of the Wisconsin Buttermakers' Association: We the Committee on Resolutions have drawn up the following resolutions, but as I came in the room I heard the finishing up of the discussion on the butterfat standard. We have not drawn up any resolution on that. It is up to you to draw that.

The resolutions were read as follows:

Whereas, We the Wisconsin Buttermakers' Association assembled in this, our eleventh annual convention, appreciate the kindness of the citizens of Green Bay in their entertainment and the kind assistance given our officers and the cordial reception they have extended to us, and

Whereas, the Elks Club has so kindly placed their luxurious Club rooms at our disposal,

Therefore, be it resolved that we extend to the above mentioned our sincere and heartfelt thanks of the Wisconsin Buttermakers' Association.

Whereas, Mr. S. A. Cook, of Neenah, Wisconsin, has again shown his great interest in our association by his most generous contribution of the First, Second and Third Prizes given by our Association.

Whereas, the supply houses, butter firms and transportation companies who by their liberal contributions to our General Fund have shown their appreciation of our organization, and

Whereas, the personal representatives of the above firms in attendance at our convention have labored unceasingly to make our convention a great success, both educationally and socially,

Therefore, be it resolved, that as members of this association, we greatly appreciate the efforts and all assistance rendered us by the above named, and tender to one and all our sincere thanks.

Whereas, it is reported that the Committee on Agriculture of the House of Representatives have under consideration the so-called Lever Bill, H. R. 18493; and

Whereas, under the terms of the said bill, H. R. 18493, the name of the article now recognized by national and state laws as oleomargarine is changed to that of margarine; and

Whereas, Section 13 of said Lever Bill, H. R. 18493, is so

designedly framed as to repeal the present provision of the national oleomargarine law, that "upon the arrival within the limits of any state or territory or the District of Columbia of any oleomargarine manufactured in any other state it shall be subject to the operation and effect of the laws of such state or territory or the District of Columbia, enacted in the exercise of its police powers to the same extent and in the same manner as though such articles or substances had been produced in such state or territory or the District of Columbia, and shall not be exempt therefrom by reason of being introduced therein in original packages or otherwise"; and

Whereas, by the provisions in Section 4 of said Lever Bill, H. R. 18493, as to original packages, if the same shall become a national law and held to be constitutional, anyone may sell oleomargarine, no matter how dishonestly colored, all he pleases, irrespective of any state law; and

Whereas, by the provisions of said Lever Bill, H. R. 18493, proof is required, as a condition for imposing the penalty for violation of the terms of the law, that the violation was "knowingly" or "wilfully" done, concerning which kind of legislation the New York Court of Appeals has, as we believe, correctly declared:

> "Experience has taught the lesson that repressive measures which depend for their efficiency upon the proof of the dealer's knowledge and of his intent to deceive and defraud, are of little use and rarely accomplish their purpose. Such an emergency may justify legislation which throws upon the seller the entire responsibility for the purity and soundness of what he sells and compel him to know and be certain."

Whereas, the said Lever Bill, H. R. 18493, by its provisions not only condones the essential element of fraud in oleomargarine, to-wit, the color of butter, but compels the states also to condone the same fraud; and

Whereas, under the provisions of the present national oleomargarine law, and of the oleomargarine law of the State of Wisconsin as interpreted by the Wisconsin Supreme Court and as enforced by the State Dairy and Food Department, fraud in the sale of oleomargarine is practically eliminated and the consumer who wishes for honest butter is able to procure the same, and the con-

sumer who wishes for oleomargarine can procure that article under its own name and in its own natural color; therefore,

Resolved, that the Wisconsin Buttermakers' Association, assembled at its eleventh annual session at Green Bay, denounces the said Lever Bill, H. R. 18493, as a protection of, rather than as a protection against, the fraud in the manufacture and sale of oleomargarine and protests against the enactment of said bill into law, or of any other bill of like character;

Resolved, that the changing of the name of oleomargarine to that of margarine, as proposed in the said Lever Bill, H. R. 18493, if the bill is enacted into law, will, as it is plainly intended, disrupt the present state oleomargarine law or compel long and costly litigation;

Resolved, that experience in the enactment and enforcement of oleomargarine laws has taught that the essential element which makes of oleomargarine a deceitful and fraudulent imitation is resemblance to yellow butter, which element of fraud the Lever Bill, H. R. 18493, designedly protects by providing that it may masquerade in the color of genuine butter;

Resolved, That the United States senators and members of the House of Representatives from the State of Wisconsin be and hereby are most urgently requested to work and vote against the passage of the said Lever Bill H. R. 18493, or against any other bill containing like provisions;

Resolved, that the secretary of this association be instructed to furnish forthwith a copy of these preambles and resolutions to each United States senator and each member of the House of Representatives from the State of Wisconsin.

Resolved, that we recognize the fact that there are 10,000,000 acres of undeveloped agricultural lands in Wisconsin, practically all of which is eminently adapted for dairying, and we therefore endorse the purpose of the Wisconsin Advancement Association in securing settlers for these lands and extend our thanks for the publicity which the association is giving to the dairy interests of the state.

Whereas, the Wisconsin Buttermakers' Association appreciates the great benefits the dairy industry is deriving from the efforts of

the agricultural department of the State University, the State Dairy and Food Department and the Bureau of Animal Industry at Washington, D. C.,

Therefore, be it resolved that this association through its officers and individual members will do all in their power to further the efforts of the above named State and National institutions.

Whereas, the members of the Wisconsin Buttermakers' Association believe that the National Creamery Buttermakers' Association could be made of even more use and value to the butter making industry of the country by taking a still more active and persistent part in all questions effecting the dairy industry, such as oleomargarine legislation, the freight rates on butter and other transportation problems and in fact by looking out for complaints that may arise from any creamery in the United States, concerning the non-enforcement of any dairy law, and

Whereas, we believe that under the present system the compensation of the secretary of the N. C. B. A. is not such that he can devote any large part of his time to the work, therefore be it

Resolved, that we recommend to the executive committee of the N. C. B. A. that they hire at a suitable salary, the best and most efficient man available to devote his whole time to the work suggested in the preamble of this resolution, under the direction of the executive committee.

Whereas, our retiring officers, S. B. Cook and J. G. Moore, who have so ably filled the positions of President and Member of the Executive Committee and have devoted their time so unselfishly to the great benefit of our Association,

Therefore be it resolved that we extend to them our sincere and hearty thanks.

And it is further resolved that we extend our thanks to the Dairy Press of this and adjoining states for their liberal and prominent advertising.

All of which is respectfully submitted by your committee.

ALLEN CARSWELL.
JOHN F. MAGRANE.
W. F. CONWAY.

MR. H. C. LARSON, Madison: I move that the resolutions be adopted as read.

Which motion was duly seconded and carried.

MR. J. G. MOORE, Madison: I have been asked to read this notice: "The ladies of the convention are requested to meet at the Beaumont Hotel at 7:30 this evening. Entertainment for the evening will be provided, and it is hoped all the ladies will be present."

MR. LARSON: I have just a request to make lest it be forgotten before the meeting closes. Your committee as appointed yesterday to revise the By-laws request that every buttermaker send in suggestions or changes or additions, such as he may see and consider important, to that Committee, either to the chairman or any member of the committee, that they may have something to act upon.

THE CHAIRMAN: The next on the program will be an address on

GRADING CREAM.

By Mr. E. C. Dodge.

MR. DODGE: Fellow citizens: It is very gratifying to me that you have heard Prof. Mortenson this afternoon before my feeble attempt on the subject. This is a subject that I have had to take second hand, not being an active buttermaker myself, and I have picked this up in talking with the buttermakers, managers, etc., and I was also glad to hear Mr. Wright. I used to make butter long before the flood—the Johnstown flood. When the pipette test first came out, I think, I was the first in Jefferson County to adopt it. I started in on the 22 per cent pipette test. I worked on that for fully a year before I got down to the 17.6 c. c. pipette. When I started the neighbors came to me and all said that I was going to upset the whole community and that the pipette test would never be adopted, but it is and it has worked very successfully. I am just as strong a believer today that the grading of cream will be adopted and then it will be sold on its merits.

Our worthy Secretary has asked me to read a paper on the subject of grading cream. My knowledge is so very limited it seems greatly out of place for me to undertake to handle this subject properly.

Tradition tells us how the old time country merchant tried to grade butter and did it by paying the customers who made the poor butter the same price as those who made good butter. This,

E. C. DODGE

to my mind, is the way the average creamery man is grading cream. Since the birth of the centralizers and the predominance of the hand separator we have seen the grade of our butter gradually dropping back but we knew our neighbors were in the same boat, and you know, misery loves company. So it went on until we came to the conclusion that the trade would take anything, but the time finally came when the trade overloaded themselves with too much of this class of goods. The creamery man had to either take such prices as could be obtained for inferior goods or resort to such

other measures as would produce satisfactory results. Therefore, some of us at last awakened to the fact when it commenced to cut into our pocketbooks. After figuring profit and loss a couple of months and finding the balance on the wrong side of the ledger, we held a council of war and decided to start a compaign on the producers, which is about as follows:

We started out about September 15th by writing to our patrons and telling them that we were going to start grading in a couple of weeks as per circular letters which were sent to everyone. We told them we would establish three grades,—Special, Sweet or nearly sweet, No. 1, Old, stale cream, No. 2, with a difference of four cents. We lost some patrons, probably twenty-five per cent on the start, but we are getting a much better grade of cream and intend to keep on grading though we may have to modify the system somewhat. We never shall go back to the flat price for all cream unless the patrons become sufficiently educated to produce all good cream. If a patron had a lot of poor cream we did not cut him the first time but wrote him a nice letter telling him how to better his cream, etc. If I were to do it over I would not send out the letters before starting, especially to those who have good cream.

I think the grading of cream is bound to come and those who do not grade will be forced to either buy cheap or else take their chances on poor cream. The grading proposition seems to appeal to the farmers as the only correct system.

We took this up with a good many of the farmers and they seemed to think if we didn't grade the cream there was no incentive to produce a better grade of cream, so that those we talked with weer in favor of grading the cream. Of course, they all imagine their cream is good and don't like to get less than the highest price. Our system of having the second grade called No. 1 helps out on the score and if patrons are handled right there is not much trouble. In fact, everything has run nicely with us so far excepting our first announcement that we would start grading. This had the effect of scaring some and possibly angering some on the start. Some of those who dropped out at first have been coming back. On our routes we are going to adopt the system of hav-

ing special cans for the poor grade and will grade it at the creamery as we think it would be impossible to get a driver to grade properly. Of course, the sample might answer to a certain extent, but it is not enough to give a real good chance for grading.

The benefits of grading are worth many times their cost, loss of business counted in, and by proper methods very little loss of business need be sustained. Like everything else, it all depends on the man at the gun and the local circumstances. We will know more about it in a year's time, but one thing is sure, we must grade carefully.

We started in September, and since that time we would naturally get a better grade of cream than we would during the summer, but we have discovered that very little of our cream that we have taken in these factories comes in sour; most of it comes in sweet. The farmers who bring in the cream themselves find out that this extra three or four cents for the best quality of cream over the very poor pays to bring it in sweet.

I believe that the grading business will never be worked out entirely satisfactorily until by law, but until there is some legislation on this subject, each creamery must work out its own salvation by careful, conscientious, kindly educational work, by paying a good price for good cream and a poor price for the poor cream. You will see that when you begin to touch the farmers' pocketbook he will soon sit up and take notice.

DISCUSSION.

THE CHAIRMAN: We will take up a little time in the discussion of this subject.

MEMBER: I would like to ask Mr. Dodge what price he pays for the best?

MR. DODGE: We pay from one to three cents above for the best grade.

MEMBER: How often do you gather the cream?

MR. DODGE: During the winter seasons every third day and during the summer seasons every day.

MEMBER: I would like to ask Mr. Dodge, what system or method he uses to determine the grade of the cream?

MR. DODGE: Not being a chemist on milk and cream we use about the same method probably as the ordinary commission man does in scoring his butter; we use the taste and smell. In some particular milk that we take for starter we buy on the alkali test, but the cream is all graded by the sense of smell and taste.

MR. GUY SPEIRS, Eau Claire: I would like to ask Mr. Dodge how he handles it on the cream wagons, if he has any?

MR. DODGE: The grading so far has been done by the hauler, but this spring we intend to have it done at the creamery, and when there is any cream that the hauler doesn't consider that he can accept, we expect to have it put in other cans and graded at the creamery.

MR. SPEIRS: Can you keep those cans of cream separate?

MR. DODGE: We don't expect that we are going to have a great many of them.

MR. SPEIRS: We started out that way, to put the different quality of cream in different cans. I can tell you that the women folks hate to see their cream going into the poor cream can. From carrying four cans we have got down to one can, and I hope to see that done away with entirely.

PROF. MORTENSON: The way that we used to handle that on a good many of our routes where we were paying on a quality basis, we used to have an acid test system. We used to make an acid test right before the lady, and it is a good object to the lady. She is going to have her cream put into the right can before she gets through with it. We used Prof. Farrington's tablets. Any one of our drivers could do it successfully. The driver will come out and get his little dipper and he will take a dipperful of the cream and a dipperful of the solution. He will say to the lady, "This is some stuff they sent along with me from the creamery just to indicate whether your cream is sweet or not. If this is pink after we have mixed those two together your cream is sweet, but if it is white it is sour." The lady would say, "No, I think it is sweet." Then he will say, "Have you got some of your morning's milk or morning's cream?" "Yes." She finds that that is pink. "Next time," he tells her, "have a sample from each milking and cool it

and we are going to see how many of those samples are sweet when I get back." I found that that system will actually work. It is now five years since we started on the Pacific Coast and actually put our routes on that basis. You can understand that we can have a can of sweet milk with a few undesirable flavors. It only needs a word or two to those people in a nice way and they will realize it and will do what is right.

Then there is another way and that is the separate can. Then another way, and that is the individual can system.

Then there is one thing for us to consider. When the cream is turned over to you by the producer, if they are turning this cream over to you sweet on the route it is up to you also to bring that cream into the creamery sweet, and for that reason it seems to me the only reasonable way of looking at it is to pass on it right at the doors. You can put a big blanket at the bottom of the wagon, or canvas, throw a few pails of water over that canvas and then another canvas and soak that with water. Then every hour or two wet those blankets again. The evaporation from those blankets will protect the cream and it will be fully as cold as it was when received by you. (Applause.)

MR. F. W. KELLEY, Milwaukee: I would like to ask if Mr. Dodge makes any allowance for the butterfat content.

MR. DODGE: No.

MR. A. H. JENKS, Loyal: I would like to say a few things regarding grading cream. Most of our patrons were keeping their cans in water. Most of them had tanks where the top of the cans were out of water, and some of them were submerged. We made an investigation of our cream,—I was doing some gathering myself at that time, and I put the sweet cream in one can and the sour cream in another, and churning those separately I found that the butter from my sour cream was better than that from my sweet cream, because the cans of the sweet cream were in the hands of the submerging patrons and they chucked them into the water before the cream was cooled at all and it had an animal flavor. We found that it was a fact throughout our route that those flavors were carried into sweet cream because those cans had been sub-

merged. One patron hadn't a tank and he was feeling that he was somewhat handicapped for keeping his cream. I suggested to him that he sink a tub in the ground on the north side of his house and cool his cream well and then set it in that tub in that shady spot. I noticed throughout the summer I got as good cream from him as from any of my other patrons.

MR. C. E. HART, Milwaukee: About a year ago I read a paper on artificial refrigeration and in that I incorporated a system that the East Indians use for cooling water. It is simply a wet canvas hung up. I think instead of using a blanket a cheaper method would be to use some burlap sacks, rinse them out, dampen them and putting them over the cream cans.

MR. SPEIRS: Sometimes in hot, dry weather we get pinched for sweet cream for the ice cream and we have to send the wagon out into the country for ten miles. They use ordinary raiload shipping cans. We take the sack that our rock salt come in, wrap it around the can and keep that wet, and we never yet had sour cream come in.

THE CHAIRMAN: There will be nothing more than the "mixer" here tonight, but we have some good subjects on tomorrow, so try to be here at 9:30.

Meeting adjourned.

FRIDAY MORNING SESSION.

Meeting called to order by Vice-President Bowar, who presided.

CHAIRMAN: The first on the program is the Marketing of Butter, by Prof. Farrington. (No response.)

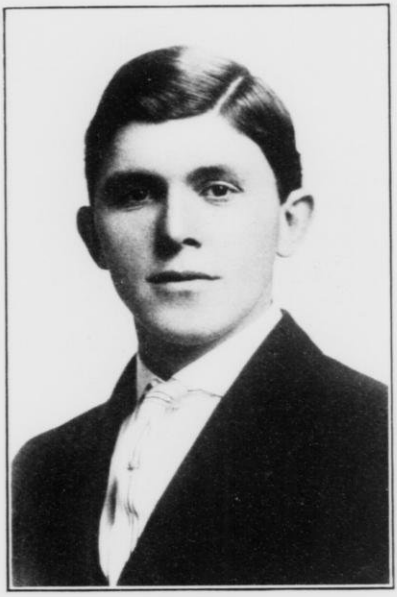
CHAIRMAN: The next is a resolution in regard to the revision of the by-laws of this Association. That was read yesterday and I think it ought to be acted on this morning the first thing. (No response.)

CHAIRMAN: The next is The Little Things and the Little Neglects, by M. K. Brunner of Ft. Atkinson, Wisconsin.

LITTLE THINGS AND LITTLE NEGLECTS.

By Mr. M. K. Brunner.

MR. BRUNNER: Fellow Buttermakers and Dairymen: When Prof. Benkendorf asked me to take part in this program, at first I thought it was a pretty good thing, but on second thought I decided it was a pretty hard thing to find something to interest a lot of fellows who know more than I do about buttermaking. Prof.



M. K. BRUNNER

Benkendorf said I could talk on anything I knew anything about, and since that time I have been wondering what that was. You needn't expect to hear anything you don't know anything about.

In creamery butter making there enter many little things which must be properly applied to the more important factors to give us a fine finished product. It appears that in no other line of work do the little things bear so important a part in getting the desired results from the main principle and therefore figure so di-

rectly in the success or failure of the buttermaker or his employers. It is my opinion that we have at the present time more failures through lack of proper attention than through lack of knowledge. We have here in Wisconsin a dairy school as good if not better than any other in the world, dairy and creamery journals edited by some of the most practical dairymen in the country and an abundance of educational matter published yearly by the State Dairy Department. With these opportunities at hand it seems to me improbable that there be any man engaged in our business who has failed to provide himself with a knowledge of the fundamental principles involved in the process of butter making.

Together with the assumption that Wisconsin buttermakers know their business we must attribute the cause of their various troubles to a neglect of some of the minor details of their work. Some things have been small enough to escape their attention, yet large enough to bring about annoying results. If we would have less of these we must be more punctual and more accurate and direct these toward quality, quantity, and economy of production.

As to punctuality we must begin by getting up in the morning. With a late start and several different things requiring our attention at the same time we can not be prompt as we should be when our patrons come to be waited on. Getting started half an hour earlier than is really necessary goes a long way toward making our work more pleasant and accurate. If this leaves us a few spare moments before the milk comes in we will find ourselves brushing and straightening things up and doing little repair jobs which we would probably feel too tired to do after our regular day's run. The strongest possible incentive toward repairing or better adjusting our apparatus is a little spare time just before using it. Therefore provide yourself with these spare moments.

We cannot over estimate all the good results obtained from just prompt attention at the weigh can. Prompt waiting imparts a good fellowship which will make your patrons better satisfied with your tests and prices or much easier to handle in case they are not satisfied. Coming to the creamery is a daily occurrence to the farmer and a daily opportunity for us to show that we are *there on the job.*

As to accuracy, we will have to begin at the weigh can. When they tell us that the quality of butter on the market is below that of fifteen years ago, we all answer as one "because of the poor raw material." This is quite true, but due mostly to some inexcuseable reason. In fact, under the present laws, we have no legal right to accept poor milk or cream. The coming of the farm separator is usually mentioned as the cause of this poor material, which it is in an indirect way. Indirect because it increased the territory so as to bring about close and unwholesome competition and also because it gave the buttermaker and the dairy farmers a chance to become more careless. In the old whole milk days the farmer knew that he had to furnish good milk because poor milk would not go through the separator. But why is it that those same farmers are now sending (in most cases) a poor quality of cream? There can be but one reason and that is "because we take it." The only remedy is to be on the lookout and spot him every single time he is not up to the mark. "Just like the whole milk men used to do." Patrick Henry said, "Eternal vigilance is the price of liberty," and we can say, "Eternal vigilance is the price of quality." In my experience every farmer has furnished good cream when he first got his separator. But his cream is probably gathered by a hauler and we never see him. Pretty soon he has an accidental lot of poor cream and we take it and so on until he gets more and more careless until we complain and he tells us, "Well, I can go some where else." I think, it would be a paying proposition for a creamery to have little blanks to fill out and return with the cream can, and when a patron has good cream encourage him, and when it is poor it will show him that you are on the look out and set him at working for a better mark. We must also bear in mind that it is up to us to keep it in good condition by not letting it spoil on the road to the creamery. One of the common faults now-a-days is the barns which are so nice that they can't keep the milk and cream out of them. A barn is a good place to keep cows only.

After having received good milk and cream, I will assume that you all know the main principles of ripening and churning. It seems though that a little more attention should be paid to

moisture content. I think it safe to say that the average butter on our markets today is not over fourteen per cent. Although I would not aim at sixteen per cent, I think it very important and possible to maintain an average of fifteen per cent. In a 500 pound creamery the one per cent would amount to 5 lbs. daily, which at 30 cents equals $1.50; in a month $45.00. This goes a long way in paying the buttermaker's salary. In a year $540 would buy a new ripener or a churn. In the total output of Wisconsin for one year it amounts to $300,000—quite an item to be drawing out of our wells.

Another matter which I think should be receiving more attention is the use of paraffine in butter packages. An ordinary 60-lb. tub can be given a thin coat of paraffine at a cost of one cent per tub. If you do not feel that you can afford any of the modern devices for applying paraffine, which are on the market today, you can take an ordinary tin pan which you can buy at the hardware store for ten cents, fit it into a container in which water is maintained at the boiling point and you have all that is necessary for heating your wax. From my own experience, I know that the work can be done well at the rate of five tubs per minute, which is twenty-five tubs in five minutes. Every buttermaker can surely spare that much time. It has been found that the average shrinkage from churn to market weight is 1¼%. Allowing ½% for the strong up-weight taken by the commission merchant, it leaves ¾% loss, due to actual shrinkage. Any one will admit that paraffine would save at least half of this which, at 500 lbs. per day, would amount to 56 lbs. of butter per month, worth $16.80 at 30 cents per pound. At one cent for each tub it would cost $2.50 to paraffine these tubs which would mean a saving of $14.80 or nearly fifty cents per day. Besides this it would do away with the woody flavor in tub butter as well as being the best known means of preventing mold.

Perhaps the most neglected part in most of our creameries is the general repair work, such as leaky valves and joints, loose boxes and bearings and lack of paint. The reason for this is undoubtedly the fact that the most of our work has a certain set time when it has to be done and this work not being so, is overlooked.

I began my paper by saying that our faults are mostly lack of attention. Why is it that you can go into a great many creameries and find steam leaking at valve stems, unions, and stuffing boxes? They all know how to repair them. Why is it that we find so many creameries needing paint? Paint doesn't cost much and any one can apply it. Why do we find any amount of butter with a very cloudy brine? They all know how to work butter properly. Why do we find some factories generally insanitary? Every one surely knows how to clean up. It is because they haven't applied the knowledge they possess. The only way to get at these odd jobs is to plan our work ahead and set a time for them when we will see that they are done. You can't always do it now, but don't plan too far ahead.

After all has been said, the true secret to success is hard work. The training and educating of the brain can accomplish nothing unless it betters the hand. The good results come from doing not merely teaching and talking. This convention, successful as it appears to be, will be a real success or a failure in accordance with what we do when we return home to our factories. If we do not want the time and money we spend here to be wasted, we will have to go home and do some things which we would otherwise not have done. If we bear this in mind we will soon be repaid even if they be but little things.

I don't think that the wet blanket is a very sanitary way In the summer time it is apt to collect dirt and mud on the outside of the can, and besides the blanket would not last very long. Here is a method we have used with very good success. Of course it is not a remedy for poor cream. We have hoops made of iron and that goes over the wagon and a canvas goes over that and that keeps the cream cool.

DISCUSSION.

THE CHAIRMAN: Now you all heard Mr. Brunner's article. We are open for discussion on that. I may start a discussion by asking Mr. Brunner, if he don't think one cent per tub for paraffining more than it really costs?

MR. BRUNNER: I think it is at the present cost of paraffine.

THE CHAIRMAN: Don't you think that applying it with a brush some of the paraffine will peel off?

MR. BRUNNER: You have to have your tub hot.

THE CHAIRMAN: And your tub cools off very fast?

MR. BRUNNER: Oh, yes.

THE CHAIRMAN: I have not had very good success with paraffine.

MR. BRUNNER: The way we do is to have our tub hot and our paraffine as hot as we can get it.

THE CHAIRMAN: Have you had any trouble with the paraffine peeling off?

MR. BRUNNER: Not at all.

MR. H. C. LARSON, Madison: Mr. Brunner speaks of having the tub hot. I would like to inquire how he heats the tub.

MR. BRUNNER: Simply by putting the tub over a steam jet.

MR. LARSON: Is the wood damp when you apply the paraffine?

MR. BRUNNER: Yes.

MR. A. CARSWELL, Clear Lake: I used paraffine for two or three years, and two or three years I used it without a paraffiner. You put a tub over a steam jet for a few minutes and melt half a pint to a pint of paraffine and apply it. You won't be bothered with paraffine peeling off. I have never had any trouble at all in putting it in tubs and putting a thin coat on with a brush.

THE CHAIRMAN: That is my experience. I made a failure at first. When your tub is a little bit open on the bottom it leaks out when you are working it, then I turned the tub over.

MR. CARSWELL: You buy good tubs and it won't leak out.

THE CHAIRMAN: I buy the best I can buy, but the paraffine will leak out.

MR. A. D. MCCREADY: I would like to ask the gentleman what the object is in paraffining other than to prevent shrinkage.

MR. BRUNNER: It does away with the wood flavor if nothing else. We bought quite a lot of tub butter last summer to supply our retail trade and there was a strong wood flavor to it.

MR. CHARLES E. MCNEILL, Chicago: Did you have that wood flavor with fresh made butter? This, of course, is of interest

to me because we are putting up butter in prints for our trade. We never get butter in tubs. Where does that wood flavor come in?

THE CHAIRMAN: I do not think that if a tub is properly soaked and the salt rubbed on the outside of your tub there is much danger without paraffine, although I paraffine.

MR. CORNELIUSON: Mr. Brunner stated, if I understood him correctly, that the shrinkage was one and a quarter per cent. I would like to have him tell us whether that statement was based on his own experience or on the experience of others?

MR. BRUNNER: I meant to state before I read my paper that that is a figure from Martin Meyer's Creamery Buttermaker and he says it was according to some close investigation. He says it is one and a quarter from churn weight to market weight.

THE CHAIRMAN: I wonder if Meyer has paraffiners to sell. I think he rated his shrinkage quite high there, don't you, Mr. Corneliuson?

MR. CORNELIUSON: I am not prepared to say for the present. For more than a year the Dairy Division has conducted some experiments with a view to determing what the shrinkage is between the creamery weight and the market weight, but the investigation has not progressed far enough to draw any conclusions from it as yet. I am not inclined to dispute one and a quarter per cent, as it is perhaps very nearly correct.

MR. F. MARTY, Monroe: I would like to ask Mr. Corneliuson how they get that weight, from the creamery, or if they have men who weigh it?

MR. CORNELIUSON: I am sure that is the worst problem, to get the correct weight. We are doing it in this way: Our field man goes to the creamery and weighs up the butter at the time it is packed. Each tub is weighed and the gross weight of the tub is marked on it, and when it is packed and finished for the market the gross weight is marked or noted again. Then when the butter arrives in the market our market inspector there goes to the house which handles the butter and weighs it up there, and in that way we get the results, but we have difficulty in many creameries of

having scales sufficiently sensitive and accurate. It is our aim to do no work except where they have sensitive and accurate scales.

MR. MCNEILL: Do you take the exact weight?

MR. CORNELIUSON: We do in some instances take the exact weight and in others we have worked on a theory that one-half pound would be sufficient for shrinkage, so if a tub holds 62½ pounds—but so far as I have been able to discover it is doubtful whether that is really the case, whether one-half pound will be sufficient.

MR. MCNEILL: This one and a quarter per cent would mean nearly 16 ounces to a tub. 60 pounds would bring it between 15 and 16 ounces.

MR. CORNELIUSON: It is safe to say 100 pounds or one and third tubs.

MR. MCNEILL: At that rate the man would have to allow nearly a pound to a tub shrinkage. Now I know that some of our factories where they have good scales allow eight ounces to a tub. That butter will hold down to a pound. If you will allow eight ounces to the tub for shrinkage the weights will come pretty nearly holding out. It is not every creamery man who has the scales. You will find from your own experience that sometimes we run a pound short, sometimes two pounds, sometimes more. The scales in the market have to be correct. The scale in the factory is not in general use every hour of the day as it is in the market. It pays the creameryman to have a good scale.

We are here to get information the same as you fellows are. I have soaked in a good deal of information here, but I don't want to take up unnecessary time.

MR. CORNELIUSON: I think we can possibly spend a little time on this subject of shrinkage. It is my impression that there is altogether too much careless work done in the weighing of butter at the creameries and keeping count of the weights. I have found many creameries that will go on from week to week, in fact from month to month, not knowing the weight of the butter they ship, to say nothing of knowing the shrinkage. I believe that every creamery should have accurate scales, sensitive and accurate, and they should know the number of pounds in each shipment,

they should not guess at it, they should know it definitely and accurately. Then if they do not get the proper treatment find out the reason why.

MR. GUY SPEIRS, Eau Claire: I want to bear out what Mr. McNeill has said. In weighing the butter into the tub we allow eight ounces for shrinkage, and whenever I have any trouble with weights it is very small. We don't have a shrinkage once a year. There was a little while we had some trouble and we traced it to some trouble with the scale. I had a man come along three years ago who claimed he had worked for Fairbanks, Morse & Company for years as an expert and he offered to go over the scales. He wanted ten dollars to go over three sets of scales. I thought it was all right, and it didn't take him but a minute to show that it was about a pound out. Since then I have got an outfit and once a month my machinist goes over those scales. Every buttermaker can do it. Simply take care of them. I also believe every buttermaker should have an outfit to repair his steam and water valves. It certainly would be money well spent.

MR. BRUNNER: I would like to ask Mr. Speirs what one of these outfits cost.

MR. SPEIRS: I think it was about $5. If the creamery man would go to work on his valves he would be better off. You can reseat those valves that are leaking. You get a little scale under there and it cuts your valve seat and you can't put in your seat and it is no good. You are wasting your money all the time. You get that little apparatus and you have saved this, a whole lot of money and steam and besides in the winter time your creamery is a neat place to work in.

THE CHAIRMAN: In response to Mr. Speirs. I have got an outfit just the same and I have had it about nine years and I have saved myself the price of that outfit times over.

The next on the program will be the resolution in regard to revision of Article IV of the By-laws of the Wisconsin Buttermakers' Association, which was read to you yesterday. Do you want it re-read?

MR. J. G. MOORE, Madison: There may be some here that didn't hear them yesterday.

THE CHAIRMAN: If so, I call on Mr. H. C. Larson to read them.

MR. LARSON: The article of the by-laws to be revised is as follows:

WHEREAS, Article Fourth of the By-Laws of the Wisconsin Buttermakers' Association reads as follows:

"The privileges of the Association's butter contests are open to exhibitors outside of Wisconsin, but such exhibitor 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."

The committee feels that this paragraph should be changed to read as follows:

Article Fourth: "The privileges of the Association's butter contests are open to exhibitors outside of Wisconsin for complimentary score only and any exhibitor exhibiting butter at the Association contests for complimentary score shall, after deducting express charges and $1.00 membership fee, have returned the balance for which the butter sold."

I move that this revision be made.

Motion seconded.

CHAIRMAN: There is a motion before the house and seconded that we accept the revision as read. Are you ready for the question?

The motion was carried.

MR. MOORE: After yesterday afternoon's session it was suggested that a resolution be drawn up and be presented this morning in regard to the 82½ per cent butter standard, and I am going to do that, although I think it does not cover the case.

THE CHAIRMAN: There are parties here that have to leave and we will have that later. Consequently the next on the program is the Marketing of Butter, by Prof. Farrington, which is to be read by Prof. Benkendorf.

SECRETARY BENKENDORF: Prof. Farrington had to go home last night and he asked me to read his paper for him.

The paper was read as follows:

MARKETING BUTTER.

By Professor E. H. Farrington.

There is only one point under this head that I am going to take the time to mention at this time and I do it merely to bring the subject before the convention for discussion. I have talked with many creamery operators during the past, mostly former dairy students, who drop in for a short call while passing through

PROF. FARRINGTON

Madison. As the years go by the question most prominently before the creamery buttermaker at that time is usually brought up and the former student who is then in charge of some factory gives me his experiences in regard to the matter.

A good many years ago the subject of "mottles" was much discussed, then later, "starters," then "overrun," then "hand-separators," etc., etc. Each season seems to have one particular point in the manufacture of butter that is given temporary emphasis and

this practice of getting much evidence on one subject each season, I think, is a good one as it gives us a lot of information that is usually helpful to a good many buttermakers.

The particular point in marketing butter that I should like to hear discussed by the buttermakers and creamery managers at this time is the marketing of butter sold in 60-pound tubs. I have been told that there are creameries shipping butter to market without weighing the butter in each tub, but simply record each shipment as so many 60-pound tubs. This represents about the most careless system of selling butter that one can imagine. The creamery in this case is entirely at the mercy of the buyer it takes what the buyer is inclined to give in the way of weights; such a practice is like selling cordwood without measuring it and hay by the rack full instead of by the ton. There are undoubtedly buyers to whom it is perfectly safe to sell butter in this way; buyers who can be depended on to give the creamery the right weights, but there is much greater satisfaction in knowing exactly how many pounds of butter are shipped each time from the creamery than in taking the buyer's word for it.

If there is much difference between the creamery and the market weights this will have considerable influence not only on the amount of money due the patrons during the year but it is one factor in reducing the overrun at the creamery in case the amount of butter paid for is less than the creamery weight of the butter.

Suppose 100 tubs holding 60 pounds of butter each are sent to market and the weights and tests of the cream at the factory showed that this butter was made from 4800 pounds cream fat; now if the creamery is paid for 100 tubs multiplied by 60 or 6000 pounds of butter, the factory overrun is 1200 pounds or 20%; but if the buyer of the butter cuts each tub of butter 1½ pounds and reports that each tub contained 58½ instead of 60 pounds butter paying the creamery for 100 tubs multiplied by 58½ pounds or 5850 pounds butter, then the overrun is 1050 pounds or a little less than 18%; a difference of over 2% in the overrun is thus made by the cut in weight made by the buyer of the butter. The overrun calculated on the actual weight of butter made at the cream-

ery was 20%, but the overrun calculated from the butter paid for was 18%.

CONTRACTS BETWEEN CREAMERY AND BUTTER BUYER.

A great many different arrangements are made for selling butter; some ship to a commission merchant who sells at a certain figure above or below the market price and who charges the creamery 5 per cent commission for doing the business. Other merchants do not charge any commission but agree to pay a certain market price f. o. b. the factory; still others agree to pay a premium of one cent or so above the market price f. o. b. the factory; and again others agree to pay a premium of one cent or so above the market price f. o. b. the city to which it is shipped.

The different agreements between seller and buyer are numerous and may be made for a longer or a shorter time than one season. Such agreements are a matter of business between the buyer and the seller and require no particular discussion, but there is one point in selling butter that every butter seller should insist on and that is an understanding as to *weights*. An agreement should be made with a buyer on the basis of the net weight of butter contained in each tub or package as determined by the weights obtained when each tub is filled at the factory. It is possible that one-half pound or so on each 60-pound tub of butter should be allowed for shrinkage in weight, but the net weight of butter in each tub should be known and the butter paid for on the basis of the net weights of all the tubs of butter in each lot sold.

A creamery can often afford to sell its butter at a lower price per pound on the basis of definite weights than at a higher price per pound with no agreement as to weights. The net amount of money received for the butter churned at the creamery and for which the patrons should be paid according to the butter fat delivered in milk and cream is much more important than an offer of one-half cent or one cent or more above the market quotations for the butter f. o. b. the factory shipping station. The price per pound is of some importance, but payment for the actual number of pounds of butter delivered is of much greater importance.

The following transactions may illustrate an experience that is more or less common with creameries in selling their butter. Along in June when buyers are looking for butter to hold in storage or in fact at any time of the year a butter buyer may call at a factory and after a pleasant call make what seems to be an exceptionally good offer for the entire output of the factory.

I happen to know of an instance where a buyer offered ¾ cents above New York extras, f. o. b. the factory for all the butter made at a creamery during the storage season. The first shipment to this buyer was a lot of 42 sixty-pound tubs; each tub was weighed empty and again after it was filled giving about one-half pound of butter over weight to allow for shrinkage. The net weight of butter on this basis at the factory was 2150 pounds, the New York market quotations on extras 28½ cents that week, hence according to agreement the creamery should receive 2150 pounds multiplied by 29¼ cents which equals $628.87.

The amount actually received from the buyer was $617.76 or $11.00 less than the agreement; a cut of 37.5 pounds in weight of butter was made or nearly one pound per tub which with butter at 29¼ cents amounted to about one-half cent less per pound of butter than the agreement.

A second shipment was sent to this same buyer; this contained 68 tubs which according to the creamery weights contained 4276 pounds of butter. When the buyer remitted, the shipment was out 114 pounds in weight; this is 1.7 pounds per tub which at the price paid amounted to 49 cents per tub or a cut of a little over three-fourths cents per pound butter.

The factory actually received, therefore, the even market quotation instead of ¾ cent above the market per pound of butter which the original agreement called for. The price was not cut but the weights were cut enough to make the actual receipts for the butter ¾ cent per pound less than was expected by the creamery.

These illustrations are probably similar to the experiences of many creamery men in selling butter, and various ways have been found for making satisfactory agreements with butter buyers as

to weights. I will only make one suggestion on this point and hope to hear from others in regard to it.

There is no doubt but an overweight of a certain amount of butter per 60-pound tub should be given by the creamery to make up for shrinkage and loss in weight by selling small quantities of butter at retail from each 60-pound tub: how much this shrinkage should amount to may be an open question but I am inclined to think that one-half pound butter per tub is about right.

A convenient and satisfactory way, therefore, of selling butter in 60-pound tubs would be to weigh each empty tub after it is soaked, lined and ready to be filled, mark this weight on the side of the tub and then fill each tub with the same weight of butter. If the tubs will all hold 62 pounds of butter, weigh in 61½ pounds each; this practice, I think, will be satisfactory to most buyers and can be carried out at the creamery with but little extra work on the part of the buttermaker.

If the tubs will not all hold 62 pounds of butter, then find out the maximum weight of butter that can be packed in each tub and put the same weight of butter into all tubs allowing one-half pound overweight for shrinkage. In this way the creamery has a record of the exact weight of butter sold in each shipment and an arrangement can doubtless be made with a buyer to pay for the butter on the basis of such weights. (Applause.)

THE CHAIRMAN: You have now heard this article on the Marketing of Butter. Now we can follow up with discussion. It is worth discussion, and a hearty discussion too.

MR. SPEIRS: I would like to say just a word on this matter of shrinkage. This shrinkage doesn't all come on the butter buyer. That is, he is not responsible for it. I was in Philadelphia a year ago this winter and went into a butter house and the commission man said to me, "Speirs, I am getting some butter from a man up in Wisconsin, a friend of yours, and we are having a good deal of trouble as to weights. I wish you would stay here and help us weigh this butter." It was billed out to the house at 63 pounds. I waited there and tried the scales and weighed up that butter myself and I couldn't get it to weigh over 61 or 61½. I also found

that that butter had settled down in the tub from three-quarters of an inch to an inch and a quarter. It was a poorly made butter.

MR. MCNEILL: Mr. Farrington speaks of butter being paid for on the basis of the weights, the buttermaker weighing the goods. I am very safe in saying that was pretty generally the case, but at that time the average tub did not hold over 60 pounds net to the tub and some 59 and some 57, but in late years the tendency has been to increase the tub—the amount that it will hold—so that now it is not uncommon to have a tub holding 63 pounds, and I am very much of the opinion that the buttermakers of the present day, whether they are men who have been in the business for some time or not, are decidedly in the minority who average up without knowing really what there is in their shipments. It is a good thing for a creamery to send in its weights to the house it is doing business with for the reason that at certain times of the year in some sections butter will not hold out in weight in the butter at the factory. If there is a considerable difference between the weight at the factory and the weight at the commission house, if it is in Chicago or New York, speaking from our own way of doing business, we would call in the Chicago Government Inspector and have him test the weights so that the man at the other end doesn't have to take our word for it.

Another thing. When a man comes to you and offers you a price for your butter that you know is considerably more than the actual value of the butter, if I were in your place I would want to know just exactly what he is going to do with that butter, because there can be no great difference between one commission house and another as to what they are going to get for the goods. In other words it is a kind of confidence game. You deal with a man who offers you a fair price all the year around and you will find at the end of the year you are a great deal better off.

THE CHAIRMAN: I think this point of shrinkage has been very thoroughly discussed in regard to the other paper, but if there is any other point you would like to discuss we will take time for it.

MR. CORNELIUSON: There is one point more in connection with the making of butter and I am not sure whether is was mentioned in Prof. Farrington's paper or not. That is the question

of prints. There are some countries, for instance Denmark, which recognize a state print on their butter that comes up to a certain standard of quality. He is entitled to use that print and no other creamery which is not up to the standard can use it. I do not know if there is anyone here who has considered the question of state prints, but I just throw this out as a suggestion that may be well worth considering. I believe it would be a good thing to have a staple mark or identification upon the butter produced in Wisconsin and in a like way upon the butter produced in Minnesota, etc.

SECRETARY BENKENDORF: In regard to that let me say that the Committee on Public Affairs is looking into that matter. They were out to the Dairy School not long ago and I am quite sure that they will give that matter thorough consideration.

In regard to Mr. McNeill's statement about these flattering offers, I would simply say this, it always behooves a buttermaker to look into the reliability of the house before he has any dealings with it. There are plenty of reliable houses that will give you the market price of butter. If a person goes two or three cents above the market price he is only going to skin the buttermaker some way. I know instances in this state where two or three cents above the market price were offered; the buttermaker sold and shipped his butter to Chicago, and then had a very hard time getting the money. When they would go to Chicago to find the parties they never could be found. There are plenty of good reliable houses, and I don't like to see any of the buttermakers held up in this way.

CHAIRMAN: We will now consider Mr. Moore's resolution.

MR. MOORE: I want to introduce a resolution. Its main object is to pave the way for something better, that is to say, that the Legislature will not meet for another year and we do not expect that anything could be done to change the standard until that time, but it will be a straw to show which way the wind is blowing and this association can at its next session take this matter up definitely. We do not want to be still tied up to the resolution which was passed at Wausau five or six years ago.

"WHEREAS a resolution was passed at the Wisconsin Buttermakers' convention held in Wausau in 1907 demanding a fat standard for butter of 82½ per cent, and

WHEREAS in the years that have passed since that convention a marked change has taken place in creamery practice so that standards which at that time may have been just to all parties, under the changed conditions of the present, are now liable to work a hardship on individuals and the industry in this state,

THEREFORE BE IT RESOLVED that we recall our action at Wausau regarding a butterfat standard of 82½ per cent and go on record at this time as favoring such standard for butterfat as will be uniform in all states and conform to the best dairy practice of the present."

MR. CLAY TYLER, West De Pere: I move that that resolution be laid on the table.

Which motion was seconded and carried.

CHAIRMAN: The next on the program is "The Gasolene Engine as a Source of Power for Creameries" by Mr. E. F. Sadler.

THE GASOLENE ENGINE AS A SOURCE OF POWER FOR CREAMERIES.

By Mr. E. F. Sadler.

MR. SADLER: Mr. President and Gentlemen: I am sure it is an honor to be called upon to address a convention of Wisconsin buttermakers, which I appreciate. Whether or not the paper will be of any benefit to you, I appreciate the recognition by your Secretary.

The power problem in the creamery is one that has been overlooked and neglected more than any other phase of the creamery business despite the fact that it is one of the most important. The process of manufacture has been developed and improved until today it is purely scientific. The hap-hazard, hit-and-miss ways have given way to the theories taught in our dairy schools. Cream is ripened to a certain degree of acidity, temperatures are watched closely, and in fact from the time cream or milk enters our factory doors it is handled by skilled men and treated, as I said, scienti-

fically. I could go on and enumerate many things that are decided improvements over the old ways of making butter, but you are all familiar with them.

There is one feature of butter manufacture, however, that has never been generally improved upon, and that is power. I am not attempting to prove to you that our present power plants are not efficient, for they are, but I do say and have proved to my own

E. F. SADLER

satisfaction at last that they are not economical. On the contrary they are recklessly extravagant. In my recent article on this question I covered the ground as thoroughly as I could, so it will be necessary for me to repeat a good deal of it now.

One of the most important improvements in modern factory operation is the kind and cost of power supplied. Our large manufacturing concerns have expended thousands and millions of dollars the past few years in an effort to reduce their power cost, and their investment is paying mammoth dividends. These business heads

were not looking for better power particularly, but for power just as good at less cost.

This is a subject which I have been giving considerable thought and attention the past few months, and the more thought I give to the cost of creamery power, the more thoroughly I am convinced that enough money is being emitted through the smoke stacks of our creameries for which no value is received to completely re-equip each plant with new and modern machinery every six years.

Usually the most conspicuous part of a creamery exterior is a huge smokestack from which there is almost constantly arising smoke and heat.

Go on the interior and no matter how small the plant, you will find a 15 or 20 horse power steam engine and a boiler probably 10-horse larger in capacity. You will find the fire is held practically from one year's end to the other. Why? In order that a running head of steam may be acquired more quickly in the morning and to avoid freezing in the winter. You ask the Secretary what his greatest item of running expense is, exclusive of the buttermaker's salary, and he will invariably tell you fuel. (In some plants it exceeds the buttermaker's salary.) Ask him why he burns so much and he will tell you that the engine cannot be operated and steam furnished by burning less.

When I first began to study the question of power, I asked myself: Why, if there is a cheaper method of furnishing steam and power, haven't the creamery papers and authorities brought it out? Why haven't these secretaries or managers studied out a way to reduce it? I concluded about as follows: When the large number of butter factories were built 10, 15 or 20 years ago, the hand separator was unknown and the whole-milk was delivered to the creamery. It took strong power to operate these five, six and seven large separators, and no creamery was equipped with less than a 20 or 30 horse engine. The same proportionate amount of steam and power is required in creameries operating separators today, but this steam and power can be supplied at a materially less cost ,and this fact has evidently been overlooked heretofore by the majority of creameries.

As the cream system came on, the factory separators were taken out, but the same boiler and engine continues to furnish steam, run a churn an hour or so, a cream vat about that length of time, a starter can, perhaps, and pump water. The thought never occurred to them that less power was needed, and those who did think of it concluded that so long as the boiler and engine were already in and paid for they might as well use them. And so many managers have thought and still think. They could not and can not see the economy of spending more money in order to save on fuel.

The idea that anything else but a big boiler and engine was practical escaped my serious attention until I became proprietor and manager of a creamery. As soon as I had to write checks for coal I began to wonder if it was necessary to feed a 30-horse power boiler and run a 20-horse power engine just to run three separators a couple of hours a day, operate a medium sized churn and the few other appliances requiring power. I realized from the first that my power was costing me too much, but upon observation I saw that every other creamery was doing likewise. At the end of my first business year, however, I found that I had spent $471 for coal, or an average of $39.25 per month, and we only manufactured 90,000 pounds of butter. And at that I bought my coal by the carload direct from the mines at an average cost of about $3.90 per ton delivered to the creamery.

I began to look around for leaks. We re-lined our fire box, put up a new smokestack, put on new valves and new packing. The result of this overhauling, of course, proved to be a considerable saving of fuel, but it did not relieve the continuous fire which had to be carried and from which we were deriving little benefits. It did not shut off that smoke and heat I could see going to waste up through the stack.

And right here let me say that a great deal more fuel is consumed than necessary on account of defective stacks, poor draught, broken grates and boiler fronts which permit air to flow in and chase the heat out unused. I do not pose as an engineer, but I have found out a few things by experience which a great many buttermakers neglect. They know the difference, but they do not take

sufficient interest, or the board of directors do not, to exert extra effort to have it otherwise. There is a nack of firing a steam boiler, and the buttermaker who simply throws in the coal and scoops out the ashes is causing the creamery company to pay abnormal prices for their fuel. As an instance to illustrate. I happened in on a buttermaker not long ago while he was carrying about 50 pounds of steam. He was in the boiler room and was just fishing out pieces of a melted grate, meanwhile offering a flowery tribute to the "poorest coal he ever shoveled" with an occasional reference to the manager. I looked at the coal and found it a good grade of block variety and then I looked into his ash pit. It didn't take long to point out to him that the trouble was not poor coal but in poor firing. He complained of burning out grates every few weeks and of the coal melting over them causing clinkers and stopping the draught. It was because he didn't keep the ashes from filling up against the under side of the grates. His method of firing was exactly like the foundryman fires a cupola—a layer of fire, a layer of iron and another layer of fire. In fact this is the only way they can melt even raw pig iron. No matter how good your coal, cupola firing will burn out your grates, cause clinkers and melt your coal instead of burning it. Do not let the ashes fill up from below and come in contact with the grates.

While a great deal of fuel can be saved by careful handling of boiler and engine, I contend that a creamery running two or three separators and the regular line of machinery does not require a 15, 20 or 30 horse steam power plant, and particularly is this reckless extravagance in gathered cream factories.

I sent out inquiries to several creameries in the dairy states asking about the cost of their power, and the information I received bears out my contention of extravagance. I found the average cost of reporting creameries operating separators to be $42.70 per month, and for gathered cream plant, $41.15. In other words, the creameries operating no separators are paying nearly as much for power as those running separators, which is convincing evidence that no attention has been given the subject of economical power. These reports show, too, that variation in cost of power is due more to cost of fuel rather than the amount of power required—another

evidence of thoughtless habit. It is plain, however, that big boilers and engines are being used simply because the creameries several years ago started out that way, and until now no one has tried to break the habit.

Now, the remedy I propose is not applicable without exception, as there are plants where the utmost economy is practised. I believe, however, that 50% of our creameries can reduce their power cost 50%, and if this 50% is worth saving to you, give it serious thought and consideration. I do not propose to recommend the running of creameries without steam, as that would be as impossible as trying to run them without milk or cream. I merely propose to show you, how I, at least, have a sufficient amount of steam and power at a materially less cost. It is not economy to run short of either steam or power, but it is foolish extravagance to maintain a power plant from two to four times larger than necessary.

The gasoline engine is the sort of power to which I direct your attention. Its application to the creamery is of comparatively recent date, in view of the fact that a few years ago when all creameries operated a battery of separators steady power was necessary, and the gasoline engine was too young an invention to have obtained that uniform motion which it possesses to-day. Then someone cried out that the odor of gasoline would taint the butter and a prejudice was born that only a year or so ago began to give way to business judgment and discretion. The gasoline engine has been developed and improved until to-day it has reached the point of perfection and its economical power has been generally recognized in all classes of factories except the creamery. Now it is our turn to take advantage of it and cast inherited tendencies and fallacies aside and use our own heads. We must break away from these and do more thinking for ourselves.

The operation of power separators requires just as steady and uniform power as it ever did, but I claim the gasoline engine will deal out that uniform power at an astonishingly low cost compared to steam. Where will we get our steam? From a boiler, the same as you do now, only use a boiler in proportion to the amount of steam required—not of the size our predecessors thought was necessary. For instance, a small 10-horse boiler will operate your

turbine tester, will heat your water, pasteurize your skim-milk from the separators and supply all the steam necessary for an average size local creamery, and do it with a surprisingly small amount of coal.

Another prejudice which has grown against the gasoline engine is the idea that you cannot depend on it. Perhaps a few years ago that was true, but if we supply the modern gasoline engine with gasoline and an electric spark you will get power just as surely as you will if you supply your steam plant with water and fire.

Supposing we find that a small boiler and a gasoline engine will save 50% of our power cost, what will we do with our big boiler and engine, asks some manager. The same thing you would do with any other piece of machinery that is out of date and for which can be substituted something that would save money and labor. Sell it if you can, and if you can't, let it remain idle. It is more economical for it to stand idle than to run it if it costs you 50% more than necessary.

The matter of power is a plain business proposition which each must work out for himself, but I want to get you to do more thinking about it.

The first gasoline engine I put in was a 2½ horse capacity. We attached it to the main line shaft and instead of keeping up steam until four or five o'clock in the afternoon just to run the ripener, we cooled with this little engine, and in that way alone saved 160 pounds of coal per day. Next we took off the cylinder from the steam pump and arranged a pump jack, which is also operated from the line shaft by an eccentric pulley. Here again we saved steam and fuel.

Many creameries cool their cream direct with ice immediately after it is received and many using starters cool with ice direct when the proper acidity is reached. By careful experiment we found that we could not get as satisfactory churn results with cream cooled with ice direct. It is almost impossible to properly emulsify the fat globules with a paddle, particularly so if the cream contains very much water. We could not churn as exhaustively with ice-cooled cream. We also found we could save 50 to 75

pounds of ice per day by circulating a strong salt and ice brine through the coils, to say nothing of the better churn results.

In these two features alone—cooling the cream and pumping water, we are saving enough coal to pay for the engine every three months.

The little engine did such noble work that I decided to operate all my machinery with gasoline power, which consists of three 3,000-pound separators, one 900-pound churn, deep well pump, milk heater, starter can and cream ripener. In order to find the size engine we could use with the most satisfaction and economy, and to be in position to recommend the proper size, I began experimenting with a 6-horse engine. At first thought you will say it won't even run the churn, but it not only ran the churn but it ran all the other machinery and did it all at one time. However, it required continuous explosions, which is neither economical in the amount of gasoline consumed nor on the durability of the engine. It ran the three separators alone satisfactorily and held them up to speed as uniformly as any steam engine could probably do. But one has to be equipped to run all the machinery at once in case of an emergency, so I would not recommend a 6-horse engine for a creamery operating three separators. I am now operating an 8-horse engine, and while it does good work I would advise a milk plant with three separators to put in a 10-horse. If you only have one separator, the 6-horse engine will do the work satisfactorily and economically.

I also own a cream plant located six miles from a railroad station where coal costs $5.75 per ton. I only took possession last September, and although there was a first-class 15-horse steam engine and 20-horse boiler, I immediately installed a 6-horse gasoline engine and a 3-horse upright boiler. This Deerfield plant was a defunct farmers' creamery and we are only making about 4,000 pounds of butter per month but we are doing it at a combined steam and power cost of 59c per run, or, 12 runs per month, at a cost of $7.08, which figures 17.7c per 100 pounds of butter. I do not know accurately but I am reliably advised that the Deerfield coal bill when the farmers were running it amounted to $40.00 per month. Of course, they made more butter, but we would make at

least twice as much butter as we do at Deerfield with an immaterial increase of cost over that I have mentioned. Our steam engine and boiler are standing idle.

At the present time at Dewar we are using our big boiler for heating purposes only, and by so doing we are reducing the amount of fuel consumed just as nearly 50% as we can figure. I have a 10-horse upright boiler about ready to connect, and as soon as it is in working condition I will be able to give a fuel cost of not to exceed $15 per month. We run our 8-horse engine on an average of five hours per day and the gasoline consumption is four gallons, costing us 8c per gallon, or 32c. Instead of gasoline there we are using naphtha at 8c. Then we use the 2½-horse engine for pumping and cooling purposes. This engine runs two hours each day at a cost of 4c. Thus the power cost is 36c per day, and we have power to spare. The 2½-horse engine is not necessary, but as long as I had it anyway, I continue to use it.

I have not considered the lubricating oil in either the steam or gasoline engine costs, but it is needless to say the gas engine will not require as much as the big steam engine. I believe, also, that year for year there will be a big saving in repairs. Grates for the small boiler are materially cheaper, there is no big fire box to keep in repair, fronts to replace and engine repairs are much cheaper and more easily and quickly secured.

I have used the gasoline engine long enough to convince me that it is entirely satisfactory power for all kinds of creamery work, and I have proved by practical demonstration that it is a material saving.

Now, Mr. Manager, I have put up a proposition which should cause you to investigate your power plant. I have no gasoline engine to sell, and the information I have gained, I hope, will be of value to you. It is for you to decide whether or not you can save a neat sum for your company by putting into practice what your own judgment dictates rather than follow a pioneer custom which to-day is, in most cases, woefully extravagant.

I have not mentioned that the gasoline engine allows the buttermakers in whole-milk plants an extra hour's sleep in the morning.

The proposition is worthy of your consideration.

Just before I left I received a letter from R. B. Young, who was president of the Iowa State Dairy Association and also manager of the Buffalo Center Co-operative Creamery and, after I arrived, this first article came out with reference to this gasoline proposition. Mr. Young bought a gasoline engine and a small boiler, and this letter says:

Mr. EARL SADLER,
Waterloo, Ia.

Dear Mr. Sadler:—Your favor of the 30th at hand and carefully noted. We have as yet no exact figures to give on the saving we have made by the purchase of a Gas Engine and 6 H. P. Boiler. But we have in a general way determined that our saving is very close to $30.00 per month. Our former power has a 20 H. P. Steam Boiler and a 12 H. P. Steam Engine. We now use a 9 H. P. Fuller & Johnson Gas Engine. We are more than pleased with the way the new power is working and feel that we shall never regret the change.

Sincerely,
(Signed) R. B. YOUNG.

DISCUSSION.

THE CHAIRMAN: You have now heard this valuable article with regard to the gasoline engine in the creamery proposition.

MR. SADLER: I believe, before going any further, one of the best things would be for Mr. Bowar to give us his experience with gasoline engines.

THE CHAIRMAN: I think it is in order now to have a discussion on your paper. Your paper covered the ground thoroughly.

MR. SPEIRS: We are operating two creameries by electricity and this year one of the buttermakers took it into his head that he was wasting coal. We put in a 4-horse gasoline engine and hitched it onto the line shaft. We don't separate, but he pumps by the hour and he has got so now he runs his churn to the gasoline engine until the cream gets ready to break. He is saving from eight to ten dollars a month on his bills.

MR. CORNELIUSON: If I understood Mr. Sadler right he stated that his average expense with steam was $400 for the production of 90,000 pounds of butter. That would make it about .044 cents per pound of butter. I would like to have Mr. Sadler tell us, if he has the figures, what his present cost of butter is by the gasoline engine.

MR. SADLER: So far I have only been using the big boiler for heating purposes, and by weighing our coal before and since I find we are saving 50 per cent on coal. I made a change in buttermakers February 1st and I waited until the new man got in before I figured that up.

MR. C. E. HART, Milwaukee: I would like to ask Mr. Sadler what the difference is between naphtha and gasoline.

MR. SADLER: I don't think the results are any better with one than with the other. We get naphtha for 8 cents and gasoline costs 11 cents. There is a difference of 3 cents. I don't think that gasoline would develop any more power, although it may.

MR. MOORE: I would like to ask if the engine in use is water cooled or air cooled.

MR. SADLER: The engine we are using is a water cooled engine. I have not had an awful lot of experience and I would not want to go on record as saying it was better than an air cooled. We find with the water cooled engine that sometimes it happened when we were first starting the experiment we overheated the engine and the water heater got too hot, but it is very easy to put a little hose in this water,—connect a hose over the top and let it run through gradually. Let the water circulate so it doesn't get so hot.

MR. HART: It has been commonly conceded among manufacturers that a water cooled engine is the best and most proficient engine, because if you use the air cooled engine and it gets too hot you are running more chances. It is commonly conceded among manufacturers that a man is better off if he can leave his engine, get it to a certain temperature and leave it there. Your engine will not do its work as well as it will when it has reached its regular temperature.

MR. IKOFF: Mr. Sadler stated that he used four gallons. I would like to know how long he ran his engine with four gallons.

MR. SADLER: Five hours on four gallons. It probably runs an hour during the churning process. During the day we run an average of five hours. We have made very close observations on that.

MR. IKOFF: I don't think there will be more than 3½ gallons of gasoline used.

MR. SADLER: I don't get the point there.

MR. IKOFF: If you use gasoline you would use about three gallons and a half.

MR. SADLER: I don't know, I haven't used it.

MR. IKOFF: According to the amount of pressure on the engine, I think, it would take about 3½ gallons to do that kind of work and, as you say, gasoline is 11 cents, you are saving 7 cents. That, of course, amounts to quite a little.

MR. SADLER: A safe way to figure the cost would be this—most of the engine companies will figure that it takes a tenth of a gallon of gasoline per hour per horse power.

MR. HART: Those figures are correct.

THE CHAIRMAN: Providing, everything is in good condition.

MR. SADLER: Certainly.

MR. SPEIRS: You don't know how much power you are putting on that engine.

MR. HART: Have you any way of testing your gasoline or your naphtha?

MR. SPEIRS: No, we have accepted the company's figures.

MR. HART: Another point which, I think, a majority of buttermakers do not understand. A gasoline power engine is a very similar proposition to an automobile. It is arranged so you can get in any part of it very easily and if there is any trouble with it it is very easy for a man not very familiar with it to find out where the trouble is.

MEMBER: At this cream plant the buttermaker I have has been making butter about fifteen years and he admitted to me that he never started one in his life and absolutely didn't know anything about it. I had it taken to the creamery and he set it up

and he never has had a bit of trouble. The only trouble was during this very cold weather the cylinder got cold and the buttermaker took half an hour to get that engine started. As soon as he got hot water and warmed up the cylinder it worked all right.

MR. HART: The point I want to bring out is where to look for trouble. If you can't start a gasoline engine—the first thing is for the man who is going to run the machinery to find out if that engine has compression, to know if the valves are all right. The next thing is to find out about your magneto or spark plugs. If you have got your current there then you know that is all right and you turn your engine over and see that it throws the little clutch over and causes the spark to cause the explosion.

MR. SADLER: If you can't get your engine started either there is something wrong with your spark or else you are out of gasoline.

THE CHAIRMAN: I would like to ask Mr. Hart what he deems the proper temperature for the cylinder.

MR. HART: About 180 to 200 degrees Fahr.—175 to 200 degrees. That is, you lay your hand on the cylinder nearest to the cylinder head.

THE CHAIRMAN: I have got my gasoline engine connected up with a heater coil, but I find that the water got too hot and I put in a circulating connection so that the water can circulate.

MR. HART: It is very simple to remedy that by boring a little hole in the shoe and let the water drip out continuously.

THE CHAIRMAN: I have got those connections, but I would like to know what temperature is the best to hold that water. I have found out that just a heater full of water is not enough.

MR. HART: When the heater gets too hot, take cold water and pour it right in there and you can chill it off.

THE CHAIRMAN: I think, this is a subject that is very important to the creameries.

MR. HART: Mr. Sadler spoke in his paper about gasoline getting into the butter.

MR. SADLER: The only trouble I had was that there was some complaint that there was gasoline in the butter and I went over to the factory and I found that part of it had a little taint in the but-

ter and part of it didn't and I found that some of it had been wrapped and put in the refrigerator, and I further found that he had been working with the engine just before he wrapped some butter and that he didn't wash his hands.

MR. HART: Do you have your engine within the creamery proper?

MR. SADLER: When we did all our experiment work we had our engine within five feet of the creamery.

MR. HART: Do you advocate that?

MR. SADLER: No, but I didn't want to build an engine room before I found out what I wanted.

MR. HART: The reason I asked that question was because I had in mind a creamery running with gasoline and the engine is right in the engine room. Talking with the engineer he asked me to test his butter and I did. I said, "You have oil in your butter." He said, "Engine oil, that ought not to be." I said, "No, it is not, it is gasoline." He said, "I am carrying on some experiments for the man whom I am shipping my butter to. They claim they get gasoline flavors in the butter." He took particular pains to mix gasoline with that butter to see what action it had on the butter. He stated from the experiments he had made that butter three days after he had shipped it you could not find any trace of gasoline in it. I don't know how far he has got with those experiments.

MR. SPEIRS: The City of Eau Claire uses a gasoline engine for pumping the city engine. Two years ago that leaked and the gasoline ran into the well. We boiled that water—we had no other way of getting water—and we boiled it. And yet when our butter went to market we had complaints of the gasoline flavor in the butter.

MR. SADLER: A thing like that can't be laid up against that system. Accidents will happen. But if you handle your gasoline engine properly there ought to be no trouble.

MR. SPEIRS: The point I want to make is this,—keep your gasoline just as far away from your cream as you can. That has got to be watched and watched pretty close.

MR. H. C. LARSON, Madison: I have investigated a number

of cases where they have had the gasoline engine hooked up to the creamery.

MEMBER: Besides that there is always oil around the engine.

MR. SADLER: We connected our exhaust pipe, ran it up through the roof and put the muffler on the top, about 35 feet of pipe and we didn't notice any difference in the pulling power of the engine. The engine companies try to get the muffler as near as they can to the cylinder, but in most every instance we have the muffler on the outside of the building.

MR. HART: They usually prefer to put the engine close to some position where they don't have to carry more than six feet of pipe.

THE CHAIRMAN: I am sorry, I guess we will have to cut this discussion short ,although I am interested in it myself.

The next on the program is the Wisconsin Weights and Measures Law as Related to Buttermakers, by Prof. Emery, Dairy Commissioner:

MR. EMERY: Mr. Chairman, and Members of Buttermakers' Association: I am here at this time by the written request of your Secretary that I be here personally and give this address as named on your program. If any of you received information different from this you have been misinformed.

It is now ten minutes to twelve. I am not at all sure that you want to stay here and hear this address. If not, I am perfectly willing to forego giving the address. I prepared a brief paper and had expected Mr. Downing, the Chief Inspector of Weights and Measures, who does the work which is indicated by his title and who is an expert, to be here and assist in the illustration, but unfortunately Mr. Downing was sick all night and is not able to be here and, therefore, the work is for me.

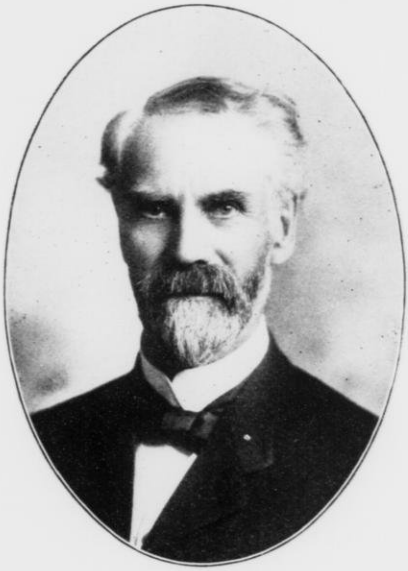
THE NEW WISCONSIN WEIGHTS AND MEASURES LAW.

By Mr. J. Q. Emery.

The legislature of 1911 amended the weights and measures law of the state of Wisconsin by chapter 566 to such an extent as

to make a practically a new law. The old office of state sealer of weights and measures was abolished and a new office of state superintendent of weights and measures was created and the state dairy and food commissioner was made ex-officio state superintendent of weights and measures.

The weights and measures and the scales and beams, received from the United States under a resolution of congress, approved



J. G. EMERY

June 14th, 1836, and such new weights and measures and scales and beams in addition thereto or in renewal thereof, and such as shall be made under the direction of the new state superintendent of weights and measures in conformity therewith, and certified to by the national bureau of standards, were made the state standards.

The National Bureau has appliances for standardizing the weights and measures used by the various states. They do not keep all of these weights and measures, but they have certain ones

from which these weights and measures are obtained. Those are compared with the International Bureau of Standards at Paris so that there is uniformity—a practical uniformity—throughout the civilized world on the weights and measures. The State is required to have in the Office of Weights and Measures these various standards to be approved and certified to by the National Bureau of Standards. In turn the State Office of Weights and Measures is required to distribute standards for the various cities, and in turn the City Sealer of Weights and Measures will determine his working measures from those measures that are standardized. There are certain tolerances.

You will see, therefore, that this work is a work that is world wide a uniformity of standards and weights and measures are as similar as is possible. I may say in the office of the Wisconsin Weights and Measures Bureau we have scales that we can do this work with very accurately. We have scales that are so accurate that we can weigh a hair from your head. These are required to be kept in that condition; they are required to be kept sensitive, and in order to be kept so they are not to be used with the hand, and so the greatest care is taken that it must be accurate. As I said in regard to the City scales, they must be standardized once in two years at least.

The state superintendent of weights and measures is authorized to appoint, subject to the rules of the state civil service commission, a chief inspector of weights and measures, with an annual salary of $1600 and necessary traveling expenses, and one stenographer for the office of weights and measures, at a salary of $1200. The dairy and food commissioner was authorized to appoint not more than five additional dairy and food inspectors, at a salary of not to exceed $1200 per year and necessary traveling expenses; and acting as state superintendent of weights and measures, he was authorized to designate any assistant dairy and food commissioner, or any cheese factory, creamery, dairy and food inspector to act ex-officio as state sealer of weights and measures with like authority, powers and duties as prescribed for city sealers of weights and measures.

I wish to make a single explanation in connection with this

law. As State Dairy and Food Commissioner I wished to do as much as I could that the department should not be disorganized by the act of the Legislature. That is to say, all these men should not be diverted from that work so that the Dairy and Food Department should not be crushed by that legislation, so while it seemed to be imperative that the Dairy and Food inspectors should go out and test and seal the various scales while they were working around the cheese factory or creamery, the facts of the case are not according to that, and in carrying out this I have designated a number of Dairy and Food inspectors equal to the difference made to the department by the weights and measures law and have concluded that this is the best. It seems to me that the Dairy and Food department should not be disorganized by transferring those provided specially for that purpose to a new line of work.

You will understand that the bill as introduced sought to make the Dairy and Food Commissioner, State Superintendent, but the argument went pro and con all winter and finally succeeded in making him not only ex-officio superintendent of the weights and measures throughout the state, but it imposed a duty also on him of doing the actual work of sealing and testing scales and seeing that the law in regard to weights and measures is enforced.

The law prescribes the duties of the state superintendent of weights and measures. Among these it provides that he shall have and keep a general supervision of the weights and measures and the weighing and measuring devices of the state and in use in the state. He is required to take charge of the state standards, cause them to be kept in a fire-proof building belonging to the state, and is required to correct the standards of the several cities, and as often as once in five years compare the same with those in his possession, and seal the same when tried and proved to be in conformity with the state standards. He is required annually to test all scales, weights and measures used in checking the receipt or disbursement of supplies in every institution under the jurisdiction of the state board of control. He is required either himself or by his inspectors to visit the various cities at least once in each two years in order to inspect the work of the local sealers. The law makes it his duty to issue from time to time, regulations for the

guidance of all sealers, said regulations to cover the procedure to be followed by the aforesaid officers in the discharge of their duties. In these regulations he is required to prescribe the amount of tolerance to be allowed.

The old office of county sealer of weights and measures was abolished, and in lieu thereof all the cities in the state of more than 5000 population by the last state or national census are required to have a city sealer of weights and measures to be appointed by the mayor from a list of eligible candidates furnished by the state civil service commission. In all territory within the state, except the aforesaid cities, the inspectors of weights and measures appointed by the state superintendent of weights and measures, and such assistant dairy and food commissioners, and cheese factory, dairy and food inspectors, and such creamery and dairy and food inspectors as may from time to time be designated by the state superintendent of weights and measures, shall act ex-officio as sealers of weights and measures with like authority, powers and duties as prescribed for city sealers. All fees for sealing weights and measures are abolished.

The law specifies the number of pounds that shall constitute a bushel in the commodities named therein, when those commodities are sold by the bushel or fractional part thereof. It further provides that all dry commodities not otherwise specified in the section shall be bought or sold only by standard dry measures, standard weight, or numerical count except where parties otherwise agree in writing.

The law establishes a standard for milk bottles and provides how the bottles shall be labeled, and requires that manufacturers of those bottles shall furnish a bond to be approved by the attorney general and filed with the state superintendent of weights and measures, binding them to compliance with the law. Upon the filing of such bond, so approved, with the state superintendent of weights and measures, he is authorized to issue to the proper parties the designating number to be used upon the bottles.

This work secures uniformity and accuracy in the work done on these milk bottles. These are made exclusively by machinery, so the law provided a tolerance in these bottles. The name of the

individual or the trade mark of the manufacturer is also to be printed in the bottle. If it is found that these bottles are wrong, the manufacturer is liable to be prosecuted upon his bond and forfeits $500 to the state.

The law requires that coal, charcoal and coke must be sold by weight. It provides for the issuing of tickets by the seller to the purchaser, designating the gross and net weight.

In the preparation for the work in enforcing this law we had first to get a room, which required two months before we could get in possession of it. We had a man go to Milwaukee where a very excellent system had been in operation for some years, to Chicago and to New York. In my opinion New York is the foremost state in this work. I mention this to indicate only a brief part of the work in the preparation done for this work. Dr. Reitman, who is an expert, being acquainted with the terms of our law, said that in his opinion if cities would appoint a sealer of weights and measures and would have the law enforced that the saving to the city alone in the matter of coal in the supply of the public buildings of the city would pay the whole cost of the weights and measures department and that no doubt the law would save the state many times the cost.

The law standardizes the liquid gallon; barrel for apples, pears, cranberries and certain other fruits.

The law fixes the capacity for a bushel crate for apples, pears, plums, peaches, and other fruits not secondarily contained in quart of other boxes within such crate. Also standardizes the crate for a bushel of cranberries. It provides that blackberries, blueberries, cranberries, currants, gooseberries, raspberries, cherries, strawberries, and similar berries in packages of less than one bushel shall be sold by the quart, pint, or half-pint dry measure; and penalties are provided for violation of the statute. A penalty is provided for the using of or retaining in possession any false weight or measure, or any weight or measure or weighing or measuring device to be used in the buying or selling of any commodity or thing which has not been sealed by the sealer of weights or measures within one year; also the selling, offering or exposing for sale, or keeping for the purpose of sale, less than the quantity which the seller repre-

sents; also for the use of any false weight or measure in buying or selling any commodity or thing, or for the selling or offering or exposing for sale or keeping for the purpose of sale any commodity in a manner contrary to law.

In this case the law seems to be a school master who goes at his work first, to find ont what needs to be done; second, how to be done and what means for doing it.

Of course, this means that the weights and measures and scales used by creameries and cheese factories are to be tested and sealed. The first great and laborious work in the enforcement of this law is in the inspecting and sealing of the weights and measures and scales that the owners thereof may know whether they are correct or incorrect. It is not construed as a command of the law that owners and users of scales that have not been sealed are necessarily violators of the law. Until the present time there has been no practicable means provided whereby the owners of such appliances could know with certainty the accuracy of those appliances; but after the appliances have been tested and sealed or condemned, then the faulty determination of weights and measures renders the users of the same amenable to prosecution. The law provides that any new appliance purchased after the visit of a sealer may be used until the next visit, provided the purchaser of those appliances notifies the state superintendent of weights and measures of such purchase, giving a general description and where the appliances may be found.

The enactment of the new weights and measures law of Wisconsin was in practical effect the re-enactment of a portion of the Mosiac law as recorded in Leviticus 19:35-36: "You shall do no unrighteousness in judgment, in meteyard, in weight, or in measure. Just balances, just weights, a just ephah, and a just hin shall ye have." And again in Ezekial 45:10: "Ye shall have just balances and a just ephah and a just bath."

There are wide-spread evils in relation to weights and measures which the law recognizes and which it is the purpose of the law to correct. It is the expression, through the legislature, of the purpose of the people of the state, to regain possession of their

rights and to secure a square deal as between buyers and sellers. These evils exist in three forms:

1. Faulty apparatus to determine quantity.
2. Faulty use of correct apparatus.
3. Commodities put up in packages with no indication of the quantity of contents.

I shall undertake to speak concerning only the first two designated evils. A remedy for the third evil mentioned necessitates the enactment of national and state laws requiring articles to be sold by net weight or measure or numerical count and a statement on the cartons of the net weight of contents.

The cause of these evils is ignorance, or negligence, or acquired dishonesty, or inherited dishonesty. The first three causes can be overcome; the fourth must be eliminated.

The existence of these evils is not characteristic of our day alone. In Amos 8: 4-8, occurs this passage: "Hear this, all ye that swallow up the needy, even to make the poor of the land fail, saying, 'When will the new moon be gone that we can sell corn, and the sabbath, that we may set forth wheat making the ephah small and the shekel great and falsify the balance by deceit? That ye may buy the poor for silver and the needy for a pair of shoes. Yea, and sell the refuse of the wheat?' "

A booklet has been issued by the state superintendent of weights and measures containing the new weights and measures law; and in accordance with the requirements of law, a booklet also has been issued by the state superintendent of weights and measures containing regulations and instructions for the guidance of weights and measures officials. In those regulations more than one hundred specific different forms of faulty apparatus and faulty use of correct apparatus for determining quantity have been pointed out, and to detect and correct which the work of sealers of weights and measures must be directed. Owing to limitations of time and the fact that one of these booklets is available to each of you, I shall not undertake to enumerate all those short weight and measure abuses here and now. However, I shall briefly indicate some of the conditions which have been found to exist in this state.

A preliminary inspection of grocery stores, meat markets, dry goods stores, etc., by the chief inspector of weights and measures has brought to the Office of Weights and Measures much evidence of the great need of a systematic and periodical inspection of weighing and measuring devices. The practice of selling beans, cranberries, hickory nuts and other dry commodities by the liquid instead of the dry quart measure is so common that hardware men had discontinued keeping dry quart measures upon their shelves. This represents a difference of about 16%. The bottomless measure, while recognized as a fraud by some of our merchants, is still in use in many sections of the state. By its use the dealer has been able to purchase vegetables by weight and then sell them by the bottomless measure, so that he *sold* five pecks by such measure from the bushel he purchased by weight. Linseed oil measures are found coated with oil. Some merchants not being averse to such conditions, as it is somewhat of an aid to him in giving his customers short measure. In fact new measures are found on the shelves of the hardware stores that either through carelessness or intent have been made short. Dry measures can be found of all diameters and depths, with and without flaring tops, some greater and others less than the legal capacity. Scales are found out of balance, in some cases two or three ounces to the pound. An illustration will be given. Scales with incorrect computing charts, broken parts, worn pivots, light poises, worn beams, and a host of other imperfections are so common that from the reports of the work done by our inspectors during the month of December, 1911, fully 26% of the scales were found incorrect.

Counter tacks in dry goods stores are incorrectly spaced, in some cases as much as one-half inch on the yard; heads of large diameter prevail. Cloth tapes are in use in many stores, which through shrinking and stretching are either shorter or longer than the legal measure.

Measuring pumps for kerosene and gasoline with improper adjustments, broken parts and leaky valves, are a fruitful source of producing short measure.

Trade custom is a cloak which is used to cover up a multitude of inequitable practices. Selling by the sack, the basket, the box,

the package, the load, in which there is no definite standard of quantity are methods of transacting business that are in vogue all over the state and which are encouraged by a certain class of manufacturers and distributors.

The above are but a few of the more common conditions found in all parts of the state, and which with a thorough inspection it is hoped will soon be a thing of the past.

Instead of further enumerating these conditions, the time will be taken to give a few concrete illustrations of typical weights and measures evils.

DISCUSSION.

MR. SPEIRS: I stayed over to hear this paper and I think my time has been well spent. I would like to ask Mr. Emery what has been done in this department in the way of sealing creamery and cheese factory test bottles. There is something in which we are dealing in percentages and a slight variation means a good deal, and a good many of the bottles on the market are not correct. They cause continual trouble to the creamery men.

MR. EMERY: As yet we have been unable to reach this work. I want the members here to understand this proposition. This work was new to us all. We had to study. In the cities the work belongs to the cities. Mr. Downing was here on that business at the present time. Up to the present time we have been compelled to let our work in these larger centers go. Mr. Speirs states the thing exactly. In these articles that are used in the cheese factories and creameries, a small variation makes a very great difference at the outset, because here is the opportunity for unfair competition.

MR. H. C. LARSON, Madison: I do not know if I understood Mr. Speir's question. We have instruments for the purpose of testing those bottles and determining whether or not they are accurate. There is a law providing for the punishment upon conviction of a man who is using a bottle not accurate. You will find very few bottles in use now that are not accurate.

MR. SPEIRS: The mail order houses are advertising and sell cream test bottles and they are cheap bottles. You can't get the

farmer away from that and you can't get some firm managers away from that. I have found lots of bottles, the best bottles I can buy, that are not right. I would like to know if there is not some way whereby a creamery could buy its bottles or order them direct from the factory and have them sent to the department of weights and measures to be tested and the creamery pay for the work done.

MR. EMERY: You mean these bottles for the test?

MR. SPEIRS: Yes, sir.

MR. EMERY: I think that would be possible if the bottles were sent to us. There are no fees. The work is all done with no cost. The law provides that persons may send any articles and have them examined.

MR. SPEIRS: You get a bunch of bottles and they vary and you test a cream patron's cream and those cream bottles gives him more than is coming to him and the next time less than is coming to him. You can't blame him for making trouble.

MR. LARSON: The farmer,—the patron of a creamery that patronizes these supply houses or mail order houses—the greatest objection to this thing is that source. They get those bottles cheap and up-to-date, there is no means of getting at whether or not those bottles are right or not.

MR. SPEIRS: Here is the point, Mr. Larson. You have got the mail order house to contend with. Your bottles are right and you don't give a continental about the other fellows.

MR. EMERY: Mr. Speirs is absolutely right on this.

SECRETARY BENKENDORF: The supply men, the commission men and the railroad men have been very generous about contributing toward the success of this meeting. Last evening we had a small amount left which we divided pro rata among the donors. I hope that will meet with the approval of all who contributed and also the buttermakers of this convention.

THE CHAIRMAN: It is now in order for a motion to adjourn.

Motion made and carried that the convention adjourn.

REPORT OF THE ENTERTAINMENT COMMITTEE

Mr. G. H. Benkendorf, Sec.,
Madison, Wis.

Dear Sir:—The Committee on Arrangements for the Smoker and Mixer which was held Thursday evening, Feb. 9th, beg to report as follows:

RECEIPTS.

36 Contributors at $5.00 each	$180.00	
2 Contributors at $2.00 each	4.00	
Total		$184.00

DISBURSEMENTS.

Sandwiches	$ 40.00	
Punch	40.00	
Cigars	52.00	
Service, etc.	15.00	
Elks Club Boys Quartette	1.00	
Orchestra	11.00	
Contribution to entertainment of visiting ladies	5.00	
Balance contributed to Jules Lombard Relief Fund	20.00	
Total		$184.00

The committee in charge of this smoker wish to thank the contributors for the financial assistance given them and beg to say that in view of the fact that the balance was so small it was decided to turn it over to our old friend Jules Lombard whose songs will be remembered as a pleasing feature of former conventions.

Respectfully submitted:

H. P. DILLON, Chairman.
JOHN HIGH.
J. T. PURVES.

JOHN HIGH

H. P. DILLON

Chairman

J. T. PURVES

ENTERTAINMENT COMMITTEE

LIST OF CONTRIBUTORS TO SMOKER

Creamery Package Mfg. Co., Chicago.
J. G. Cherry Co., Cedar Rapids, Iowa.
Bingham & Risdon, West De Pere, Wis.
Co-operative Creamery Supply Co., Milwaukee.
A. H. Barber Creamery Supply Co., Chicago.
Perfection Butter Color Co., Brooklyn, N. Y.
Colonial Salt Co., Chicago.
Worcester Salt Co., Chicago.
De Laval Separator Co., Chicago.
Torsion Balance Co., New York.
Eck, McNiel & Co., Chicago.
International Harvester Co., Chicago.
Dairy Machinery & Construction Co., Derby, Conn.
Diamond Crystal Salt Co., St. Clair, Mich.
Sharples Separator Co., Chicago.
Hunter, Walton Co., Chicago.
Wells & Richardson Co., Burlington, Vt.
Chr. Hansen Laboratory, Little Falls, N. Y.
H. J. Grell Butter & Egg Co., Johnson Creek.
J. B. Ford & Co., Wyandotte, Mich.
S. S. Borden & Co., Chicago.
Wisconsin Dairy Supply Co., Whitewater, Wis.
Gallagher Brothers, Chicago.
Johnston & Coughlin Co., New York.
Merrill & Eldredge Co., Chicago.
W. D. Collyer Co., Chicago.
W. J. Haire & Co., Boston.
New York Dispatch, Chicago.
Morton Salt Co., Chicago.
L. A. Disbrow Churn Co., Owatonna, Minn.
J. R. Ellis & Co., Boston.
John R. Deischer Co., Chicago.
G. W. Bull & Co., Chicago.
Elov Ericsson, St. Paul, Minn.
Pedie Fednuk, Pumpkin Hollow.
Fitch, Cornell & Co., New York.
Beatrice Separator Co., Chicago.
Coyne Brothers, Chicago.

JUDGES SCORES

AND PRO RATA AWARDED.

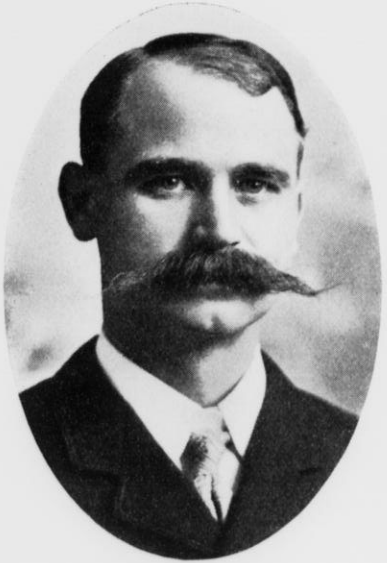
We were fortunate at Green Bay in having a most excellent butter room furnished free of charge by the Beaumont Hotel. It was well lighted and ample in size. The exhibition was in charge of A. C. Schultz of Platteville, member of the executive committee. The judges who passed upon the butter were Prof. C. E. Lee, Madison; H. C. Larson, Madison, and Thos. Corneliuson, Washington, D. C. The scores listed below are the average of the scores given by the three judges scoring independently. The score and pro rata awarded each exhibitor appear in separate colums.

DISTRICT NO. 1.

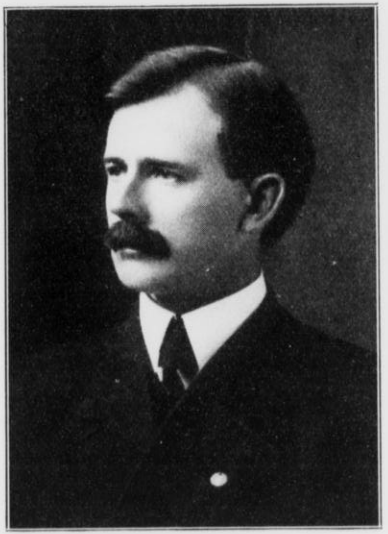
	Score	Pro rata
Nichols, Harry D., Elkhorn	97.16	10.29
Thompson, F. C., East Troy	96.50	9.45
Merryfield, F. V., Troy Center	96.33	9.24
Wurster, H. H., Browntown	95.50	8.19
Von Liere, Martin, Troy Center	95.16	7.77
Clark, W. J., Lake Beulah	95.16	7.77
Conway, W. F., Sharon	94.50	6.93
Hofacker, Ben. O., Zenda	93.66	5.88
Wileman, F. V., Milton Jct	93.50	5.67
Hildeman, E. J., Lake Geneva	93.33	5.46
Wilson, T. G., Hazel Green	93.16	5.25
Thiede, A. R., Beloit	92.66	4.62
Meyer, J. R., Slades Corner	92.83	4.83
Christensen, Hans, Burlington	91.83	3.57

DISTRICT NO. 2.

Stryker, I. W., Nashotah	97.50	10.71
Whiting, H. H., Cedarburg	97.33	10.50
Sauer, G. P., Cedarburg	97.00	10.08
Cross, Alvin, Thiensville	95.50	8.19
Kelling, F. H., Johnson Creek	95.16	7.77
Thelen, P. J., Saukville	95.16	7.77
Stewart, W. A., Eagle	94.66	7.14
Groth, O. J., Cedarburg	94.33	6.72
Brunner, M. E., Ft. Atkinson	94.16	6.51
Higgins, M. J., Sullivan	93.83	6.09



THOS. CORNELIUSON



H. C. LARSON

C. E. LEE

BUTTER JUDGES

	Score	Pro rata
Kottke, Paul, Cedarburg	93.66	5.88
Werner, F. M., Waterloo	93.66	5.88
Perschbacher, A., West Bend	92.83	4.83
Wollensak, S. C., Kewaskum	92.83	4.83
Blumenstein, Frank, Sullivan	92.33	4.20
Berndt, F. O., No. Prairie	92.33	4.20
Kubat, W. H., Eagle	92.00	3.78
Titus, Chas. B., Muskego	91.00	2.52
DISTRICT NO. 3.		
Griffin, H. E., Mt. Horeb	96.66	9.66
Kipp, Henry T., Albion	95.50	8.19
Stewart, G. M., Mazomanie	95.16	7.77
Warnke, Wm., Kingston	94.50	6.93
Christensen, Walter, Klevenville	94.00	6.30
Weber, J. F., Hartford	93.83	6.09
McCready, A. D., Marshall	93.16	5.25
Thym, A. E., Manchester	92.83	4.83
Bolstead, L. L., Basco	92.33	4.20
Tucker, E. H., Lodi	91.66	3.36
Halliday, E. E., Mauston	91.16	2.73
Polzin, R. H., Minn. Jct.	91.00	2.52
Wuethrich, Fred, Doylestown	91.00	2.52
Bolstead, E. T., Deerfield	90.00	1.26
DISTRICT NO. 4.		
Nurell, C. A., Soldiers Grove	95.50	8.19
Turner, Leslie M., Montfort	95.16	7.77
Kretzschmar, Julius, New Lisbon	94.33	6.72
Miller, J. H., Baraboo	94.16	6.51
Mortenson, Jno., Camp Douglas	93.16	5.25
Zimmerman, Otto, Fennimore	93.00	5.04
Fargen, M. M., Plain	93.00	5.04
Bowar, Frank, Cazenovia	92.66	4.62
O'Conner, J. M., Union Center	92.00	3.78
Dresser, Val., Louisburg	90.33	1.68
DISTRICT NO. 5.		
Brye, R. O., Readstown	96.00	8.82
Tambiingson, Mrs. R. E., Wilton, (Complimentary)	95.00	
Lee, Sever, Modena	95.16	7.77
Longfellow, A. N., Wilton	94.83	7.35
Winter, L. H., Eau Claire	94.33	6.72

CORRECTION.

These names belong in district No. 6 but through an error were placed in district No. 10.

Paul, E. N., Greenwood	94.66	7.14
Nachtwey, Anton, Dorchester	92.83	4.83
Christenson, Odin, Nelsonville	92.66	4.62
Buchholz, F. C., Marathon City	92.50	4.41
Christenson, Christ, Amherst Jct	92.00	3.78
Moldenhauer, A. J., Neillsville	92.00	3.78
Lee, Vinton D., Neillsville	91.83	3.57
Sanford, C. M., Amherst Jct	91.83	3.57
Warner, T. J., Rosholt	91.33	2.94
Windfelt, J. J., Almond	91.16	2.73
Jenks, A. H., Loyal	90.66	2.10
Cross, M. R., Humbird	90.50	1.89

	Score	Pro rata
Brye, C. T., Newry	94.16	6.51
Tamblingson, R. E., Wilton	94.16	6.51
Sinkler, E. F., Black River Falls	93.16	5.25
Seyforth, J. W., Mondovi	93.16	5.25
Zimmerman, A. W., Norwalk	92.83	4.83
Melsby, O., Durand	92.66	4.62
Jeffers, D. E., Westby	91.66	3.36
O'Hearn, Frank, Melrose	91.66	3.36
Christensen, Henry, Tomah	91.16	2.73
Sleyster, R. V., Cochrane	91.16	2.73
Berthold, Wm., Dodge	91.16	2.73
Ringger, Jacob, Durand	91.16	2.73
Anderson, C. P., Shennington	91.16	2.73
Dale, N. E., Blair	90.83	2.31
Roou, Ben, Bangor	90.66	2.10
DISTRICT NO. 6.		
Husband, Fred J, Wausau	95.16	7.77
Von Mehren, Paul, Merrill	95.00	7.56
DISTRICT NO. 7.		
Prust, C. H., Princeton	94.33	6.72
Rugotzka, C. F., Wautoma	94.00	6.30
Cleaves, R. C., Northland	93.83	6.09
O'Dell, Claude, Wild Rose	92.83	4.83
Huth, C. W., Seymour	92.83	4.83
Griese, E. C., Kilbourn	92.83	4.83
Olsen, L. A., Waupaca	92.16	3.99
Smith, I. H., Montello	92.16	3.99
Engbretson, M., Scandinavia	92.00	3.78
Miller, A. E., Budsin	91.50	3.15
Kothlow, G. H., Edgerton	90.00	1.26
DISTRICT NO. 8.		
Schiller, John, New Holstein	96.83	9.87
Moersch, Quirin, Peebles	95.50	8.19
O'Keefe, R. J., De Pere	95.66	8.40
Olsen, Lauritz, W. De Pere	95.33	7.98
LeMere, S. G., Green Bay	94.33	6.72
Longteau, Earl, Green Bay	94.33	6.72
Hill, W. F., Brandon	94.16	6.51
Gregory, R., New Franken	93.50	5.67

	Score	Pro rata
Borchert, Geo. E., Green Bay	93.33	5.46
Hoppe, L. F., Rio Creek	93.16	5.25
Roegner, Arthur, Chilton	93.00	5.04
Karls, Nich., Stockbridge	92.50	4.41
Grab, Henry, Luxembourg	92.33	4.20
Tyler, Clay, W. De Pere	92.16	3.99
Juul, John, Wrightstown	91.83	3.57
Sibilsky, E. H., Algoma	91.50	3.15
Yates, R. A., Fond du Lac	91.50	3.15
Braun, John P., Malone	91.16	2.73
Houdek, F. J., Waupun	91.00	2.52

DISTRICT NO. 9.

Nichols, W. R., Amery	96.16	9.03
Kristensen, Axel, Luck	95.50	8.19
Limp, Walter, Bloomer	94.83	7.35
Christensen, R. P., Milltown	94.83	7.35
Colwell, R. P., River Falls	94.83	7.35
Kristensen, P., Cushing	94.66	7.14
Esker, Ole, Dallas	94.33	6.72
Carswell, Robt., Clear Lake	94.16	6.51
Scheel, E. W., Turtle Lake	93.66	5.88
Chapin, B. J., St. Croix Falls	93.66	5.88
Benson, C. J., Reeve	93.50	5.67
Beck, John P., Stanton	93.50	5.67
Jacobson, Thos., Cadott	93.33	5.46
Nedvidek, F. J., Bloomer	93.00	5.04
Melgaard, H. O., Ellsworth	92.83	4.83
Goble, C. C., Hersey	92.83	4.83
Roch, F. J., Chippewa Falls	92.66	4.62
Bjerking, J. L., Beldenville	92.66	4.62
Garlid, Geo., Knapp	92.66	4.62
Enerson, Hilbert, Comstock	92.50	4.41
Boettcher, C. T., Menomonie	92.16	3.99
Gerland, C., Rice Lake	91.83	3.57
Hanson, J. M., New Auburn	91.83	3.57
Shager, Emil, Elk Mound	91.66	3.36
O'Conner, C. F., Eau Galle	90.66	2.10

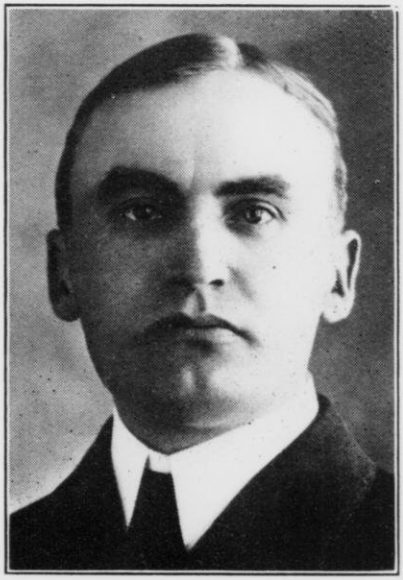
DISTRICT NO. 10.

Christensen, Chris., Rose Lawn	95.16	7.77
Peterson, Louis, Bonduel	94.00	6.30
Magrane, J. T., Oconto Falls	91.16	2.73

Haberstich, A. C., Medford	91.16	2.73
Fehling, E. A., Shawano	90.66	2.10
Roesser, Matt., Sister Bay	90.66	2.10
Paul, E. N., Greenwood	94.66	7.14
Nachtwey, Anton, Dorchester	92.83	4.83
Christenson, Odin, Nelsonville	92.66	4.62
Buchholz, F. C., Marathon City	92.50	4.41
Christenson, Christ, Amherst Jct	92.00	3.78
Moldenhauer, A. J., Neillsville	92.00	3.78
Lee, Vinton D., Neillsville	91.83	3.57
Sanford, C. M., Amherst Jct	91.83	3.57
Warner, T. J., Rosholt	91.33	2.94
Windfelt, J. J., Almond	91.16	2.73
Jenks, A. H., Loyal	90.66	2.10
Cross, M. R., Humbird	90.50	1.89

NON-RESIDENT.

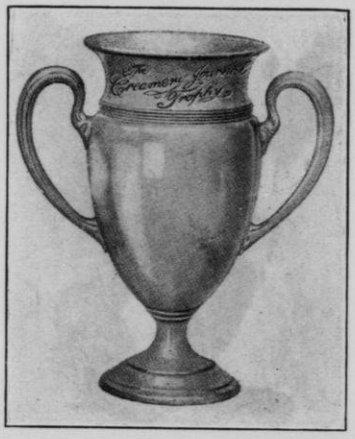
Anderson, A. J., Otisco, Minn. (Comp.)	93.50	
Grosser, John, Clinton Falls, Minn. (Comp.)	94.83	



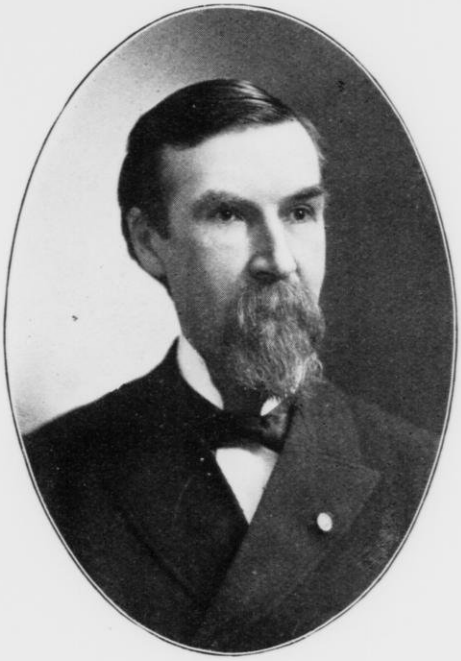
ELOV ERICSSON, ST. PAUL
In Charge of Educational Starter Demonstration

CREAMERY JOURNAL TROPHY

In the fall of 1909 the editor of the CREAMERY JOURNAL, published at Waterloo, Iowa, announced that his paper would give a loving cup of 925 parts pure sterling silver, gold lined, as an award to the state association having the highest average score of butter entered at their annual convention. It was also further provided that any state association that won this cup three times consecutively would be given permanent possession of the same. Wisconsin won the first year with an average score of 92.9 for 148 entries. The next year they again had the highest average score of 92.43 with 175 entries. At the Green Bay convention in 1912 there were 155 entries with an average score of 93.13. Having fulfilled the conditions for ownership the cup has been awarded to this association and has been placed on permanent exhibition at the Dairy School of the University of Wisconsin.



CREAMERY JOURNAL TROPHY.



HON. S. A. COOK

For four consecutive years Hon. S. A. Cook of Neenah, Wis., has shown his interest in the development of the dairy industry in this state as promoted by the Wisconsin Buttermakers' Association by donating three valuable chairs each year to those scoring highest at our conventions. Twelve beautiful chairs now adorn the homes of some of our members about the state, due to his unbounded generosity and great interest in the rank and file of the organization.

THE PRIZEWINNERS

The following is a list of the exhibitors who were so fortunate as to win the prizes offered by the association:

STATE PRIZE WINNERS.

Score

First prize—I. W. Stryker, Nashotah, leather chair, value $35.00, donated by Hon. S. A. Cook, Neenah.....97.50

Second prize—H. H. Whiting, Cedarburg, leather chair, value $25.00, donated by Hon. S. A. Cook, Neenah.....97.33

Third prize—Harry D. Nichols, Elkhorn, leather chair, value $15.00, donated by Hon. S. A. Cook, Neenah 97.16

Fourth prize—G. P. Sauer, Cedarburg, wood chest with drawer, containing 26 pieces Community silver, knives, forks, spoons, etc. 97.00

Fifth prize—John Schiller, New Holstein, two-quart water set, 7 pieces, best sterling silver deposit ware.....96.83

Sixth prize—H. E. Griffin, Mt. Horeb, Nine-piece desk set, solid brass 96.66

Seventh prize—F. C. Thompson, East Troy, Set silver knives and forks, classic pattern, Community silver.....96.50

Eighth prize—F. V. Merryfield, Troy Center, Set silver knives and forks, Sheraton pattern, Community silver.....96.33

Ninth prize—W. R. Nichols, Amery, Set silver knives and forks, Avalon pattern, Community silver.....96.16

Tenth prize—R. O. Brye, Readstown, Set silver knives and forks, Sharon pattern, Community silver.....96.00

DISTRICT PRIZE WINNERS.

Through the liberality of the Green Bay Commercial Club, which not only contributed $300 to the premium fund, but also an additional $100 to be expended for prizes, we were able to offer twenty district prizes, two in each of the ten districts into which the state was divided. The first prize was a set of Rogers Brothers (1847) silver knives and forks, the second, a three-piece carving set, stag horn handle, silver caps and ferrules, 9-inch blade.

The state was divided into ten districts, each district containing approximately 100 creameries and the same general conditions for producing butter. The winners were as follows:

First district—Milwaukee, Racine, Kenosha, Walworth, Rock and Green counties.

First prize winner—Martin Von Liere, Troy Center.

Second prize winner—W. J. Clark, Lake Beulah.

Second district—Jefferson, Waukesha, Washington and Ozaukee counties.

First prize winner—Alvin Cross, Thiensville.

Second prize winner—F. H. Kelling, Johnson Creek.

Third district—Dane, Columbia, Dodge and Green Lake counties.

First prize winner—Henry Kipp, Albion.

Second prize winner—A. D. McCready, Marshall.

Fourth district—Grant, La Fayette, Iowa, Crawford, Richland, Sauk and Juneau counties.

First prize winner—C. O. Nurell, Soldiers Grove.

Second prize winner—Leslie M. Turner, Montfort.

Fifth district—Vernon, Monroe, La Crosse, Jackson, Trempealeau, Buffalo, Eau Claire and Pepin counties.

First prize winner—Sever Lee, Modena.

Second prize winner—L. H. Winter, Eau Claire.

Sixth district—Marathon, Portage, Wood and Clark counties.

First prize winner—Fred J. Husband, Wausau.

Second prize winner—E. N. Paul, Greenwood.

Seventh district—Adams, Marquette, Waushara, Winnebago, Outagamie and Waupaca counties.

First prize winner—C. H. Prust, Princeton.

Second prize winner—R. C. Cleaves, Northland.

Eighth district—Fond du Lac, Sheboygan, Calumet, Manitowoc, Brown and Kewaunee counties.

First prize winner—R. J. O'Keefe, De Pere.

Second prize winner—Quirin Moersch, Peebles.

Ninth district—Pierce, St. Croix, Dunn, Chippewa, Barron and Polk counties.

First prize winner—Robert Carswell, Clear Lake.

Second prize winner—E. W. Scheel, Turtle Lake.

Tenth district—Burnett, Douglas, Washburn, Rusk, Sawyer, Bayfield, Taylor, Price, Ashland, Iron, Lincoln, Oneida, Vilas, Langlade, Shawano, Forest, Florence, Marinette, Oconto and Door counties.

First prize winner—Christ Christensen, Rose Lawn.

Second prize winner—J. T. Magrane, Oconto Falls.

AN ACKNOWLEGEMENT

In addition to the general and the district prizes offered by the association, the following concerns co-operated with our officers in an effort to make the Green Bay convention a success by offering various prizes:

J. B. Ford Co., Wyandotte, Mich.
Chris. Hansen's Laboratory, Little Falls, N. Y.
Co-operative Creamery Supply Co., Milwaukee.
Coyne Brothers, Chicago.
Wells & Richardson Co., Burlington, Vt.
Diamond Crystal Salt Co., St. Clair, Mich.
Preservaline Mfg. Co., Brooklyn, N. Y.

The members of the Wisconsin Buttermakers' Association are certainly grateful for the interest manifested in the welfare of the organization by the above named firms.

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22S28 Larson, H.C. 24S28
28 AUG 1931 Behrens, M. 2 SEPT 1931
28 [illegible] Behrens, M. [illegible]
14 APR 1947 Kloon, WH 29 [illegible]
17 MAY 1948 W. Bohnhoff 18 MAY 1948
MAR 28 '62