Sixteenth annual meeting of the Wisconsin Cheese Makers' Association held in the Freie Gemeinde Hall, Milwaukee, Wisconsin, Wednesday, Thursday and Friday, January 8, 9 and 10, 1908. 1908

Wisconsin Cheese Makers' Association
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Walter Bernstein

SIXTEENTH ANNUAL MEETING

OF THE

WISCONSIN

Cheese Makers' Association

HELD IN THE

Freie Gemeinde Hall, Milwaukee, Wisconsin, Wednesday, Thursday and Friday, January 8, 9 and 10, 1908.

Report of the Proceedings, Annual Address of the President, and Interesting Essays and Discussions Relating to the Cheese Interests.

Compiled by
U. S. BAER, Secretary.
MRS. M. G. CARPENTER, Stenographic Reporter.

MADISON, WIS.
DEMOCRAT PRINTING COMPANY, STATE PRINTER
1908

LETTER OF TRANSMITTAL.

Office of the Secretary,
Wisconsin Cheese Makers' Association,
Madison, Wis. 1908.

To His Excellency. James O. Davidson,
Governor of the State of Wisconsin:

I have the honor to submit the sixteenth annual report of the Wisconsin Cheese Makers' Association, showing the receipts and disbursements the past year, also containing the papers, addresses and discussions had at the annual convention held at Milwaukee, January 8–10, 1908.

Respectfully submitted,
U. S. BAER,
Secretary.

OFFICERS, 1908.

President:—

J. B. McCREADY.....Green Bay, Wis.

Vice President:—

FRED MARTY.....Monroe, Wis.

Directors:—

Three Years—F. J. KARLEN.....Monroe, Wis.
Two Years—J. W. CROSS.....Mauston, Wis.
One Year—J. D. CANNON.....New London, Wis.

Treasurer:—

F. E. CARSWELL.....Richland Center, Wis.

Secretary:—

U. S. BAER.....Madison, Wis.

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ARTICLES OF INCORPORATION

OF THE

Wisconsin Cheese Makers' Association

(Adopted February 2, 1899.)

ARTICLE I.

The undersigned have associated and do hereby associate themselves together for the purpose of forming a corporation under Chapter 86 of the Wisconsin statutes of 1898 and the acts amendatory thereof and supplementary thereto, the business, purpose, and object of which corporation shall be the education of its members for better work in the art of making cheese, the care and management of factories, the sale of their products and the weeding out of incompetency in the business of cheese making; the further object of the corporation is to demand a thorough revision and rigid enforcement of such laws as will protect the manufacture of honest dairy products against undue competition from deceitful and dangerous imitations; and to unite the rank and file of its members in instituting a regular crusade against the unjust practice of pooling milk at cheese factories by weight, without regard to the butter fat which it contains.

ARTICLE II.

This corporation shall be known as the "Wisconsin Cheese Makers' Association," and its principal office and location at Madison, Wisconsin.

ARTICLE III.

The association shall be a corporation without capital stock. Any person who is a practical cheese maker, and such other persons as are di-

rectly or indirectly interested in the manufacture and sale of unadulterated cheese may become members of this corporation by paying one dollar annually in advance and signing the roll of membership.

ARTICLE IV.

Section 1. The general officers of said association shall consist of a president, vice-president, secretary, and treasurer and the board of directors shall consist of three members of the association.

Section 2. The term of the officers of the association shall be one year or until their successors are elected at the next annual meeting following their election, and until such successors qualify. At the first meeting of the members of the association there shall be elected a director for the term of one year, a director for the term of two years, and a director for the term of three years, and thereafter there shall be elected at each annual meeting, a director for the term of three years, and each director shall hold his office until his successor is elected and qualifies. The election of officers and directors shall be by ballot, execpt in case of a single nominee, when election by acclamation may be substituted. A majority of all the votes cast shall decide an election.

ARTICLE V.

Section 1. 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 special committees and sign all orders drawn on the treasurer. He shall appoint a committee on resolutions and a program committee. He shall also provide for suitable medals at the expense of the association.

Section 2. The vice president shall assume the duties of the president in the latter's absence.

Sectio 3. The principal duties of the secretary of this association shall be to keep a complete and accurate record of the proceedings of the Board of Directors and of the association and to attend all meetings, keep a correct account of the finances received, pay all moneys into the hands of the treasurer and receive his receipt therefor, and to countersign all orders for money drawn upon the treasurer. He shall keep a record book and suitable blanks for his office. He shall make a full and complete report at each annual meeting of the correct state of the finances and standing of the association. He shall also procure certificates of membership, and every person joining the association shall receive one signed by the president and countersigned by the secretary.

Section 4. The principal duties of the treasurer shall be to faithfully care for all moneys entrusted to his keeping, paying out the 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 to inspection at any time by any member of the association.

Section 5. The Board of Directors shall be the Executive committee and shall audit the accounts of the secretary and treasurer, and present a report of the same at the annual meeting; Executive committee shall procure a place to hold the meeting and make arrangements for Reception committees, hotel rates, halls, and all necessary preliminary arrangements for each and every meeting.

Section 6. The committee on programs shall make all arrangements for the proper working of the conventions, assigning all subjects, arranging for speakers, and make the division of time allowed to the discussion of each topic, to determine upon the time for the election of officers, conducting business meetings, and any other matters that may properly come under this division.

Section 7. The committee on resolution shall draw up such resolutions as the exigencies of the time may require and which shall express the sense of the association.

Section 8. The said officers shall perform such additional or different duties as shall from time to time be imposed or required by the members of the corporation in annual meeting, or by the Board of Directors, or as may be prescribed from time to time by the by-laws, and any of the duties and powers of the officers may be performed or exercised by such other officers or officer, or such person or committee as the corporation or Board of Directors may authorize.

ARTICLE VI.

The treasurer of the corporation shall give a bond in the sum of one thousand dollars with two sureties, for the faithful performance of his duties.

ARTICLE VII.

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

ARTICLE VIII.

The first meeting of this association for the election of officers and directors shall be held on the 3d day of February, 1901, and such corporation shall hold a meeting of its members annually during each calender year at such time as may be determined by the Board of Directors.

MEMBERS OF WISCONSIN CHEESE MAKERS' ASSOCIATION, 1908.

A

Aldrich, M. B.	De Pere	Wisconsin
Assenbauer, Mike	Theresa	Wisconsin
Altman, J. F.	Blenker	Wisconsin
Albrecht Bros. & Co	Kewaunee	Wisconsin
Anderegg, Casper	La Crosse	Wisconsin
Ackerman, Henry	Manitowoc, R. 3	Wisconsin
Adams, M. J.	Waukesha	Wisconsin
Anderson, H.	Sheboygan Falls	Wisconsin
Austin, H. E.	Boscobel	Wisconsin
Ackerman, Joseph	Monroe	Wisconsin
Ast, Ben	Dodgeville	Wisconsin
Alexander, C. B.	Chicago, Star Union Line	Illinois
Aderhold, E. L.	Neenah	Wisconsin

B

Baer, U. S.	Madison	Wisconsin
Brinkman, C. F.	Coon Valley, R. 1	Wisconsin
Bergs, Joseph	Edgar, R. 2	Wisconsin
Bymers, John	Vesper	Wisconsin
Best, C. E.	Franklin	Wisconsin
Beck, G. E.	Linden	Wisconsin
Bennin, Chas. A.	New Holstein	Wisconsin.
Bartz, H. F.	Suring, R. 1	Wisconsin
Bonikowske, Louis	Odgenburg	Wisconsin
Benkendorf, G. H.	Madison	Wisconsin
Bagley, Frank R.	Chicago, 40 Dearborn St.	Illinois
Bean, Geo. W.	Green Bay, R. 8	Wisconsin
Benishek, Anton	Kellnersville, R. 2	Wisconsin
Bornfleth, R.	Burnett Jct	Wisconsin

Bauer, Fred	Chilton	Wisconsin
Bois, A. F	Osceola	Wisconsin
Becker, Phil	Hubertus	Wisconsin
Bender, Fred	Boaz	Wisconsin
Bennett, Andrew	Belmont	Wisconsin
Barron, Frank	Fond du Lac, R. 2	Wisconsin
Burchard, G. W	Fort Atkinson	Wisconsin
Bruhn, Aksel	Spring Green, R. 1	Wisconsin
Bahr, C. A	New Holstein, R. 3	Wisconsin
Bahr, Ed. M	Sheboygan Falls	Wisconsin
Borchart, Albert	Wayside	Wisconsin
Biddulph, J. R	Tiskilwa	Illinois
Baker, Wm. D	Kiel, R. 1	Wisconsin
Brinkman, Ed. C	Plymouth, R. 25	Wisconsin
Bartelt, John	Allenton, R. 1	Wisconsin
Bruik, A	Sawyer, R. 3	Wisconsin
Bamford, H. J	Plymouth	Wisconsin
Baertschi, Fred	Mayville	Wisconsin
Blood, Fred	Winnetke	Illinois
Blessig, L. W	Milwaukee, Penn. Ry. Co.	Wisconsin
Brickhaus, S. N	Chicago, 184 E. Kinzie St.	Illinois
Bates, R. R	Madison, 137 E. Johnson St.	Wis.
Brandt, A. K	Plymouth, R. 27	Wisconsin
Becker, Henry	Richfield, R. 2	Wisconsin
Bilgrien, H	Iron Ridge	Wisconsin

C

Chilsen, Knudt	Merrill, R. 5	Wisconsin
Cross, Avery A	Mauston	Wisconsin
Cross, J. W	Mauston	Wisconsin
Carswell, F. E	Richland Center	Wisconsin
Cannon, J. D	New London	Wisconsin
Combs, Frank	Merrill	Wisconsin
Cranston, P. E	Sabin	Wisconsin
Cook, Hon. S. A	Neenah	Wisconsin
Callies, R. H	Edgar, R. 1	Wisconsin
Carpenter, Fred H	Edgar, R. 1	Wisconsin
Cebell, R. A	Watertown	Wisconsin
Conrad, R	Haven	Wisconsin
Coulsom, E. H	Kewaunee	Wisconsin
Cannon, Sam	Neenah	Wisconsin
Chesak, W. J	West Bend, R. 2	Wisconsin
Chaplin, H. A	Plymouth	Wisconsin

Corneliuson, T.....Eau Claire .....Wisconsin
Criss, J. F.....Chicago, 278 So. Water St...Illinois
Chaplin, Erle.....Plymouth .....Wisconsin
Cook, S. A.....Neenah .....Wisconsin
Cornish, O. B.....Ft. Atkinson .....Wisconsin
Carver, C. A.....Milwaukee, 114 Wis. St...Wisconsin

D

Derfus, J. J. .....Sherwood .....Wisconsin
Dornstreich, Wm.....Greenleaf, R. 3.....Wisconsin
Douma, G.....Cleveland .....Wisconsin
Decker, A. J.....Fond du Lac, 127 Gillett St....Wis.
Draheim, John A.....Hayton, R. 1.....Wisconsin
Damrow, O. A.....Sheboygan Falls, R. 7....Wisconsin
Dohnel, F. W.....Oconto, R. 2.....Wisconsin
Dixon, H. A.....Clintonville .....Wisconsin
Diekow, R. C.....Cobb .....Wisconsin
Damrow Bros.....Fond du Lac.....Wisconsin
Ditmar, John G.....Kewaunee, R. 2.....Wisconsin
Durst, Henry.....Twin Bluffs, R. 1.....Wisconsin
Durst L. A.....Twin Bluffs, R. 1.....Wisconsin
Dassow, R. P.....Sheboygan Falls, R. 8....Wisconsin
Dodge, A. C.....Lake Mills.....Wisconsin
Deland, A. D.....Sheboygan .....Wisconsin
De Zotell, Frank A.....Milwaukee .....Wisconsin
(921 Ry. Exchange Bldg.)
Dibble, C. A.....Milwaukee .....Wisconsin
Room 28 Chamber of Commerce Bld
Dillon, H. P.....Oshkosh, 146 Franklin Ave....Wis.

E

Ebbens, Louis E. .....Thorp .....Wisconsin
Elmslie, J. A.....Milwaukee .....Wisconsin
(24 Chamber of Commerce)
Elmer, John H. & Son.....Monroe .....Wisconsin
Emery, J. Q.....Madison .....Wisconsin
Enright, John.....Watertown .....Wisconsin
Eichinger, Joseph.....Sturgeon Bay, R. 2.....Wisconsin
Ebert, Lornz.....Bonduel .....Wisconsin
Eide, Harry.....Granton .....Wisconsin
Ellfson, Henry.....Spring Green.....Wisconsin

Ehrlich, Otto.....Sheboygan Falls, R. 10..Wisconsin
Ellsworth, C. R.....Lone Rock.....Wisconsin

F

Fennema, John.....Ondega .....Netherlands
Figred, Elias.....Stavanger .....Norway
Feun, Oscar A.....Sheboygan Falls, R. 7....Wisconsin
Frank, Wm. J.....Manitowoc, R. 4.....Wisconsin
Fero, Walter.....Stanley, R. 2.....Wisconsin
Fischer, John.....Boaz .....Wisconsin
Freeman, Leonard.....Fenton .....Michigan
Furrer, Casper.....Blanchardville .....Wisconsin
Fischer, E. H.....Waldo .....Wisconsin
Fenner, Frank.....Sheboygan Falls, R. 9....Wisconsin
Fehrmann, Aug.....Whitelaw .....Wisconsin
Falck, Louis.....Morrison .....Wisconsin
Fries, Anton.....Glidden .....Wisconsin
Fellenz, Joseph B.....Kewaskum, R. 1.....Wisconsin
Fassbender, H.....Greenville .....Wisconsin
Falk, J. W.....Mayville .....Wisconsin
Fisher, Geo. Jr.....Spencer, R. 2.....Wisconsin
Ferbend, F.....Chicago, 71 So. Water St....Illinois
Frazer, G. W.....Appleton .....Wisconsin
Fulmer, F. B.....Oshkosh .....Wisconsin

G

Goodman, L. W.....Cadott, R. 2.....Wisconsin
Grootemont, John.....Brillion .....Wisconsin
Grimm, A.....Tremont .....Wisconsin
Gartman, A. .....Edgar, R. 1.....Wisconsin
Goeb, John H.....Fond du Lac, 278 6th St..Wisconsin
Good, Chas. H.....Richland Center.....Wisconsin
Goetschel, S. E.....Cleveland .....Wisconsin
Gartman, Chas.....Sheboygan, R. 4.....Wisconsin
Gruenke, O. F. .....Clintonville, R. 2.....Wisconsin
Gregorius, M. J.....Appleton .....Wisconsin
Gerner, R.....Barton .....Wisconsin
Green, R. C.....Albion .....Wisconsin
Gartman, F. W.....Sheboygan, R. 4.....Wisconsin
Gronert, R. F.....Beaver Dam .....Wisconsin

H

Hosig, Emil B.....Mayville .....Minnesota
Huffman, Howard.....Richland Center .....Wisconsin
Haskins, H. J.....Madison .....Wisconsin
Husar, Emil.....Kellnersville, R. 1.....Wisconsin
Hoffman, A. F.....Stanley, R. 1.....Wisconsin
Heckert, C. A.....Chilton .....Wisconsin
Harder, F. J.....Hilbert, R. 5.....Wisconsin
Helm, A. B.....Oshkosh .....Wisconsin
Holzmiller, John.....Fennimore .....Wisconsin
Hannawell, Freeman.....Livingstone, R. 2.....Wisconsin
Hahn, A. H.....Sheboygan Falls, R. 8...Wisconsin
Hertel, Jacob.....Chilton, R. 2.....Wisconsin
Haugartner, J. J.....Marion .....Wisconsin
Hoeppner, John.....Marion .....Wisconsin
Hefty, Jacob.....Mt. Horeb .....Wisconsin
Haven, E. A.....Bloomingdale .....Michigan
Haag, Wm.....Malone .....Wisconsin
Hasse, Louis.....Juneau, R. 1.....Wisconsin
Hamm, Albert.....West Bend, R. 3.....Wisconsin
Howe, J. H.....Spencer, R. 2.....Wisconsin
Habhegger, John.....Watertown, 110 Second St., Wis.
Huber, Joseph .....Monroe .....Wisconsin
Heublein, M. C.....Fox Lake .....Wisconsin
Hrusk, Andrew.....Luxembourg, R. 3.....Wisconsin
Hoesly, Fred.....Bangor, R. 2.....Wisconsin

I

Indermuhle, Henry.....Theresa .....Wisconsin
Indermuhle, Fred.....Oakfield, R. 27.....Wisconsin
Indermuhle, Carl.....Knowles, R. 1.....Wisconsin

J

Jaeger, John.....Campbellsport .....Wisconsin
Jozwick, John H.....Hofa Park .....Wisconsin
Jarchow, L .....Forestville .....Wisconsin
Johnston, Robert.....Woodstock, Ontario,.....Canada
39 Vansittart Ave.
Jennings, A. A. .....Chicago, 4 Sherman St.....Illinois

K

Kane, James.....Stanton .....Wisconsin
Koehler, M. A. .....West Bloomfield .....Wisconsin
Kriewaldt, J. E. .....Embarrass, R. 1.....Wisconsin
Knudson, Oscar.....Spring Green.....Wisconsin
Kregel, L. C.....Larson, R. 15 .....Wisconsin
Kawai, Mataroku.....Osaka .....Japan
Kust, G. C.....Neillsville .....Wisconsin
Kaeser, John .....Monroe .....Wisconsin
Kusel, L. H.....Watertown .....Wisconsin
Karlen, F. J. .....Monroe .....Wisconsin
Karlen, Jacob .....Monroe .....Wisconsin
Karlen, Jacob Sr.....Monroe .....Wisconsin
Kalmerton, Ed.....Sheboygan Falls, R. 7, Wisconsin
Kouz, Joe.....Elkhart, R. 32..... [illegible]sin
Kuhn, Phil.....Rockfield .....Wisconsin
Kuhn, Geo. C. .....Fredonia .....Wisconsin
Kulhanek, Simon.....Kewaunee .....Wisconsin
Kuehl, W. M. .....Kewaunee, P. O. Bx. 186, Wisconsin
Koskamp, H. M.....Oostburg, R. 3.....Wisconsin
Koopman, Albert.....Port Washington .....Wisconsin
Kalk, H. A. .....Plymouth, R. 24.....Wisconsin
Koepke, Otto.....Kewaskum .....Wisconsin
Knuth, Herman.....Kiel, R. 3 .....Wisconsin
Kohli, Christ.....Mayville, R. 3 .....Wisconsin
Kohli, Robt. .....Knowles, R. 1.....Wisconsin
Kasper, P. H. .....Welcome .....Wisconsin
Koenigs, Math.....St. Cloud, R. 42.....Wisconsin
Kuhn, J. J. .....Cleveland, R. 1 .....Wisconsin
Kachel, T. A. .....Whitewater .....Wisconsin
Klessig, H. R.....Fredonia .....Wisconsin
Kerscher, Frank .....Manitowoc .....Wisconsin
Kleinhesselink, G. .....Cedar Grove .....Wisconsin
Kornely, Chas. .....Manitowoc, R. 7 .....Wisconsin
Kellert, Ed. .....Grafton, R. 1.....Wisconsin
Kiekhaefer, Aug. .....Reedsville, R. 1.....Wisconsin
Kachel, J. C.....Whitewater .....Wisconsin
Kirkpatrick, John.....Richland Center .....Wisconsin

L

Lejeune, J. F.....Rice Lake, R. 2.....Wisconsin
Lau, Lewis.....Hartford, R. 4.....Wisconsin

Luethy, H. B.....Reedsville .....Wisconsin
Lorenz, A. C.....Manitowoc, R. 5.....Wisconsin
Lutz, O. C.....Cleveland, R. 2.....Wisconsin
Lisser, Alex.....Darlington .....Wisconsin
Linzmeyer, J. B.....Angelica, R. 1.....Wisconsin
Larson, H. C.....Dodgeville .....Wisconsin
Luecke, W. F.....Manawa .....Wisconsin
Leeseberg, Ralph.....Milwaukee, 597 14th St., Wisconsin
Last, B. O. .....Luxembourg .....Wisconsin
Lord, Frank .....Kewaskum, R. 5.....Wisconsin
Lord, James.....Ithaca .....Wisconsin
Luethy, Adolph.....Reedsville .....Wisconsin
Loose, Henry.....Hilbert, R. 4.....Wisconsin
Luebke, A. C. .....Forestville, R. 2.....Wisconsin
Lammers, Arthur J. .....Waldo .....Wisconsin
Leavens, A. .....Sheboygan Falls.....Wisconsin
Lindow, Wm. C. .....Plymouth, R. 27.....Wisconsin
Larson, P. A.....Holeman .....Wisconsin
Lounsbury, J. M.....Watertown .....Wisconsin
Luchsinger, Thos. .....Monroe .....Wisconsin
Laabs, F. W.....Curtis .....Wisconsin
LeFeber, John, Pres. Gridley Dairy Co., Milwaukee .....Wisconsin

M

Lovell, R. C. .....Juneau .....Wisconsin
Malczenski, Edward.....Pulaski .....Wisconsin
Makazek, Paul.....Kewaunee .....Wisconsin
Moser, Joe.....Brillion .....Wisconsin
Meisner, Frank.....Embarrass .....Wisconsin
Miller, Henry.....Peshtigo, R. 2.....Wisconsin
Matin, H. F. .....Osceola, R. 1.....Wisconsin
Meusch, Arthur.....Fond du Lac, R. 3.....Wisconsin
McMillin, R. C. .....Viroqua, R. 3, Box 57, Wisconsin
Michels, Math.....Madison .....Wisconsin
Moore, Alex. .....Pittsburg, 22 Sharon Ave., Penn.
Marks, F. F. .....Colby, R. 1 .....Wisconsin
Moore, J. W. .....Madison .....Wisconsin
Marty, Gottlieb .....Madison .....Wisconsin
McCready, J. B. .....Sheboygan .....Wisconsin
Mahlik, M. J. .....Pilsen .....Wisconsin
Mayer, Henry .....Darlington .....Wisconsin
Marty, Fred .....Monroe .....Wisconsin

Moore, J. G.	Madison	Wisconsin
Mayhew, A. B.	Clintonville	Wisconsin
Mayhew, E. B.	Greenbush	Wisconsin
Mayer, Math	New Holstein, R. 3	Wisconsin
McCarthy, J. T.	West Concord	Minnesota
Matznick, G. M.	Kiel, R. 1	Wisconsin
Maas, Emil	Oostburg, R. 13	Wisconsin
McAdams, Will	Waukesha	Wisconsin
McManners, H.	Madison	Wisconsin
McNicholas, Frank	Plymouth, R. 26	Wisconsin
Muehleisen, Gottlieb	Tell	Wisconsin
Manning, Tim	Richland Ctr., R. 2	Wisconsin
Muehlberg, O. E.	Fredonia	Wisconsin
Maechtle, A. G.	Port Washington	Wisconsin
Matthews, Vern	Excelsior	Wisconsin
Mrotek, Peter	Kewaunee	Wisconsin
McCaig, J. H.	Watertown	Wisconsin
Maurer, W. H.	Rock Grove	Illinois
McGill, James	Little Suamico	Wisconsin
Meyer, Reinhold Mfg. Co.	Plymouth	Wisconsin
Moldenhauer, H. R.	Watertown	Wisconsin
McCormick, Chas.	Dodgeville, R. 2	Wisconsin
Marschall, Chas.	Lomira, R. 1	Wisconsin
Meyer, M. H.	Madison (Dairy School),	Wisconsin
Marschall, A. J.	Madison	Wisconsin
Murphy, Morris	Chicago, 229 So. Water St.	Ill.
Murray, R. A.	Richland Center	Wisconsin

N

Newman, Henry	Sawyer, R. 6	Wisconsin
Noyes, H. J.	Muscoda	Wisconsin
Newell, J. A.	Merrill, R. 5	Wisconsin
Noyes, H. L.	Muscoda	Wisconsin
Nussbaumer, F. W.	Sheboygan Falls, R. 9	Wisconsin
Newman, B. W.	Madison	Wisconsin
Natzke, Dan	Wayside, R. 1	Wisconsin

O

Olson, Theodore	White Mound	Wisconsin
Ostrander, J. M.	Mineral Point	Wisconsin
Okonski, Paul	Kewaunee	Wisconsin

P

Peters, Paul.....New London.....Wisconsin
Polechek, Frank.....Brussels, R. 2.....Wisconsin
Patt, C. H.....Van Dyne .....Wisconsin
Peterson, Peter M.....Clyde .....Wisconsin
Pringle, E. C.....Elkhart Lake, R. 32....Wisconsin
Possley, N. E. .....New Holstein, R. 3.....Wisconsin
Priebe, H. W.....Kewaunee, R. 6.....Wisconsin
Parkins, A. W.....Cannon Falls .....Minnesota
Peters, John H.....Sheboygan Falls, R. 9...Wisconsin
Princel, H. .....Mishicot .....Wisconsin
Paasch, Wm.....Cedar Grove, R. 14.....Wisconsin
Pelke, Louis.....Welcome .....Wisconsin
Peacock, P. H.....Sheboygan .....Wisconsin
Peirick, J. J.....Beaver Dam .....Wisconsin
Pipal, V. W. .....Blue River .....Wisconsin
Parkhurst, S. D. .....Chicago, Rector Bldg.....Illinois
Plansky, Frank A.....Kewaunee R. 3.....Wisconsin
Petznick, Robt.....Waldo, R. 22.....Wisconsin
Peterson A. F.....Appleton, R. 3.....Wisconsin
Petri, John.....Wayne, Campbellsport, Wisconsin
Pool & Lou.....Darlington .....Wisconsin

Q

Quinn, W. P.....Seattle .....Washington

R

Rothenbach, J., Jr.....Ackerville .....Wisconsin
Ropella, Lara .....Amherst Jct. .....Wisconsin
Radke, R. H.....Marion .....Wisconsin
Rank, J. P.....Luxembourg .....Wisconsin
Radloff, Max P. E.....Hutisford .....Wisconsin
Roethlesberger, John.....Juda, R. F. D.....Wisconsin
Rice, John.....St. Cloud .....Wisconsin
Reiser, Mick.....New Holstein, R. 3.....Wisconsin
Rusch, A. J.....Thorpe .....Wisconsin
Reineking, F. C.....Plymouth, R. 29.....Wisconsin
Richert, G. W.....Pelka .....Wisconsin
Roegner, Arthur.....Chilton, R. 5.....Wisconsin

Regez, Ernest, Jr. ..... Blanchardville ..... Wisconsin
Regez, Ernest, Sr. ..... Blanchardville ..... Wisconsin
Rothenbach, J. ..... Ackerville ..... Wisconsin
Rassmussen, Chas ..... Clintonville ..... Wisconsin
Rendler, G. L. ..... Coon Valley, R. 1 ..... Wisconsin
Radder, Wm. ..... Reedsville, R. 1 ..... Wisconsin
Reid, John ..... Oconomowoc ..... Wisconsin
Ropp, N. L. ..... Wrightstown ..... Wisconsin
Roth, C. ..... Monroe ..... Wisconsin
Rolfe, J. H. ..... Chicago, Randolph & Clinton Sts.
Rappel, J. F. ..... Reedsville, R. 3 ..... Wisconsin
Ryf, John ..... Oshkosh, R. 6 ..... Wisconsin

S

Strausburg, Chas ..... Loyd ..... Wisconsin
Speich, John ..... Oshkosh ..... Wisconsin
Schneider, L. A. ..... Algoma, R. 1 ..... Wisconsin
Steger, A. J. ..... Theresa ..... Wisconsin
Schurelzer, A. J. ..... Avoca, ... Wisconsin
Schneider, Christ ..... So. Germantown ..... Wisconsin
Schweitzer, P. A. ..... Allenton ..... Wisconsin
Scott, H. M. ..... Waldo ..... Wisconsin
Schoepfer, Herman ..... Hollandale ..... Wisconsin
Swits, G. H. ..... Milwaukee, Ft. 12th St., Wisconsin
Schenkel, Fred ..... Calamine ..... Wisconsin
Schurman, F. J. ..... Belmont ..... Wisconsin
Shumway, C. P. ..... Milwaukee, 412—14 Rx. Bldg. Wis.
Skinner, David P. ..... Milwaukee, 412–414 Ry. Ex., Wis.
Southard, Roy ..... Cadott ..... Wisconsin
Schauf, Albert ..... Neptune ..... Wisconsin
Sherwood, A. ..... Milwaukee, Ft. of 12th St., Wis.
Sohrweide, Wm. ..... Chilton ..... Wisconsin
Sohrweide, Aug. ..... Hilbert, R. 4 ..... Wisconsin
Swenink, Fred ..... Cazenovia, R. 1 ..... Wisconsin
Schaeffer, Ed. F. ..... Muscoda ..... Wisconsin
Scholl, Wm. ..... Spring Green, R. 1 ..... Wisconsin
Sonabend, Theo. ..... Collins ..... Wisconsin
Schroeder, Herman ..... Greenleaf, R. 3 ..... Wisconsin
Simmons, D. S. ..... Viola ..... Wisconsin
Sixel, H. ..... Cleveland, R. 1 ..... Wisconsin
Schulte, Alex. ..... Hilbert, R. 3 ..... Wisconsin
Senn, Jake ..... Belleville ..... Wisconsin

Steinhart, G. J. .....Kewaunee .....Wisconsin
Sommer, Otto .....Cedarburg .....Wisconsin
Schwingle, E. G. .....Avoca .....Wisconsin
Stocker, J. J. .....Dale, R. 18, Box 2, ...Wisconsin
Schaller, Alex. .....Barneveld .....Wisconsin
Schaller, Rudolph .....Barneveld .....Wisconsin
Sobek, Chas. .....Muscoda, R. 1.....Wisconsin
Sanger, F. C. .....Lark .....Wisconsin
Schmitt, W. F. .....Blue River .....Wisconsin
Sawyer, L. H. .....Neptune .....Wisconsin
Schneider, Henry .....Marbel .....Wisconsin
Schultz, H. S. .....Cato .....Wisconsin
Schurter, Jacob .....Argyle, R. 4.....Wisconsin
Schuepke, W. J. .....Welcome, R. 40.....Wisconsin
Sweeting, C. W. .....Manitowoc .....Wisconsin
Sudendorf, E. .....Clinton .....Illinois
Schaefer, J. .....Marshfield .....Wisconsin
Schujahn, F. O. .....Fond du Lac .....Wisconsin
Stoltz, Henry J. .....Milwaukee (G. N. R.) Wisconsin

T

Taplin, L. P. .....Calvary, R. 41.....Wisconsin
Thor, Joe J. .....Kewaunee, R. 4.....Wisconsin
Teske, A. W. .....Kewaunee, R. 7.....Wisconsin
Thomas, W. C. .....Sheboygan Falls .....Wisconsin
Trudelle, S. F. .....Chicago, 87 Michigan St., Illinois
Theisen, Jacob .....Belgium .....Wisconsin

U

Ulrech, Furrer .....Hollandale .....Wisconsin
Ubbelohde, Fred .....Glenbeulah .....Wisconsin
Urfer, Louis .....Monroe .....Wisconsin

V

Vogt, John .....Fremont, R. 17.....Wisconsin
Vogt, Gessie .....Fremont, R. 17.....Wisconsin
Vogel, Gottfried .....Mt. Horeb.....Wisconsin
Vogel, Emil .....Mt Horeb .....Wisconsin
Van Duser, J. E. .....Fort Atkinson, R. 2.....Wisconsin

Voeks, Robert .....Fredonia .....Wisconsin
Viergutz, F. A. .....Appleton, R. 5.....Wisconsin
Van Blarcom, C. C. .....Fond du Lac, 184 E. 1st St., Wis.

W

Wirkus, J. K. .....Edgar .....Wisconsin
Wallace, Pat .....Hortonville, R. F. D. 21, Wisconsin
Walls, Chas. G. .....Rockbridge .....Wisconsin
Waddell, Wm. .....Hub City .....Wisconsin
Wordell, H. E. .....Brillion .....Wisconsin
Westphal, Aug. .....Neosho .....Wisconsin
Winkler, John .....Merton .....Wisconsin
Waterstreet, Wm. .....Spring Green .....Wisconsin
Willard, J. C. .....Plymouth .....Wisconsin
Winder, Wm. .....Rockbridge .....Wisconsin
Weyer, Otto .....Manitowoc .....Wisconsin
Westphal, F. C. .....Fall River .....Wisconsin
Wehenger, John .....Woodford, R. 2 .....Wisconsin
Williams, C. H. .....Chicago, 306—21 Quincy St.....Ill.
Ward, Joe .....Sandusky .....Wisconsin
Werth A. C. .....Neenah .....Wisconsin
Weber, Albert .....Allenton .....Wisconsin
Wellinghoff, E. F. .....Chicago, 182 Kinzie St.,....Illinois
Webster, Edgar .....Clyde, R. 1 .....Wisconsin
Wendland, Herman .....Sheboygan, 1534 So. 11th St., Wis.

Y

Young, John .....Spring Green .....Wisconsin

Z

Zutz, C. H. .....Reedsville .....Wisconsin
Zimmerman, Bruno .....Schlessingerville .....Wisconsin
Zehren, J. L. .....Marion ....Wisconsin
Zumkehr Peter .....Monroe .....Wisconsin
Zickert, Ed. .....Watertown, R. 6.....Wisconsin
Zwieky, Tied .....Allensville .....Wisconsin

TRANSACTIONS

WITH

ACCOMPANYING PAPERS AND DISCUSSIONS

OF THE

Wisconsin Cheese Makers' Association

Sixteenth Annual Meeting, 1908.

The Wisconsin Cheese Makers' Association met in its sixteenth annual session at Freie Gemeinde Hall, Milwaukee, and was called to order at 10 o' clock A. M., Wednesday, January 8, 1908, by the president, Mr. Matthew Michels.

INVOCATION.

J. G. MOORE, Madison, Wis.

Our Father in Heaven, we come to Thee with thankful hearts and know and feel that Thou hast cared for us and kept us from danger.

We come together again, Oh Lord, in this convention so we we may fit ourselves more properly for the work to which Thou hast called us. We appear before Thee as workmen who need not be ashamed. We ask for Thy blessing that we may go forth from here better men, fitted to do better work. We ask that these meetings may be carried on in a spirit that will be best for us.

We ask Thy blessings, Oh Lord, not for any merit that may be in us but for the sake of Him who died for us, our Father, Jesus Christ. Amen.

The President: The next topic will be the address of welcome by the Honorable Sherburn M. Becker, the well known mayor of the city of Milwaukee. I have the pleasure of introducing to you at this time Mayor Becker.

ADDRESS OF WELCOME.

HONORABLE SHERBURN M. BECKER, MILWAUKEE, WIS.

Mayor, City of Milwaukee.

Mr. President, Ladies and Gentlemen:

In full appreciation of the importance of your work, your achievements and purposes, I most cordially welcome the Wisconsin Cheese Makers' Association to Milwaukee for its sixteenth annual meeting. In no formal or perfunctory greeting, but with open hands and a warmth of friendship not to be misunderstood, Milwaukee seeks to co-operate with you in every effort of advantage and benefit to your association and to all kindred organizations.

Miwaukee, permit me to say, is but a splendid reflex of Wisconsin. Its massed industry and commerce, its prosperity and stability, its progress and thrift are but a reflecting picture of general conditions. There is everywhere, throughout Wisconsin, the same keen inspiration seeking the up-building of a magnificent commonwealth, the same broad, public spirit giving high scope and character to our endeavors. Milwaukee's thrift and stability is the thrift and stability of Wisconsin segregated. The progress of the state is here reflected in the magnificent industries and enterprises to which the farms and forests, the mines and abounding resources of Wisconsin contribute. The products of our factories, mills and workshops, sent broadcast throughout the world, do not alone picture Milwaukee's greatness as a commercial and industrial center. They speak in terms not to be misunderstood, of Wisconsin's wealth of re-

source, of its golden values in dairy products, and of all else wherein men and women excel in meeting the competition of their fellows.

It is in no narrow spirit of local pride that Milwaukee extends its hearty greetings to your association upon this occasion. It is in full recognition of the fact of our relationship to, and dependence upon, the state at large, that impels the co-operation of Milwaukee in every activity seeking the betterment of conditions in Wisconsin. The growth of the city, through the enlargements of its industries and added population, means a better market for the food producers of Wisconsin. The growth of the state means added sales to benefit Milwaukee merchants and manufacturers. Our relationship is mutual in advantages and it is pleasure to note, that Wisconsin can act no better towards Milwaukee than to make it the annual meeting place of associations of this important character. It is Wisconsin's one big city, hospitable, generous and sociable to all comers. We want the people of Wisconsin to know Milwaukee, its progressiveness and splendid citizenship.

I know of no better illustration to show the progress of Wisconsin than is afforded by the splendid work of this association. I believe that the great cheese producing industry of Wisconsin, one of greatest revenue producing importance to the farmers of this state, in its business success, can be ascribed to the intellegent as well as organized effort put forth to guarantee the purity of Wisconsin cheese as well as other dairy products. We have but to recall the status of this industry, before the cheese makers, organized and by their efforts, gave notice to the world that the Wisconsin product, in purity and quality, could seldom be excelled. With the undoubted and proven excellence of Wisconsin climatic conditions as applied to the production of cheese, with nutritious grasses and a vast pasturage abounding in pure water springs and streams and every natural condition favorable, the pirates against honest production put their brand of shame upon the Wisconsin cow.

I know that the honest dairyman of Wisconsin will look back to that period with sorrowful regret, and as they recall the time when the label, "Wisconsin Full Cream Cheese," was more often but the concealment of fraud, will feel like apologizing to their herds. The Wisconsin cow, while then possibly not up to its present standard grade or pure blood, was nevertheless honest

in the share of work allotted to her. The milk was as nature supplied it, until it reached the skimming vats, with no application of the Babcock test, to disclose how often the butter fat had been depleted, or how often the product of the pump, and not the cow, had been added.

The product was dishonest, a fraud upon purity and a shame to the state, costing the dairymen of Wisconsin millions in lost sales, until the dishonesty and misrepresentation could be stopped. A few pioneers, such men as Hoard, Cook, Adams, Henry, Emery, well known to all of you here assembled, started a movement for the rehabilitation of the Wisconsin cow and her products The honesty of Wisconsin citizenship arose in response to the agitation, as it always does. The growth of the dairy legislation and its proper enforcement, in this state has been the result, but back of all that, to me, is the far more significant fact, that the men who are engaged in manufacturing the cheese and butter of the state, and the farmers who own the herds, with an occasional exception it is true, are inspired by that progressive spirit which makes for the welfare of Wisconsin in no stinted degree.

That this relative perfection has largely been brought about through the efforts of this association, each member working as an educator in his own local field, must be admitted. The membership of the association and the leadership of the entire dairy movement in Wisconsin has been honest and today's magnificent proportions of this industry, in money returns to the state, is to my mind, an example ringing true of that high quality of citizenship so characteristic of Wisconsin. There were frauds and law breakers among you, but you drove them out, until today, the rubber stamped label affixed to a box of Wisconsin cheese, is a certificate of honesty the world over.

This has been the spirit of your association and of other state organizations of various intents and purposes. It is a Wisconsin spirit, distinctive and characteristic of high grade men and women who achieve, who do things worth doing, who are not supinely content to accept what is, but who aspire to the attainment of what should be. The process may sometimes be impeded with uncertainty, and the results slow in being attained, but we have a way of "getting there" in the results.

The Virginian, who through the accident of geography, happens to have his birth across the border-line into another state,

regrets the incident as in his spirit of state pride, he apologizes for not being a "Born Virginian." The Kentuckian never fails to declaim about the blue grass sweeps and verdant mountains of his state, while we in Wisconsin, blessed with the bounty of God's prodigality in resources, with an amalgamation of racial strength and the power and determination of men who always conquer, at times I fear, forget that spirit of state pride to which we are justly entitled by the excellence of our heritage. I want to quicken this spirit of a better appreciation as applied to Wisconsin. Look at the picture of what we have, in all that makes for the welfare of our citizenship, and see if it does not lead to a keener pride in being of a commonwealth unequalled in present accomplishments and in the broader possibilities of future achievements conducive of betterment.

I earnestly hope that next year you will hold your convention in Milwaukee, and at this time I want to extend an invitation to you to come to the City Hall. I should be very happy to show each and every one of you through that magnificent building, which is one of the finest municipal buildings in the United States, and if there is anything concerning the working of our municipality in which you are interested, I shall be only too happy to discuss any subject concerning this administration or the government of Milwaukee with you. I thank you.

The President: The response to this very cordial address of welcome will be given by Mr. H. C. Larson, of Dodgeville, Wis.

RESPONSE TO ADDRESS OF WELCOME.

MR. H. C. LARSON, DODGEVILLE, WIS.
Assistant Dairy and Food Commissioner.

Mr. President, Honorable Mayor Becker, Ladies and Gentlemen, and Members of the largest State Cheese Makers' Association in the World.

I don't know why Secretary Baer invited me to respond to this address of welcome, when there are so many others better fitted to do so. However, I feel proud of the privilege of thus

serving an organizaton that has done so much in the direction of building up the cheese industry in this state.

It is, indeed, gentlemen, an honor for us to be so cordially welcomed to this the greatest business city of the state by its mayor, and, Mr. Mayor, in behalf of this association I want to thank you for it. I assure you we enjoy coming to your most beautiful city for our annual convention, because we have met here so often and been treated so well.

When we consider the cheese industry which we represent, the progress it has made within the last few years and the leading position that our cheese holds in the different markets of the world, we have reason to feel proud of it, and we are proud. There are in Wisconsin nearly seventeen hundred cheese factories, with about thirty-five thousand patrons who milk nearly four hundred thousand cows, contributing 1,500,000,000 lbs, of milk annually, which when manufactured into cheese of different kinds is worth about $12,000,000. These factories are scattered over the state in fifty seven counties, with from one to two hundred factories in a county. Think of the vast amount of money invested in the cheese business and the thousands benefited by it, also the good influence it has upon the retail and wholesale business of this state. In the main, the cheese makers employed in these various cheese factories throughout the state are men who know their business, do their work better, keep their factories cleaner and in a more sanitary condition than ever before in the history of the cheese business. The farmers are more intelligent, know how to do more profitable dairying, their cows are of better dairy type, better housed and fed than ever before, the milk receives more care and is delivered to the factories in better condition, consequently we have a better finished product and more money and profit in the business.

I am pleased to look into the faces of so many cheese makers. If there is anything that would please me better it would be more cheese makers. I would that all the cheese makers in the state could have been here and heard the warm address of welcome to which we have just listened. Coming, as it did, from a man of the honorable mayor's standing and position, it seems to me that it should be a source of stimulation to us to know that the business in which we are engaged has the good will of such men, so much so that no matter what our records are we should set out to improve them.

We are proud of this city, Mr. Mayor, and glad we are privileged to hold our sixteenth annual meeting here, we are glad to be welcomed and given a hearing for the industry in which we are so greatly interested.

PRESIDENT'S ADDRESS.

MATTHEW MICHELS, Madison, Wisconsin.

Ladies and Gentlemen and Members of this Association:

Assembled in this our Sixteenth Annual Convention, it gives me great pleasure indeed to see so many of the old as well as the new faces in this audience. Our meetings in past years have always been very successful from every point of view, a fact, which is very gratifying to all cheese makers, having the welfare of the cheese making industry at heart.

We are here today for the eighth time enjoying the hospitality of this beautiful city of Milwaukee, we have been accorded, as usual, a most hearty welcome and there is no question but what our stay while here will be such that those who invited us will feel proud of the fact that their invitation was again accepted. The prospects for the success of this meeting are looming up even brighter than at any previous one.

The purpose of this association as stated in our Articles of Incorporation shall be the education of its members for a better practical knowledge of cheese factory operation, promoting progress in the art of cheese making, the sale, transportation and storage of cheese, and in the weeding out of incompetency in the business of cheese making.

This Association, the Dairy School and the Dairy and Food Commission are doing a great work in educating the cheese maker to a better practical knowledge of cheese factory operation. The forming of county or district associations and the meeting of cheese makers about once a month would be a step in the right direction. Such questions as uniformity, sale and cow testing as well as many others could be taken up and much good accomplished.

The Wisconsin Dairymen's Association is doing an untold amount of good work in organizing cow testing associations in

many parts of our State. I want to urge every cheese maker to secure, if possible, a man from the Dairymen's Association to help him organize such an association among his patrons. In Denmark one half of the dairymen are testing their cows and in many parts of our State, mostly through thte efforts of the Dairymen's Association, the testing of cows has been started in the past year. I believe the cheese maker should take an active interest in this matter. He should persuade his patrons to test their herds in order that they may know at the end of the year, the exact production of the individual cow. The testing of cows will not only result in getting more and better milk, but will eventually give the patron a larger net profit per cow and encourage him to produce milk during the entire year.

I would like to give a few facts regarding the Wisconsin Dairy School Exhibitions, which were opened last May. Up to the present time we have scored seven hundred fifty-nine (759) exhibits of cheese and nine hundred ninety-two (992) of butter or a total of one thousand seven hundred fifty-one (1,751) samples. All of these exhibits received a commercial score by each of the three judges and a moisture determinaion was made of every exhibit. There is an enormous amount of work connected with these scorings, all of which is given free to the manufacturers of cheese and butter taking part in them.

The Dairy and Food Commissioner furnishes two men each month to help in judging, Mr. Cannon on cheese and Mr. Corneliuson on butter. The U. S. Government through the kindness of Chief Webster gave us one of their men, Mr. Moore, as another judge. The other judges, as well as all the expenses connected with the scorings are paid by the Wisconsin Dairy School.

The cheese and butter has all been sold at very satisfactory prices, the proceeds of such sales being remitted to the exhibitors. Often cheese and butter makers get into trouble with their product, simply because the quality has gone off so gradually that they have failed to notice the change, thereby perhaps losing hundreds of dollars a year, either in direct reductions or indirectly by constantly underselling.

Many states are now carrying on so called "Scoring Contest." While the educational features may be the same, in most of these contests there will be a highest average score of all, which will be given nearly all the glory and honor there is to be had. Many others that may come within a fraction of a point to the very

highest are not in sight. They are not given the credit actually due them.

The Wsiconsin Exhibitions are in no sense a "contest" but designed purely to assist the maker in his efforts to improve his products and to maintain a high standard of quality in them. At the end of twelve months if we have fifty or more that reach the high mark set to obtain an "A" diploma, each will be given such. To all exhibitors having participated in these scorings for twelve months within a period of two years are issued diplomas according to their standings. These diplomas will have an artistically designed cut of the Dairy School building and a picture of the person to whom the diploma is granted. The aim of every exhibitor taking part in these exhibitions should be to land an "A" diploma, if he fails the first year, he should continue until he does succeed. To hold a diploma in class A will mean as much to the winner as a college diploma means to men engaged in other professions.

The past year has been the most prosperous one in the history of cheesemaking. I hope when you take leave of this convention and beautiful city, that you will feel it has been good for you to be here.

I would recommend that this Association continue to carry out the plan of increasing the premium fund by setting aside a certain amount of each exhibit to be added to the pro-rata premium fund offered the following year. Also that it hold a free for all Judges' Scoring Contest. In such contest fifty per cent of the points should depend upon the contestant's own score in duplicate and fifty per cent on how near he can get to the score previously given.

There is no doubt that if the members of this Association act collectively, they will always be a great force in the advancement of the cheese making and dairy interests of our State.

I feel as though I would be unworthy of your confidence to let this occasion go by if I did not thank you for the honor conferred on me by electing me your presiding officer without a dissenting vote.

In conclusion I want to suggest to you the advisability of being prompt in attending each session. Our secretary has

given us a very full, practical and instructive program and it is only justice to him that we show our appreciation of his efforts in this manner.

The President: We will now listen to the report of the Secretary, Mr. U. S. Baer.

REPORT OF SECRETARY.

U. S. BAER, Madison, Wisconsin.

Mr. President and Members of the Association: I have the honor to report upon the work of this office for the year ending January 8th, 1908.

The future outlook for the general success of the organization was never as encouraging as at the present time. The membership for the past year has again increased nearly one-fifth over that of the preceding year.

The cheese product of our state today is superior to that made in any former period in the history of the industry. Cheese making is rapidily becoming the specialty of districts of wide area in northern Wisconsin. It is now regarded as among the most progressive and highly developed forms of farming in the state. Co-operative and commercial organizations are being formed to conduct the business locally and to guard its general interests. State laws are being rapidly enforced by the Dairy and Food Commission, which have been the means of very materially fostering this industry during the history of the Department under Hon. J. Q. Emery's wise and energetic supervision.

We may safely congratulate ourselves on the fact that of all the several diversified interests of agriculture none have prospered or afforded the people of the state more substantial returns than the cheese business the past season.

The copy for the annual report was ready for the printer early in March, but the Department of State refused to accept it until late in July, because of the great amount of printing up to that time in the hands of the state printers. At the time of acceptance I fully expected that it would receive immediate attention and

be published at an early date. After the copy had been in type for some time, I was further informed that the publication was again delayed, owing to some difficulty in the matter of contracts between the State and certain manufacturers of paper or materials necessary to the completion of the report. Three thousand copies of the four thousand edition of the report were sent out promptly after being received about December 10th.

Our treasurer's financial statement will show the sources from which all moneys paid into the treasurer's hands were received, and the disbursements paid on orders received from this office, which he holds as vouchers, for the year beginning January 8th, 1907, and ending January 8th, 1908.

We are looking forward to the time when there may be a great National dairy show held in this city, which will be possible on the completion of the proposed mammoth new auditorium to cost $500,000.00 and which it is reported will be ready a year hence. In the effort to secure that great show we will need the cooperation of the various Wisconsin associations devoted to the dairy interests. No state in the Union can prepare for a greater exhibit of this kind than our own Wisconsin. Let it be the watch-word *"Monster Dairy Show for Milwaukee 1909."* Milwaukee should take a hand in spreading the fame of the state's dairy products by assisting in arranging for such a show. It should be held in the winter as cold weather is the best time for holding a dairy show and it should be held in Milwaukee. To the visitors the Cream City is at her best at that time of the year. Milwaukee by enlisting the aid of the dairy interests of the state could arrange for a great dairy show that would be of incalculable good to the dairy interests and would be most helpful to the city and to the state.

On January 11th, 1907, this organization unanimously adopted the following resolution:

"WHEREAS, the Wisconsin Butter Makers' Association has, since its organization six years ago adopted the plan of having the butter makers competing for the premium fund, donate their tub of butter which is sold, and after deducting one dollar for the membership fee, which goes into the general fund, and the express and other charges attending the exhibit the balance is used as a premium for the next convention, and we are reliably informed that this premium fund aggregates over $1,000 each year, and whereas, the larger the premium fund the greater interest,

Therefore, be it resolved, that we agree to allow a certain proportion to be taken from the sale of our exhibits to be used for such premium fund."

It is true that the Wisconsin Butter Makers' Association when it first met had a very small premium fund, and the butter makers who sent butter to that first convention donated their tub of butter. As I remember it there were 110 butter makers who entered and contributed a tub of butter. A tub of butter will cost a butter maker somewhere between five and six dollars. Of course there may be an objection in the minds of some of you on account of the size of cheese. A Swiss cheese maker, for instance, with his two or three hundred pounds of cheese would hardly be expected to donate the value of that cheese as compared with the exhibitor of Young Americas equivalent to twenty pounds, but a certain number of pounds could be sent and the Swiss cheese or a large cheese sold, and the price for a certain numbr of pounds donated. After the first year it will not be so bad as it looks. Last year the Wisconsin Butter Makers' Association had $1,139.42 in its premium fund, and this year I understand, the amount is nearly if not quite so large; $539.00 of that being money the butter makers contributed themselves last year from the sale of their butter. The entire amount was $928.85, but expenses attending judging, express charges, membership fees, etc. cut it down to $576.10. I can see nothing that will so add to the interest and bring out a larger number of exhibits than this one particular thing of making a larger premium fund.

The Minnesota State Butter and Cheese Makers' Association at its convention last year gave over $1,200.00 in premiums to the exhibitors for butter and cheese. Not one dollar of this money had to be solicited from any supply house or otherwise. The entire amount being realized from the butter and cheese exhibits—principally butter—from the year before. A premium fund secured under such conditions can be enjoyed with a much greater feeling of independence than when solicited from unwilling contributors.

Respectfully submitted,

U. S. BAER.

The President: Next is the report of Mr. F. E. Carswell, our treasurer.

TREASURER'S FINANCIAL REPORT FOR 1907.

F. E. CARSWELL, Richland Center, Wis.

Mr. President and Members of the Association: The following itemized report is made, showing the sources from which all moneys paid into the treasurer's hands were received and the disbursements paid on orders from the secretary, which I hold as vouchers:

Receipts.

1907.		
Jan. 3.	Balance carried forward	$90 07
Jan. 11.	Paid memberships	427 00
Jan. 17.	Refund, Western Passenger Association	17 00
Jan. 17.	Paid memberships	2 00
Jan. 22.	Paid memberships	2 00
Feb. 16.	Paid memberships	2 00
July 6.	Draft from State Treasurer.....	600 00
July 9.	Paid membership	1 00
Dec. 31.	Wisconsin Dairy Supply Co.....	15 00
Dec. 31.	J. B. Ford Co.....	20 00
Dec. 31.	A. C. Parfrey.....	10 00
Dec. 31.	John Kirkpatrick	5 00
Dec. 31.	Wisconsin Dairy Farms Co.....	5 00
Dec. 31.	Wm. J. Moxley & Co.	5 00
Dec. 31.	Kiel Wooden Ware Co.	10 00
Dec. 31.	J. Hanson & Co.	10 00
Dec. 31.	International Salt Co.	10 00
Dec. 31.	Elov Ericsson	5 00
Dec. 31.	Marschall Dairy Laboratory.....	10 00
Dec. 31.	Creamery Package Mfg. Co.....	25 00
Dec. 31.	The De Laval Separator Co.....	10 00
Dec. 31.	New York Produce Review & American Creamery	5 00
Dec. 31.	Waverly Oil Works	5 00

Dec. 31.	C. E. Udell & Co	10 00
Dec. 31.	Grunert Cheese Co	5 00
Dec. 31.	Chr. Hansen's Laboratory	10 00
Dec. 31.	Frank L. Jones	10 00
Dec. 31.	E. A. Roser & Co	10 00
Dec. 31.	Albrecht Bros. & Co.	10 00
Dec. 31.	Brillion Iron Works	5 00
Dec. 31.	International Harvester Co., of America	10 00
Dec. 31.	Wallace B. Crumb	5 00
Dec. 31.	Plymouth Cheese Co.	5 00
Dec. 31.	Standard Oil Co.	10 00
Dec. 31.	S. J. Stevens Co.	10 00
Dec. 31.	Wisconsin Coal Co.	10 00
Dec. 31.	Republican Hotel	10 00
Dec. 31.	A. Booth & Co.	10 00
Dec. 31.	Dairy Employment Agency	5 00
Dec. 31.	W. C. Thomas	5 00
Dec. 31.	Northwestern Cheese & Butter Insurance Co	5 00
Dec. 31.	Diamond Crystal Salt Co.	5 00
Dec. 31.	Cornish, Curtis & Greene Mfg. Co.	10 00
Dec. 31.	P. H. Peacock	5 00
Dec. 31.	A. H. Barber Cry. Supply Co.	10 00
Dec. 31.	Crosby & Meyers	10 00
Dec. 31.	Colonial Salt Co.	10 00
Dec. 31.	J. B. Lewis Co.	10 00
Dec. 31.	John Habhegger	5 00
Dec. 31.	D. & F. Kusel Co.	10 00
Dec. 31.	Otto Biefeld & Co.	10 00
Dec. 31.	Dornfeld-Kunert Co.	10 00
Dec. 31.	M. Fitzgerald	10 00
1908.		
Jan. 6.	Hon. S. A. Cook	25 00
		$1,566 07

Disbursements.

1907.		
Jan. 9.	Pro rata premium fund	$ 100 00
Jan. 10.	Expenses of office of secretary	150 00
Jan. 11.	Mrs. M. G. Carpenter, stenographic services	50 00

Jan. 14.	Republican Hotel, hotel bill	143 70
Jan. 14.	Entertainment, music	10 00
Jan. 14.	Flowers, express, cartage	11 30
Jan. 14.	Postage	10 00
Jan. 15.	Milwaukee Sign Co., 8 signs	12 50
Jan. 15.	Salary voted J. W. Cross by Board of Directors	20 00
Jan. 31.	Mayers Electric Press, printing	131 50
Jan. 31.	The Schwaab Stamp and Seal Co.	72 00
Jan. 31.	F. A. Averbeck, 12 medals	52 00
Jan. 31.	Robert Johnston, traveling expenses	31 00
Jan. 31.	Ernest Regez, Jr., cheese	9 09
Jan. 31.	Interest on borrowed funds, State bank	24 20
Jan. 31.	Henry Ellmer, damaged Swiss cheese at N. D. Show	20 00
Jan. 31.	Postage checks, express, exchange, freight	6 45
Jan. 31.	Albert Strueben, traveling expenses	7 00
Jan. 31.	Express	1 75
Feb. 10.	Postage	5 00
Mar. 5.	Louis Alder, traveling expenses	8 85
Mar. 5.	Miss Alma Roump, stenographic services	5 20
Mar. 5.	Hon. H. R. Wright, expenses attending annual meeting	30 90
Apr. 9.	Miss Alma Roump, stenographic services	2 75
Apr. 9.	Prof. E. G. Hastings, expenses attending annual meeting	4 50
Apr. 9.	Prof. E. H. Farrington, expenses attending annual meeting	7 79
Apr. 9.	Mrs. Mary Carpenter, stenographic services	30 35
Apr. 22.	Walter Mayer, printing	13 75
Apr. 22.	Sorenson & Son, premium chair	13 00
Apr. 22.	Wisconsin Cheese Scoring Contest Association	43 87
Apr. 22.	A. J. Glover, expenses attending annual meeting	5 33
May. 30.	Premium deposit, Muscoda Dairy Board	15 00
May 30.	G. C. Hindy, expenses attending annual meeting	15 00
May 30.	J. W. Cross, Supt. cheese exhibit	19 09

May 30.	D. S. Crosby, expenses cheese judging..	19 95
May 30.	Peter Zumkehr, expenses attending annual meeting	7 75
May 30.	Gottfried Marty, expenses attending annual meeting	6 50
Aug. 10.	Postage	5 92
Sept. 2.	Postage	7 50
Nov. 2.	Miss Alma B. Roump, stenographic services	2 50
Nov. 2.	Postage	8 00
Nov. 7.	Hammersmith Engraving Co., 3 half tones	22 12
Nov. 12.	Postage	7 00
Nov. 18.	Postage	10 50
Dec. 1.	Postage	5 00
Dec. 16.	Postage	7 00
Dec. 20.	Postage, mailing annual report	52 00
Dec. 23.	J. W. Cross, expenses attending executive meeting	7 66
Dec. 24.	Postage, express, freight, telephone....	4 94
Dec. 26.	Postage, reports, entry blanks, drayage, packages	16 80
Dec. 26.	Postage, 900 programs @ 3c each.....	27 00
Dec. 30.	Postage, reports, letters, packages, express, telegrams	22 18
1908.		
Jan. 7.	Printing, stationery, postage, telephone, Fred Marty	5 50
Jan. 7.	Interest on borrowed funds.....	8 20
Jan. 7.	Postage, reports, programs, letters, entry blanks, packages	17 00
	Total Disbursements	$1,353 39
	Balance in hands of Treasurer.....	212 68
		$1,566 07

On motions, duly seconded, the reports of the secretary and treasurer were adopted as read.

The President: We will now listen to the report of the Board of Directors.

REPORT OF BOARD OF DIRECTORS.

JOHN GROOTMONT, Brillion, Wis.

Gentlemen: A meeting of the directors and officers of the Wisconsin Cheese Makers' Association was held at the State Fair Park on the twelfth day of September, 1907.

Present: Mat. Michels, president; F. E. Carswell, treasurer; U. S. Baer, secretary; Jake Karlen, director; J. W. Cross, director; John Grootemont, director.

Upon the motion of Mr. Grootemont, seconded by Mr. Cross, the secretary was instructed to announce the sixteenth annual meeting of the Wisconsin Cheese Makers' Association for the 8th, 9th and 10th days of January, 1908.

Upon the motion of Mr. Carswell, seconded by Mr. Karlen, it was unanimously voted that the sixteenth annual meeting of the Wisconsin Cheese Makers' Association be held in the city of Milwaukee.

The president appointed director John Grootemont and secretary U. S. Baer as committee on entertainment. Said committee being instructed to make complete and final arrangements with reference to convention halls, exhibition rooms and hotel headquarters in the city of Milwaukee.

The secretary was instructed to arrange dates of the time of the entries of cheese so as to have the entire exhibit judged prior to the opening day of the convention.

By order of the board of directors the rules of governing the cheese exhibit were left changed as per rules of 1907 so as to admit of the entry of all the cheese of the ninth monthly "Cheese Scoring Exhibition" in connection with the regular educational cheese scoring contest exhibit of the Cheese Makers' Association.

We have examined the accounts and vouchers of the secretary and treasurer and find them correct.

(Signed) JOHN GROOTEMONT,
JACOB KARLEN, JR.
J. W. CROSS.

On motion, duly seconded, the report of the executive committee was adopted as read.

The President: The next on the program this morning is an address on Market Requirements by Mr. J. B. McCready of Sheboygan, Wis.

MARKET REQUIREMENTS AND MARKETING CHEESE.

J. B. McCready, Sheboygan, Wis.

Mr. President, Ladies and Gentlemen: I rather felt like reading this paper from the floor but, after the invitation Mr. Grootemont had to come up, I felt I had better follow suit. I am not quite as big as he although lots of times I feel as large as he. I would prefer to read this from the floor for the reason that as a cheese buyer speaking to cheese makers I feel I would like to talk to you on the level, because we cheese buyers have a reputation of not being on the level, that is the idea of some cheese makers at least. However, we are not all in the same boat and those not on the level are getting very scarce.

This subject, or rather these two subjects, will permit of a good deal of discussion, yet I do not feel like taking up too much of your valuable time by going into detail to any great extent.

A thorough discussion on Market Requirements would entail a criticism on the various faults found in cheese, with hints and suggestions as to their improvement. But I believe this point will be more fully gone into during the reading of other papers, therefore I will confine myself to a few suggestions as to what a buyer of cheese looks for and expects when he pays top price for this commodity.

True, there is some slight difference of opinion among buyers and judges as to just what constitute a good cheese. Yet we are all agreed, espcially at least all dealers in Wisconsin, and those who find it necessary to store cheese and who require

good keeping stock, are agreed that a good close bodied, meaty texture, even color and clean flavored cheese, is the one most desired. What we want is a cheese that can be shipped to any point in the United States. Some dealers may ask you to make a soft, open cheese for western trade, Iowa especially. This may be all right as far as it goes, but let that trade get stocked, and you find yourself with a bunch of soft, open stuff that you cannot sell elsewhere except at a loss. The West uses lots of good, firm, close cheese, and will use them more and more as they become educated to the fact that the firmer cheese keep best, and develop the finest flavors with age. I say to you, make a cheese that can be shipped any place.

At no time was the necessity for close, meaty cheese more clearly demonstrated than last fall when the bottom fell completely out of the cheese market. When this happened, our home market was as dead as a door nail. No one wanted cheese. Fortunately, however, our prices were in line with those of Canada and we were able to export to Great Britain. That is always a help. Unfortunately, however, we were starting to get soft, pasty cheese, and these we cannot export.

Aim to make your cheese uniform in size. Nothing looks more slovenly or careless than to pull the cover off a box of Young Americas or Long Horns and to see four cheese all of different heights and proportion.

There is entirely too much pasty cheese being made in this country in the fall of the year, and it makes me tired to hear some of you cheese makers saying it can't be helped. I say it can be helped if you'll cut out trying to make cheese from water and working for that almighty yield, that which helps enrich your farmers and impoverishes the reputation of Wisconsin cheese. Cook firmer and salt higher in the fall when milk is richer, pastiness is nothing but an over amount of moisture. I say quit working for that extra miserable pound, Wisconsin doesn't need your help to make her the biggest cheese producing state in the Union, she is that now, but you have got to help her to continue to be the producer of the best cheese in the Union. I say it is not necessary to

make pasty cheese, and the sooner the dealers pay you for it according to its actual value, the better for all concerned.

Another thing that is not required of you is paraffining your cheese; of late years it is almost impossible to get small cheese from a factory but what are paraffined. Here you are working for that miserable pound again. There is no dealer but what would prefer to have your cheese not paraffined. The average factory is not properly equipped for this kind of work, and besides you paraffine before the cheese are properly dried and cured. The result is wax that cracks and peels off, and when they are paraffined too green that moisture that is held in causes pastiness, bitter flavor, and in lots of cases when cheese are placed in storage, sloughed or rotten rinds. The firm I represent, for one, will cease to buy paraffined cheese where the others can be procured, and I believe I am safe in saying, others feel the same way as we do.

I have tried to tell you what we like in a cheese and what we don't like. It's up to you to let these suggestions soak in, for I presume you are trying to make cheese that will please your buyers, while we in turn are trying to buy cheese that will suit our trade.

Under the head of marketing cheese just a few remarks before closing. Sell your cheese when possible on your Dairy Board of Trade, no factory within selling distance of a Board should sell any place but on that Board. It's all right for those who are far from a Board, or where there are not factories enough for a board to exist, to contract their cheese with some good firm for the season. But when you have a Board sell on it. The more cheese offered the more buyers will attend, the more buyers the keener the bidding and the better the prices paid. There are some Boards in this state that are bigger fakes than Barnum ever dreamed of. Imagine a great big majority of factories who are willing to sell their cheese based on the ruling price of some of these boards, where one or two lots of cheese make the price that governs the price paid two hundred factories, where a good man could eat all the cheese offerd for sale in a week, and where no buyer attends, for he couldn't make his car fare by doing so. I say, sell your cheese on the Boards when possible.

Put your cheese up in good, clean, well nailed boxes. You

factorymen could get better nailed boxes if you would insist on it, and it's pretty nearly time to do a little insisting, for some of the boxes you use are poor.

I have had some little experience as a cheese maker, also some as a buyer, and by way of closing I want to say to you, that I have found the average buyer always willing to be square with you when you show a willingness to be square with him. When your buyer finds fault don't go up in the air. Just remember if he wants your cheese again he is surely making you his best offer, and remember that man does not live that can say he never made a poor cheese in his life, for we all have made them and will continue to do so at times, and when you do and your buyer offers you what they think they are worth, take it and make up your mind that mistakes cost money, and as long as you can help it there will be no more mistakes.

DISCUSSION.

The President: This is a good paper and I presume there are some questions you would like to ask.

Mr. Dassow: I would like to ask where we can get those good boxes.

Mr. McCready: I would not care to name the firms that make good boxes and those that do not, I would rather be a "booster" than a "knocker." I think if you get into conversation with some cheese makers today they will name them for you.

Mr. Dassow: I think it would be better to make them public. That would be the way to knock them out.

Mr. McCready: The idea is that there are manufacturers of boxes in this state that are putting out good boxes and the same manufacturers are putting out mighty poor ones; it depends a good deal on the rush and the amount of time they have to get them out in. Some of you people do not give them sufficient time and sufficient notice. The cheese boxes are not all made in your own nighborhood, you can get them from the outlying districts and some of those outlying dis-

tricts are putting out as good a box as can be bought. The trouble with most boxes is they are not sufficiently nailed. I happened to be in Oklahoma and Texas last summer and I saw cheese come there from Wisconsin when there was not a box on any of them and it was due to nothing but the fact that the boxes were not sufficiently nailed. I do not care to name any of the firms making cheese boxes that are not good. I may not be a good judge of a cheese box and I might get into trouble with the makers.

Mr. Aderhold: We do not care about your trouble, tell us anyhow.

Mr. McCready: The worst cheese box made in Wisconsin today is made west of Madison. In Fond du Lac we got cheese that after we took them out of the box and paraffined them, they were so tight, the boxes being mostly square instead of round, that we could not force the cheese into them without scraping the paraffine off. The trouble with all the boxes are they are insufficiently nailed and a number are too green when they are brought in.

Mr. Dassow: I find in ordering cheese boxes two months ahead they will get too dry; we cannot keep the covers so they will fit, and they also get dirty standing around and are covered with cobwebs.

Mr. McCready: You are not supposed to have any cobwebs at your factory.

Mr. Dassow: In Canada, where I learned my trade we bought every cheese box that we used for the year (and we made over two hundred tons of cheese in six months) in the Spring and put them in the attic and other places we had for them over the curing rooms. We want our boxes dry and if they are properly made and nailed they will not fall apart.

Mr. Noyes: Is not the trouble that our boxes are too green? Some boxes you can put anywhere and they will always be good because they are made of material that is good and properly cured. I find one trouble is that a good many of our factories are making cheese for too little money and have to buy pretty cheaply to get anything out of it for themselves. Cheese makers ought to get together and establish a uniform price for making cheese so as to protect themselves. I think the cheese makers are the only people in Wisconsin

that cannot work together for their own interest. If they would organize, get together and maintain their business they would be better off.

Mr. McCready: That is very true, Mr. Noyes, and no doubt that matter will be taken up later on in some other discussion.

Mr. Dassow: Take a green cheese box and the cover and bottom are always dry. As far as the veneering goes, that dries out in a very few days.

Mr. McCready: I do not think Wisconsin has more brains than Canada but I know they make a cheese box in Canada that does not dry up and blow away. The cheese boxes I spoke of that we bought in the spring of the year were wet when they came in but were dry when we used them; the cheese box held together and that was all we wanted. They can put the veneer on tight enough so they will hold because lots of them are holding while others are not, and there are some places where the boxes are not properly made. I want to say to you, Mr. Noyes, before I go any further, that there are good cheese boxes made in your district but I have found boxes there perfectly green that when they became dry, without a cheese in them, became square. That is not a cheese box.

Mr. Grootemont: What is the price of the Canadian boxes?

Mr. McCready: Of course I have not made cheese in Canada for about ten years, but at that time we were using a box 14½ inches deep and 13½ or 14 inches across, and those boxes cost us twelve cents laid down in our factory. Today they are costing fourteen cents, but there is more material in them than in one of our Twin boxes.

Mr. Aderhold: I think we ought to keep Mr. McCready up there until 12 o'clock. He intimated that some of the cheese dealers, not many but just occasionally one, was not on the level. From reports that I hear occasionally, if they are true, we have to conclude that occasionally a cheese buyer steals outright from a shipper. Mr. McCready, do you think that happens occasionally?

Mr. McCready: Yes I have known it to be true.

Mr. Aderhold: What action ought a Board of Trade take for their own protection as sellers when such is the case?

Mr. McCready: I think a man of that caliber ought to be ruled off the Dairy Board of Trade and kept off. I do not think a buyer should be allowed to buy on a Board of Trade until properly investigated. They had that experience in the Clintonvilled istrict where a man came in there and bought cheese. They are looking for him yet. The people I am with wanted to start a warehouse in Clintonville and I went up there shortly after this fellow had escaped. I was known to most of the cheese makers but the minute I said that we were going to open a warehouse and would take in their cheese, giving them the same argument as the other fellow, I had to "skidoo." I think action should be taken by a Dairy Board, if it can prove a fellow is not honest or square. I do not think there are many dishonest buyers but when they do find one, I think that man should be ruled off the Board.

Mr. Aderhold: I agree with you, they nearly all are square, and yet assuming that those honest and square dealers knew they would be ruled off the Board of Trade if they did any stealing, there would be less stealing today just the same with those honest and square ones, for instance when a buyer has the goods and the money and will settle according to his own figures.

Mr. McCready: I want to tell you something that will surprise you. I had an idea at one time that the only square man on the job was the cheese maker, that every buyer was an out and out crook. I had to change my opinion, not only from the fact that I was a cheese maker but also a buyer, and it will surprise you to know the amount of cheese that does not come out full weight, surprise you to know the Daisy cheese that comes out two pounds short, and it will surprise you to know the fellows that send them in very often. Had I been on my way here from Sheboygan instead of from Canada, where I have been on a visit, I would have brought down an exhibit that would have shown you that one cheese maker in Wisconsin is a crook. I have a cheese that the mice lived in for six months. It was supposed to be a 20 lb. Daisy and it weighs seven and a half pounds. It had a piece of cheese rind inside and paraffine over it.

Mr. Taplin: What would you do with a buyer that buys a lot of cheese and if the cheese drops a cent or two on the

Board, will find fault with the cheese which he previously had pronounced as all right?

Mr. McCready: There is scarcely no cheese but a man can find fault with if he is looking for trouble.

Mr. Taplin: This man said "The cheese is o. k. but the market has dropped so I cannot give you the money."

Mr. McCready: I would have sued him for it. We have fellows that write us our cheese is off and it would surprise you how many off grades there are in the market when the market drops, but I would have sued him, that is all, and would see he never bought another cheese from me.

Mr. Linzmeyer: How much do the cheese weigh for the market weight when they arrive at the warehouse?

Mr. McCready: We call for strong up-beam not balanced weight, and take a quarter of a pound over.

Mr. Linzmeyer: If the beam strikes up it is weight?

Mr. McCready: That is what we call weight. There is no rule covering that here but there is in Canada. On the 80 lb. cheese there you can afford to give a little stronger weight than weighing up 20 lb. Daisies. Cheese weighing 81 lbs. and which would not go 81½ strong we call 80 lbs. If it weighed the half pound strong, we called it 81 lbs. That is up-beam. Of course those cheese were taken all over Canada, none of them paraffined, and they lost two or three pounds in actual weight on every cheese they store and to a certain extent they are entitled to strong weight. If you are shipping in your cheese paraffined, do not think because they are paraffined that just the swing balance ought to be good enough weight because paraffined cheese will shrink, but I think I would prefer to give any buyer a quarter of a pound over.

Mr. Linzmeyer: That is what we always figure, but one buyer claims the dairy and food laws require a quarter pound over.

Mr. McCready: They do not; he made that law himself the day he wrote you.

Mr. Linzmeyer: I saw the cheese weighed and he would not give weight unless there were a quarter over at the warehouse. We weighed the cheese at the factory and they were a quarter pound overstrong.

The President: If they weighed 20½ lbs. would he call them 20 lbs.?

Mr. Linzmeyer: Oh no. We had 40¼ lb. cheese and he wanted them to weigh up at that. If they did not he docked one pound.

Mr. McCready: That is not right. There are several cheese makers in the audience, I presume, from whom I bought cheese this summer. One cheese maker in particular, whom I do not think is in the audience, but if he were I would call on him to give his experience in weight. He was only about a mile and a half out of Clintonville and Mr. Splitgerber (I mention the name so you may refer to him if you wish) was weighing his curds in the factory and supposed he was giving good strong weight. He shipped his cheese to us and we found them from a quarter to a half pound short each box, and we cut him five on five. We wrote him and he came to our place, bringing with him a cheese in the buggy, having weighed the cheese not five minutes before he started. He came into the warehouse himself, put the cheese on the scales and found while he had given ⅝ of a lb. over in the factory it was a quarter pound short on our scales. Our scales had been inspected, and not only that but pretty nearly all the other cheese in the warehouse held out in weights, so he convinced the farmers there that they had better get him a new pair of scales. He got me to order the scales for him and I have not cut him on weights since.

Mr. Linzmeyer: When you see cheese weighed in the warehouse and they weigh one quarter of a pound over you are entitled to your weight, because in most cases you get it if they only go one eighth of a pound over.

Mr. Aderhold: I think in places where there is a sealer of weights and measures, it would be only proper to call him in.

Mr. McCready: The sealer calls at our warehouse in Sheboygan every two weeks and we also have him come in and weigh cheese occasionally. It depends on the man you are doing business with. If I buy your cheese, and find them short weight I am going to cut you on full weight and write and tell you about it; if the fellow sitting alongside of you had short weight I would cut him but I would not write and tell him of it until I sent him his check because I know him and he knows that I would not cut him on short weight unless he was entitled to it.

Mr. Wallace: If you found a cheese weighing 61 lbs. and higher, would you give the other fellow the extra pound?

Mr. McCready: No sir.

Mr. Wallace: In weighing cheese you cannot always get them within a quarter of a pound, you may get them three eights or just up balance. I make a practice if they balance up to mark it full weight and if three quarters over give it to the buyer. It looks to me like a small piece of business for a dealer to give a maker short weight on a short weight when he has a whole lot of cheese that weighed over, for which he allowed the maker nothing. If he would give me credit for the pound if I were a full pound over, I would not blame him for cutting me on trifle short weight.

Mr. McCready: Those full pounds over come so very infrequently that I would be willing to give it. If your cheese usually runs a half pound or three quarters of a pound over, I do not believe a dealer who considers himself a dealer ever would cut you for a cheese that just balanced beam. We only weigh five cheese and the chances are we will not strike the one that just balances. We have four others running a half to three quarters over, and when I find a fellow giving those kind of cheese I would not cut a pound on five.

Mr. J. G. Moore: Referring to the statement that there is a kick once in a while on weights, does the buyer ever get a kick from the fellow that buys his cheese? You have to give that man up-weight, don't you? Is he going to allow you for a half pound?

Mr. McCready: He never has yet.

Mr. Wallace: Will not the paraffining make up for that weight?

Mr. Noyes: I find lots of cheese makers weigh their curds and on the average weigh them 20 lbs. up weight; when that goes along straight they will reduce that an eighth of a pound; if it still goes along straight they will reduce it an eighth so as to get a big yield. When it gets to the warehouse it falls short and the cheese maker goes there and says "I weighed that the same as I did all summer." He is looking for the almighty yield. The dealer has to guarantee weight and has to have full weight, if he gets three quarters of a pound over on a sixty pound cheese he cannot sell that for 60¾ lbs., he must sell it for 60 lbs.

Mr. Wallace: That is all right when they weigh correctly, but I do not see how it is possible for a man to weigh accurately when they go on the scale.

Mr. McCready: It would surprise you to know how accurate some old committees are that weigh cheese; it would surprise you to know how active they are in going around the factory to pick two Twin cheese that will swing the beam right; they do not pick out the first cheese and put it in the box. I got cheese at one time where two old fellows were on the committee; they each took a week in weighing out the cheese and I knew the week one of the old fellows was weighing the cheese; he had all the time he wanted but he never made a cent by looking for the cheese that would just balance up, because he was invariably cut for short weight.

Mr. J. W. Moore: Do you think it right for a cheese dealer to cut a man on a certain day's make of cheese? Say he has ten days' make in a shipment and he has five boxes that are very bad, is it right for the dealer to cut a fraction of a cent on the full shipment or only on the cheese that is defective?

Mr. McCready: It is neither right nor fair to cut him on the entire shipment. I do not know what each man's system of receiving cheese is, but when cheese is sent to us we go through all the cheese before we take any weights. We prefer to have all the cheese dated, and it is a good idea to date your boxes. Most cheese makers put their date mark right under the weight mark, and I presume this will be discussed in another paper. It is a good idea because it gives a dealer an opportunity to go through the cheese rapidly and if he has confidence in the cheese maker it only takes him five minutes to go through a lot of cheese. If we find one day that is off we aim to set out those dates, receive all the good ones under one lot number and all the poor ones under another, so when we go to pay a man we may be a Young America shy in the exact number of cheese he made that day, and when we settle with him we tell him there were eight boxes we had to cut.

Mr. J. W. Moore: I do not think this is altogether the dealer's fault. To an extent it can be blamed to the cheese maker because if the milk in the neighborhood is running bad a certain month the farmers cannot expect the maker will get No. 1 cheese and he should so advise them.

Mr. McCready: I have heard of a firm, when a day's make was off, cutting the whole shipment one-eighth to a quarter instead of cutting that one day but I do not believe in that method and do not follow it because if I were to buy one day's make for three cents and paid 12½ cts. for the next day's make, I do not know how I could have balanced it up in order to cut him on the whole lot.

Mr. Noyes: The times such things occur are when the cheese are all mixed up and without date, and poor cheese are in the bottom of the box, then we size the lot up and pay for them what we think the lot is worth. The trouble is in mixing up the cheese, and there are cheese makers that do not have time to date their cheese or boxes. Some cheese makers have time to do all those things and we always find their factories in good order and his cheese in nice shape, and if he has poor cheese he will tell you about it. That is the man that gives the right weight and a dealer never has any trouble with that kind of man. Those cheesemakers do bob up here and there all over every section I have ever been in, and I also find there are some poor cheese makers that try to get through with just as big a yield as possible and with just as little trouble as they possibly can.

Mr. Wallace: Wouldn't a cheese maker get a little better treatment from a dealer if he ships to him all the time than if he ships to him only once in a while?

Mr. McCready: We are supposed to pay for cheese what they are worth.

Mr. Wallace: Is it not a fact that the dealer finds more fault with the man he buys from only once in a while than with the man from whom he buys regularly?

Mr. McCready: A man shipping his cheese to us year in and year out is doing us a certain favor. When another buyer goes in and solicits his cheese for an extra eighth of a cent, he does not go over to the other fellow, he sticks, and naturally when a man sticks to us we will stick to him.

Mr. Wallace: If you come up on our Board of Trade and buy cheese from me and do not do as well by me as the other fellow who has been buying from me, I will not sell you the next time.

McCready: I did not know you were referring to cheese bought on the Board of Trade. We buy your cheese perhaps once in a while on the Board of Trade if your cheese are all right and if we want them bad enough we will accept them and pay the market price for them.

Mr. Wallace: There is a difference between all right and something that is better and when you find somthing that could be better and is all right with a steady dealer, is it all right with me if I ship you every six months?

Mr. McCready: If I buy your cheese and they are marketable of course they are all right. I am talking about marketable cheese and that is all we are trying to buy on the Dairy Board of Trade.

I know a good many fellows that had cheese contracts this year off the board that were glad to come in and put them on the board and also write us and ask if we wanted to take them. I know that the cheese that are contracted off the board, in our section of the country at least, and shipped to any dealers are not suitable cheese for us to buy after they bring them back and put them on the board. Some dealers, especially where you ship to a wholesale grocer, will get you to make soft open cheese, and a great deal of this soft, open cheese was offered on the board this fall and seldom were they not cut until they got back into the proper system of making cheese, that is making cheese that will go anywhere in the United States or the Old Country, a good, firm, close cheese I do not care who wants it. We found this out last fall when we started to export. Out of all the Americas on the board one week we were only able to ship half of them, because the balance were too pasty and we would not take a chance at them. Some cheesemakers I presume do not want to come to the Dairy Board, cannot get away from their factories long enough.

Mr. Dassow. A dozen of cheesemakers go to the Plymouth board regularly and never sell a box of cheese.

Mr. McCready: It may be they are making a special cheese of some kind.

Mr. Dassow: I have been in the factories and found nothing different from the ordinary make of cheese.

Mr. McCready: Every man is entitled to sell his cheese

as he sees fit. I cannot give you each man's reason for not selling on the Dairy Board but the man who sells on the board often gets the extra one-eighth of a cent, the other does not.

Mr. Dassow: It seems to me the only object that those fellows have in contracting their cheese and not selling it on the Dairy Board is to let somebody else do the dirty work.

Mr. McCready: I do not think anybody selling off the Board of Trade gets any better usage than the man selling on the board.

Mr. Dassow: I would like to ask if every cheesemaker would paraffine his cheese would we have better cured rinds?

Mr. McCready: I can take you to Sheboygan today and show you cheese where I can shove my finger into the rinds due to nothing else than the cheesemaker paraffining his cheese right out of the press. A cheese cures and develops and shows almost from the time it is four or five days old what it will develop into, but paraffining wax does not tell you anything of that kind. If we could make a moisture test of every pound of cheese that comes to our warehouse we could tell which to hold and which not to, but it takes a good judge, when a cheese is five days old, to tell whether to put that cheese in the warehouse or not. If you get your paraffine wax too cold and get it on almost an eighth of an inch thick that cracks off; the cheese is put in a cooler and where the wax is off the rinds become mouldy; if you paraffine them too soon they are wet, the moisture has not had a chance to get out, there is too much moisture there and the result is it forces itself as far as the rind and causes a rot. I have seen that too often to suit myself. Paraffining cheese is a mighty fine thing for the cheese dealer to save a lot of shrinking and to save a lot of black, dirty cheese, but it is not the best thing in Wisconsin for the flavor of cheese, and I can almost wager my life on it. Canadians do not paraffine their cheese. Last week over there I got some cheese nine months old and every cheese had a flavor to it that our cheese do not have at that age. Our cheese will develop a sharp, bitter flavor which those cheese did not have. They get what they call "nutty flavor cheese," and we do not.

Mr. Dassow: Is it not a fact that there is something else to blame for it, is it not too much moisture? I do not think paraffining is to blame.

Mr. McCready: Why not? Paraffining is holding in too much moisture.

Mr. Dassow: In our neighborhood we are working for yield. Everybody puts in as much moisture as he can.

Mr. Kong, Iowa: I have been in the cheese business twenty-five years and sometimes buy cheese in Wisconsin, and I am sorry to say they have been short in weight every time I have received them, and I always write to them not to paraffine the cheese. I find I have no sale in Iowa for paraffined cheese. In a town where I am selling cheese the grocers will not take paraffined cheese, claiming it will not keep well. Between the paraffine and rind it moulds and gives the cheese a bad apparance when cut. I always object to paraffined cheese. My cheese keeps better when not paraffined than when paraffined.

Mr. McCready: The fact of your cheese showing mouldy under the paraffine would indicate they were a little mouldy before paraffining, but did you ever notice the rinds get soft? Paraffining cheese has not improved Wisconsin cheese, I will tell you that.

Mr. Kong: I bought cheese the other day which a man had paraffined. He kept them in the basement and he showed them to me and asked me what was the matter with them; I told him they were too wet.

Mr. McCready: You spoke about short weights. I am not going to deny the fact that you can get short weight cheese from Wisconsin dealers but if you were buying paraffined cheese you wiuld be less apt to get short weight. Your other cheese does shrink in weight more than the paraffined but if you have not paid for the cheese, pay for what you get. I am not plugging for trade, but if you buy your cheese from me I will guarantee you will never get short weight. We have a law against marking boxes incorrectly, and I hope it will be enforced because there are cheese dealers in Wisconsin that are just as anxious to see every man get full weight cheese as the man who buys it.

Mr. Ide: I have seen a number of cheese buyers if a cheese

came in weighing 20½ lbs. they would scratch out the figures and mark that cheese 21lbs. I have seen that done myself.

Mr. McCready: I have seen it too, I do not deny it.

Mr. Ide: They have been marked up as high as one and one quarter to one and one half pounds.

Mr. McCready: You understand that the first of January the National Pure Food law went into effect. This law requires that all dealers give full weights, and a good many dealers became honest the first day of January last year.

Mr. Ide: But a good many dealers forgot to become honest because they kept on the same way this year as last.

Mr. McCready: I feel I am in a position today where I am apt to be jeered at. I am between the cheese maker and the cheese buyer, but on the first day of January a good many became honest and a good many remained there and we are hoping the balance will be compelled to be made honest before another first of January, because it just means that the dealer who marks up cheese can underquote and undersell the man who sells full weight.

Mr. Ide: I think we will have to have different laws before we can compel the dealer not to mark up his cheese because he marks up the cheese and then puts them into storage and when the cheese come out of storage short he says it is because of shrinkage, and he will not sell them by the pound but by the box.

Mr. McCready: No cheese is sold by the box except square cheese, nothing but square cheese is sold by the box and that is the only cheese unless a man guarantees that he will ship Daisies that average 20 lbs. We have factories that make us nothing but 20 lb. Daisies; they do not mark the weights on them but we mark them 20 lbs. because we want the trade to know they are 20 lbs. and when we buy 20 lbs. of cheese and pay our money for it we are supposed to get it.

Hon. J. Q. Emery: I would like to ask whether dealers in Wisconsin cheese have been the only sinners in this matter of underweight and overweight?

Mr. McCready: I think not.

Mr. Emery: Has it been as common among Eastern dealers as in Wisconsin?

Mr. McCready: It has been know in the East but I think it has been more common in Wisconsin than with Eastern dealers. There is one thing, Mr. Emery, Eastern prices on cheese have been much lower right along than in Wisconsin and there has been a certain temptation to mark up our weights so as to equalize our price with New York, but I think the majority of cheese dealers are giving full weight cheese and if you know of any dealers giving short weight cheese I would much rather have you report them.

Mr. Emery: I shall have no hesitancy whatever. I should have pleasure in getting after them.

Mr. Schwingel: Should all paraffined cheese go into storage at once?

Mr. McCready: Certainly, paraffined cheese must not be allowed to stand around and blister.

Mr. Schwingel: I think right there is where a good deal of the trouble is.

McCready: When we are paraffining cheese in the warehouse that are going to be shipped or are going into cold storage, they are not over five or six hours on the floor any way you take it. Where a man paraffines his cheese in the factory he paraffines some every day, then boxes them and ships them out. I have seen cheese come in in hot boxes and they were brought into our warehouse very hot and blistered. Let the cheese dealer paraffine the cheese. That is his business. We can buy paraffine at six cents a pound and do not care to pay 15¾c for it.

Mr. Schwingel: I do not think there is any benefit to cheese makers to paraffine cheese in the cheese factory.

Mr. McCready: Where a man is working for yield, yield all the time, he is going to get into trouble. That is one of the things that makes Canada what it is in the cheese business. The last thing we thought of was yield, the first quality.

The President: I have heard some cheese makers say the cheese buyers complained because mould set in on cheese before it reached the dealers and for that reason they paraffined their cheese. Now where they have no curing rooms I think it is possible that that will cause more trouble than paraffining the cheese. As far as paraffining cheese and keep-

ing it in the ordinary room temperature is concerned, I would say that during the past summer at the dairy school we paraffined all the cheese sent in by exhibitors, and a good many of them came in oniy a few days old. We paraffined them and put them on the shelves for a month and most of the time the temperature was between 60 and 65 in the hot months, and I found no trouble with the paraffine cracking in that temperature.

Mr. Schwingel: How old should a cheese be before paraffining it?

The President: I cannot answer that question. I think Mr. McCready stated that it all depended on the amount of moisture in the cheese, some cheese you might paraffine when a few days old, other cheese you would have to keep ten days before paraffining.

Mr. McCready: The chairman used the argument of paraffining cheese to cover up poor curing rooms. The money spent in the paraffine tank and the time used in paraffining, would build a curing room which would prevent mould.

Mr. J. W. Moore: I think it is possible to fix up a cheese that is mouldy so as to make it look fairly decent, but take a cheese that is paraffined too early in the factory and how can it be treated to get rid of the slime that will be there? I have seen cheese that came in slimy and the dealer took off the bandage; then of course the cheese was slimy and he scraped that and let it stand in a draft for several days and yet it was slimy. Slimy cheese cannot be corrected while mould on cheese can be helped.

Mr. McCready: I would rather clean up mouldy cheese and paraffine them after they were dried. It is worth money to wash cheese and the man that has a curing room that moulds cheese should be charged by any dealer for washing those cheese up, but I would rather have mouldy cheese than cheese with the wax cracked off. There is no way to get paraffine to stick on that.

Mr. Wallace: Which would you rather have cheese come in with a cap cloth or with a circle?

Mr. McCready: For my part, I learned my trade making cheese where we stuck to heavy cap cloth but where you use a heavy cap cloth you have to use warm water to get

the cloth to stick and you can get a better rind than by using the circle. I have had cheese without cap cloths that suited me and I have seen them from other factories where the rind had chipped and mould worked in where they used cap cloths, and this would not have been the case had they used a circle because they did not use the cap cloths properly.

Secretary Baer: I want to announce to the convention that I am reliably informed that this afternoon we will have one of the best Swiss warblers in the state, and we will have a quartette and a double quartette to sing for us. We will also have people from the various theaters in the city here to entertain us from time to time. Do not forget to visit the second floor of the Republican Hotel where the supply men are keeping open house and desire to meet you. They are the men who have been in the convention, the men behind the gun, have helped to finance it and make it possible for us to continue year after year to hold larger and more successful meetings. They have been largely instrumental in making it possible for your officers to get out what I have been told by a number of delegates in attendance is a pretty decent looking program. They have paid lots of money for the advertising and they are now at the Republican Hotel and would be glad to see you.

On motion duly seconded, the meeting adjourned until 2 o'clock P. M.

WEDNESDAY AFTERNOON SESSION.

January 8th, 1908.

Meeting called to order at 2:30 P. M. by President Michels, and opened with music by Matti Brothers, the Swiss Warblers.

The President: At this time I will appoint the committee on resolutions which will consist of Messrs. E. L. Aderhold, of Neenah, J. W. Moore, of Madison, and P. H. Kasper, of Welcome.

The next on the program will be an address by Mr. J. G. Moore of Madison, Wisconsin, Secretary of the Wisconsin Buttermakers' Association and also Secretary of the Dairy Manufacturers and Milk Producers Protective Association.

ADDRESS.

J. G. MOORE, Madison, Wis.

Secretary Wisconsin Buttermakers' Association.

Mr. Chairman, Ladies and Gentlemen:

I have heard it said that sometimes it is a good thing to have two strings to your fiddle and so in my address today I have two subjects for discussion. The first subject, in regard to the matter of cream rates, may seem to you as cheese makers as a subject foreign to your interests but I hope by the time I finish to have shown you that it is something in which you are deeply interested.

A subject that I think you will be interested in is whether Wisconsin's cheese and butter interests should own, control and publish a paper devoted to their interests?

Most of you are no doubt familiar with the fact that a paper under the name of the "Cheese and Dairy Journal" was published at Whitewater for a time, and was two years ago made the official organ of this association.

At the time of the suspension of the Cheese and Dairy Journal the paper was offered to some of us who thought at the time that it could be made successful, with a little financial backing, but were discouraged by a prominent newspaper man who being asked for advice told us that the road of journalism was strewn with the wrecks of suspended publications, which is no doubt true.

At the beginning of the short life of the Cheese and Dairy Journal it made no effort to appeal to the creamery interests for support, but later finding that there was not enough advertising to be obtained for an exclusive cheese paper, decided to enter the creamery field, but it was too late, and not having sufficient financial backing was sold to the only paper that makes any pretension of catering to the cheese interests.

Now with such an example before us, it may seem the height of folly to again venture upon the sea of journalism, but we have another example to show you, viz.: The Dairy Record, of St. Paul, Minnesota. This paper has been in existence for nearly eight years and is owned entirely by the Minnesota State Butter and Cheese Makers Association; not always, but its success as a paper has been made sure and solid since the stock has been entirely in the Association's hands and the Makers of the state have a greater interest in it. Naturally owing to the fact, that they are the owners.

I have been investigating the subject of pubishing a paper somewhat, and I want to lay before you the results.

When the Cheese & Dairy Journal suspended publication it had advertising contracts sufficient to pay for the printing and mailing the paper; the greatest trouble was that it cost so much to get subscriptions, many times even more than the price of the subscription.

It seems to me that if the Wisconsin Cheese Makers' Associa- and the Wisconsin Buttermakers' Association were to join forces in the matter that it could be managed in such a way as to insure its success.

With more than 3,000 cheese factories and creameries in the state as a field of operation, it seems to me that the field is large enough, and when our makers know the paper is their own that they are patriotic enough to stand by it.

Wisconsin cheese and butter interests have problems peculiarly their own and could best be treated in a paper owned by themselves.

As to the method of control I should suggest that the officers of the two associations be a board of directors to formulate the policy of the paper and to select the editors.

By the way, I want to say that your secretary, Mr. U. S. Baer was the man who did Herculean work in the way of making the Cheese and Dairy Journal readable and instructive to the cheese

makers, and I know that if we ever have a paper no mistake could be made in selecting him as editor of the cheese end of it. His heart would be in the work and with his acknowledged ability as a writer, and his knowledge of the cheese business from A to Z and his wide acquaintance, I can almost assure you of the success of the undertaking.

I have talked with some of the advertisers and some of them said they thought it would be a good thing, and others thought there was enough papers as it was.

In talking with the editors of the Dairy Record in regard to this, they were to my mind rather disposed to throw cold water on the project and said that most firms these days set aside a certain sum for advertising, and should another paper start up it would only mean a smaller amount for each one.

They advised that our association make their paper the official organ, but, personally, I do not think that Wisconsin with its great dairy interests should be the tail to any other state's kite.

Should this association deem this idea of an association owned paper worth further consideration I should suggest that a committee be selected to look further into the matter and co-operate with a like committee from the Buttermakers' Association.

I want to say this in conclusion that it is not with any idea of providing a soft job for some one that I advocate the establishing of an association paper, but on the contrary, I know that Mr. Baer, myself and others will be more than willing to do all we can for the interest of the paper and give it such service as can not be purchased with money.

At the convention of the Wisconsin Buttermakers' Association held in Wausau last February, Hon. J. Q. Emery, Dairy & Food Commissioner of Wisconsin, had the following to say:

"In my judgment, never in the history of this state has the local creamery industry been so menaced as at the present time. If our local creamery interests in Wisconsin, this magnificent dairy state with a total annual income from her dairy products of more than fifty-seven million dollars, is to continue and advance that industry, there are certain conditions that are absolutely indispensable. First and foremost, cleanliness in dairy products from cow to consumer; second in our creamery work the testing of butter fat in cream or milk of the patron must be done with intelligence, with painstaking care, and with absolute honesty; third, there must be no discrimination in railroad trans-

portation by the roads between the various classes of producers of these dairy products.

Now, gentlemen, this is a serious proposition and there is no body of men so called upon to deal with this proposition as the Wisconsin Dairymen's Association and the Wisconsin Buttermakers' Association. I state to you things that I know, and I say that a local creamery is charged one dollar a hundred to ship its butter to Chicago by express. Now keep that in mind; at the same time, from the same place they take one hundred pounds of cream to Chicago for 26 cents. The cream is 40 per cent butterfat. Now, under the arrangements, a large portion of this cream shipped to Chicago centralizers averages 40 per cent butterfat. It amounts to this, that the Chicago centralizers get their butter for 52c a hundred for transportation charges, while the Wisconsin local creamery pays $1.00 to get its butter to Chicago. Gentlemen, that is not a square deal. In addition to this, the railroads return the cream cans free of charge, they do this by shipping as baggage.

Thus it will be seen that by this action of the railroads the Wisconsin local creamery is placed in a position of particular hardship if this thing continues. No Chicago centralizer nor any other centralizer can get out of a farmer's cream any more honestly, than the local co-operative creamery can get out. Therefore it is to the interest of every Wisconsin farmer to stand by the Wisconsin local creamery. He gets all there is in the over run, and everything! The dairy sentiment of our state, the railroad commission and all the forces of our state should stand like a solid wall in defense of our dairy interest as a part of Wisconsin. Not only should they stand as a stone wall, but should be just as aggressive as a mighty army seeking to gain what is right and just in these matters. The Creamery Buttermakers' Association can do much to bring this matter to a right turn."

At that time a resolution was passed, as follows:

"WHEREAS, Under the present railroad rates in portions of this state a local creamery paying a dollar a hundred to ship its butter to Chicago by express is competing at the same time with Chicago centralizers that secure rates on forty per cent cream shipped as baggage at twenty-six cents per one hundred pounds and the cans returned free; thus enabling the Chicago centralizers to obtain a transportation rate of fifty-two cents per hun-

dred on their butter; while the local Wisconsin creamery must pay one dollar per hundred to get its butter to Chicago, therefore be it

Resolved, That such discrimination in transportation charges by the railroad is not a square deal to the local creameries and their patrons.

Resolved, That this discrimination in charges is a serious menace to the local creamery and the dairy interest of the state; and that the officers of this Association are hereby requested to urge this matter upon the Wisconsin Railroad Commission and the National Interstate Commerce Commission for the purpose of securing justice in transportation to the Wisconsin local creamery and their patrons, and that they secure the co-operation of the dairy and daily press in arousing and reporting the dairy sentiment of this state in securing equitable rates."

Very few present at that convention really understood the importance of the subject brought up by Mr. Emery's remarks and also covered by the Resolution.

A number of the leading creamery men of the state, however, had been feeling the effects of the cream being shipped out of their territory and when Mr. F. A. Seeber, of Roach & Seeber Co., Waterloo, issued a call to meet in Watertown July 30th, at the Commercial Hotel, quite a large and representative gathering of those interested in the creamery business were present. After a general discussion of the reasons for making the call, a permanent organization was formed under the title of the Wisconsin Dairy Manufacturers & Milk Producers Protective Ass'n, with Mr. F. A. Seeber of Waterloo, Pres., A. L. Roach of Waterloo, Vice-Pres., Mr. H. W. Sorge, of Reedsburg, Treasurer, and J. G. Moore, Madison, Secretary.

The following Resolution was ordered printed in the form of a petition for distribution to the creameries and cheese factories of the State:

"To the Honorable, The Interstate Commerce Commission, Washington, D. C.

WHEREAS, It has come to our notice that the so-called centralizing companies located in Chicago, viz: The Beatrice Creamery Co. and the Blue Valley Creamery Co. have petitioned your honorable to maintain the low rates heretofore enjoyed by them for the transportation of cream, alleging in their complaint that the railroads have entered into a conspirarcy in restaint of trade, and

WHEREAS, We, the representatives of the dairy industry of of the state of Wisconsin, the leading dairy state affected by the maintenance of such low rates, with its 3,000 creameries, cheese factories and skimming stations, with $5,000,000 invested in machinery and buildings, with 102,000 patrons milking 944,000 cows, contributing 3,166,000,00 pounds of milk annually with a revenue of more than $57,000,000, believing, as we do, that these rates in question are now entirely too low, and in our judgement tend to concentrate the industry in the hands of the few to the detriment of the many, and

WHEREAS, The so-called distance tariff is employed in computing rates on cream locally and the rates enjoyed by these Chicago companies are in their very nature monopolistic and destructive of the best interests of the producer, we, the representatives of the dairy industry of Wisconsin respectfully petition your honorable body to disregard the petition of the said Chicago companies and maintain the distance tariffs on cream."

A notice was sent with the petition calling attention to the importance of this matter to the dairy interests of the state and asking the maker or factory man to obtain as many signatures as possible.

At the meeting above referred to the following persons were named as a committee to go to Washington to represent the state at the hearing; before the Interstate Commerce Commission: Hon. W. D. Hoard, Ft. Atkinson, Hon. J. Q. Emery, Dairy & Food Commissioner, Madison; F. A. Seeber, of Roach & Seeber Co., Waterloo; E. C. Dodge, Pres. Wisconsin Buttermakers' Association, Lake Mills; J. G. Moore, Rep. Fox River Butter Co., Madison.

You may wonder, as cheese makers, how all this interests you. St. Paul once said, referring to the Church, that it was all one body, although composed of many different parts; and that one member could not say to another I have no need of thee. And further: "And whether one member suffer, all the members suffer with it."

So it is with the dairy business, the man who is interested in the manufacture of cheese cannot say I am not interested in what pertains to the making of butter; nor can the butterman say I am not interested in what affects the cheese maker. What affects one is bound to affect all, and therefore I have taken the liberty to present this subject of cream rates to you so that you

can realize your interest in the matter and take such action as will protect not only yourselves but the creamery and dairy interests as well.

For years milk has had to be transported into the large cities for immediate consumption and the railroads have had in force a terminal tariff which covered shipments from any distance up to say 50 or 100 miles.

Since the introduction of the hand separator a change has taken place in some localities, in the way in which the producer markets his butter fat. He used to haul the milk daily to the nearest creamery and bring back the skim milk for feeding purposes. Now by having the separator on the farm, he can hold the cream on the farm a longer time, and reach out to markets other than the one in his intermediate locality. Taking advantage of the low rates the force for transporting milk, so-called centralizers have been established drawing supplies from a large territory. In some states where dairying has not reached the development it has in Wisconsin or Minnesota, this method has possibly proved a good thing, but in states like Wisconsin and Minnesota when the local cream and cheese factories are so numerous that the producer has the benefits of the keenest kind of competition, it is seriously questioned if the introduction of this factor in the dairy business will prove a blessing.

In states like Kansas and Nebraska, Wyoming, Colorado, where the centralizer has been longest at work competition has indeed been reduced to a minimum. The large aggregations of capital looking about for new fields to conquer siezed upon Chicago as a favorable place to locate and induced the railroads to extend the distance that the terminal tariff would operate in.

Possibly the railroads thought by giving a low rate the producer would get the benefits and dairying along their lines be developed thereby. Claiming that the business is conducted under these low rates was unprofitable to themselves and that the producer was not getting the benefit, the railroads promulgated a tariff raising the rate slightly and putting into effect what is known as the "Distance Tariff" which is the tariff under which all butter and cheese is shipped.

The centralizers claiming that such raise in rates would ruin the business asked the Interstate Commerce Commission to interfere and restrain the railroads from changing the tariff.

As the interstate Commerce Commission is notoriously behind with its work the centralizers appeared before Judge Kohlstaat

of the United States Circuit Court and asked for an injunction restraining the railroads from changing the rate until such time as the Interstate Commerce Commission could hear and determine the justice of such proposed increase in rates.

Under stipulation of the attorneys of both sides I believe this injunction is now in force.

The Wisconsin Dairy Manufacturers & Milk Producers Protective Association deemed it necessary to ask the Interstate Commerce Commission to allow them to be represented in the hearing and its officers were instructed to engage a lawyer to look out for Wi consin's dairy interests.

Mr. John Barnes, former chairman of the State Railroad Commission was secured to represent the association, and as you all understand the movement of this kind requires financial backing the following circular letter was sent to every creamery and cheese factory in the state:

"To the Butter and Cheese Interests of Wisconsin:

Are you aware that a case of vital importance to the dairy and cheese interests of this state is now pending before the Interstate Commerce Commission in which such interests are represented, and that another such case is pending before the Railroad Commission of Wisconsin, and it is to be heard Oct. 19th.

Did it occur to you that by reason of Preferential rates whereby cream can be transported great distances at a trifling cost the butter making business is being concentrated at a few great plants in a few large cities, and that unless relief is had the same conditions will exist in Wisconsin?

These concentrating plants with their millions of capital by the appication of Standard Oil methods have already conquered Kansas, Nebraska, Oklahoma, a large part of Iowa and Illinois, a portion of Minnesota, and are beginning to add Wisconsin to their long string of scalps.

It is difficult to go into detail in reference to their operations in a letter of this kind. A single example will illustrate. Less than ten years ago, before the concentrating plants began their career, there were nearly two hundred creameries in operation in Nebraska. Now the number has dwindled to sixteen. Practically the same results have followed in Kansas and the local creameries were shut out of Oklahoma from the start. Like results have followed in other sections where the trust has been operating.

The method adopted by the concentrators is to pay high prices for cream in new territory where they come in contact and competition with the local creamery until the latter is forced to suspend operations whereupon the prices are dropped to a lower level than that paid by the local creamery.

The process of gradual elimination is carried on in much the same way as the Standard Oil Trust froze out the local refineries one by one until it was left undisputed master of the field and at liberty to dominate the market price.

It is neither good for the farmer nor the butter or cheese manufacturer that competition in the business of buying milk and cream be driven from the field. If a temporary raise in prices results from the operation of the trust it will continue but a short time while the low prices that will ensue as a result of the elimination of competition will continue indefintely.

The danger spoken of is not financial but is real, and immediate. It is absolutely essential to the preservation to the dairy and cheese industries of Wisconsin as they are now carried on that they organize and present an united front against a common enemy that will wipe out both under the existing order of things in a short time.

The Railroads have awakened to the necessity of preserving the local creamery and cheese factory and have issued tariffs removing in a measure at least the discrimintions under which the local factories labored. The advances in rates are being vigorously resented by the centralizers. A restraining order has been issued by the United States Circuit Court in Chicago, prohibiting the advance rates from being prohibited. A petition has been filed with the Interstate Commerce Commission loudly protesting against the proposed advance in rates and the case will be fought with all the vigor that unlimited wealth can command.

The fight involves the life or death of the local creamery and cheese factory in Wisconsin. If the centralizers win the present method of handling milk and cream will, in a few years, be wiped out and the large plants located at a few central points do all the business. The investments in local plants will become a dead loss.

These industries being vitally interested should fight to protect themselves and the communities in which they are located. Twenty-seven firms owning about a hundred factories have been communicated with and are agreed that counsel should be em-

ployed and preparations made for a big respite both before the Interstate Commerce Commission and the Wisconsin Commission. Every factory in the state is vitally interested and should join in the movement. Our opponents are well organized and equipped, recognizing that in union there is strength."

Hon. J. Q. Emery, State Dairy and Food Commissioner, is heartily in sympathy with the movement. So is Ex-Gov. W. D. Hoard, and we are informed that the Hon. Secretary of Agriculture believes that the concentrating system is detrimental to the best interests of the farmers.

If you are willing to aid and contribute toward making a fight for your own preservation sign and return the enclosed agreement. Later a meeting will be called and the objects and purposes of the association will be more fully outlined.

The parties in interest who have been already consulted have done considerable work in the way of looking up facts and have retained Mr. John Barnes, former chairman of the Wisconsin Railroad Commission, to represent the dairy and cheese industries of Wisconsin in litigation.

F. A. Seeber, Pres. Wisconsin Dairy Manufgs. and Milk Producers Protective Ass'n.

E. C. Dodge, Lake Mills, Pres. Wisconsin Buttermakers' Assn.

U. S. Baer, Sec'y. Wis. Cheese Makers' Ass'n.

Make all checks payable to the treasurer, Mr. Henry Sorge, and mail to

J. G. MOORE,
Secretary,
Madison, Wis.

That this danger to the local cheese factories and creameries of the country is appreciated elsewhere I would say that after presenting this matter to the Minnesota Butter & Cheese Makers' Assocation at its recent convention the following resolution was unanimously adopted.

"WHEREAS, We beieve that a crisis has arrived in the dairy industry which demands prompt and energetic action on our part, and believing, as we do, that if we have a square deal we can successfully compete with any and all centralizers who may be endeavoring to monopolize the manufacture of butter, and

"WHEREAS, we beieve that the present low rates enjoyed by the centralizers in the transportation of cream has operated more than anything else to bring about this condition, and

"WHEREAS, this question of discrimination of rates has been brought before the interstate commerce commission for settlement, and

"WHEREAS, the dairy interests of the state of Wisconsin have taken a step in the right direction by employing an attorney to properly present their interests before said commission, therefore be it

"Resolved, that we hereby express our hearty sympathy with them in this movement, and pledge them our united support."

The dairy interests of North and South Dakota and Iowa are with us in this fight and are willing to aid in any way possible.

We must go before the Interstate Commerce Commission with all the backing that it is possible to get and we want your moral as well as financial support.

All territory will look alike to our friends the centralizers and you cheese makers and factory men must realize that the hand separator is come to stay and its use is spreading fast and you can not tell how soon your territory will be invaded.

The State Railroad Commission thought this matter of cream rates of so much importance that it took up the matter on its own motion and had a hearing on Nov. 5-6-7. At that hearing largely through the efforts of our Protective Association, through our attorney, Mr. Barnes, a mass of valuable information was presented to the Commission from such witnesses as B. D. White, Asst. Dairyman Dairy Division Dept. of Agriculture, Washington, D. C.; Hon. H. R. Wright, Dairy & Food Commissioner of Iowa; H. J. Credicott, Government Inspector, Chicago, Ill., Hon. J. Q. Emery, Dairy & Food Commissioner, Madison, and members of his staff as well as others. Let me quote from the testimony of Mr. John Kirkpatrick, of Richland Center, as follows:

Q. Where do you reside Mr. Kirkpatrick?
A. Richland Center.
Q. What business are you engaged in?
A. Cheese dealer.
Q. Do you operate any cheese factory?
A. No sir.
Q. Just deal in cheese?
A. Yes sir.
Q. Do you know something about the so-called centralizers?
A. Yes sir, somewhat.

Q. What knowledge have you had in reference to this and in what way have you had your attention called to them?

A. I have visited the plants in Omaha, spoken with some of the employes there, have met their solicitors up in the states.

Q. Now have you paid any attention to the rates on milk and cream in the state of Wisconsin?

A. Not particularly, no sir.

Q. If you have any judgment on the sunbject, Mr. Kirkpatrick, I would like to get the benefit of it, whatever it is, with reference to the probable effect of the centralizing plant upon the cheese industry in Wisconsin, with which you seem to be more intimately connected, I believe.

A. If these centralizing plants can under ordinary values of cheese get into the state I think they will close up half the factories in the state. Where I am in Richland County, solicitors were up there last year and also this spring, but owing to the high values for cheese which has been prevalent for the past two years they could not do very much, but if cheese should get down to a normal basis, say ten cents, I think they could get in and clean us up.

Q. Well, do you think it would be for the best interests of the farming community that that should be done?

A. I think that these establishments are against public policy. I think they are the very worst possible thing that can happen to this state.

Q. Why do you say that?

A. For the reason that I do not believe they make the quality of butter that is now being made in the local creameries. I do not think that it is possible for them to do it.

Q. Any other reason?

A. Well I believe they would do in this state just the same as they have done in other states, after they have practically closed up the local institutions that they will put down this price of cream to such a point that it will be a severe loss to the farming community, that has been their custom.

Q. It is your idea then that they are so equipped that whenever they get around to attend to Wisconsin under existing or prevailing rates they can do so?

A. I think that is true.

Q. Anything else you think of Mr. Kirkpatrick?

A. Nothing, except this fact, rates on cheese as compared

with the rates on cream. The rates on cheese from Richland Center to Chicago are 42-½ and 8% is to be added for the boxes. I understand they are hauling the cream down to Chicago for practically that rate by express and returning their cans.

Q. You think that this is not fair considering the service that is afforded for the cream and cheese, the value of the two products and everything else, you think that the rate on cheese either is too high or that on cream is too low?

A. The value of a can of cream is practically the value of a 60 pound box of cheese, and one is getting express rates and the other is getting freight rates. One is allowed express service and the other given freight service for the same money."

You will thus see that if Mr. Kirkpatrick is right in his views of the situation that the cheese makers of the state of Wisconsin are intensely interested in this matter rates.

DISCUSSION.

The President: Any questions you would like to ask Mr. Moore?

Mr. F. Marty: Would not the low rates on cream at the present time have a bad influence on the manufacture of cheese? Is that your opinion?

Mr. Moore: I certainly do think so or I would not have had the hardihood to present this paper before the cheesemakers of the state. It seems to me with the spread of the hand separator in localities among cheese factories, if present conditions are to continue, that the centralizers will be putting men in the field and soliciting cream from the very doors of the cheese factories, and with the capital they have behind them they can concentrate their energies on one particular spot until that spot is their own, and that is where the local creamery or cheese factory would have no protection. The only protection is the equalization in rates and I have no fear that the local creamery or cheese factory would be in any danger whatever from any centralizer if the rates are equalized.

Mr. Noyes: The railroad companies are also allowing their agents in some places to take in the cream, weigh it, test it and attend to its shipment, on top of carrying the cream by express for the same rate as they would charge us by freight for our cheese. Where they are starting in they pay the agent

a nominal price for this work and he is allowed by the railroads to do it, so you can see how intensified they are on this work. They start out in a small way and very soon are in a big business.

Mr. Larson: Let it not be understood that this cream goes to Chicago by express, but it goes on the express trains at freight rate.

Mr. McCarthy, Minn.: I think this matter is just as important for cheesemakers as for buttermakers. I am in a territory in Minnesota close to the agent; they have a cream agent there that sells hand separators and it cuts in on the cheese makers. I am fighting hand separators as hard as anyone in Minnesota; I would like to see the rates fixed so they would help us a little and I would like to see all the Wisconsin cheese makers take this up because as they are along the railroad here the centralizers are going to cut in on them, and next year if the price of milk goes down hand separators will come in here as they have in Minnesota.

Mr. Dassow: Out our way the hand separators came in and the only thing that saved us was the high price of cheese this year, but if we had a lower price for cheese and a higher price for butter the cheese makers would suffer.

Mr. Schultz: I was down in Missouri and ran a creamery down there. The centralizers came in there and it took them just two weeks to get us out, they were paying four cents more for butter fat than we, so you see what they will do. As Mr. Noyes just said, the railroad agent there was willing to test the cream, pay for it and do all the work at a half cent a pound. That is the way they are doing in some parts of the country. The big fellows that have the money will crowd out the others and I think you will have to fight them in Wisconsin.

Mr. Moore: I wish I could impress you people with the importance of this subject. If you could come in contact with the people who are working in the centralized business you would awaken to the fact that you are up against competition of the keenest kind. The centralizers send their men out to get cream in a locality and they go so far as to threaten the creameries in that locality. Before the State Railroad Commission a buttermaker told that the agent of one of the

centralizers came there and wanted to buy his cream, and when he refused to sell, the agent said, "We will shut you up." I wrote to a butter maker up in the Northern part of the state and asked him to come down and give testimony, but he replied that he did not dare for if he told what he knew those fellows would shut him up as sure as fate. You see to what extent they will go. I have a prospectus of one of the large centralizing creameries; they show a map of the United States with a shaded portion, which covers a large portion of the central West, they claim this as their own and say it is growing all the time. I tell, you gentlemen, it is time to wake up.

Mr. Emery: I do not think I can add anything to the discussion except to call attention to the central fact here that this advantage to the centralizer grows out of the fact that his cream is distributed at a lower rate than milk is transported, and if the charge for transportation of that cream compared favoraby with the charge of transportation of milk, or excess baggage or other things, then the creameries and cheese factories would have equal chance for competition, but it is this very unusual transportation charge that puts the creamery man, the cheese man, and their patrons of course, to disadvantage.

Mr Dassow: In regard to the other matter, about the cheese journal, I wish to say I think that is a very good thing and I believe we ought to have a paper of our own; I therefore move that the chair appoint a committee to confer with a committee from the Buttermakers' Association, such committee to consist of Messrs. U. S. Baer, J. B. McCready, and E. G. Schwingel.

Motion duly seconded and carried.

Mr. Corneilson: I would like to ask Mr. Moore how it is proposed to hold the stock, whether it is to be held by the two associations or by the members individually?

Mr. Moore: Mr. President, I would say for Mr. Corneilson's and others information that, so far as I have thought the matter out, the proposition was that the associations should control and own the stock and that the voting power of that stock should be invested in the officers of both associations. If on further consideration, it was found that the associations

could not furnish enough money to pay up the capital stock, I now feel pretty sure that there are certain men who would be willing to contribute something in the form of money for stock with the idea that the control of it should be still invested in the associations, and if such time ever came that the associations could buy it back and pay for it, they could have it.

The President: If there are no further questions, we will take up the next topic on the program, which is to be handled by Mr. J. W. Moore, the Government expert and Wisconsin exhibition judge, of Madison, Wis.

MONTHLY CHEESE SCORING EXHIBITIONS.

J. W. Moore, Madison, Wis.
U. S. Department Cheese Expert.

Mr. President, Ladies and Gentlemen and Memebr of the Wisconsin Cheese Makers' Association:

The topic assigned me "Monthly Cheese Scoring Exhibitions" is certainly of importance to everybody interested in dairying, from the producer of milk to the retailer of dairy products. If these Cheese Scoring Exhibitions are conducted as they should be, they are educational and will eventually raise the standard of our make of cheese, thereby, increasing the consumption of cheese per capita which will increase the demand for milk.

I presume it is needless to state the relation that I bear toward our Monthly Cheese Exhibitions. For it is impossible for me to believe that I have gained a prominence among you by doing my work so well that it is not to be criticised by anyone. Yet I am of the opinion that no one before me has been able to accomplish this end, and he who is able to accomplish it, is superhuman.

In order to become an efficient judge of cheese in an educational exhibition, a person must set up some definite standard in his own mind, as to what a number one cheese is. I know of no better way to determine this standard than by selecting the very best milk obtainable, make it into cheese

according to the best methods and cure same properly. When this has been accomplished we will have a product, which we can use as a standard.

At the present time a cheese scoring as much as 92 points is classified as extras. If a cheese scores a certain number of points below extras, we should be able to attribute it to a certain fractional part of the market price of cheese.

The score card now used in Wisconsin is as follows: Flavor 45 points, Texture 30, Color 15, and Make-up 10. Now some of us hold that salt should be given a place on our score card and others contend that it should not. I believe that salt does not need a place on a score card, especially where we write out our criticisms, for when we have scored a cheese for flavor and texture we have already considered salt. Salt as used in cheese making does not give a salty flavor but just merely adds to the flavor. A cheese which has less salt than it should have is lacking in flavor. It may also be moist, weak and even pasty, due to the lack of salt. On the other hand too much salt gives a slow curing cheese, low in flavor and a harsh stiff or even corky texture.

The Wisconsin Cheese Scoring Exhibitions were started a year ago last May, principally under the auspices of the Dairy and Food Commission. This proved to be of great help to the cheese interests of the State and the following May the University Dairy School made these Cheese Exhibitions a branch of their Department.

To illustrate how the exhibitors have been strengthened, I wish to cite the results obtained at our last State Fair. The number of cheese received from those taking part in the Monthly Cheese Exhibitions and outsiders were about equal, sixty-six per cent of the prize money offered for cheese was won by exhibitors taking in these Exhibitions, also winning the first prize on Cheddars, Flats, Daisies and Prints.

The principal improvement in flavor since the starting of these exhibitions seems to be the doing away of high acid cheese. For at first we found many high acid cheese, while now they are very scarce. The texture runs much more uniform now than at first. The makeup of the cheese has improved very materially and there certainly was ample room for improvement in this, for some of us.

Holding the cheese one month in the Dairy School Curing rooms is a splendid plan as it gives everybody's cheese an equal opportunity for curing and at the same time tends to make certain the reseipt of cheese more nearly representing the outnut of the factories represented in these Exhibitions.

DISCUSSION.

Mr. Haven, Mich.: What per cent of the factories in Wisconsin take part in these scoring contests?

Mr. Moore: I think Mr. Michels told us this forenoon in his paper that something like 300 participated in this exhibition the past season, about one-fifth of the cheese makers in the state.

Mr. Parkin, Minn.: How old was the cheese when you received it?

Mr. Moore: Most of it quite green, four or five days old, right from the press to the box. Most of it by the time we got it paraffined was from a week to ten days old.

Mr. McCarthy: Was the cheese paraffined as soon as you received it?

Mr. Moore: Yes, as soon as the cheese was received it was paraffined.

Mr. Dassow: Mr. McCready told us this morning that paraffined cheese lacked flavor. How did your cheese come out?

Mr. Moore: Of course we did not have duplicates of those cheese so we are not able to state. I do agree with Mr. McCready that there is a serious objection to paraffining cheese green and I think that as long as cheese is marketed as it is today, very close to the make, I think dealers should be strict and reject any cheese paraffined at the factory. I have spent some time among dealers and have found cheese damaged by being paraffined in the factory and I have also found much cheese damaged in the car. Some of the railroad agents are very careless in having cheese piled up and if the cheese makers do not insist upon the cheese being piled as they should be, they are stacked in one end of the car and when

the cars are moved they are thrown all over the car. Cheese treated in that way cannot be gotten into market in the best shape, even though the dealers strip the paraffine off and re-paraffine it again it will not look as good as before.

Mr. Emery: For my own information, I want to ask is it maintained by you and by Mr. McCready this morning that cheese should not be paraffined at all, or that cheese should not be paraffined at the factory.

Mr. Moore: Under present conditions the way cheese is marketed now (it is not marketed as it should be) but as it is marketed now very close to the hoop, I think cheese dealers should stand firm in that and not take cheese that is paraffined at the factory. I do not see any objection to the dealer paraffining it.

Mr. De Land: Mr. President, I have always done as much paraffining of cheese as any dealer. I claim to be the first man in the state to do any paraffining, did it in a primitive way with a kettle over an other kettle to heat water. I have also experimented with cheese paraffined and unparaffined and put in cold storage both ways, I have tested both. As to the flavor of the cheese being better or worse by being paraffined, it is not true. The chemical change takes place just as well with the paraffine coat, and the shrinkage is much less. I am willing that the cheese should be paraffined as soon as the bandage is dry. The objection to having the factory men paraffine the cheese is that they do not get it hot enough, do not take pains in dipping the cheese and will get on all the paraffine they can, and the result is that when that is put into the car it generally breaks the paraffine. We who understand it, put on the lightest coat of paraffine possible and it is not so apt to break up.

If you want to ask any questions of me regarding paraffining I am ready to answer them. They make a wax that tests 123 to 125 so of course it has less water and is more elastic than this cheese wax.

Mr. Emery: The paraffining of cheese does not deteriorate in any way the quality of the cheese?

Mr. DeLand: It does not, for I have tested it in my cold storage. I did it to not only determine the effect on the quality but as to the shrinkage.

Mr. F. Marty: I would like to ask Mr. Moore if he has ever carried on any experiments with duplicate cheese for a certain period, one paraffined and the other unparaffined, a score being taken at the time of putting the cheese in storage and another score taken when the cheese came out?

Mr. Moore: I have not done any work along that line directly but the work we have done has helped to confirm some ideas along that line. Last year the government had forty-five different lots of cheese in storage at Plymouth and we could see some difference in the cheese that was paraffined and put in cold rooms right from the hoop; we had other cheese that was held in an ordinary curing room from the same lot, then paraffined and put in a cold room at a temperature of 38 or 40.

Mr. Aderhold: If there was any difference in the texture you could not lay it to the paraffining?

Mr. Moore: What I meant to bring out was there was a difference in the pastiness. We naturally think that the one held in the ordinary curing room two weeks dried out more tha the one immediately put in cold storage. There would be more moisture in the former cheese and it would be rather pasty.

Mr. F. Marty: I would like to ask what is the average per cent. of moisture that is expelled from a cheese not paraffined? That is a 100 lb. cheese unparaffined, put away for any length of time, what per cent of moisture will be expelled from it, and how much from the same cheese if unparaffined?

Mr. Moore: I do not know anything about that; in fact I have not tested the moisture contained in the cheese this last summer at all. I do not think we have a man in the state who has tested more moisture in cheese this year than President Michels, and perhaps he will give you his opinion.

President Michels: We have a few figures on that but I have not them here but perhaps next year I can give you a good many figures on the moisture in cheese. We have tested every cheese sent to the dairy school this year, held at different temperatures, paraffined and unparaffined, and when we meet again in convention I think there will be many things we will know about moisture that we do not know today. We find moisture in cheese runs all the way from 33 to 45%.

Mr. F. Marty: About what per cent of moisture would naturally evaporate from a cheese not paraffined? What per cent is expelled from that cheese during the curing process?

The President: I think Mr. DeLand can answer that question.

Mr. DeLand: Take a box of Twins put in in May and brought out in September or October, and I usually found about two pounds loss on the box. On a 65 lb. cheese the average shrinkage, if unparaffined would be about 2 lbs., while if paraffined we have not had any that would shrink a half pound in that time. Practically the texture of paraffined cheese is better than the one that is unparaffined. The reason for that is this,—the two pounds that is left in the box of Twins is water, and that water helps to make the texture a lot smoother than the cheese that is dried out. The unparaffined cheese will dry out.

Mr. Enright: A cheese that will expel moisture, will break paraffine but cheese thoroughly cured will not expel moisture.

Mr. Noyes: I just want to bring the fact up that the temperature of the room in which cheese is cured makes a lot of difference in the evaporation and shrinkage of the cheese. We had factories with the old fashioned way of curing up stairs and it became very noticeable how much more moisture we lost then in six weeks than we do now in the same time. We do not want to lose sight of that fact.

Mr. Moore: I would like to ask Mr. DeLand what moisture content the cheese has where the texture will not be effected by holding all the moisture in it. As I understood him, the cheese that is paraffined will retain two pounds more moisture than the one that is not paraffined. If you have made that so it will cure up just right by losing that two pounds moisture, the one that still retains the two pounds of moisture will probably be pasty and have excess moisture, cure faster than it should.

Mr. DeLand: I do not think so. I have never found cheese that came out with a firm texture that got pasty after putting it in storage.

Mr. Moore: Are they all firm texture?

Mr. DeLand: We have a good many pasty cheese in the

fall of the year and at this time but we get rid of them as soon as we can. We do not carry pasty cheese.

Mr. Aderhold: This evaporation of water does not take place from every portion of that cheese. The water leaves the outside and does not come from the very center of the cheese. If that cheese is pasty to start with it will be pasty in the center while the surface will be too dry to be good eating cheese. I am referring to unparaffined cheese. I have seen cheese where one would have to cut away a half inch around the surafce in order to get where there was anything fit to eat, the water had evaporated so from the surface.

Mr. DeHaan: I would like to know if this scoring contest up in Wisconsin is open for the world, or is it for Wisconsin alone?

The Chairman: It is just for Wisconsin.

Mr. DeHaan: I have been sending cheese here and I am from Iowa.

The President: So far we have had but one man from outside the state and he was from Illinois. I suppose that outsiders will get in and some arrangement will have to be made. This is a branch of the University work in the course of agriculture and other courses down there, and non-residents have to pay a certain fee. It is a state institution supported by the state and there would probably be a larger difference if outsiders came in.

Mr. Wallace: Don't you think the scoring at this educational school contest is done too high? Is not the general average high, Mr. Moore?

Mr. Moore: I do not know that my opinion on that subject amounts to any more than that of any one else.

Mr. Wallace: Did you ever compare the high scores obtained by certain exhibitors in the state of Wisconsin and have those exhibitors go to the Minnesota state fair or any other state fair and go down two or three points? A Minnesota man will come here and exhibit and get a score two or three points lower than he had obtained at home. I would like to have you explain why they cannot get the same score in other states as in their home state?

The President: There is no man in the world today that can score two or three hundred tubs of butter or boxes of

cheese and have them all come within a half point. Last summer we had a letter from one man in particular saying he had a tub of butter at the Minnesota state fair that scored a point and a half higher than at our state fair, and they were out of the same churning. We had another man that got a score on cheese in Chicago two points higher than the one at Madison and he complained of our score. When we score higher than the other states we hear nothing about it.

Mr. Wallace: I have noticed in the papers the reports of the scores on cheese more than on butter, and I have noticed that the men who scored high here were nowhere near being high in Minnesota, and even Michigan will score higher than we do on cheese and we thought Michigan was not in it as a fine cheese state, but I have come to the conclusion that all those scoring contests are merely to advertise each particular state regardless of quality.

Mr. Corneilson: Is it not a fact that cheese that may be considered first class in St. Paul may not be considered first quality in Milwaukee? Different cities have different ideas of cheese, and I think that reason may account for the fact of cheese from Sheboygan or Plymouth not scoring as high in St. Paul as down here and vice versa.

Mr. DeLand: In answer to this inquiry, I would say that Wisconsin, Sheboygan County, has exhibited at every national exhibition of cheese. Now then, if those scores varied very much from the regular contest then it would look as though there was something to advertise the state but I assure you that the same men who exhibited at St. Louis, Buffalo and Chicago had scores practically or about the same as the contest in this state has shown. I think that should answer the question.

Mr. Wallace: That is true about St. Louis, but show me some that got a high score in Minnesota and got it here.

Mr. Kasper: Last summer I had some cheese in Minnesota and here and my cheese scored within two tenths of a point as high in Minnesota as it did in Wisconsin.

Mr. Aderhold: That does not decide the matter; your cheese simply has that habit, that is all.

Mr. Enright: Would it make any difference, if the cheese were scored on the same points, whether it was high or low and have it uniform?

Mr. Baer: I cannot agree with Mr. Wallace in his statements. Minnesota not long ago did me the honor of asking me to judge some sixty or seventy cheese at the Minnesota state fair, and among them were about thirty-five or forty cheese from Wisconsin. I was the sole judge and Minnesota got first on Young Americas, first on Swiss, first on Limburger and second on Brick. I knew nothing about whose cheese I was scoring, whether it came from Wisconsin or Minnesota.

The President: Mr. Parkin, who has charge of the scoring of cheese in Minnesota, is here and we would like to hear from him on this subject.

Mr. Parkin: We do not go after the soft cheese quite as hard as you do in Wisconsin, our market there caters a little to soft cheese. We do not want anything spongy or loose, but I think you score a little heavier on pastiness than we do.

Mr. Wallace: Do you think an educational contest ought to offer prizes? Do you think it is a true reward of merit for the work done? Is it not possible that the man that is doing the most to improve conditions may not be the man that is making the cheese? So don't you think it a detriment in an educational contest for a man to offer a prize of any kind?

The President: Scoring contests in this state do not offer a prize of any kind. We have no prizes to offer at all; the prizes given are offered by individuals.

Mr. Haven: Are the cheese sent to the scoring contest and held thirty days before being scored?

The President: They are held thirty days, then scored and sold.

Mr. Anderson: I want to ask a question of Mr. Moore in regard to scale of points in scoring. Did you not say you gave 45 points to flavor and 15 to color? Does that not give the flavor three times as much influence on the total score as the color?

Mr. Moore: It seems to me a reasonable cause for giving 45 points on a scale of 100 is because flavor is the most important.

Mr. Anderson: If one man loses one point on flavor and the other man lose one point on color, they would both get

99, would they not? Each would then have the same influence.

Mr. Moore: We will say that a cheese scores under extras, which is 92. It does not matter whether that is cut down in flavor, texture, color and make, or whether it is almost all based on one defect or a little of each, but I think that that should be attributed to a fractional part of the market price of cheese. I was formerly of the opinion that we gave flavor 45 points because it was the most important, that we gave texture 30 because it came next, and I thought that three points cut in body was equivalent to two points in flavor, but I think now that is wrong.

The President: In other words we give flavor 45 as perfect because it is so much more apt to vary than the makeup. If you only gave it ten you might want to cut it fifteen and could only cut ten.

Mr. Dassow: If you cut a cheese one point on flavor and also one point on color, what sort of cheese would it be?

Mr. Moore: It would be a bad looking cheese. A cheese that would deserve one point on color, you would naturally look to have defects in flavor or texture; or if it deserves a cut of one out of fifteen on color you would not expect to find either the texture or flavor very fine.

The President: I believe we will have to close this discussion as it is getting late. We wlll now be favored by a song by Mrs. Kempfer.

Solo sung in the Swiss language by Mrs. Kempfer, of Winneconne which was much enjoyed by the audience and an encore given.

The Chairman: The next will be the reading of scores by our secretary, Mr. Baer.

REPORTS OF EDUCATIONAL CHEESE SCORING EXHIBITIONS.

U. S. Baer, Madison, Wis.

AMERICAN CHEESE.

Name	Address	Score
Joseph Bergs	Edgar, Wis.	95.25
Anton Benishek	Kellnersville, Wis.	96.83
Chas. Beeman	Viola, Wis.	94.91
L. J. Bahnik	Kewaunee, Wis.	95.33
A. A. Cross	Mauston, Wis.	93.00
P. E. Cranston	Soldiers Grove, Wis.	95.25
Matthew De Haan	Lineville, Iowa	93.16
M. G. Douma	Cleveland, Wis.	94.33
W. D. Fecker	Kiel, Wis.	93.83
J. A. Fuller	Lancaster, Wis.	95.33
John Fisher	Boaz, Wis.	93.75
M. J. Gregorius	Appleton, Wis.	95.00
Arnold Grimm	Fremont, Wis.	95.16
B. Griese	Black Creek, Wis.	95.25
O. F. Greunke	Clintonville, Wis.	95.33
F. J. Harder	Hilbert, Wis.	95.00
W. B. Hatch	West Bend, Wis.	94.00
John Hoeppner	Marion, Wis.	97.00
Frank Haack	Casco, Wis.	84.33
Emil Hosig	Mayville, Minn.	92.18
F. E. Hannaweel	Mt. Horeb, Wis.	95.33
U. L. Johnson	Fairwater, Wis.	90.50
N. Jennings	Readstown, Wis.	94.33
A. G. Koopman	Pt. Washington, Wis.	94.33
L. Kohlmann	St. Cloud, Wis.	90.91
J. J. Kuhn	Cleveland, Wis.	93.83
Oscar Knudson	Montfort, Wis.	94.66
Geo. J. Kust	Neillsville, Wis.	95.50
P. H. Kasper	Welcome, Wis.	93.16
E. Kopping	Sawyer, Wis.	95.33
Wm. Kuehl	Kewaunee, Wis.	96.00
Jas. Lord	Ithaca, Wis.	95.00
E. B. Mayhew	Greenbush, Wis.	93.16
Ed. Maedke	Stanley, Wis.	94.50
Math. Meyer	New Holstein, Wis.	95.00
Anton Mueller	Hayton, Wis.	92.50
R. A. Murray	Yuba, Wis.	96.50
J. A. Newell	Merrill, Wis.	91.83
L. Novotny	Grimms, Wis.	94.83
H. L. Noyes	Muscoda, Wis.	95.75
Chas. H. Patt	Van Dyne, Wis.	94.25
H. F. Pieper	Eden, Wis.	93.58
A. F. Peterson	Appleton, Wis.	95.16
H. W. Priebe	Kewaunee, Wis.	95.33
W. L. Parkin	Northfield, Minn.	89.50
N. L. Ropp	S. Kaukauna, Wis.	96.16
L. O. Rehm	Elkhart, Wis.	92.41
Chas. Rasmussen	Clintonville, Wis.	97.16
T. W. Schreiber	Kiel, Wis.	94.33

A J. Schulte	Hilbert,	Wis.	94.41
E. G. Schwingel	Avoca,	Wis.	94.58
Alb. Schauf	Neptune,	Wis.	95.83
E. S. Snyder	Bloom City,	Wis.	93.50
G. Steinhart	Kewaunee,	Wis.	94.83
J. J. Srockker	Dale,	Wis.	94.50
H. M. Scott	Waldo,	Wis.	93.08
T. A. Ubbelohde	Glenbeulah,	Wis.	96.08
H. Verhulst	Oostburg,	Wis.	94.83
John Vogt	Fremont,	Wis.	97.08
Pat. Wallace	Hortonville,	Wis.	95.50
Wm. Waddell	Hub City,	Wis.	95.66
W. Zlab	Two Rivers,	Wis.	93.66
P. Zehren	Marion,	Wis.	97.66
J. L. Zehren	Marion,	Wis.	97.33

SWISS CHEESE.

Name	Address		Score
Jos. Ackerman	Monroe,	Wis.	96.00
J. R. Beddu!ph	Tiskiwa,	Ill.	93.50
Jacob Hefty	Mt. Horeb,	Wis.	96.87
Jacob Karlen	Monroe,	Wis.	95.00
Jacob Karlen & Son	Monroe,	Wis.	95.50
Alex Lisser	Darlington,	Wis.	94.00
Jacob Marty	Brodhead,	Wis.	97.50
Henry Meyer	Darlington,	Wis.	94.00
Ernest Regez	Blanchardville,	Wis.	95.25
Ernest Regez & Son	B'anchardvil'e,	Wis.	96.50
John Roethlisberger	Juda,	Wis.	98.12
Herman Schoefer	Hollandale,	Wis.	94.25
Fred Schenskel	Ca'omine,	Wis.	94.25
Jac. Schurtter	Argyle,	Wis.	95.25
Frank Scheurman	Belmont,	Wis.	91.75
Rudolph Urben	Ridgeway,	Wis.	90.00
Louis Urfer	Monroe,	Wis.	93.00
Gott. Vogel	Mt. Horeb,	Wis.	95.25
John Wehinger	Woodford,	Wis.	99.00
Joe Huber		Wis.	96.87

BRICK CHEESE.

Name	Address		Score
C. Anderegg	La Crosse,	Wis.	98.00
Chris Bigler	Clayton,	Wis.	92.00
C. F. Brinkman	Coon Valley,	Wis.	94.62
Reinhard Boenfeldt	Burnett Jct.,	Wis.	91.75
J. W. Falk	Mayville,	Wis.	92.00
Henry Hoseley	Turtle Lake,	Wis.	91.75
Louis Hasse	Juneau,	Wis.	95.50
Oscar Kramer	La Crosse,	Wis.	94.50
Chris Kohli	Mayvil'e,	Wis.	96.62
Jac. Karlen	Monroe,	Wis.	95.25
G. Muhleisen	Alma,	Wis.	96.25
G. L. Rendler	Coon Valley,	Wis.	94.75
E. Regez, Sr.	Blanchardville,	Wis.	97.25
E. Regez, Jr.	Blanchardville,	Wis.	96.75
J. Rothenbach, Jr.	Ackerville,	Wis.	94.50
Carl Schmidt	Oconomowoc,	Wis.	92.75
Alex Schaller	Barneveld,	Wis.	96.25

LIMBURGER CHEESE.

Name	Address	Score
John Altman	Mineral Pt., Wis.	95.00
Jacob Karlen & Son	Monroe, Wis.	95.75
Ernest Regez, Jr	Blanchardville, Wis.	98.75
Ernest Regez, Sr	Blanchardville, Wis.	97.00
Jacob Senn	Belleville, Wis.	96.75
Otto Sommer	Cedarburg, Wis.	92.75
Henry Zweifel	Warren, Ill.	96.25
Unknown		96.50

CONVENTION CHEESE SCORES.

The following is a complete list of the exhibitors of all styles of cheese at the Wisconsin Cheese Makers' Sixteenth Annual Convention, held in Milwaukee, January 8, 9 and 10, 1908, having a score of 90 or above.

AMERICAN CHEESE.

Name	Address	Flavor	Texture	Color	Make-up	Score
Joseph Bergs	Edgar, Wis.	42.00	28.16	15.00	9.41	95.58
A. Benishek	Kellnersville, Wis.	42.83	29.00	15.00	10.00	96.83
Joseph Bergs	Edgar, Wis.	42.00	27.00	14.83	9.83	93.66
Chas. Beeman	Viola, Wis.	42.16	28.16	15.00	9.91	94.91
J. R. Biddulph	Tiskilla, Ill.	42.16	26.33	15.00	15.00	93.50
L. J. Blahnik	Kewaunee, Wis.	42.50	27.83	15.00	10.00	95.33
A. A. Cross	Mauston, Wis.	41.66	26.83	15.00	9.83	93.00
P. E. Cranston,	Soldiers Grove, Wis.	42.16	28.16	15.00	9.91	95.25
M. DeHaan	Lineville, Ia.	41.50	27.16	15.00	9.50	93.16
M. DeHaan	Lineville, Ia.	40.33	26.66	15.00	9.83	91.50
M. G. Douma	Ceveland, Wis.	41.33	28.00	15.00	10.00	94.33
W. D. Fecker	Kiel, Wis.	42.16	27.66	15.00	9.00	93.83
J. A. Fuller	Lancaster, Wis.	42.00	28.33	15.00	10.00	95.33
John Fischer	Boaz, Wis.	42.00	26.83	15.00	9.91	93.75
W. D. Fecker	Kiel, Wis.	41.83	27.50	15.00	9.16	93.50
M. J. Gregorius	Appleton, Wis.	42.50	27.50	15.00	10.00	95.00
Arnold Grimm	Fremont, Wis.	42.16	28.16	15.00	9.83	95.16
B. Griese	Black Creek, Wis.	42.50	28.16	15.00	9.58	95.25
O. F. Greunke	Clintonville, Wis.	42.16	28.33	14.83	10.00	95.33
F. J. Harder	Hilbert, Wis.	42.83	27.16	15.00	10.00	95.00
W B. Hatch	West Bend, Wis.	41.66	27.50	15.00	9.83	94.00
John Hoeppner	Marion, Wis.	42.83	29.16	15.00	10.00	97.00
Frank Hosig	Mayville, Minn.	41.66	26.16	15.00	9.25	92.18
F. E. Hannawell	Livingston, Wis.	42.50	27.83	15.00	10.00	95.33
U. L. Johnson	Fairwater, Wis.	40.33	29.16	15.00	9.33	90.50
N. Jennings	Readstown, Wis.	41.83	27.50	15.00	10.00	94.33
A. C. Koopman,	Pt. Washington, Wis.	41.00	28.33	15.00	10.00	94.33
L. H. Kohlman	St. Cloud, Wis.	38.83	27.50	15.00	9.58	90.91
J. J. Kuhn	Cleveland, Wis.	42.33	26.83	15.00	9.66	93.83
Oscar Knudson	Montfort, Wis.	42.16	27.50	15.00	10.00	94.66
Geo. J. Kust	Neillsville, Wis.	42.66	28.00	15.00	9.83	95.50
P. H. Kasper	Welcome, Wis.	42.50	28.66	15.00	10.00	96.16
E. Kipping	Sawyer, Wis.	42.50	27.83	15.00	10.00	95.33

Name	Address	Flavor	Texture	Color	Make-up	Score
William Kuehl	Kewaunee, Wis.	42.66	28.33	15.00	10.00	96.80
James Lord	Ithaca, Wis.	42.33	27.66	15.00	10.00	95.00
E. B. Mayhew	Greenbush, Wis.	40.66	27.83	15.00	9.66	93.16
Ed. Maedke	Stanley, Wis.	42.00	27.83	15.00	9.66	94.50
Math. Meyer	New Holstein, Wis.	42.66	27.50	14.83	10.00	95.00
Anton Mueller	Hayton, Wis.	42.00	27.33	15.00	8.16	92.50
Math. Meyer	New Holstein, Wis.	42.16	27.50	15.00	10.00	94.66
R. A. Murray	Yuba, Wis.	43.33	28.16	15.00	10.00	96.50
J. A. Newell	Merrill, Wis.	41.00	26.50	14.93	9.50	91.83
Louis Novotny	Grimms, Wis.	43.16	27.83	15.00	9.83	94.83
H. L. Noyes	Muscoda, Wis.	43.16	28.66	15.00	9.91	95.75
Chas. H. Patt	Vandyne, Wis.	42.16	27.16	15.00	9.91	94.25
H. F. Pieper	Eden, Wis.	41.50	27.16	15.00	9.91	93.58
A. F. Peterson	Appleton, Wis.	41.83	28.83	15.00	9.50	95.16
H. W. Priebe	Kewaunee, Wis.	42.33	28.00	15.00	10.00	95.33
W. L. Ropp	Wrightstown, Wis.	42.50	28.33	15.00	10.00	96.16
L. O. Rehm	Elkhart, Wis.	40.83	27.16	14.83	9.91	92.41
Chas. Rasmussen,	Clintonville, Wis.	43.00	29.16	15.00	10.00	97.16
T. W. Schreiber	Kiel, Wis.	41.50	27.83	15.00	10.00	94.33
A. J. Schulte	Hilbert, Wis.	42.16	27.33	15.00	9.91	94.41
E. G. Schwingel	Avoca, Wis.	41.83	28.00	15.00	9.75	94.58
Albert Schauf	Neptune, Wis.	42.50	28.33	15.00	10.00	95.83
E. S. Snyder	Bloom City, Wis.	41.66	26.83	15.00	10.00	93.50
G. Steinhart	Kewahnee, Wis.	42.50	27.50	14.83	10.00	94.83
J. J. Stockker	Dale, Wis.	42.33	27.33	15.00	9.83	94.50
H. M. Scott	Waldo, Wis.	41.83	27.16	15.00	9.08	93.08
T. A. Ubbelohde	Glenbeulah, Wis.	42.66	28.66	15.00	9.75	96.08
H. Verhulst	Oostburg, Wis.	42.66	27.16	15.00	10.00	94.83
John Vogt	Fremont, Wis.	42.83	29.33	15.00	9.91	97.08
Pat Wallace	Hortonville, Wis.	42.33	28.66	15.00	9.50	95.50
William Waddell	Hub City, Wis.	42.66	28.16	15.00	9.83	95.66
Wenzel Zlab	Two Rivers, Wis.	41.33	27.70	15.00	9.83	93.66
Peter Zehren	Marion, Wis.	43.50	29.16	15.00	10.00	97.66
J. L. Zehren	Marion, Wis.	43.00	29.33	15.00	10.00	97.33

SWISS CHEESE.

Name	Address	Flavor	Texture	Color	Salt	Make-up	Score
Jos. Ackerman	Monroe, Wis.	33.75	29.00	18.75	9.50	5.00	96.00
J. Hefty	Mt. Horeb, Wis.	34.00	26.50	19.50	10.00	5.00	95.00
J. Huber	Monroe, Wis.	33.75	29.87	19.25	9.00	5.00	95.87
J. Karlen	Monroe, Wis.	33.00	27.75	19.50	9.75	5.00	95.00
J. Karlen & Son	Monroe, Wis.	33.25	29.25	19.25	9.00	4.75	95.50
A. Lisser	Darlington, Wis.	33.50	27.00	18.75	10.00	4.75	94.00
J. Marty	Brodhead, Wis.	33.00	29.50	20.00	10.00	5.00	97.50
H. Meyer	Darlington, Wis.	33.50	27.25	19.25	9.75	4.75	94.00
E. Regez,	Blanchardville, Wis.	33.25	29.00	19.25	9.00	4.75	95.25
E. Regez & Son	Blanchardville, Wis.	33.25	28.25	20.00	10.00	5.00	96.50
J. Rothlisberger,	Juda, Wis.	33.12	30.00	20.00	10.00	5.00	98.12
H. Schoepfer,	Hollandale, Wis.	32.75	30.00	17.00	9.50	5.00	94.25
F. Schenkel,	Calomine, Wis.	33.25	27 25	19.50	9.75	5.00	94.25
J. Schurtter	Argyle, Wis.	33.50	29.00	18.50	9.25	5.00	95.25
F. Scheurman,	Belmont, Wis.	32.00	27.00	18.25	9.50	5.00	91.75
R. Urben	Ridgeway, Wis.	32.50	26.50	18.75	9.75	4.50	90.00
L. Urfer	Monroe, Wis.	33.25	26.25	18.75	9.75	5.00	93.00
G. Vogel	Mt. Horeb, Wis.	33.25	28.25	19.25	10.00	4.50	95.25
J. Wehinger,	Woodford, Wis.	34.00	30.00	20.00	10.00	5.00	99.00

BRICK CHEESE.

Name	Address	Flavor	Texture	Color	Salt	Make-up	Score
C. Anderegg,	La Crosse, Wis.	38.75	39.25	10.00	5.00	5.00	98.00
C. Bigler	Clayton, Wis.	38.00	34.00	10.00	5 00	5.00	92 00
C. Brinkman,	Coon Valley, Wis.	37.25	37.50	10.00	5.00	4.87	94.62
R. Boenfe'dt,	Burnett Jct., Wis.	37.25	34.75	9.75	5.00	5.00	91.75
J. W. Falk	Mayville, Wis.	36.75	36.00	9.50	5.00	4.75	92.00
H. Hoseley,	Turtle Lake, Wis.	35.50	36.50	10.00	5.00	4.75	91.75
L. Hasse	Juneau, Wis.	37.50	38.25	9.75	5.00	5.00	95.50
O. Kramer	La Crosse, Wis.	36.75	37.75	10.00	5.00	5.00	94.50
J. Karlen	Monroe, Wis.	37.25	38.00	10.00	5.00	5.00	95.25
C. Kohli	Mayville, Wis.	38.50	38.12	10.00	5.00	5.00	92.62
C. Kohli	Mayville, Wis.	37.00	36.50	10.00	5.00	5.00	93.50
G. Muhleisen	Alma, Wis.	37.12	39.00	10.00	5.00	5.00	96.25
G. L. Rendler,	Coon Valley, Wis.	37.00	37.75	10.00	5.00	5.00	94.75
E. Regez, Sr.,	Blanchardville, Wis.	38.75	38.50	10.00	5.00	5.00	97.25
E. Regez, Jr.,	Blanchardville, Wis.	38.25	38.50	10.00	5.00	5.00	96.75
J. Rothenbach, Jr.,	Ackerville, Wis.	37.50	37.00	10.00	5.00	5.00	94.50
C. Schmidt,	Oconomowoc, Wis.	37.50	35.75	10.00	5.00	4.50	92.75
A. Schaller,	Barneveld, Wis.	38.00	38.25	10.00	5.00	5.00	96.25

LIMBURGER CHEESE.

Name	Address	Flavor	Texture	Color	Salt	Make-up	Score
J. Artman,	Mineral Pt., Wis.	37.50	38.50	10.00	5.00	4.00	95.00
J. Karlen & Son,	Monroe, Wis.	38.75	37.00	10.00	5.00	5.00	95.75
E. Regez, Jr.,	Blanchardville, Wis.	39.12	39.50	10.00	5.00	5.00	98.75
E. Regez, Sr.,	Blanchardville, Wis.	38.50	38.50	10.00	5.00	5.00	97.00
J. Senn	Belleville, Wis.	38.00	38.75	10.00	5.00	5.00	96.75
H. Zweifel	Warren, Ill.	37.12	39.00	10.00	5.00	5.00	96.25
Unknown	Unknown	38.00	38.50	10.00	5.00	5.00	96.50

The $100.00 cash premium fund will be awarded on the excess pro rata plan to all entries scoring 92 points and above.

Every exhibitor whose cheese scores 90 points and above will receive a diploma signed by the judges, and verified by the president and secretary, setting forth the score of the cheese, the highest score, the lowest score, and the average score of all cheese exhibited at the meeting.

Respectfully submitted,

J. W. Cross. Mauston, Wis.

Superintendent.

Judges:

Math. Michels, Madison, Wis.

J. D. Cannon, New London, Wis.

J. W. Moore, Madison, Wis.

Gottlieb Marty, Madison, Wis.

The President: The next will be the awarding of premiums by Hon. J. Q. Emery, our State Dairy and Food Commissioner.

AWARDING OF SPECIAL PRIZES, DIPLOMAS AND PRO-RATA PREMIUM FUND.

HON. J. Q. EMERY, Madison, Wis.

Dairy and Food Commissioner.

Mr. President, Ladies and Gentlemen:

I want to give a little credit to myself in the way of prophecy. Those of you who were here a year ago will recall, I think, that at the close of the awarding if special prizes in the room at the hotel, when that room was full to overflowing, many people standing, I said that I thought the association had outgrown the capacity of that room and it seemed to be up to the officers of the association to find a larger place for its meeting if the association were to grow from that time on. The larger room has been provided and this afternoon it is filled, so I think in one respect I may claim a little of the spirit of prophecy.

Something has been said here this afternoon in regard to the matter of prizes. Life is a struggle for prizes. We are all seeking those prizes, some gaining more, others less. Now the prizes that are awarded are, as I understand it, for the purpose of stimulating an interest, inducing people to participate in these scoring contests that might not otherwise do so, to awaken interest, and as such they have great value. Now in the educational scoring contest that is being carried on by the dairy school, beginning last year, there are three men assigned to the work of judges. They are experts and if they are not the best men in the state they are certainly equal to any in the state in the matter of scoring cheese. These men come together and pass individual judgment upon the cheese, probably arrive at about as accurate conclusion as can be expected of human nature. At a meeting of the Minnesota Butter and Cheesemakers Association, a few weeks ago, there was

a scoring contest for the scorers of butter. The experts who score butter were called upon to pass judgment at different times on the same tubs of butter. They did not score it twice alike in a great many cases but they came so near it that I have had my confidence greatly strengthened in the accuracy of these scoring contests. "Wisconsin's progress in the dairying industry has been studied throughout Europe," said Sir Horace Plunkett, member of the British Parliament from Ireland, in an address to 300 agricultural and dairy students at the University of Wisconsin.

Fifty-seven million dollars of annual revenue from all classes of dairy products, including by-products from cheese factories and creameries, 102,000 patrons, 944,000 cows contributing more than 3,166,000,000 lbs. of milk annually to 2,925 cheese factories, creameries and skimming stations, factories and machinery approximating $5,000,000 in value—such are the figures that give a somewhat inadequate notion of Wisconsin conditions as to the extent of her dairy industry. First, in the number of cheese factories, first in the number of creameries; first in the combined number of cheese factories and creameries, first in the total aggregate for butter and its by-products; second only to the Empire state in the total aggregate for cheese and its by-products; second only to the same state in the total aggregate for all dairy products, including by-products, with Iowa as third, Illinois as fourth, Minnesota as fifth and Pennsylvania as sixth, exceeding the combined total aggregate of all dairy products and by-products of Iowa and Minnesota by more than $2,000,000 and of Illinois and Pennsylvania by more than $5,000,000—such is the *rank* of Wisconsin among the great dairy states of the Union as shown by the United States census of manufacturers for 1905. Cheese that commands the highest prices in the best cheese markets of the world, creamery butter whose percentage of "extras" is not exceeded by any state and which returns to Wisconsin patrons a net price equal to, if not exceeding, that of any other state—such is the *quality* of Wisconsin commercial butter and cheese.

The beautiful Rock River Valley, undulated by hills and valleys, abounding in crystal waters, with a pure atmosphere rightly tempered by winter snows and summer rains, a conspicuous part of the original as it now is of the greatly extended Elgin creamery butter district, far-famed for the superior quality of its creamery butter; a deep rich soil supplied with purest water, yielding abundant, luxuriant grasses, along the eastern portion of the state bordering on Lake Michigan that gives to the climate an evenness of temperature and a degree of moisture peculiarly conducive to high quality in cheese, and like conditions extending over central and northern Wisconsin—these are some of the conditions which nature has contributed to the results above indicated. Wisconsin's great variety of soils with the presence of her varied hills and valleys, combined with her geographical location, were the tempting causes that brought within her borders dairymen from the East and sturdy, industrious and frugal German, Swiss, Scandinavian and other foreign immigrants who, following the habits acquired in their boyhood home, have produced dairy products, especially cheese, in variety and of a quality unexcelled elsewhere.

The cheese business of Wisconsin is carried on by about 1,650 cheese factories, having buildings and machinery estimated at a value of more than $2,000,000. To these cheese factories 34,000 patrons contributed in 1906 two hundred and six million, two hundred and fifty-five thousand pounds of milk from 348,850 cows, which produced 124,980,360 lbs., of cheese, and for this cheese the patrons received $13,907,600. Estimating the value of by-products at $10.00 a cow, the aggregate for by-products from cheese factories exceeds $348,000.

Proprietors, managers, cheese makers and butter makers, patrons, the Wisconsin Dairymen's Association, the dairy press, the Wisconsin Agricultural College, the Wisconsin Dairy School, the Wisconsin Cheese Makers' Association, the Southern Wisconsin Cheese Makers' Association, the Wisconsin Butter Makers' Association, the Wisconsin Farmers' Institutes, the Wisconsin County Agricultural Training Schools, the Wisconsin Dairy and Food Commission, the dairy supply men and cheese buyers and butter buyers, and other factors, have each contributed a share to the achievements before men-

tioned. The co-operation of all these factors is necessary for successful results. The failure of any one of them to perform properly his part must to that extent lessen successful achievement. Limitation of time precludes my speaking in detail of each of these agences or forces.

The articles of incorporation of the Wisconsin Cheese Makers' Association declare as among the objects of this association, the education of its members for better work in the art of making cheese, the care and management of factories, the sale of their products and the weeding out of incompetency in the business of cheese making. That this association has made great progress in the accomplishment of these objects is a statement that I am sure will go unchallenged. The annual meetings of this association have surely grown in interest and in value from year to year. Corresponding with this the membership of the association has been enlarged from year to year and its influence extended. The annual reports contain discussions of the many topics involved in the cheese industry from the ablest and best authorities and constitute an up-to-date text-book on these subjects. The history of the annual meetings of this association is the ambodiment of the spirit of progress.

I am quite sure that I voice the unanimous sentiment of this association when I say that the wisdom displayed by the association, year after year, in the choice of its secretary has been a very large contribution to the magnificent success in the growth and beneficial results of the association. It is disparagement to no one when I say that the faithful and unselfish work and zeal of the secretary of this association in its behalf, in the preparation of its program, in the provision for the comfortable entertainment of the membership of the association, in the high quality of the speakers provided for its annual programs, in the premiums provided for successful competitors, in the educational scoring contests and exhibitions and in multitudinous other ways, have constituted a conspicuous feature in the successful history of this body. He has placed the interests of the association first and foremost in all his efforts. He has not exploited himself, but has been a quiet, impersonal force. He has sought harmony and not discord. Such a spirit becomes contagious.

It is known to this association, but not so well known to the public, that the better grades of all varieties of well-cured Wisconsin cheese have no superior anywhere in the world in like varieties; that inferior grades of cheese made in other states have been palmed off on Wisconsin consumers as Wisconsin cheese, and that the better grades of Wisconsin cheese have often been sold under the brand of another state.

I suggest that this association make provision whereby the editors of daily papers in this city be furnished samples of each variety of the prize cheese of this exhibit.

As I understand it, the accustomed annual scoring contest of the Wisconsin Cheese Makers' Association and the Monthly Educational Scoring Contest inaugurated two years ago and now continued by the Wisconsin Dairy School are merged for this meeting. As you are all familiar with the detailed work of these contests, I need not here enlarge upon that topic.

The quality of cheese of whatever variety is all important to the success of the enterprise. It is to improve the quality of the different varieties of Wisconsin cheese that these educational scoring contest and exhibitions have been established and are maintained. The cheese maker is the pivotal agent in securing the highest quality of cheese. He must see to it that the milk which is manufactured into cheese is produced under clean and sanitary conditions from cow to cheese factory. He must have knowledge, skill, tact and back-bone. An oyster can never be a good cheese maker.

The winning of the prize does not mean simply expert skill in the mechanical work of making the cheese. It means that to be sure; but it means more. It means that conditions have been created and maintained whereby milk of good quality has been obtained. It takes knowledge, skill, tact, perseverance, industry, courage, back-bone, to create and maintain such conditions. As before stated, these educational scoring contests and exhibitions tend to emphasize the necessity of these requisites and stimulate their activity. If he is to be regarded a benefactor who makes two blades of grass grow where only one grew before, what shall be said in praise of the man who brings it about that a prime cheese is made where only a poor cheese was made before?

Your product has been carefully examined and scored by three highly competent, expert judges. From month to month you

have received from the dairy school comments on your cheese that pointed out its defects and suggested how they might be improved. It is only our friends who kindly tell us how we can improve. Our enemies do not want us to improve.

Because these special prizes stand for high quality, I take pleasure in awarding them. These contests, these awards, these special prizes, call the attention of the public to the high quality of Wisconsin cheese. I am sure that all those who have participated in these contests, though may have won no special prize, have yet gained what is of great value. They have gained new knowledge, new skill, and I trust new interest, new aspiration, new hope and renewed determination to succeed. Those of you who have improved by this experience have thereby gained a veritable prize.

DISTRIBUTION OF SILVER CUPS AND SPECIAL PRIZES.

The prizes offered by the association were twelve silver cups, and were awarded to the following:

American Cheese—First prize, J. L. Zehren, Marion, Wis.; second prize, Charles Rasmussen, Clintonville, Wis.; third prize, John Hoeppner, Marion, Wis.

Limburger Cheese—First prize, Ernest Regez, Jr., Blanchardville, Wis.; second prize, Ernest Regez, Sr., Richardville, Wis.; third prize, Jacob Senn, Belleville, Wis.

Brick Cheese—First prize, Casper Anderegg, La Crosse, Wis.; second prize, Ernest Regez, Sr., Blanchardville, Wis.; third prize, Ernest Regez, Jr., Banchardville, Wis.

Swiss Cheese—First prize, John Rothlisberger, Judah Wis.; second prize, Jacob Marty, Brodhead, Wis.; third prize, Jacob Hefty, Mt. Horeb, Wis.

The prize chairs offered by Hon. S. A. Cook of Neenah, Wis., were awarded to the first, second and third highest average of seven scores in the dairy school monthly scoring exhibitions: $35 chair to P. H. Kasper, Welcome, Wis.; $25 chair to N. L. Ropp, Wrightstown, Wis.; $15 chair to John Hoeppner, Marion, Wis.

The Marschall Dairy Laboratory prizes were awarded to the following: $50 gold watch to P. H. Kasper, Welcome, Wis.; $25 gold watch to J. L. Zehren, Marion, Wis.; $25 gold watch to

Math. Meyer, New Holstein, Wis.; $25 gold watch to H. W. Melchert, Seymour, Wis.

The Wyandotte Washing Powder prizes were awarded to the following: Gold watch to P. H. Kasper, Welcome, Wis.; set carving knives to John Hoeppner, Marion, Wis.; set carving knives to E. B. Mayhew, Greenbush, Wis.

The gold watch charm offered by Averbeck & Co. of Madison, Wis., was awarded to Mr. John Wehinger, Woodford, Wis.

The President: There are other prizes here to be awarded and I would like to have Mr. Parkin of Minnesota say a word to us in regard to that matter.

Mr. Parkin, Minn: We have with us Mr. J. F. McCarthy, of West Concord, Minn., the man receiving the highest score for the six months' scoring contest on cheese in Minnesota, and I would be glad to have him say a few words to this convention.

Mr. McCarthy, Minn.: I do not know what you would like to hear from me along the line of making cheese. When I first entered the Minnesota contest I had no idea what the prize would be, but after I got in and they announced the prizes I was anxious to come to Wisconsin as it had been my native state. I was born within forty or fifty miles of this city, at Waukesha, and I came down here with a selfish purpose to take back more than I left.

I do not expect to tell the Wisconsin cheesemakers how to make cheese. You have able men here who have forgotten, perhaps, more than I ever knew or will know about cheese making, but I am glad to meet the Wisconsin boys face to face. I am getting selfish and if I could I would have your association meet in Minnesota once.

I had the pleasure of winning the highest average in my state, but let me tell you boys, I want to thank my patrons for that which I did at the St. Peter convention. I got the right raw material or I never would have had the score. The first thing you want to look out for is the raw material. Of course you can make good cheese out of good material but it is hard work to make good cheese out of poor material. I am going to remain with you until the convention closes and go back to Minnesota feeling well paid for my trip. I thank you for your attention.

Mr. Parkin: I wish to announce that Mr. McCarthy's average score is 97.21 for the six months' contest. Mr. Fred Miller wins second with a score of 96.81. Mr. Miller was not able to be present.

Mr. Baer: I still have more. A purse of $15 will be divided among the members of the Muscoda Board of Trade, as follows: $7.50 to the member securing the highest score on American cheese; $5.00 to the member securing second highest score on American cheese, and $2.50 to member securing the third highest score on American cheese. Perhaps Mr. Noyes can tell us about that.

Mr. Noyes: The prizes are to be paid direct from the treasury of the Muscoda Board of Trade to the winners. They go to the people exhibiting cheese from the Muscoda Board of Trade.

Mr. Aderhold. The chairs you see up on the stage were donated by Mr. S. A. Cook, of Neenah, a gentleman who takes a great interest in this association as well as many more. He wanted to be here when these prizes were to be awarded. I saw him last evening and on account of some function in which he has to participate this evening, he cannot be present today but he said he would try and be present tomorrow.

Another party we ought to feel thankful to is the firm of J. B. Ford Company, the manufacturers of Wyandotte Washing Powder, which is taking great interest in this association and treating us like princes, and I think it is up to all the members of this association, at least, to give the goods of that firm a fair trial. I think we owe the concern that much at least and if we can get our patrons to give the Wyandotte goods a trial some of us may have a good deal cleaner cans than we otherwise would have.

Secretary Baer. Just a word as to the pro rata premium fund and diplomas. We have been pretty busy the last day or two and the manner in which some of these prizes were awarded have made it a tremendous lot of work to get the average score and award these special prizes, and that has made it impossible for us to get our cash premium fund ready for today. You cannot leave town anyway. Becker's car of coal will go to nobody but a cheesemaker and in order to get it he must be present in person. Some of us will be short of money by that time and the pro rata will be just the thing.

WINNERS OF PREMIUM FUND.

Names and addresses of exhibitors participating in the association cash pro-rata premium fund:

Joseph Bergs	Edgar,	Wis.	95.58
Anton Benishek	Kellnersville,	Wis.	96.83
Chas. Beeman	Viola,	Wis.	94.91
Louis J. Bahnik	Kewaunee,	Wis.	95.33
A. A. Cross	Mauston,	Wis.	93.00
P. E. Cranston	Soldiers Grove,	Wis.	95.25
Matthew De Haan	Lineville,	Ill.	93.16
M. G. Douma	Cleveland,	Wis.	94.33
W. D. Fecker	Kiel,	Wis.	93.83
J. A. Fuller	Lancaster,	Wis.	95.33
John Fisher	Boaz,	Wis.	93.75
M. J. Gregorius	Appleton,	Wis.	95.00
Arnold Grimm	Fremont,	Wis.	95.16
B. Griese	Black Creek,	Wis.	95.25
O. F. Greunke	Clintonville,	Wis.	95.33
F. J. Harder	Hilbert,	Wis.	95.00
W. B. Hatch	West Bend,	Wis.	94.00
John Hoeppner	Marion,	Wis.	97.00
Emi B. Hosig	Mayville,	Wis.	92.18
F. E. Hannawell	Livingston,	Wis.	95.33
N. Jennings	Readstown,	Wis.	94.33
A. C. Koopman, Jr.	Pt. Washington,	Wis.	94.33
J. J. Kuhn	Cleveland,	Wis.	93.83
Oscar Knudson	Montfort,	Wis.	94.66
Geo. J. Kust	Neillsville,	Wis.	95.50
P. H. Kasper	Wecome,	Wis.	**96.16**
E. Kopping	Sawyer,	Wis.	**95.33**
Wm. Kuehl	Kewaunee,	Wis.	96.00
Jas. Lord	Ithaca,	Wis.	95.00
E. B. Mayhew	Greenbush,	Wis.	93.16
Ed. Maedke	Stanley,	Wis.	94.50
Math. Meyer	New Holstein,	Wis.	95.00
Anton Mueller	Hayton,	Wis.	92.50
R. A. Murray	Yuba,	Wis.	96.50
L. Novotny	Grimms,	Wis.	94.83
H. L. Noyes	Muscoda,	Wis.	95.75
Chas. H. Patt	Van Dyne,	Wis.	94.25
H. F. Pieper	Eden,	Wis.	93.58
A. F. Peterson	Appleton,	Wis.	95.16
H. W. Priebe	Kewaunee,	Wis.	95.33
N. L. Ropp	Wrightstown,	Wis.	96.16
L. O. Rehm	Elkhart,	Wis.	92.41
Chas. Rasmussen	Clintonville,	Wis.	97.16
T. W. Schreiber	Kiel,	Wis.	94.33
A. J. Schulte	Hilbert,	Wis.	94.41
E. J. Schwingel	Avoca,	Wis.	94.58
Albert Schauf	Neptune,	Wis.	95.83
E. S. Snyder	Bloom City,	Wis.	93.50
G. Steinhart	Kewaunee,	Wis.	94.83
J. J. Stockker	Dale,	Wis.	94.50
H. M. Scott	Waldo,	Wis.	93.08
T. A. Ubbehohde	Glenbeulah,	Wis.	96.08
H. Verhulst	Oostburg,	Wis.	94.83
John Vogt	Fremont,	Wis.	97.08

Pat. Wallace	Hortonville,	Wis.	95.50
William Waddell	Hub City,	Wis.	95.66
Wenzel Zlab	Two Rivers,	Wis.	93.66
Peter Zehren	Marion,	Wis.	97.66
J. L. Zehren	Marion,	Wis.	97.33
Casper Anderegg	La Crosse,	Wis.	98.00
Chris. Bigler	Clayton,	Wis.	92.00
C. F. Brinkman	Coon Valley,	Wis.	94.62
J. W. Falk	Mayville,	Wis.	92.00
Louis Hasse	Juneau,	Wis.	95.50
Oscar Kramer	La Crosse,	Wis.	94.50
Jac. Karlen	Monroe,	Wis.	95.25
Chris. Kohli	Mayville,	Wis.	96.62
G. Muhleisen,	Alma,	Wis.	96.25
Geo. L. Rendler	Coon Valley,	Wis.	94.75
Ernest Regez, Sr.	Blanchardville,	Wis.	97.25
Ernest Regez, Jr.	Blanchardville,	Wis.	96.75
J. Rothenbach, Jr.	Ackerville,	Wis.	94.00
Carl Schmidt	Oconomowoc,	Wis.	92.75
Alex Schaller	Barneveld,	Wis.	96.25
John Altman	Mineral Point,	Wis.	95
Jacob Karlen and Son	Monroe,	Wis.	95.75
Henry Zweifel	Warren,	Ill.	96.25
Unknown	Unknown,	Wis.	96.50
Jos. Ackerman	Monroe,	Wis.	96
J. R. Beddulph	Tiskilwa,	Ill.	93.50
Jacob Hefty	Mt. Horeb,	Wis.	95
Joe Huber	Monroe,	Wis.	96.87
Jacob Karlen	Monroe,	Wis.	95
Jacob Karlen and Son	Monroe,	Wis.	95.50
Alex Lisser	Darlington,	Wis.	94
Jacob Marty	Brodhead,	Wis.	97.50
Henry Meyer	Darlington,	Wis.	94
Ernest Regez	Blanchardville,	Wis.	95.25
Ernest Regez and Son	Blanchardville,	Wis.	96.50
John Rothlisberger	Juda,	Wis.	98.12
Herman Schoepfer	Hollandale,	Wis.	94.25
Fred Schenkel	Calomine,	Wis.	94.25
Jac. Schurtter	Argyle,	Wis.	95.25
Louis Urfer	Monroe,	Wis.	93
Gottlieb Vogel	Mt. Horeb,	Wis.	95.25
John Wehinger	Woodford,	Wis.	99

Signed:

F. E. CARSWELL, *Treasurer.*
U. S. BAER, *Secretary.*

ROLL OF HONOR.

Names and addresses of exhibitors awarded association diplomas of merit for the year 1908:

Name.	*Address.*	*State.*
Joseph Bergs	Edgar	Wisconsin
Anton Benishek	Kel nersville	Wisconsin
Charles Beeman	Viola	Wisconsin
L. J. Blahnik	Kewaunee	Wisconsin
A. A. Cross	Mauston	Wisconsin
P. E. Cranston	Soldier's Grove	Wisconsin
Matthew De Haan	Linevi le	Iowa
M. G. Douma	Cleveland	Wisconsin
W. D. Fecker	Kiel	Wisconsin
J. A. Fuller	Lancaster	Wisconsin
John Fisher	Boaz	Wisconsin
M. J. Gregorius	Appleton	Wisconsin
Arnold Grimm	Fremont	Wisconsin
B. Griese	Black Creek	Wisconsin
O. F. Greunke	Clintonville	Wisconsin
F. J. Harder	Hilbert	Wisconsin
W. B. Hatch	West Bend	Wisconsin
John Hoeppner	Marion	Wisconsin
Frank Haack	Casco	Wisconsin
Emil Hosig	Mayville	Minnesota
F. E. Hannawell	Mt. Horeb	Wisconsin
U. L. Johnson	Avoca	Wisconsin
N. Jennings	Readstown	Wisconsin
A. C. Koopman	Port Washington	Wisconsin
L. Kohlmann	St. Cloud	Wisconsin
J. J. Kuhn	Cleveland	Wisconsin
Oscar Knudson	Montfort	Wisconsin
George J. Kust	Nellsville	Wisconsin
P. H. Kasper	We come	Wisconsin
E. Kopping	Sawyer	Wisconsin
William Kuehl	Kewaunee	Wisconsin
James Lord	Ithaca	Wisconsin
E. B. Mayhew	Greenbush	Wisconsin
Edward Maedke	Stanley	Wisconsin
Mathew Meyer	New Holstein	Wisconsin
Anton Mueller	Hayton	Wisconsin
R. A. Murray	Yuba	Wisconsin
J. A. Neuell	Merrill	Wisconsin
L. Novotny	Grimms	Wisconsin
H. L. Noyes	Muscoda	Wisconsin
Charles H. Patt	Van Dyne	Wisconsin
H. F. Pieper	Eden	Wisconsin
A. F. Peterson	Appleton	Wisconsin
H. W. Priebe	Kewaunee	Wisconsin
N. L. Ropp	South Kaukauna	Wisconsin
L. O. Rehm	Elkhart	Wisconsin
Charles Rasmussen	Clintonville	Wisconsin

Name.	*Address.*	*State.*
T. W. Schrieber	Kiel	Wisconsin
A. J. Schu te	Hilbert	Wisconsin
E. G. Schwingel	Avoca	Wisconsin
Albert Schauf	Neptune	Wisconsin
E. S. Snyder	Bloom City	Wisconsin
G. Steinhart	Kewaunee	Wisconsin
J. J. Srockker	Dale	Wisconsin
H. M. Scott	Wa'do	Wisconsin
T. A. Ubbelohde	Glenbeulah	Wisconsin
H. Verhulst	Oostburg	Wisconsin
John Vogt	Fremont	Wisconsin
Patrick Wallace	Hortonvi le	Wisconsin
William Waddell	Hub City	Wisconsin
W. Z'ab	Two Rivers	Wisconsin
P. Zehren	Marion	Wisconsin
J. L. Zehren	Marion	Wisconsin
Joseph Ackerman	Monroe	Wisconsin
J. R. Biddulph	Tiskiwa	Illinois
Jacob Hefty	Mt. Horeb	Wisconsin
Jacob Karlen	Monroe	Wisconsin
Jacob Karlen & Son	Monroe	Wisconsin
Alexander Lisser	Darlington	Wisconsin
Jacob Marty	Brodhead	Wisconsin
Henry Meyer	Darlington	Wisconsin
Ernest Regez	Blanchardville	Wisconsin
Ernest Regez & Son	Blanchardville	Wisconsin
John Roethlisberger	Juda	Wisconsin
Herman Shoefer	Hollandale	Wisconsin
Fred Schenkel	Calomine	Wisconsin
Jacob Schurtter	Argyle	Wisconsin
Frank Scheurman	Belmont	Wisconsin
Rudolph Urben	Ridgeway	Wisconsin
Louis Urfer	Monroe	Wisconsin
Gottlieb Vogel	Mt. Horeb	Wisconsin
John Wehinger	Woodford	Wisconsin
John Altman	Mineral Point	Wisconsin
Jacob Karlen & Son	Monroe	Wisconsin
Ernest Regez, Jr.	Blanchardville	Wisconsin
Ernest Regez, Sr.	Blanchardville	Wisconsin
Jacob Senn	Belleville	Wisconsin
Otto Sommer	Cedarburg	Wisconsin
Henry Zweifel	Warren	Illinois
An unknown		Wisconsin
C. Andregg	La Crosse	Wisconsin
Chris Bigler	Clayton	Wisconsin
C. F. Brinkman	Coon Valley	Wisconsin
Reinhard Boenfeldt	Burnett Junction	Wisconsin
J. W. Falk	Mayville	Wisconsin
Henry Hoesley	Turtle Lake	Wisconsin
Louis Hasse	Juneau	Wisconsin
Oscar Kramer	La Crosse	Wisconsin
Chris Kohli	Mayville	Wisconsin
Jacob Karlen	Monroe	Wisconsin
G. Muhleisen	Alma	Wisconsin
G. L. Rendler	Coon Valley	Wisconsin
E. Regez, Sr.	Blanchardville	Wisconsin
E. Regez, Jr.	Blanchardville	Wisconsin

Name.	*Address.*	*State.*
J. Rothenbach, Jr.	Ackerville	Wisconsin
Carl Schmidt	Oconomowoc	Wisconsin
Alexander Schaler	Barneveld	Wisconsin

Judges:

Math. Michels, Madison, Wis.
J. D. Cannon, New London, Wis.
J. W. Moore, Madison, Wis.
Gottlieb Marty, Madison, Wis.

President:

Math. Michels, Madison, Wis.

Secretary:

U. S. Baer, Madison, Wis.

The Chairman: Next on the program for this afternoon is a short statement by the prize winners in the different classes, how they made their cheese, then we will have a discussion on what a good cheese is and the cutting of the prize cheese. Before taking that up, however, we will again be favored by a solo by Mrs. Kempfer.

Swiss Yodel song by Mrs. Kempfer.

Mr. Wallace: Mr. Chairman, I move that the Swiss cheese makers tell us how they made the prize cheese.

Motion seconded and carried, but the Swiss prize winners not being present, the winner on brick cheese, Mr. Casper Anderegg, was called on.

SHORT STATEMENTS FROM PRIZE WINNERS.

HOW I MADE MY PRIZE WINNING BRICK CHEESE.

CASPER ANDEREGG, La Crosse, Wis.

Mr. Chairman, Ladies and Gentlemen:

I do not feel competent to come before you here as an expert on making brick cheese. I almost call myself accidentally fortunate to have the honor of receiving the prize which has been awarded to me, for which I wish to extend to the officers of this association hearty thanks.

In regard to making brick cheese, I receive my milk generally in the morning. We receive it on a platform and the cheesemaker has to open every can himself. The cheesemaker is instructed to stand right by the can and try to catch the odor from the can as soon as he opens it, and if it is o. k. it is dumped into the weigh can. On the weigh can I have a strainer; the milk is supposed to be strained before it arrives at the factory and it is also strained before it goes into the weigh can, and so it enters the vat.

The first thing in order is to warm up the milk. I try to warm it up gradually and not in too much of a hurry. In winter time we receive very cold milk but I never consider it wise to turn on too much steam so as to heat it around the pan. Warm the milk gradually and keep it in a moving rotation in order not to create cream. In the meantime we prepare the rennet. As I stated in my entry blanks, I am using home made rennet, and we follow a method which has been discussed here for the last few years. After we get our milk warm we take five parts milk and one part rennet extract the way we have it reduced and tested, have a measure for every two hundred pounds and use so much rennet extract, and if the milk is weaker or stronger one day than another we either strengthen or reduce the rennet extract accordingly. I want my rennet extract just so and have a measure, using so many pounds of milk and so many ounces of rennet extract, and I use a starter winter and summer.

The assistance I have received by our monthly contests, and profiting by the mistakes I have made, which have been reported to me, I feel has placed me in position to remedy my defects and helped me to receive the score I have today.

Going further, I allow the milk from twenty to thirty minutes, about twenty-five on the average, to coagulate; in cutting, until I turn on the steam, I want twenty minutes; in cooking I want thirty minutes. If I am not mistaken the cheese I had entered here was cooked up to 104, and I keep it in rotation until I have the curd in the shape I want it. I cannot tell you exactly how I want it, but after I have it just as I want it I draw the whey off and dip it out in the moulds, and I turn them over three times a day, that is every eight or nine hours. I have eight to eight and a half pound

weights. After I put them in the cellar they are salted for three days, turned over and salted every evening. The next day the first batch of cheese on the shelf should have a slight wash with salt water. The reason we do that is to get a nice smooth rind on the cheese. I use tin moulds in my factory. You cheesemakers who use wooden moulds perhaps have to follow out a different process in that matter, but handling my cheese with tin moulds I get them sufficiently dry by washing the first day after it is put on the shelf, so I continue washing that cheese with salt and water three times every other day, and after that I wash the cheese whenever I think it is necessary, when it is either too dry or too wet. It has to be turned over and the boards cleaned in order not to have a Limburger odor on the brick cheese in case the boards should get damp.

As the time is limited I will not say anything more on the process of cheese making but will give the other winners an opportunity to speak but I do wish to say a few words to my fellow cheesemakers. Let us go hand in hand and work our responsible men that are opening their arms for us, inviting us to come in. Let us have our cheese tested and let us get good advice from those that are older and more experienced than we are. I could name those gentlemen but you all know them. You all heard what Professor Emery said and the advice he has given us. We should take that up, consider it and believe it. It is worth it. Let us try to improve our cheese and it will be a matter of greater pride to ourselves than to any other.

Again I want to say that I am indeed pleased and proud to receive this honor at your hands but I must not forget to share this honor with my patrons for having supplied me with the excellent milk which made it possible for me to secure such high scores on my cheese. My patrons, who have produced clean pure milk are to be credited with the larger share of our success in these contests. I assure you that my patrons and myself will strive at all times to place before the public a nice clean pure article of brick cheese.

The President: We would like to have the pleasure of having a short statement from the Limburger cheese prize win-

ner. He has two cups, first and third prizes. We will ask Mr. Ernest Regez, Jr., to tell us how he made his prize winning cheese.

Mr. Regez: I am a dealer and bought the cheese and cannot say how it was made.

Member: Mr. Chairman, we passed a resolution last year that no one but a cheese maker could carry off a prize.

The President: I think that is the way that it should be.

Member: It is a good thing for a dealer to come here and get prizes; he has a better place for curing than an ordinary cheese maker.

Mr. Regez, Sr.: The cheese we exhibited here was made from milk we bought from the factory. Of course we buy lots of cheese also but two or three boxes of cheese exhibited are our own product.

Mr. Wallace: Can you tell the name of the man who made the cheese?

Mr. Shaller: I was on the committee on resolutions last year and we passed a resolution that the dealer could exhibit cheese but the prize should go to the maker.

Mr. McCarthy, Minn.: I would like to offer a few suggestions. I tell you boys this is a Wisconsin Cheese Makers Association and the cheese maker ought to get the benefit of it. I believe in giving the man that owns the factory the credit of having the prize cheese made in his factory, but the maker ought to get the full benefit. It is an educational contest and that is where you want to put it.

Mr. J. G. Moore: There may be a conflict between the resolution passed last year and the by-laws as originally worked under, and no doubt it is the duty of the officers to go by the by-laws as far as possible. It looks as though there were a sort of mix-up and now is the time to have it right. I have no doubt that the gentlemen here who are manufacturers and owners of factories are anxious to do everything in their power to have their makers produce a better grade of cheese and they should be willing to agree to have the prizes offered by the association go to the makers. If I owned a factory and my maker got first prize I would be anxious to advertise the fact that my maker could make that kind of cheese. As it is now we do not know who the

man is who was so successful in his work as to make this particular cheese which took first prize. I think this came up at the first or second convention of the Wisconsin Butter Makers' Association at which the man who won first place did not get the prize, but we cannot take away the honor of having made first prize cheese by giving the place to the second man, and when the second man receives a cup that says "First Place" on it, it is no credit to him to show it.

Mr. Decker: Mr. Chairman, I move that when entries are received they shall be received in the name of the cheese maker, and regardless of who exhibits the cheese, the maker of that cheese is entitled to whatever premiums are awarded to such cheese.

Motion seconded and carried.

Mr. Anderegg: I think it would be better for the association to read the scores the second day of the convention. We realize that we met people in this hall this afternoon, who came in after the scores were read, did not expect they would be read so early, and therefore I would like to offer the following resolution, that the premiums be awarded to the cheesemakers that have the highest scores, providing they have paid their entry fee and membership, whether they are here or not, through sickness or some accident, if they come later on or if they advise the secretary the reason for their not coming and have some one here to represent them.

Motion seconded and duly carried.

The Chairman: If there is no further business we will now stand adjourned until tomorrow morning.

THURSDAY MORNING SESSION.

Meeting called to order at 10 A. M. by President Michels, the first number on the program being a solo by Mrs. Kempfer.

The President: Our first papers this morning are ten practical lessons by ten practical cheesemakers each lesson to be limited to five minutes. As Professor Moore is obliged to

leave on an early train, we will arrange to have part of the lessons first and then call on him.

The first of these lessons is Qualifications Necessary to be an Up-to-date Cheese Maker, by Mr. A. T. Bruhn, Spring Green, Wis.

THE QUALIFICATIONS NECESSARY TO BE AN UP-TO-DATE CHEESE MAKER.

A. T. BRUHN, Spring Green, Wis.

First and foremost he should be a live, active member of the Wisconsin Cheese Makers' Association.

He should be an exhibitor at some of the fairs and educational scoring contests.

He must be sufficiently broad minded to get the patrons' point of view, and not only his own.

He must be manly enough to inspire sufficient confidence in his patrons that they will willingly leave the management of their greatest source of income to him. He must possess sufficient tact to reject unfit milk without antagonizing the patron who brought it, but be able to suggest the remedy in a kindly man to man way.

He must be honest. Nothing short of absolute honesty works here. Without honesty he cannot hold the confidence of his patrons and if he has not that then for him it is quitting time.

He must be intelligent. He must know every detail of his own business and the more he knows outside of that the better it will be for himself and all concerned.

Professor King says, "Strive to know why, for this teaches how and when." And I doubt if this is more true in any business than in cheese making. A cheesemaker should know the why of every detail of his work from the weighing and samlping of the milk until the whey is in the farmers' whey barrel.

He must also know how to care for the cheese until sold, keep well posted on the markets in the different parts of the country, and it is mighty healthy for him to understand the methods of the buyer and the cold storage, the jobber and

wholesaler, because the cheese buyers are not all angels and unless you know something of their methods they are apt to get quite a little the best of you. Depend on their getting the best of you anyway but look out they don't get too much the best.

Not only must he know his own business thoroughly but he should know considerable about farming so that if he is asked for advice by his patrons he can give it intelligently.

He should be able to judge dairy cattle, be able to explain thir good and bad points, and if he knows enough of veterinary elements that he can assist in cases of trouble in a herd, such as milk fever, abortion and the like, so much the better.

An up-to-date cheesemaker should know and be able to handle the tuberculine test. He should know what is the best and cheapest feed to raise in his particular locality and be able to formulate a ration for their different kinds of stock from the available food stuffs. He should be able to give sound advice on barn construction especially as to location, drainage, light and ventilation and the construction of floors.

Then right along with the feeding and care of dairy cows comes the care of the milk. Not all of the patrons can handle the milk in the same way, and he must be able to show each man the most advantageous method adapted to his particular circumstances.

And last but not least he must be a good workman.

A cheesemaker's work is not a soft snap. The hardest work comes in the hottest part of the year and if he fights gas till an ungodly hour one day he must be fresh as a daisy to greet his patron with a pleasant smile and good morning next day.

Through it all he must keep his factory and utensils neat and clean, for a slovenly cheesemaker has no right to expect clean and wholesome milk from his patrons which is the beginning of the end.

DISCUSSION.

The President: Have you any questions you desire to ask Mr. Bruhn in regard to this subject? I think a number of you have something to say about this.

Mr. Dassow: I would like to ask the gentleman how he arranges in the morning to go after his patrons without getting them angry and insulting them?

Mr. Bruhn: I have made cheese for thirteen years and do not believe I ever insulted a man yet at the weigh can and I think I have not taken in any poorer milk than the average cheesemaker in the state. I have not had one piece of cheese rejected this summer and I think that speaks for itself. I do not believe it is necessary to insult a man because you have to send his milk home. You can tell him the defects in a kindly way and there is not a man but will agree with you in case his milk is off, but be careful not to complain of his milk when he thinks it is not off. When he thinks his milk is good you have to explain to him where it is off and if he wants it proven, you must prove it to him. We have methods of proving the quality of the milk, we have the curd test, the acidemeter, or some form or other, and we can prove to him whether his milk is fit for making cheese or not, and in my experience I have never had a man object because I sent his milk home.

Mr. Dassow: What do you do if a man comes to the factory late and insists on coming late?

Mr. Bruhn: That, perhaps, is one of the hardest things we have to contend with and I think the gentleman knows it. If a man insists on coming late I generally send his milk home. I figure that a man that does not come in, say until nine o'clock, a factory is better off without. I would rather let the other fellow have his milk and I send it home for that reason. If I know he is coming I generally arrange to hold a vat if I possibly can, but if I cannot hold it I send his milk home and I have had no objection on that score either.

Mr. Dassow: What do you do to a man that always says "Yes" to everything and goes home and does the same thing over again.

Mr. Bruhn. Where are you located. That is something I never ran up against. I do not know what I would do in a case like that.

Mr. Dassow: I can tell you what I did, I got the inspector out and it helped him and helped all the rest of the patrons.

Mr. Bruhn: So far as my patrons are concerned, it has

never been necessary to call the inspector. When I called the inspector it was to help myself.

Mr. Aderhold: I suggest that if Mr. Dassow has a man like that he will try and make him say no.

Mr. Larson: What do you do with a man that is all the time doing the things that are right?

Mr. Bruhn: I expect him to do the right thing. I am trying to do my best for him and I expect him to do his best for me.

Mr. Larson: Would it not be good policy to give expression of the fact if a man does that all the time?

Mr. Bruhn: If a man has brought me good milk all the year, I generally have an annual meeting at the end of the year's business and we have a little confidential talk with each other, and sometimes I manage to give them a little talk on the latest practices in dairying, etc., and in those cases I generally recommend those people that are doing the best and hold them up as an example for the others; but, outside of that, I expect every one of my patrons to do the best they can under their conditions. I am working as hard as I can for their interests and expect them in return to work just as hard for my interest.

The President: Don't you think when a man comes along with a nice can of milk you would be apt to tell him it is good? By telling him about it when his milk comes in good one day, you have a better chance to tell him of it if his milk is off the next.

Mr. Bruhn: I came near getting into trouble at one time doing that. I got a batch of milk that I thought was excellent. I took a test with the acidemeter and it showed less than .15% of 1% acid; it was cold and nice, tasted as sweet as could be. I took the curd test and found it was the worst milk I got in the factory, that is it cost me more trouble, so I am a little chary of giving much praise in that way.

Mr. Dassow: When a man is bringing good milk, is he not doing his duty and no more?

Mr. Bruhn: That is what I meant to say. He is doing his duty to himself and to the cheesemaker. We know we have to have good milk and impress that on our patrons' minds as much as possible. If a man does not bring good milk he

knows he is trespassing on the rights of someone else, consequently he is not doing his duty and is only doing his duty when he brings good milk, so for that reason and a good many others I do not think he is doing anything special because he is bringing good milk. I do not believe in awarding a premium to the man that is bringing the best milk because it is only his duty to do that. It is a little like giving a boy five cents for being good.

Mr. Grimm: I would like to ask the gentleman to explain what made that batch of milk the poorest after it was tested.

Mr. Bruhn: I am not able to tell. At the time I was bothered to quite an extent with yeasty fermentation. It did not show up in the vat until four or five hours after the whey was run off when I should have been able to put the curd in the press, and then it began to show up in the form of small pin holes and this worked for several hours; if I put it in the press it worked on the shelf for several days and got to be huffy cheese. The man bringing that batch of milk was neat and clean and his premises were neat and clean. The only reason I could see was that his milk was not cooled rapidly enough. I think most of the trouble comes to milk after it has been drawn from a cow.

The President: If there are no other questions we will take up the next paper, by Mr. George Beck of Lindon, Wis.

CARE OF MILK FOR CHEESE MAKING.

GEORGE BECK, Lindon, Wis.

I have been asked by the Secretary to read a paper on the care of milk for cheese making. This is indeed an old and well worn subject but we dare not drop it. The question of today is how should milk be cared for for the manufacture of cheese, and how should we instruct the farmer so as to get a good product from the farm. We as cheesemakers must fight against bad flavors and impure milk, or we cannot make a good product. So I think the first thing to impress upon

the farmer is in regard to the feed, water, and care the cow gets. The next thing is in being clean. In milking, this don't mean that the man necessarily has to wear a white suit, to be clean, but it does mean he should have clean hands and clean clothing. Also should the milk utensils be kept perfectly clean, and all seams flushed full of solder, for there are so many cheap pails used that are simply thrown together. Some of them will hold milk but it gets into the seams and cannot be washed out properly, therefore will decay and help to spoil all milk that comes in contact with it.

In regard to washing pails or cans it isn't a good practice to use a dish rag, as a good many do, for a dish rag is not always free from bad flavors. Therefore would advocate using a brush and warm water and then rinsing with scalding water. They should then be placed on a rack or table out in the sun. This airing seems to be a great help to the keeping of milk. The question often comes up or is quite frequently asked, "What kind of cans would you advise a farmer to buy if he ask you for advice." I should advise him to buy nothing but 15 or 20 gallon cans. For the average farmer two of these cans are large enough. Where he has a 30 or 40 gallon can he will mix the night and morning milk and this certainly isn't a good practice and is unhandy to handle when all in one can and besides the milk is libale to take a return trip some morning, then all his milk is lost for that morning and perhaps caused by mixing. By no means ever advise a farmer to get the narrow necked cans, for it is hard to air the milk and they are very difficult to wash clean and therefore will cause bad flavor.

There are 3 causes for bad flavor in milk; 1st, from strong foods; 2nd, from absorption, and 3rd, from bacterial infection.

I am not going to speak of all of these but would like to say a few words in regard to absorption. A good many people think milk will not absorb taint while it is warm and therefore let it set around the stable or almost anywhere. I think this is where they are mistaken, for that is just when it will absorb taint very readily. Therefore milk that is put in the watering tank to be cooled should be stirred and cooled at once, and the lid put on, for as a rule the watering tank is in the barnyard or somewhere where there isn't much pure air.

Some farmers are using ærators and are getting very good results. There are several different kinds of ærators and it is hard to say which is best, for what suiis one would not suit another. But if milk is aired and cooled down to 60 degrees F. and the cheese maker doesn't make a good piece of goods it certainly isn't a fault of the farmers. Then the farmer has a chance to condemn the cheese maker and it is true a good many should be condemned.

DISCUSSION.

Mr. Dassow: Do you think the aerator is the proper thing to use?

Mr. Beck: Yes if it is used where the air is pure, but if used somewhere about the barn I think it is not a good practice because the milk would absorb much taint while aerating.

Member. Where is there pure air of any kind in the summer months, air free from germs?

Mr. Beck: I think it is possibe that air is purer in some places than in others. If the milk is aerated near the barn, one thing is sure and that is that there will not be good results obtained.

Mr. McCarthy: How many farmers do you think take their aerator out where the air is pure? The most of them aerate it in the barn.

Mr. Zumkehr: I would like to ask if this man claims it is sufficient to cool the milk to 60 degrees?

Mr. Beck: Yes I think it is. I dare say a man could make good cheese by cooling down to even 65 degrees, but the cooler you get your milk the better it is for the cheesemaker and also for the farmer.

Mr. Zehren. Does the gentleman think there is any air purer than the milk when drawn from a cow?

Mr. Beck: No I do not. It only helps the milk when it is tainted when it comes.

Mr. Zehren: The question is, do you think that good pure milk, as good as you can get it from the cow is improved by contact with the air, by aerating it?

Mr. Beck: No I do not. It s only aerated because it is not pure.

Mr. Bruhn: Is all milk pure when drawn from the cow?

Mr. Beck: No I do not think it is all free from taint.

Mr. Bruhn: If cows are healthy is it not actually pure?

Mr. Beck: I do not think it is.

Mr. Scott. There are some bacteria that follow up the milk duct.

Mr. Bruhn: I think the poor milk is generally drawn to the ground. Do you think you improve the milk by aerating it? Do you think you remove the food taints by aerating the milk?

Mr. Beck: Yes I think so.

Mr. Good: I think an aerator is used more to cool the milk.

Mr. McCarthy: If milk is drawn from the cow and immediately put into a clean can thoroughly stirred so the water will always strike on the outside of the can, I think we are better off without the aerator. I think the aerator is a good deal like the old water separator and I have no use for either of them.

Member: I would like to ask if you recommend closing the cans tight after the milk is cooled down to 60 or 65 degrees?

Mr. Beck: Some say it is a good thing but I have never considered it so. After milk is cooled to 60 there is not much danger of causing gas there by closing it up tight.

Member: I think if the can is closed tight after the milk is cooled off there is no chance for germs to get in that milk.

Mr. Dassow. I have my patrons so educated that they put their cover on while they are milking, do not open it more than is necessary and I get the best results.

Mr. Wallace: I think an aerator is a good thing. There has been a bulletin issued stating that there is not much damage done to milk by aerating it in a fairly clean place. When the morning's milk is to go with the milk of the night before it will not be cool, but if the aerator is used the patrons are going to deliver the milk quite a little cooler to the factory than if they have not used it. I think if all the patrons would use an aerator they would get the morning's milk to the factory in better shape.

Member: I tell my patrons to cool the evening's milk and the morning's milk separately before mixing.

Mr. J. W. Moore: Is it not essential in cooling milk to see that cream does not come over the surface of the milk, and if the milk is stirred occasionally to break up that cream, is that not the thing desired? If the milk is simply cooled down and not stirred does not that cause trouble? If it is stirred with a dipper as good results may be obtained as by aerating and the chance for contamination will not be so great.

Mr. Schwingel: I would like to ask this gentleman whether his patrons have twenty gallon cans, or thirty or forty gallon cans? There is a difference in the locality from which the milk comes. Up in Sheboygan district they are better equiped as dairymen, they have twenty gallon cans, water tanks to put the cans in, they can strain their milk and it cools as rapidly as they put it in. The farmers in my locality only have two cans, and have to strain their milk, aerate it or do something to get their milk in shape to bring it to the factory in good condition. We have to take into consideration the different localities. I have made cheese in Sheboygan county and found it the easiest place I ever found in fourteen years experience in making cheese. In our locality for three months in the year we have to contend wth gas. I think that is the reason for the different ideas of cheesemaker in regard to this matter, because they cannot teach their patrons to put their cans in water and use the same methods as are used in Sheboygan County and many other places.

The President: A good many years ago I had quite a few patrons on my books and I got them all to buy aerators. They used them for a number of years but there came a time when I did not want them to use them and for a good many years we have not used any aerators. I think very often the aerator is abused and I believe on the whole the aeration of milk does not do any good except to cool it. On the whole I think it is a danger instead of a benefit to the cheesemaker.

Mr. Parkin: My experience is that when a patron runs his milk through the aerator he considers that is all that is necessary to do to his milk, never set it in water, and as a result I got better milk from the patrons without the aerator.

Mr. Haskins: I have patrons that cool their milk in different ways, some that use the aerator entirely, others that cool by water, and I have good results both ways. I have also had some patrons that use both aerator and water and I have had very good results that way.

Mr. J. W. Moore. It would be rather a dangerous thing to advise the patrons to use the aerator alone because the time of the year you need to take the best care of your milk is the time when the temperature runs as high as 80 in the evening when the farmer uses the aerator, and how will he get his milk cool enough with the aerator alone?

Mr. Dodge: I think the location of the aerator makes a good deal of difference at the time it is used. I have seen milk aerated in barns where the stable odor was very strong.

Mr. Wallace: I think most of the trouble with milk comes from the fact that it is not either aerated or cooled.

The President: I believe we wlll have to close this subject and take up the next one, which is to be handled by Mr. P. H. Kasper, of Welcome. Mr. Kasper is the man who took so many prizes here and I hope you will go for him.

RECEIVING MILK AT THE WEIGH ROOM.

P. H. KASPER, Welcome, Wis.

The subject assigned to me by our worthy secretary, Baer, Receiving Milk at the Weigh Room, you will all agree with me, is one of the most vital and important subjects pertaining to the manufacture of fancy cheese. To begin with we must impress on the minds of our patrons the idea that we are jointly interested in each others welfare for the purpose of getting the most money out of our product.

We must impress upon their minds the losses that are sustained in trying to make a good article out of poor milk.

We must teach them the proper care of milk and all utensils used in connection with it. You must show your patrons the vital points necessary in the care and cleanliness to produce good milk.

You must show them that you know the proper kind of milk necessary to make a good cheese and must take nothing else, no matter who it is.

We must be firm in our dealings and when a patron offers a can of milk and you tell him once that you cannot eccept it, don't take it under any circumstances, for the moment you accept a can of dirty or tainted milk you will not only offer an inducement for the farmer to produce dirty milk but you will create a market demand for such milk, and the next morning you will have another patron that has a can of milk that is not up to the standard but he will ask you to accept it simply because you took his neighbor's milk the day before.

In that way you will not only ruin the reputation of your factory, but your reputation as a cheesemaker will also be at stake, besides you are violating the Laws of the State of Wisconsin. By all means honor and obey the State Dairy and Food Laws, for they not only protect the consumer but the farmer and cheesemaker as well.

Some of my brother cheesemakers will tell me that they cannot reject any and all milk that is not up to the standard, for fear that some of their patrons might leave and go to their neighbor's factory. But let me tell you and impress upon your mind always rather sacrifice a patron than a principle. Set your standard high and retain it. Don't wait for the assistant State Dairy and Food Inspector to come to send home your dirty milk or compel you to send it home. What impression must such a cheesemaker produce on the minds of his patrons if that should be the case?

You must convince your patrons that all milk that passes your inspection will also pass to the entire satisfaction of our State Dairy and Food Inspectors.

The cheesemaker is, to a great extent, responisble for the quality of milk received at his factory. The standard of your milk received at your factory will be governed by the standard you set it. If you set your standard high you will receive a high quality of milk. If low you can expect nothing else but a low quality of milk.

But before we can ask our patrons to accede to all these rules and insist upon that nothing but clean and wholesome milk will be accepted in our factory, we must set a good example, not alone for our patrons, but for the entire community. We cannot expect our patrons or compel them to deliver nothing but clean and wholesome milk and manufacture it into cheese in a dirty and unsanitary factory.

The inside as well as the outside of our factory as well as the surroundings must represent a picture of neatness.

Not alone the floors should be kept clean but everything that comes in contact with milk. There is no more excuse for the cheesemaker with small income, than it is for the cheesemaker that has the means, to keep his factory in an unsanitary condition, for water is cheap and some of our world's known washing powder is within reach of everybody. Not even the whey

tank must be neglected, for a dirty and filthy whey tank is not only an eye sore but thousands of dollars in losses are sustained in the cheese business annually just for that reason.

Special attention must be given to our weigh room for it is almost impossible to detect a can of tainted milk in a dirty and unsanitary room where the walls are spattered with milk and the corners are filled with dirt.

Keep nothing in your weigh room but a good reliable set of standard scales. Weigh can, composite sample jars arranged on shelves, and your receiving sheet, everything, must represent a picture of taste and neatness.

In receiving milk in the morning greet your patrons with a kind and cheerful good morning, examine every can of milk carefully before accepting it or emptying it into the weigh can. during the time the patron drives away, empty your sample in the composite sample jar so that when the next patron drives up side of the weigh can, then weigh the milk, enter the number of pounds on the receiving sheet and the patron's pass book and during the time the patron drives away, empty your sample in the composite sample jar and when the next patron drives up you will be ready to receive his milk.

By all means give each patron honest, just weight, no more and no less, be honest in all your dealings, take a deep interest in the welfare of your patrons as well as your own and in that way you may not only gain and enjoy the confidence of your patrons but also of the surrounding community.

DISCUSSION.

Mr. Haven: At the receiving stand we find two kinds of milk that give us trouble, some a little too good to make poor cheese and a little too poor to make good cheese.

Mr. Kasper: There is hardly any excuse for poor milk. All milk is good when it comes from the cow and if it receives the porper care it is pretty nearly all alike when it comes to the factory.

Mr. Haven: Don't you receive a lot of milk that is not right and you cannot tell just where the trouble is?

Mr. Kasper: We have had very little trouble the last seven or eight years. We have our patrons so they cool their morn-

ing's milk, set their cans in a tub of water and strain their milk into the cans and cool it down.

Mr. Haven: That may be true, but don't you find cases where the milk comes in in such way that off flavors develop later? I find in my work among the patrons that that is the worst thing we have to contend with. The milk develops off flavors later and many times we find milk on the dividing line between good and poor.

Mr. Noyes: I do not know how it is in Mr. Kasper's territory but down in our territory we have some patrons that bring some pretty good milk and when one can of milk is off most of the milk is off, and when one can of milk is good they are all good. Being in the old section of the state, we do not have as good pastures as they do in some parts of the state and the milk in the very hot weather is bound to be off. In my work traveling around in a radius of fifty miles, I do not know of a single factory that has nice milk all the time and I know of very few factories in our territory that during the months of July and August do not have at least one floater, and in one of my father's factories they had thirteen floaters during the month of July, but on the ridge were this factory is located water is scarce and hard to get, they have to go three and four hundred feet for water. Most of the farmers have wind mills and it is impossible for one man to pump enough water to get their milk cool unless he has a gasoline engine and consequently sometimes, when the wind is not blowing, they get very bad milk. In other places, where there is bottom land, the milk comes bad in certain portions of the year and when one can of milk is bad most of it is bad and we have some cheesemakers in that territory who are exceptionally good about advising their patrons in taking care of their milk and I know some of our cheesemakers go out among the farmers and take care of the milk themselves, but the next day would get gassy curd, and the only way they could do was to use a great deal of hot water so as to make good cheese that all dealers would want.

Mr. J. W. Moore: I would like to ask Mr. Noyes what he means by hot water?

Mr. Noyes: In our factory, when we have a very hot night and the milk comes in very gassy we advise water from 125 to 130° F.; when we have bad flavors and very gassy milk we advise using water from 130° to 135° F. and our makers have very good

success in making a close boring cheese that will pass the world over. Most of our cheese are shipped south to Texas.

Mr. Schwingel: I would like to ask Mr. Kasper if he really thinks that a cow always gives good milk? I think that among a lot of patrons in a factory you will find some cows will give bad milk, due to the fact that some pastures have stagnant water where the cows will drink and we can smell it in the milk as soon as it comes in in the morning. This is a matter that should be discussed a little more, I think, because some of the bad milk comes directly from the cow.

Mr. Kasper: A man can always tell tainted milk, no matter how well it is cooled. If you get a can of tainted milk well cooled and find the cream swimming on top in small particles, you can make up your mind that milk is tainted. This gentleman over there says that at some times of the year the milk is all bad; we get as good milk in July as we do in September or October. It is the cheesemaker's fault if he takes all bad milk; why does he not send it all home?

Mr. Wallace: Are you bothered with sediment in the bottom of your cans?

Mr. Kasper: No, our strainer cloth is almost as clean after we have taken in the milk as before. When our farmers brought in milk with sediment we used to tell them the best place to leave fertilizer was on the farm.

Mr. Wallace: Are you troubled with flavors in the milk, that is food flavors like cabbage, beets, turnips, or anything of that kind?

Mr. Kasper: We do not allow them to feed cabbage. Sugar beets will not affect the milk.

Mr. Wallace: Do you allow them to feed mangels?

Mr. Kasper: Mangels will not affect the milk if fed right after milking and if they are not rotten. I do not think mangels fed in the fall of the year will affect the milk any. I tell you most of the places where milk is spoiled is from feeding stuff that is piled up in the barn, they give off odors in the stable and that is where the milk catches it the most.

Mr. Wallace: It has been my experience in butter that if you have many patrons feeding mangels you can tell it. One or two will not make any difference but where a lot of them feed them you will be troubled with off flavor. It seems to me you are very fortunate in being in a county where you get good milk.

Mr. Kasper: There are not three patrons in my factory that have not swampy land. The patrons let their cows run in the swamps and it is hard for them to produce good milk, but in some way the milk does come in good.

Mr. Wallace: I had a neighbor who claimed he had perfect milk for several years and a year or two ago it went off. He could not tell what the matter was and no one could tell him what was the matter. I was in the same condition myself, my milk went off, and before that I had quite perfect milk. We got sweet flavor and off flavor and we did everything in the world to stop it. I advertised that I would give any man in the state $100 to tell me what was the matter with the milk. The men that had the cleanest places, the best water and the best pastures were the men that brought in the poorest milk and we would get soapy texture, sweet flavor. We thought possibly this off milk was due to aeration so we had them stop aerating and cool their milk down perfectly cold in the cans, but we never improved the milk from start to finish of that season. I am of the opinion that a man can do a whole lot to make good milk but he is not doing it all. There is a certain amount of luck in some of it.

The President: I think we will have to close this discussion just now. Mr. Watrous, of the Business Men's League, has a surprise in store for us.

Mr. Watrous: On the foot of the page of your program it says "A number of speakers, whose names do not appear on the program, have been invited to address the convention during the sessions." That is all right but this invitation has not included me. However, I have got so in the habit of being on your program somewhere that I could not resist the temptation to come over here and say "Hello" to you and tell you that the Business League is glad, as always, to have you with us.

Yesterday you were offered a pleasant change in your program by having a real mayor give you an address of welcome instead of a substitute who has spoken for the mayor for the last two or three years. I know you cheesemakers are all fond of music and the Business League has not sent over here a boquet of flowers but it has sent, as a little token of its appreciation of your being with us, a quartette which has come here to sing for you, if your president will allow us a few minutes to do that and break in on your program, and I have pleasure in introducing to you

now the Kilbourne Quartette, which will sing one song for you and if you like that song perhaps will sing two or three.

Selection by the Kilbourne Quartette roundly applauded and two encores were responded to.

The President: As I said a short time ago, Professor Moore is obliged to leave on an early train, and I will therefore call on him at this time to give us a talk on Alfalfa.

ALFALFA.

PROFESSOR R. A. MOORE, Madison, Wis.

Agronomy, Agricultural Experiment Station.

Mr. Chairman, Ladies and Gentlemen:

I am happy to meet the cheesemakers of Wisconsin here this morning and at first when your secretary notified me that he desired me to appear on the program I could hardly see how we were going to bring alfalfa culture into the art of cheese making. This brings me back to my early boyhood days. I remember the time in Wisconsin when the energies of the farmers were devoted to the growing of wheat. We grew wheat from north to south throughout the entire state. We grew wheat until we had an iron clad mortgage on every farm in the state and it was not until great men like Smith of Sheboygan County, and Governor Hoard of Jefferson County, came through our county that we were told of our sins, told that we were taking from the land in growing wheat that which we had no right to do. We were told to go into dairying and as if by magic the whole state of Wisconsin acted as one man and went into the dairy business. In a short period of time the county from which I came was transformed from a wheat growing county into a dairy county, a cheese making county. I remember when there was not a single cheese factory in the county, and in a few years in the small county of Kewaunee we had sixty-eight factories, and it was through the knowledge and effort of such men as we have here today that that county was transformed, that the whole state was transformed, and by those young men putting forth active efforts, through the efforts of the dairy school,

through the gain in knowledge in the art of making cheese and starting cheese factories and creameries all over the state that we now have some three thousand creameries and cheese factories all over our state and the dairy products of this state bring to the farmers annually something like fifty million dollars. What has that to do with the growing of alfalfa?

SEEDING, GROWING AND CURING.

No forage crop has been given more attention in the United States during the past ten years than alfalfa, and while it is in the experimental stage in some parts of Wisconsin, yet where proper precautions are taken it can be grown with a reasonable degree of success on any of our older and well cultivated farms.

Wisconsin is a great dairy state and the milk products bring to our farmers annually some fifty million dollars. A considerable portion of this money is expended for high protein feeds in the form of oil meal, oil cake, cotton seed meal, bran, etc. These high protein feeds are purchased for balancing the feed ration, and often the farmer has to draw the feeds from the railroad station several miles away, after paying an exceedingly good price for them. Considering the time expended in carting the feeds, together with the general cost of them, makes it expensive for the farmer and takes from him a large portion of what would otherwise be profit.

Alfalfa has come to Wisconsin to supply the dairymen and stockmen of the state and save for them a large portion of the money annually expended for high protein feeds. For seven years alfalfa has been grown with a reasonable degree of success on the Station Farm near Madison, and many tests made to determine the best method of growing this important forage plant under different conditions of soil and climate.

The value of alfalfa as a feed for all farm animals including swin eand poultry is so well known that it is unnecessary to speak of its merits here. No single forage plant combines the materials for a profitable ration for dairy cows, sheep and brood sows so well as alfalfa. When grown in comparison with red clover, timothy and brome grass on the Station Farm the season of 1905 the yield per acre of hay was 5.4 tons for

alfalfa; 2.5 tons for clover; 2.3 tons for timothy, and 1.3 tons for brome grass. As a green forage the weight of alfalfa grown per acre was double that of clover, three times the weight of timothy and five times the weight of brome grass. The per cent of protein found in the hay was as follows: 18.7 for alfalfa; 13.28 for clover; 4.74 for timothy, and 6.07 for brome grass. In total yield of protein per acre alfalfa gave a yield of three times that of clover, nine times that of timothy and twelve times that of brome grass.

Several hundred members of the Wisconsin Experiment Association have cooperated, thus making it possible to get data bearing upon the subject from many counties of the state under widely different conditions. The purpose of this paper is to state briefly the information gained with the hope that it will be beneficial to those desiring to grow alfalfa.

Testing the seed. Several factors enter into the successful growing of alfalfa, but none are more important than testing the seed and success or failure will be largely determined by this factor. Before placing an order for seed a sample should be secured from each of several good seed houses and germination and purity tests made. Often seed that looks good will give a low test. Seed that shows a germination test below eighty per cent should be regarded with suspicion. Its vigor is seriously impared even though it may sprout.

A simple tin plate tester can be used for the test in which are placed cotton flannel pads cut to fit the inside of the plate. The pads are soaked in water and excessive moisture removed by squeezing. Lay the first pad in the larger of the tin plates used and sprinkle 100 seeds on the pad,—put the other pad on top of the seed and then cover with the smaller plate to retain moisture. Plates should be placed at ordinary room temperature and examined at intervals of twenty-four hours. If pads dry out sprinkle them with water. If seed is of high vitality at the end of four days, fine vigorous sprouts will be noticeable. The sprouted seed should be removed at the end of the fourth day and the unsprouted seed left at least two days longer. The germinating power is expressed in per cent. If the alfalfa seed appears to be filled with foreign seeds it is well to send the sample to the Agronomist, Wisconsin Experiment Station, Madison, with request to test for

purity. The test will be made free for any resident of Wisconsin.

Locating the field. Good growths of alfalfa are often secured in favorable seasons on level land but better results will be obtained by selecting the field on land that is somewhat sloping where water will not stand during any portion of the year. On level ground during sleet storms water is apt to collect in all the depressions forming and freezing an ice sheet which smothers many of the alfalfa plants. "Patchy fields" are hard to renew and the best practice to follow is to plow the entire field and reseed. In no case should alfalfa be sown on land that is subject to overflow or where the water level is but two or three feet below the surface.

Character of soil. Alfalfa will grow on a wide variation of soil ranging from a rich sandy loam to a heavy clay, but a rich clay loam over a gravelly sub-soil seems to be best. It is practically useless to try to grow alfalfa on sandy or "worn out" soils without an abundant supply of good barnyard manure. Alfalfa will not do well on new and unsubdued soil, but develops best on the well, cultivated soils.

Soil inoculation. Alfalfa belongs to the plant family known as leguminosae. Like our common red and white clovers it has the power through minute living organisms found in the little nodules on the roots, to take the free nitrogen from the air for the purpose of building much of its plant tissue. Largely for this reason the plant is exceedingly high in nitrogen content and receives the greater portion of that valuable constituent from the air instead of the ground. These little organisms or bacteria are necessary for the successful growing of good crops of alfalfa and where the soil contains them in limited numbers only the alfalfa plants soon wither and die. In some sections of the state the ground is sufficiently supplied with the alfalfa bacteria, but there are many localities where they are present in so limited a number that it seems impossible to get a catch of alfalfa that will succeed in surviving the first winter.

The ordinary roadside weed, the sweet clover, which naturally grows to the height of five or six feet throughout nearly all of the counties in southern Wisconsin, is one of the essential bacteria distributors. Notwithstanding the fact that farm-

ers have waged war upon sweet clover for nearly a generation, this plant thrives readily and is of great importance in furnishing the necessary bacteria, for the successful growing of alfalfa. When a farmer is in doubt as to whether or not his land contains the proper bacteria he can successfully inoculate his fields by scattering soil from an old alfalfa field or where sweet clover has grown. Two tons of earth per acre should be scattered after the seed bed has been prepared, if earth can be secured near at hand, immediately preceding the sowing of the alfalfa seed. The alfalfa responds readily to this method of inoculation and nearly all plants will be found to have the proper nodules on the roots the first season of growth.

An excellent plan for supplying the soil with the proper germs is to use a mixture of one-fourth alfalfa seed and three-fourths clover seed for general seeding. The clover hay will be of a better grade where alfalfa is grown in connection therewith. The alfalfa plants that survive become bacteria distributors so that when the desire in later years is to seed down to alfalfa, the soil will be found amply provided with the proper germs.

Some seedsmen have advertised organisms to insure good crops when the seed previous to sowing is treated with a solution made from these cultures. The results obtained indicate that much more certain results can be secured by the addition of the infected soil.

Soil preparation. Good results have been obtained on both fall and spring plowed lands depending upon the texture of the soil and freedom from weeds. If fall plowing is resorted to it is well to plow early in the season, so as to cover weeds before they produce seed. Double disc both ways in the spring as soon as the land works well and put in garden condition, using in addition to disc fine tooth harrow. The ground should be heavily spread with well-rotted manure, using from 10 to 20 tons per acre. If seeding is done in spring plowed land the ground should be heavily manured during the winter and plowed as soon as the ground works well in the spring. The fine tooth harrow should be run over the plowed field within a few hours after the furrows are turned to prevent the drying and hardening of the soil. If the soil once becomes lumpy it is hard to put in proper condition for alfalfa seeding. A

planker or roller should be used immediately before and after seeding to alfalfa, which aids very much in firming the soil to enable rapid germination of the seed. Best results have been obtained in Wisconsin by sowing as soon as the ground can be worked to good advantage.

Nurse Crop. Where ground is inclined to be weedy it is preferable to use a nurse crop to assist the alfalfa in keeping down the weeds until it becomes established. Barley used at the rate of three pecks per acre has given best results as a nurse crop and can usually be left to ripen without apparent injury to the alfalfa. If oats are used do not exceed one bushel of seed per acre and if the season is dry cut the oats for hay at the time of heading.

Thin seeding of the nurse crop is important as it gives the small alfalfa plants sufficient space to grow between the grain plants without crowding. It also prevents to a great degree the lodging of the grain crop which will invariably kill the alfalfa plants. The draft of moisture and fertility from the land is not so great where a thin nurse crop is used in preference to thick seeding.

Land on which tobacco, sugar beets, or any highly cultivated crop has been grown the preceding year can be seeded to alfalfa without a nurse crop with fair chances of getting a good thick stand. Where alfalfa is seeded without a nurse crop the ground should be cultivated with disc and fine tooth harrow until May 15th or June 1. Weeds will then have been quite thoroughly killed and the ground will be in fine condition to sprout the alfalfa seeds in the shortest possible time. Where a nurse crop is not used frequently a cutting of alfalfa can be secured by September 1. Sowing with a nurse crop is most generally practiced in Wisconsin as it enables the farmer to get a stand of alfalfa and a fair grain crop the year of seeding.

The alfalfa seed should be sown at the rate of at least twenty pounds of good seed per acre. Five pounds of seed extra per acre will usually yield enough finer and better quality of hay to amply repay. Alfalfa is a perennial plant and will grow for many years without reseeding.

Machinery for seeding. A drill or broadcast seeder with grass seeder attachment is the most convenient machine for seeding, as both the nurse crop and the alfalfa seed can be sown at one

operation. The cahoon whirling grass seeder and the wheelbarrow seeder are also used to advantage. Sowing by hand is often resorted to where the area is limited.

Cutting the Crop. Where alfalfa is sown as above described no hay crop can be expected the first season except under the most favorable conditions. In no event should the alfalfa be cut or clipped after September 1. If the growth of alfalfa is sufficient to warrant taking a crop from the land by September 1, it should be cut then regardless of the cutting stage.

The year following the seeding you may reasonably expect three good crops. Your first crop will be ready for cutting the early part of June, at a trying time in the season for curing alfalfa. Cut at a time when blossoms appear on about one-tenth of the plants and on the morning after the dew has disappeared on a day that promises fair weather. Adjust the cutter bar of the mower so that the stubble left will be at least one inch in height. This will prevent injury to root buds of the alfalfa plants. In the afternoon of the same day of cutting if weather has been favorable the alfalfa can be raked and put into small cocks.

Hay caps. A much better quality of hay will be secured if the crop is covered under hay caps than in open cocks or windrows. Caps can be made from light cotton duck by hemming the edges to prevent raveling. Eyelets should be made in the corners in which strings should be tied to fasten the caps. Heavy wire cut eighteen inches in length and a loop made at top in which to tie string attached to cap makes a convenient arrangement to hold the caps in place. The wire pegs can be either run into the ground or pushed into the sides of the cocks of alfalfa.

Ex-Governor Hoard recommends horse shoe attachment for strings. To make these cut old horse shoes at toe calk making two weights of each shoe. Punch holes through shoe about two inches back from the end where cut so that the short end of shoe will stick into the hay and thus hold the cap in place. Some make little sacks or pockets in each corner of the cap and fill with gravel or stone for cap weights.

Curing alfalfa. The cocks of hay should not be left standing in the field more than two or three days without being removed, or the alfalfa plants underneath the cock will be completely

smothered. By taking a pitchfork and running it into the cock of alfalfa near the bottom on the side in the direction the cock is to be moved one can easily pull the alfalfa from the place previousy occupied. If alfalfa is exceedingly green when cocked or rainy weather sets in it will "heat" the cock unless opened every day or two. After rainy weather the cocks of alfalfa should be opened and the hay aired for a few hours and then recocked. In favorable weather no more difficulty will be experienced in curing alfalfa than in curing heavy growths of clover. Like clover the leaves are rich in nitrogen and crop off readily when dry, therefor the aim of the farmer should be to cure the alfalfa with the least possible handling. One-half of the feeding value may be lost through the weathering and improper handling of the crop.

Alfalfa is either stacked or placed in a barn after curing. Considerable of the feeding value is lost through stacking as the hay is porous and rain penetrates the stacks to the extent of two or three feet. An outside mow with roof does fairly well and little of the alfalfa is lost when stored under cover. A covering of marsh hay or a tarpaulin will prevent damaging of alfalfa in the stack. When to be put in barns it is well to let the alfalfa "sweat" in the cock, otherwise it will heat and get musty in the barn.

This great amount of valuable forage taken from a limited acreage had led many to think that a large portion of the farm should be sown to this important crop regardless of conditions. A word of caution to farmers who have never grown alfalfa is necessary. Try only a limited acreage on the start, not more than one or two acres, for the purpose of studying the plant and the soil conditions of the farm. The longer alfalfa is grown and fed upon the farm the more ideal the conditions for successful growth become and we feel the day is not far distant when alfalfa will be grown on the older farms of Wisconsin as generally as our common red clover.

DISCUSSION.

Mr. Reid: Why do you wait until the dew is off before starting to mow?

Prof. Moore: So there will not be too much surface water in the plant. You can take care of the inside juice in the plant nicely and the dew will dry off more readily if it is left standing in the field, so we wait until the dew is off so as to have as much foreign moisture off it as possible.

Mr. Reid: Is there any other reason? If you mow it when wet the heavy wheel will kill the plant.

Prof. Moore: If the ground is moist and the wheels go down they crush the little bulbs and wherever those are crushed the plant is going to die.

Mr. Scott: By putting alfalfa in a silo is the feeding quality affected any?

Prof. Moore: The only difficulty we find in siloing the plant is it is pretty high in nitrogen and it takes on a pretty heavy odor. That is true also of the siloing of soy beans, but by putting in a combination of alfalfa and corn I can see how you can get a very desirable ensilage and people have succeeded fairly well in putting alfalfa into the silo as it is.

Member: How does alfalfa grow on sandy soil?

Prof. Moore: We like a rather rich soil. If the sand is rich it is all right but if you are going to try in sandy soil, I advise to heavily manure, put on from ten to twenty loads of manure to the acre. That may seem an excessive amount but when you consider that you cut from three to four cuttings of hay and are getting probably $100 worth of forage from a single acre, you do not need to grow a large acreage in order to get a great amount of feed as far as value is concerned.

Mr. Doane: The Lake Shore country probably represents the sandy districts of the state. Do you know of successful fields of alfalfa from here North, within twenty-five or thirty miles of Lake Michigan? Do they have trouble in growing it?

Prof. Moore: Yes Sir. We find along the Lake Shore we have cold breezes from the lake; the land will heat up during the day and then a cold breeze from the lake will set in at night. The land will heat up during the day and then the

cold breezes set in from the lake and often bring in fog and they have trouble with first cuttings but they appear to have little trouble with the later cuttings. I was surprised a few years ago to see some beautiful fields of alfalfa growing on heavy clay farms.

Mr. J. G. Moore: Is it not a good plan on sandy soil where alfalfa will not catch to sow sweet clover, the same as grows along the road?

Prof. Moore: Certainly that would be a good plan because you would get the proper germs in the soil. Sweet clover belongs to the same specie, in a way, as alfalfa.

Member: How do you think it would grow in Iowa County?

Prof. Moore: I would not advise putting it on low flat land. On rolling land it would be all right. We know there are times in the winter when there is a llttle snow on the ground and we have one or two days of warm weather and this snow melts down, and in the low lands the little depressions will be filled with water, then if the weather turns cold the little depressions will be coated over with ice and the plants under the ice will be smothered.

Member: How would red clay loam do?

Prof. Moore: It is very good, especially if you have gravelly sub soil.

Mr. Corneilson: I understand there is a method of inoculating the seed. Has that been successful in distributing proper germs?

Prof. Moore: It has not been successful. We have carried on extensive experiments at the station farm to see whether or not it would be practical. We believe in the theory, the theory is all right but it is not practical. We have tried it on several different kinds of legumes; we have got culture from the government, from the Nitro Culture Company and from Canada and have not succeeded to any great extent by inoculating the soil in that way. The ground method is more sure.

Member: Would you not prefer dry alfalfa to feed with ensilage than to put it in with the silage?

Prof. Moore: I think to cut alfalfa green and put it in with corn silage would be exceedingly fine.

Mr. Westphal: What would be the proportion of protein in alfalfa compared with red clover?

Prof. Moore: Red clover has a little over two-thirds as much protein as alfalfa but where you get three times as much alfalfa as clover, you can see the difference in favor of the yield of alfalfa, but red clover is a wonderful plant and we do not want to go back on it.

The President: We will have to close this discussion. We have had a very good address by the professor and now we will take up the next lesson by H. A. Chaplin, of Plymouth, Wisconsin.

PREPARING STARTERS AND RIPENING THE MILK.

H. A. Chaplin, Plymouth, Wis.

Mr. President, Ladies and Gentlemen:

The subject assigned to me—that of preparation of starter and ripening of milk is one of the most important points in cheese making. Before stating how we prepare the starter, I wish to carry you back to the time I first made cheese in '78 and '79 and to the process in practice then and several years thereafter. We knew nothing of starters. The milk was taken in in the morning, being heated at the same time as quickly as possible to 84° or 86° according as to whether we were using prepared rennet or rennet extract. The milk was therefor set by or before 8 o'clock in the morning and heated to 98 or 100° by or before 10 o'clock. Then we waited for acid. If the milk came in in the proper condition, i. e. wth the proper degree of ripeness, it worked right along—we gained acid in the right time, and finished cheese making much as we do to-day. If the milk arrived too sweet we waited for acid from 2 to 4 or sometimes even 6 hours from the time of heating to the drawing of the whey. In that case we thought there was something wrong with the milk and complained to the farmers, they took better care of it, cooled it a little more, and the milk came in sweeter than ever. And where the curd laid so long in the whey, it became whey soaked, and it was impossible to make as fine a quality of cheese from it. I do not mean to

say that we did not make as fine cheese in those days, because I think we did, but it was harder work—required more skill and much more patience.

About this time we began to ripen the milk in the vat, using Harris test, and later Monrad, and still later Marschall to determine the degree of ripeness, to hasten the process of ripening we find some of the boys using whey starter—putting in sour whey to ripen the milk. Of course this had the desired effect in hurrying the work, but almost invariably made a poor quality of cheese, because all the taints and poor qualities of each day were carried along to the next, and added to those of that day—the starter becoming worse from day to day.

To overcome this a whole milk starter was used which worked better, and was taken up, and advertised, and taught as a great cure-all ills that milk was heir to; but I firmly believe that in the first few years that starters were used, more cheese were spoiled by use of poor starters, or excessive use of good ones, than were helped by them, but I am glad to say that the tendency of the present time is toward placing starters where they belong—not as a cure-all, but for the purpose of making a better and more uniform quality of cheese. I want to caution the boys against excessive use of starters—a starter is not for the purpose of hurrying up the work so that the boys can get through earlier, go to the ball-game, or to see somebody-else's sister. We never use more than ½ of 1% of starter during the spring and summer, and not more than ¾ of 1% during the late fall, except it be where the milk is known or expected to be tainted.

In preparing starters we used to take the milk from the vat, and this was improved upon by taking out the milk from some farmer considered to have good milk, and carrying that from day to day by addition of a little sour milk of starter. This practice is used by some of the makers today, and with good success during most of the year, but there are certain times when the milk of the best farmer may be badly tainted, and still while cold at the intake the maker not be able to detect it. Then the starter will be very bad, and either have to be destroyed and leave the maker without a starter, or be liable to spoil the whole milk in the vat. Therefore most of us are using a pasteurized starter. We prepare

the starteline by using commercial lactic ferment, prepared according to directions (we use Hansen's, because it is handled at our dealer's, although I have tried other lactic ferments, and found them equally good).

In preparing the milk for the starter, we take the milk from some farmer whose milk is not over-ripe, and appears clean and good. We do not take it from the vat for the reason that it might be slightly over-ripe, and not stand heating properly. The milk is then placed in the pasteurizing tank, and kept there in cool water until we have time and plenty of steam to use, when the steam is turned on, and the milk heated to from 170 to 180 degrees F., held at that temperature about ½ an hour. As our factory is piped with cold water, to cool it we have only to turn a valve, let the cold water run in on one side, warm water overflowing on the other side into the drain, or if necessary (as is generally the case) to the whey tank. We cool the milk as quickly as possible to from 65 to 70 degrees according to the season and the weather. Sometimes in hot weather it is necessary, in order to keep it at the right temperature, to leave the cold water running slightly all night. Then at from 2 to 6 o'clock, according to the season of the year and the condition of the weather, the starteline is incorporated with the starter, at such a time as we have found by experience that the starter will be in the best condition in the morning when ready for use, i. e. neither too sour nor too sweet. I like it best thick, but not so thick but that it will stir up smoothly at about the consistency of good, thick cream. Not all of you can do it in the same way, because not all factories are equipped with steam and running water, but the same effect can be produced with a little more labor, even where it is necessary to heat the can of milk for the starter in a boiler on a stove, and cool it in a wash tub, and will be better than any starter prepared without pasteurization.

We are very particular in saving the starteline from day to day. Our starteline is kept in a 2 qt. can with a tight cover, so that it can not be contaminated by the air, and even then the top is always poured into one can and the bottom into the next, out of which second can the starteline for the next day is taken, and the starteline is taken from the bottom of

this second can, and immediately placed in the ice-box, and even then the starter will sometimes go off, probably caused by becoming too sour or by some accident. Upon the slightest sign of the starter's not being perfect we prepare another starteline from fresh lactic ferment, but don't destroy the old starteline immediately, because we have found the lactic ferment not always to be relied on.

We mix the starter with the milk running into the vat at such a time between the first and last milk going into the vat as will in our judgment bring the whole milk in the vat nearest to the proper degree of ripeness by the time we are ready to set the milk. As soon as the milk is heated to 86 degrees we test it to see how ripe it is. If it works as we have figured it, it wll show from 16 to 18 points on the acidimeter, according to the season of the year and the purity of the milk. If it does not, the milk is left to stand, (being stirred meanwhile until it will. To determne the degree of ripeness we want, we bring it to the point where it will be ready to place the curd on the rack in from 1¾ to 2 hours from the time of setting the milk, with an acidimeter test of from 14 to 16 points. This is the key to the ripening of the milk. Not all can use the same degree of ripeness because not all milk works alike, but this is the point which in our judgment works best with us.

You will notice that we leave a good many things to our judgment. There is no fast and solid rule in cheese-making. If there were there would be no need of dairy schools and expert cheese-makers. We could hire anybody, give him a set of printed rules and a watch, and expect him to make good cheese. Instead of that, we must study our milk and grasses, and know the effects of different pasturage on milk. And again I want to caution you against the use of too much starter—time is always with us. If the milk is not ripe enough, we can always wait for it, but if it is too ripe, it is hard work to make a uniform cheese out of the milk. We are making cheese for the American people, and they are a very particular people—they will eat a good many kinds of cheese, but they draw the line at sours.

DISCUSSION.

Mr. Kasper: At what time do you add your starter to the milk?

Mr Chaplin: It depends on the time of year. If I think it is necessary I put it in the first thing in the morning. If I find it has been workng the best that way, I wait until the milk is mostly in the vat. I always put it in so it will be at the right degree of ripeness when I get ready to use it.

Member: When do you add starteline to the pasteurized milk?

Mr. Chaplin: At two to six o'clock in the afternoon, but during the greater portion of the year at 2 o'clock.

Mr. J. W. Moore: Is it advisable for a cheesemaker to let the testing of his vat for acidity go until his milk is heated to 86 degrees? It seems to me if a maker has any trouble, or if he is suspicious of his milk being over-ripe he can find that out in time to use a starter, and the starter should be used before the milk is heated, but if he does not test the ripeness until he gets his milk heated that is nearly the time he is ready to start cheese making.

Mr. Chaplin: As a rule we do not have trouble with our milk. If we are suspicious of it we test our milk for acidity.

Mr. Hackert: How long do you carry your starter?

Mr. Chaplin: I have carried some starters for some time, and I have found starters I could not carry one week.

Member: Do you generally take your starter out of some patron's morning milk?

Mr. Chaplin: I do not think that is necessary; I simply have milk that is sweet.

Mr. Aderhold: How many years have you used starter?

Mr. Chaplin: About eight years, nearly half the time I have been making cheese.

Mr. Aderhold: You made the statement that when you first began to use starter a great deal of trouble was caused by using too much starter and using poor starter. Don't you think where they use the raw milk starter, as I think most of the boys do today, that they more often use a poor starter than a good one.

Mr. Chaplin: No I think some of them in our county, where the milk generally comes in good, can make a pretty fair starter without pasteurization.

Mr. Aderhold: They can but it is generally not as good as they like to have it.

Mr. Chaplin: Not as good as a pasteurized starter but that does not obviate the fact that most of them use too much starter.

Mr. Aderhold: In traveling from one factory to another, I find that where raw milk starter is used, in nine cases out of ten, at least the day I was at the factory, the starter was not just as the maker wanted to have it. Sometimes it was not starter, sometimes the whey was standing on it, sometimes it was tainted, and I have found it that way nine times out of ten in my travels throughout the state from factory to factory. There may be some cheesemakers that get it pretty nearly the same every time but the starter should determine to a considerable extent, at least, the flavor of the cheese and I do not think we ought to take any chances on making it from something we do not know anything about and have no control over. I believe of a cheesemaker wants to be an ordinary "dump" he can show it as good as in any other way by using raw milk starter but anybody that wants to make something excellent is not going to be dealing with a starter over which he has no control and that he knows nothing about how it is going to come out.

Mr. Chaplin: I am not as strong as Mr. Aderhold on the point he makes regarding the raw milk starter. I think the greatest trouble is that once in a while a raw milk starter will spoil a batch of cheese, and that once in a while will more than pay for the extra work of pasteurizing.

Mr. Dassow: Don't you think it better to use less starter and put it in early in the morning rather than wait until later in the day and put in more?

Mr. Chaplin: Yes, where you are fairly sure of your milk. Where it has been working right along as you want it to. I should put in my starter early in the morning and use as small a quantity as possible.

Mr. J. W. Moore: I believe it was said by some one yesterday that it was not important to select the milk from which

starter was made. Lots of us do not pasteurize this starter as we should, and we call everything sterile. Why not select the best milk, then if we do not pasteurize thoroughly we will have something better?

Mr. Chaplin: Time comes into consideration there. You may not have the best milk in the factory coming in until after our vats are washed and ready to receive the starter next day. I admit we should select starter from fairly good milk. If your milk is not bad I think pasteurization will kill all the germs in it.

Prof Moore: You admit the milk should be selected?

Mr. Chaplin: Yes from selected milk.

The President: The next subject to be discussed is Setting, Cutting and Cooking of the Vat by Mr. P. E. Cranston, of Sabin, Wis. I understand Mr. Cranston is not present so we will discuss the subject and I will call on Mr. H. J. Noyes to open the discussion.

SETTING, CUTTING AND COOKING OF THE VAT.

Discussion led by H. J. Noyes, Muscoda, Wis.

Mr. Chairman, Gentlemen of the Convention:

This is quite an important topic but I do not think it should require a great deal of time to bring out all that is necessary in regard to the matter.

The cutting of the vat should be done at the proper time, as soon as the curd becomes firm enough, you can tell this by inserting the finger at an angle of 45 degrees to see if it will break clearly. I think it should be cut as soon as it will break nicely. In cutting your knives should be sharp. It should be cut as straight and swiftly as you can and not wabble your knife too much to break the curd. I would cut with a horizontal knife first, then a perpendicular, then across, and continue cutting until you have the right size granule. If the milk is pretty ripe I would cut finer, but if it is working normal I would cut coarser.

The cooking of the vat. I merely mention these things and you can draw out what you want by discussion. The cooking of the vat depends on the condition of the milk. If the milk is working normally, I would take thirty to thirty-five perhaps forty minutes in cooking. I would rake it over carefully and start the white whey as slowly as possible. If you have milk that is over-ripe you will have to hasten this cooking so as to keep ahead of the acid. You must be governed altogether by the condition of the milk. You have to use judgment in cheese making. You cannot put down a set of rules and go ahead and make cheese. You must use your head, your brains and your eyes.

I do not know but that is enough for me to say on the subject. Mr. President.

The President: I would like to hear from Mr. Aderhold whether he agrees with all Mr. Noyes has said.

Mr. Aderhold: I agree with everything he said that was the truth.

The President: Has anyone any questions to ask?

Mr. Parkin: In cutting the curd, what size cubes do you prefer for a normal working curd?

Mr. Noyes: Perhaps a quarter of an inch cubes and sometimes, even though milk is working entirely normal, we have to cut a little finer than at other times in order to get the proper cook. I would raise the heat gradually in order to get a good cook; I would not push the heat up and cook the curd on the outside and congeal the moisture in the curd. The temperature should be brought up slowly so as to cook the curd nicely all the way through.

Mr. Haven: What is your choice of setting for normally working milk and also gassy milk?

Mr. Noyes: In most any case I would keep pretty close to 86. I have set milk at 88 and worked it along there nearly a season but you need very sharp knives and very skilled action in order to do it. I think near 86 in any case is the best point to set milk at.

Mr. Haven: In Michigan we have been setting it at 86. Last winter we had at our convention an outside speaker from Canada who advised setting at 82 and taking an hour and a half to cook.

Mr. J. W. Moore: Do you mean that the cubes should be cut as fine as a quarter of an inch in normal working milk? Is that not exceedingly fine? Are not the knives half inch? Do you advocate cuttng finer than a half inch?

Mr. Noyes: We have not found it just right, but I advocate a quarter of an inch. In that case you never get exactly a uniform curd.

Mr. Moore: Don't you think it importannt to get a uniform curd? What reason have you for working your curd in a way that it should be cut as fine as a quarter of an inch curd?

Mr. Noyes: One of the greatest points is in getting a good cook. I found most of the men I employed would get the acid pretty readily but when I find a man who understands a good cook, ninety-eight times out of a hundred he is a good cheesemaker.

Mr. Moore: With a curd that stays two hours in the whey and gets reasonably firm if the cubes are a half inch, in case they are a quarter inch how much will that reduce the time?

Mr. Noyes: Quite a little. It gets it out of the way a little sooner, especially in summer when you have all kinds of milk I think the sooner you can get a good cook the better. I do not advocate rushing the curds, understand.

Mr. Moore: We are talking about normal curd, one that we could leave in the whey as long as we thought advisable to leave in regardless of gas. If you work it much faster than two hours in the whey will you not have excessive loss of fat in the whey by cooking so fast?

Mr. Noyes: I would not cook it fast. In cooking the curds fast if you take the particles and break them apart you will find the inside of those curd cubes soft and mushy. When you handle those you get a lot of butter fat out, you get out a lot of white whey. If you cut finer and cook a little slower you get better results.

Mr. J. W. Moore: If you cut a curd more than twice with vertical knives you cannot cut it uniform and you will have some fine curd particles that are all right and others soft, then you will hear some makers say "My milk is not working right; that curd was firm in the whey but when it came off it leaked on the racks. Why did it do that?" There were

some cubes there that were harsh and dry, others that were large and soft and when they were put on the racks they broke open and leaked. Of course that is an extreme case.

Mr. Noyes: I was never able to run a factory in the summer time and cut but twice with a vertical knife, taking a normal working curd.

Mr. Moore: Do you advocate using a quarter inch knife or cutting several times with a half inch?

Mr. Noyes: I prefer a finer knife.

Mr. Moore: In our experimental work we used a half inch knife and got a three eighths inch knife made, and there is a great difference in cutting with a three eighths inch knife.

Mr. Noyes: You must understand that you cannot compare experimental work with factory work.

Mr. Bruhn: How soon do you turn on the steam after you have the curd cut?

Mr. Noyes: Four or five or six minutes, let the whey get motion through the curd long enough so it will brighten up and be transparent in color.

Mr. Parkin: How long do you take to raise the temperature?

Mr. Noyes: About forty minutes.

Mr. Bruhn: Do you not get a better cook by setting at a low temperature than at a high. What was the object of setting at 88 when you did?

Mr. Noyes: Simply because I was making a peculiar kind of cheese.

The President: We will now stand adjourned until 1:30 o'clock this afternoon.

THURSDAY AFTERNOON SESSION.

Meeting called to order at 1:30 P. M., President Michels in the Chair.

The President: The first on the program this afternoon is a paper by Mr. Casper Stollenwerk.

DRAWING OFF THE WHEY AND HANDLING OF THE CURD.

CASPER STOLLENWERK, Medford, Wis.

Mr. Chairman, Ladies and Gentlemen: It is with great pleasure that I am here with you and hope to meet you all in many more conventions.

The subject assigned to me by your worthy Secretary is the Drawing off the Whey and Handling of the Curd.

Before drawing the whey we take it for granted that the curd has the proper cook and the right amount of acid. The finest and most difficult point in the making of Cheddar cheese is to get the proper firmness and the right amount of acid to come together.

When ready to draw the whey it is very important that the racks and rack cloths are in readiness. The curd should be kept well stirred to prevent it from matting at the bottom. Draw the whey down as much as you can before tilting the vat. When tilted the vat should be about eight inches higher at the upper than at the lower end. As soon as the vat is blocked the curd should be pushed down toward the lower end. The first section of rack should now be put in the upper end of the vat and covered with the rack cloth. Next take the curd pail and dip enough curd on so as to have the layer about six inches deep when stirred and leveled. This process is continued until all the racks are in place and the curd placed upon them.

As soon as the curd is matted enough to be handled without breaking, it should be cut into blocks, turned and again al-

lowed to drain. To keep the temperature and hasten the maturing we usually pile and repile the curd from three to five layers deep. Care must be taken not to pile and mat the curd too much, as this has a tendency to produce a weak bodied cheese. During this time it is necessary that the temperature is kept up near 100 degrees F.

When the curd tears like the cooked meat of a chicken's breast and has developed from one half to three quarters of an inch of acid it is then ready for the mill.

To handle gassy or tainted curds as well as a curd with an insufficient cook or too much acid, it is usually necessary to rinse the curd on the racks before allowing same to mat. The water used should be about 105 degrees F. and the curd must be well stirred when put on. This method of washing curds will wash out some of the taints and acid and get the curd firmer by expelling more moisture.

Should the curd have too much acid or an insufficient cook at the time of drawing the whey, it is necessary that the curd be stirred more. This can be best done by continued stir-stirring. At this time, however, it often becomes necessary to attend to getting out the last whey and to free the lower end of the vat from particles of curd. By attending to this the curd has a chance to mat, but should be broken again as quickly as possible. On a curd of this kind I would recommend not to have the curd more than four inches deep when leveled on the racks.

Should the curd get too much cook before the development of sufficient acid it may need but little and at times no stirring. Getting the curd too firm before drawing the whey is usually the cause of a corky or a tough texture in cheese.

The President: Have you any questions to ask Mr. Stollenwerk regarding this subject? If you have no questions to ask we will pass on to the next topic, a paper by Mr. William Winder, of Richland Center.

MILLING OR GRINDING AND SALTING OF THE CURD.

WM. WINDER, Richland Center, Wis.

The topic assigned to me by the secretary is, The Milling or Grinding and Salting of the Curd. To be properly understood, I wish to say, that the few remarks I have to make, are in reference to the making of summer cheese, as the bulk of our cheese is made during the warm months.

The cheese I aim at making is of firm close body and fat meaty texture, one that will cure or break down reasonably quick, and yet have good keeping qualities and improve with age when kept at proper temperatures, up to the age of several months. Cheese of this kind will I believe give general satisfaction to the majority of consumers.

If the curd has been well cooked and put on the racks in a curd sink with the right amount of acidity and stirred sufficiently to remove the moisture to the proper degree and properly turned and matted, I would expect to find it in condition for milling in one and one-half to two hours after removing it from the whey. It should be close and flaky in texture and have an acidity of .75%, or if the hot iron is used, a string of one and one-half to two inches. If the curd has been properly handled, the close flaky condition desirable at milling and the proper acidity should be attained in about the same length of time. Having these conditions I would mill immediately using a mill that would cut the curd into uniform pieces. A good mill should not bruise or smash the curd, but make a smooth clean cut and leave the curd in pieces of uniform size. It should also be easily and quickly cleaned. After milling the curd it should be well stirred so as to keep the pieces from sticking or matting together. In hot weather I would not cover the curd, but keep well stirred and exposed to the air. Keep the curd at a depth of five or six inches. If the curd has been properly handled from the beginning, high piling will not be necessary. Stir through it often enough to keep loose and free from matting. In about two hours after milling if the curd has been made from clean good flavored milk, it should be about ready for the salt.

It should have a nice mellow meaty texture, not soft but close and firm and should have a clean nutty flavor and the fresh butter flavor should be quite perceptible to the smell. If you have these conditions and the drippings from the curd show 1 to 1.2 per cent acidity it would do to salt. I do not practice washing or rinsing the curd. If a curd contains excessive loose white whey and fat, rinsing with a few pails of water before salting would be beneficial. I try to have the curd cooled down to 80 degrees or lower before salting. Now right here before we salt the curd, be sure it is ready and if you are not in a great hurry to get through it is time well spent to wait fifteen minutes longer. I have done it and I believe the majority of cheese makers have, that is to salt as soon as the curd will do. We may get a fair cheese, one that the buyer will not reject, but one-half hour longer before salting and the cheese would be classed as "finest."

In salting use a reliable brand of cheese salt, one of even grain and not too fine. Use two to two and one-half pounds of salt per one thousand pounds of milk. It may be necessary to vary this amount at different times and under unusual conditions. In determining the amount of salt to use, the maker must be governed by his past experience and good judgment. When ready to salt spread the curd out evenly over the vat or sink and apply one-half of the salt, spreading it evenly over the curd and stir through once and then apply the balance and stir several times to be sure of an even distribution of the salt. Pile the curd somewhat deeper and leave for a few minutes and turn again piling deeper. As soon as the salt has thoroughly dissolved and the curd again feels smooth and velvety, stir through once more and it is then ready for the hoop.

No hard and fast rules can be put down for the milling and salting of a curd. Experience and good judgment must rule.

DISCUSSION.

Member: What is the disadvantage in using fine salt?

Mr. Winder: As to the quality of the cheese I do not know that there would be any disadvantage if the salt was good and pure but you would have to use more salt as a larger propor-

tion of it would pass off in the brine. My idea is that the curd would not absorb as much of the fine grain salt.

Member: Why are you anxious to cool the curd to 80 degrees before salting?

Mr. Winder: I find in my experience in salting that you would have to cool it down before putting it in the press and you do not get good results by putting it in the press at a higher temperature, you are more inclined to get huffy cheese and lose more butter fat by putting it to press warm.

Mr. Bruhn: How do you manage to cool down to 80 degrees with room temperature of 96?

Mr. Winder. I do not believe I said I always get it cooled to 80 degrees. I said I tried to. In very hot weather you cannot get it that cool. You may cool your curd by rinsing with cold water. As I said I do not practice it although I did not say it was not a good plan.

Mr. Smellzer: Do you practice early or late milling?

Mr. Winder: Of course that would depend on the condition of the curd. If the curd had been a little fast worked and cooked and perhaps too much acid before getting the whey off, I would mill it early, but in a normal working curd generally about midway from the time of removing the whey and when it is ready to salt, or about one and one half to two hours according to cnditions.

Mr. J. W. Moore: What effect has milling early on the curd that has too much acid in the whey? Will it cause that cheese not to get acid, while with a late milling it would get acid?

Mr. Winder: I believe in milling early you allow the excess moisture that is usually in a fast worked curd to escape much better tthan if it is milled later. If you allow it to mat down before it is milled you are apt to get a sour, acidy flavor.

Mr. J. W. Moore: You think there would be a smaller per cent of moisture carried over in the cheese?

Mr. Winder: I could not say about the percentage of moisture but I am satisfied the acid would develop slower after it is milled than before and it is very likely there would be less moisture in the cheese, although I cannot say from experience.

Mr. Moore: How about gassy curd?

Mr. Winder: As a rule I mill a gassy curd when it gets acid, usually about the same time. A gassy curd I like to get out of

the whey with a little more acid than I do an ordinary curd. I like to have it well cooked.

Mr. Moore: You do not believe in matting your curd thin and matting all the gas out before milling?

Mr. Winder. No Sir, I do not. I very seldom pile more than two deep with any kind of curd.

The President: Mr. Noyes will now talk to us on the Paraffining and Storage of Cheese.

PARAFFINING AND STORAGE OF CHEESE.

H. L. NOYES, Muscoda, Wis.

Mr. Chairman, Gentlemen of the Convention:

The Subject assigned to me by Mr. Baer seems to have been pretty well threshed out yesterday both in the forenoon and in the afternoon, and I can say very little more than has been brought out by the argumnts of Mr. Moore and Mr. McCready. What little I have prepared I will read because I have prepared it but it seems useless to read what I have written after these discussions have come out.

Mr. President, Members of the Convention, Ladies and Gentlemen:

In the early nineties Boston and Philadelphia dealers began paraffining cheese with so much success that the method spread to such an extent that now nearly all the dealers demand that their cheese be paraffined.

I believe that Mr. Deland was the first to paraffine cheese in Wisconsin and was pronounced by him a success, and very soon after this all the dealers took it up.

All cheese should be cured a little before paraffining. As small cheese cure more quickly than large cheese they may be paraffined sooner after leaving the hoop, the larger cheese takes longer to dry out and cure so should be held longer on the shelves before paraffining.

If cheese are paraffined just as soon as they come from the hoop thy have no rind and the paraffine will not stick also the

cheese are likely to rot on the surface, and the flavor will not be as good.

Some cheesemakers seem to think if the cheese are paraffined they can finish them any old way, but it takes a nicely finished cheese to look nice after it is paraffined, as every defect shows through the paraffine.

To have your cheese look nice after paraffining you should have a cheese that is square, bright and has a nice firm rind.

It is claimed by experts that paraffine should test 124 degrees, that is, paraffine that will melt at that temperature; although some dealers use paraffine of lower test which will do in the winter time but would not advise any other time of the year. The harder the wax the nicer finish your cheese will have.

The question often arises where should the work be done, I should say the best place to paraffine cheese is in the warehouse or cold storage where all of the cheese will be done alike, no chance for the cheese to be paraffined too green, some factories get the paraffine on very thick so that it scales off and some of the cheese in hauling and shipping are liable to get damaged, dirty and the paraffine scraped off.

Before paraffining all circles should be removed, also any dust or mold that may happen on the cheese. Many makers in our section do not use circles; they leave the press cloths on until they are ready to ship, then they strip them off and box them at once, they will not face check because they seem to have a heavier rind, which is very desirable for paraffining and cold storage use.

There are several kinds of tanks used, any of which are good if the paraffine is kept at the boiling point or smoking point.

At our warehouse we use the tank with steam connections, that is with steam pipes on the bottom and sides of the tank.

We have a frame made to fit the tank so it will work up and down easily in the tank, adjusting with weights, and cords to correspond with the weight of the cheese, so that with a light pressure of the hands it may be forced into the melted wax and brought back with the weights very quickly.

The cheese should be placed with the sides resting on sharp corners of angle iron while it is being dipped, and remain there after being brought out just long enough to cool the paraffine.

The cheese boxes for paraffined cheese should be big enough to keep the sides from scraping the paraffine off when you put on the boxes.

For curing cheese in cold storage the best temperature is from 34 to 36 degrees F.

The best storage cheese are the cheese that are well made, good rind and good flavor, also cheese that are made in a clean factory, I know of a maker that keeps his factory in a very dirty condition, you look at his cheese when they are from one to three weeks old and they show up very nice, you put them in cold storage and at the end of six months they will smell just the same as his factory and you will have to sell the cheese for fish bait, so beware of dirty factories.

Soft cheese are put in cold storage in the summer by dealers because they cannot put them out to the trade but they do not make a desirable article and are liable to go off flavor.

Cheese that have too much moisture in them will rot on the surface which rests on bottom of box or in case of two in a box the surfaces which come together also will be affected, the same with cheese that are sour and cheese that have no rind.

You take a cheese that has been closely made, clean flavored, good texture and a good rind are the cheese at the end of six months or a year that are bound to give satisfaction wherever you put them.

Cheese should be put in cold storage just as soon as they are paraffined and kept there until they are ready for consumption.

Cheese with a poor texture and flavor are a good deal helped by putting them in cold storage, and sometimes a poor flavor nearly leaves them after being in cold storage six months.

The President: Is Mr. Kalk in the room? We will now listen to a paper by Mr. Kalk.

PRESSING AND BANDAGING CHEESE.

H. A. KALK, Plymouth, Wis.

Through the courtesy of Mr. Baer, I was requested, as an American cheesemaker, to write a paper on Bandaging and Pressing Cheese for this convention: As I am no orator, I hated to do so, but thought to please Mr. Baer, I'd do the best I could, and hope the audience will excuse me for all the blunders I may make.

The first thing we have to do is putting the bandage straight on the ring of the hoop and wrinkle that end of the bandage that goes to the bottom of the hoop, so it laps over about one inch and then see that the seam of the bandage runs straight up and down in the hoop.

Now we fill our hoops, put a little curd in first, and straighten that with your hand so you do not move the bandage. And see that you fill them all alike, and get them nice and even, they will look nicer and you will have less trouble in boxing your cheese.

The best thing is to weigh them all so as to make sure they are all alike. But this takes too much of our time, when you have to fill from 75 to 150 Y. A. or Longhorns a day. Then the man that does that every day can tell pretty nearly how much curd to put in each hoop. Now we are ready to put the cheese in the press, we put on a cloth circle one half-inch smaller than the hoop, then a clean follower. We put on a light pressure at first; for about fifteen minutes, then we set the continued pressure on our cheese for one-half to one hour, till we dress them. I am using the Automatic Press or better known as the McKinnow Press. I am using hot water to wash off the loose grease so the cheese close up better, I turn every other hoop in the press bottom side up so they press nice and straight.

I leave the cheese in the press from 10 to 15 hours, and when I take the cheese out of the press and find one that is not pressed very good, take it out and wash it in hot water and press it over again.

Never take a cheese to the curing room before you have a good finish on the cheese.

A well shaped, properly bandaged with good edges, and well handled cheese will sell for more money and give better satisfaction to cheese dealers and to the trade, than an ill shaped, lop-sided, and carelessly handled cheese, no matter how good the texture and flavor is.

The looks of a cheese can be improved by using clean hoops, clean followers and press caps, and will use ready made or sewed bandags as those are the only kind that will fit telescope cheese hoops and keep the cheese in good shape.

DISCUSSION.

Mr. Stollenwerk: At what temperature do you put the curd in the hoops?

Mr. Kalk: It just depends on the season. For a small cheese I have the temperature higher than for a larger cheese. For a big cheese in the winter I want a temperature of between 70 and 80 and for a small cheese between 90 and 95.

The President: At this time we will take up the next paper by Mr. Dassow.

BOXING AND SHIPPING.

R. P. Dassow, Sheboygan Falls, Wis.

The subject assigned to me, "Boxing and shippings," would at first thought seem unnecessary to bring before this meeting, but that is not the case. Inquiring with the dealers I am told that only one lot out of ten are boxed right.

After the cheese has left the hoop, well bandaged, straight, all defects removed, and ready to be boxed, care should be taken not to use anything but good clean smooth boxes.

That is very important as dirty or rough boxes will spoil the looks of the whole lot of cheese. Next give good weight, three-eighths or one-half over to allow for shrinkage. When boxing your cheese in a box have them all the same height.

Do not mark the weight on the box with a lead pencil, sometimes on one side of the box and the next time on the other, but put it on with a rubber stamp, always next to the lap or seam. The figure should be about three-fourths of an inch in size, it is a very easy matter and the rubber stamps do not cost much.

Have a stamp for each figure you need, for instance if you want to box daisies you will need only two or three say 19, 20 and 21, lay them always in the same place and it is done just as quick as with a pencil and looks much better, and they are always alike.

On the other side of the seam or lap, mark the date the cheese was made also with a rubber stamp, but the figure should be smaller then the other, about one quarter of an inch in size, you need not put on the month just the date, and if you make in two vats mark that also with a stamp A. and B.

The object of doing this is that when the shipment reaches the dealer he will not have to plug every cheese and ruin the whole lot, but he can plug one cheese from each day or each vat.

And if you parrffine your cheese at the factory and box them before they are cured you can find any day of cheese you want.

Another plan is to mark them from one to seven or from one to fourteen if you make in two vats, that would be all right if you ship every week seven days' cheese, but would you paraffine your cheese at the factory and box them before they are cured this is not satisfactory.

Shipping. Always haul your cheese on a spring wagon, or sleigh, to the warehouse or freight depot and cover with a canvas to keep off the sun and dust, also the rain. Handle with care, do not roll on wagon but send on end. If rolled on the cheese will get three cornered in hot weather where you box four in a box.

Where you paraffine at the factory it is very important that the cheese are handled with care as it is the only objection to paraffining at the factory.

DISCUSSION.

Member: How do you trim your box down?

Mr. Dassow: I do not trim them down. Years ago we used to trim our boxes but of late years most of the dealers do not want us to trim the boxes and for the reason that every factory does not do it good enough.

Mr. Waterstreet: How long do you allow the cheese to remain in the paraffine, Mr. Noyes?

Mr. Noyes: Dealers want to paraffine as hot as we can get it, cheese dipped and out as quick as possible. We paraffine cheese with the bandage on, which you do not, which may make a difference. I know in your warehouse they hold the cheese in a tank fifteen or twenty seconds while we never keep a cheese in the paraffine more than a second, just as long as it takes us to manipulate it.

Mr. Waterstreet: Don't you think by holding it in the paraffine fifteen or twenty seconds it would soak into the rind better?

Mr. Noyes: We do not have any trouble with that but you must be sure to have the paraffine very hot. We have something like ten factories bringing in cheese each week. Those cheese are all paraffined and there are only two factories out of the entire number that do this paraffining right, while I have seen some of those cheese in cold storage where the rind was rotten caused by paraffining while the cheese was so green they did not have any rind on them.

Member. Mr. Dassow is it not a good practice to put the dates on the cheese rather than on the box?

Mr. Dassow: No, because if on the box the dealer will not have to open the box to find the date. I might further state that this small date might be put right under the weight but I think it looks better on the other side of the seam or lap.

The President: The next on the program for this afternoon is the Influence of Dairy Farming on Morals by Mrs. E. D. Baker, of Edmund, Wis.

THE INFLUENCE OF DAIRY FARMING ON MORALS.

MRS. E. D. BAKER, Edmund, Wisconsin.

Delivered by Miss Lillie Baker.

When I received a letter from Mr. Baer, Secretary of the Cheese Makers' Association, asking me to write a paper on "The Influence of Dairy-farming on Morals," I felt almost as if I had been asked to wear my last season's bonnet, as I once read a paper before the Farmers' Institute on the "Influence of Farm Life on Morals." What was once said, if true, can be repeated and I beg your clemency if I repeat one or two paragraphs from that article.

What is true of dairy-farming is also true of all agricultural pursuits so far as family relations are concerned, and in speaking of the influence of dairy-farming on morals and on fitting the young for the great issues of life, I believe there is no place like the farm to inculcate those qualities of body and mind, those principles of honesty and virtue necessary to fulfill the requirements of a useful manhood and womanhood.

The prospective and the retrospective views of life are widely different. They are views from entirely different standpoints, and it is a great comfort in age to be able to look back on a well spent life. While no man can say he has made no mistakes, the head of a well regulated rural home where love is the keynote, and the Christian spirit rules, can as near come up to the standard of perfection as any living creature barring no exceptions.

The divine command to multiply and replenish the earth is just as incumbent upon the men and women of today as it was the day it was given utterance, and it is here we are privileged to live the life nearest the original plan. It is here we have all the elements required to develop and sustain the strongest characters; it is here we are brought into close relation with our children—where we can close the doors, so to speak, against the evils of outside influence.

Character forming is as peculiar unto itself as character judging. We never know when a person is going to form his estimate of our character, neither do we know what trifle is going

to influence the character of our child for life, therefore it is very important to keep a constant watch over our child, to strengthen those traits of character we want strengthened and suppress the traits not to be desired. Cultivation has more to do with your child than with your land, and we are the people who have the best implements for child culture. I maintain that the foundation of a person's character is laid and the habits well formed during the first twenty years of life, and one rarely sees a well balanced youth of twenty lead a life far wrong. The precepts of youth are too strong to be now overcome by evil associations.

Obedience is the fundamental law of good citizenship, and it should be the first thing taught a child. This is not always easy, but it can be done, not by cruelty or austere command but by love and firmness. "As the twig is bent the tree is inclined," and this is as true of child life as in plant life. A man would never give his child a horse to drive that had never been controlled, yet I have seen parents sanction marriage relations in their families where the contracting parties have seldom or never been controlled save by their own desires. If a man used as much care and good judgment in selecting a companion for life, and mother for his children, as he does in selecting a cow for his dairy the results would be better than we now have. In our little farming community around Edmund we have some of the very finest specimens of young manhood, and womanhood, I have ever met, and they have been raised on our dairy farms.

Wisconsin farms have furnished the nation some of its most illustrious men, and our community has done its share. I could name many who are at the head in their lines of work. The noted Dr. Frank Billings, of Chicago, was born and raised not three miles distant.

The late financial crisis brings no discomfort to the dairy farmer. Our cows go right along giving good rich milk—the cities must have our butter—we get our money and our child knows no fluctuation in the times, while almost every other industry is suffering, from the panic. There is a vast difference now in selling your cow for a canner or selling your milk in the can.

Child life should be studied by every mother. We are a part of a divine plan each to help perfect or mar the original scheme of creation. What part each individual takes in this divine plan

is to be determined by the individual himself, and the individual's life is largely determined by heredity and early environment, and it is on the farm we get the best results. It is here the son with his father, the daughter with her mother ,early learns the lessons of obedience, industry and self-reliance, the fundamental principles of good citizenship and usefulness.

I know a little of the feeling our city neighbors have for us and while our lives are not all joy we are the heathiest and happiest class of people I know. We are not isolated by any means. With advanced civilization we keep abreast with the times, and are surrounded by all the comforts and many of the luxuries of life. We miss the extremes of wealth and poverty both of which are injurious to the healthy, vigorous growth of body and mind. We miss the extremes of the tragedy and comedy of life, but we possess universal good fellowship with all mankind, a kindly interest in our neighbors and a degree of self satisfaction that amounts to great happiness.

Assuming that I am addressing dairy farmers and their wives let me say: Educate your children, give them the best in your heart and in your life. You cannot lay out a path for your child to take, you can only hope to guide him in the path he chooses.

The men of state, finance, commerce and the church are the sons whose early lives have been spent on the farm. The men and women who take up the burdens of the coming generation and carry on the immense scheme of creation are the issues we leave behind—the men and women raised on our dairy farms.

Mr. Baer: Something over two months ago, while making the preliminary preparations for this program, I wrote Mrs. E. D. Baker, of Edmund, Wis., for an address along this topic. At that time Mrs. Baker was very ill and she has been ill all of the time since. However, I am pleased to report to you that she is improving very much and she has sent her daughter, Miss Baker, to deliver this address rather than disappoint us, a courteous thing on the part of a perfect lady to do to an association of gentlemen; and I think it is a wise and a nice thing and a proper thing and a thing that we will be glad to do to thank Miss Baker and to send back to Mrs. Baker our best wishes for her speedy recovery to complete and per-

fect health, and I want to move, Mr. President, that we do this by means of a standing vote.

Motion seconded and unanimously carried by standing vote.

The President: We have with us the Honorable S. A. Cook, of Neenah, who was kind enough to give to the cheesemakers the three beautiful chairs you see on the platform, and we would be glad to have Mr. Cook say a few words to us.

ADDRESS.

HON. S. A. COOK, Neenah, Wis.

Mr. Chairman, Ladies and Gentlemen:

I thank you for this kindly greeting and I wish I had words that I might do justice to the occasion. I may have some ideas in regard to the production of butter and cheese, that if put in practice would be of some use, but I did not come down here to inflict them on you; however, I hope if time will permit and business affairs will permit and God spares my life to work out some of these ideas myself on my own farm with my own herd, and when I do come with these ideas and experiments I will come as a competitor, for I am a firm believer, my cheese maker friends and my butter maker friends, if there are any here, that quality has much to do with the demand and the demand has largely to do with the price on legitimate business. These are cold plain facts that you cannot get away from if you would.

I have been perhaps longer interested in this matter than some of you may think. I have been for the past year or two trying to get just the right kind of farm on which to demonstrate some of the things and I expect too that it is just possible that I am getting my experience cheaper than anything I would get if I had the stock. I am getting some experience as I go along. I have been through the country quite a good deal, learning what I could of the best method and if

the milking machine had been a success I would have been in it to a considerable extent before this.

In passing through I have tried to take down a few notes. I am not a public speaker. My life is a hard kind of life and for the last few months I had to give up farming to try to get funds enough out of something else to pay our labor, but in a few months we will be able to do more business, buy your products and pay a better price for them. I have a few ideas here which I would like to read to you. They are my ideas of what we must come to and if they do not fit any of you they will not cost you anything. If you will keep that in mind you will treat my remarks as gently as you can. It is a great pleasure to be here facing an assemblage of men and women who are interested in the higher development of one of the world's greatest branches of commerce—the profitable manufacture of pure, healthful, nutritious cheese.

It is a greater pleasure to know that the intelligent discussion of scientific theory, and the application of brawn and brains in practice by the members of this association, have resulted in giving Wisconsin a big area on the world's dairy map, and advancing her to the front column in competition for the finest quality of cheese sold in the great markets today.

There is not now a dairy region in the world that does not know Wisconsin is openly in competition with it, through her courageous, industrious, intelligent and persistent stock raisers, dairymen and cheese makers for the blue ribbon seat on the chariot of dairy progress.

Through your efforts, and the efforts of kindred associations, the cow with the crumpled horn, an udder like a fifty-year-old doodle-sack, a back filled with grubs and carrying a wagon load of fertilizer on her haunches at milking time has been pushed off the earth. Stables that had neither comfort nor proper sanitation have been removed from the farm. The crude and wasteful methods of feeding and caring for stock, and handling the produce of the dairy have followed the suggestion of the last wink of the tallow dip, and faded away.

All over the state of Wisconsin the pastures in season are beautiful with stock herds that challenge the admiration of the world. Stables ventilated and furnished with care equal to

that we bestow on our houses shelter such herds in the winter. Every ounce of nutriment in the foods supplied is saved and the kind of food best adapted for producing bone, muscle, milk and cheese is known on nearly every farm and fed there.

Out of one of the herds owned in Fond du Lac county, a cow has been bred, as you all know, that surpassed in 1907 the world's previous record in produce of butter fat, having produced in one year 1,200 pounds of butter. That represents a value of at least $300. The parents of that cow ought to be proud of her. But she never could have made this wonderful record if the disciplined brains of the dairy farmers and stock breeders had not been lent to her in care and food and encouragement. And the same reasoning can be applied to the record breaking cow of 1906 from Marathon county.

I congratulate the people of Wisconsin that they have an organization of cheese makers—an organization of men and women who are representatives from the largest number of citizens engaged in a single occupation in the nation. The people engaged in agricultural pursuit in the United States now number approximately 32 million.

I am proud to say you have done a great work and are destined to do a greater for in the great dairy state the industry is almost in its infancy when opportunity is considered.

You are educating each other to understand that it is not alone the large number of acres, or the large herd of cattle, horses, sheep or hogs that makes farming successful—that makes it possible for farmers to educate their children, furnish their homes with some of the modern conveniences of life and lift some of the burdens from the faithful wives and daughters, but more what can be realized in value in a given time from each acre, each cow, horse, sheep, hog and hen by careful selection and proper development. You are making farm life more respectable—if that were possible—by educating the farmer to respect himself. You are helping each other to see and understand that the farm presents greater opportunity for right development of the brain for service of humanity than any other occupation known. The man who can successfully manage a dairy and stock farm must embody peculiar ability. He must be capable of working hard and keeping a watchful eye over details. He must be an organizer who

knows how to direct and treat his workmen. He must be a good trader, knowing when and how to buy to the best advantage, knowing when and where to sell at the largest profit. He must understand finance and know how to keep accounts. He must know the course of public matters so he can direct the balance of power he holds in his ballot to compel legislation that will be fair to his interests and at the same time just to his fellow man.

The farmers who are all this are multiplying every year, and the country is richer in consequence. They are the men who are found to be capable of managing anything that emergency of neighborhood or nation imposes on them.

Farmers and dairymen who have their land and stock paid for, and are putting their brains into their success, should be the happiest men in the republic.

Business gets dull, and the merchant wears a bald spot on his block and patches on the elbows of his pants trying to figure a way out of his worries; banks may make unfortunate investment; receivers may take charge of great railroad and industrial enterprises and strive to figure a way out for the distressed stockholders.

But the successful farmer need not worry about such matters. He has a foundation that can not be disturbed. The bosom of his broad acres swells with abundance of produce, and the consuming millions buy the yield of his land and flocks and herds. He is a veritable monarch within his boundaries. His sons are developing splendid manhood under the finer suggestions that accompany a life lived near to nature, and his daughters are examples of virtue and womanly grace. His children are contributing to the country its best manhood and womanhood.

The farmer, the stock breeder and dairyman, who knows his business and owns his property can snap his fingers in the face the world's adversity. If he is not happy, if he does not eat the fat of the land in contentment because he is so great a benefactor of his fellow men, he is not living up to the full measure of his opportunities.

Wisconsin cheesemakers, my earnest wish for you is that you may continue in your great work of helping feed the 85 millions of the people of this blessed nation, each year with

added intelligence and greater prosperity, and that I may keep fellowship continually with you as a member of the Wisconsin Cheese Makers' Association.

The President: Gentlemen, the last speaker is the man that donated the chairs as premiums, as I announced before. I will further state that for many years he has been a member of this association and has shown that he has the welfare of the cheesemakers at heart by sending in a check for $25 every year and also $1.00 for membership. I think it would be no more than proper to give Mr. Cook a rising vote of thanks.

Mr. Cook: May I just have one word? While I thank you for these kindly words, yet I want to say to you in all candor that I was not giving those chairs for any particular benefit. The man that won those chairs could only get them by the merit of his work, and I contend that any man that wins one of those chairs is helping his neighbor, helping every man in the butter and cheese industry, helping the country, helping the state and the country and the cheese markets of the world. I am only doing my duty as a citizen of Wisconsin and receive my benefit by seeing our industry improved. (Continued Applause.

The President: The next topic on our program for this afternoon is a Simple Test to Determine the Casein in Milk, which will be demonstrated by Dr. E. B. Hart, Professor of Chemistry, Agricultural College, Madison Wisconsin.

A SIMPLE TEST FOR CASEIN IN MILK AND ITS RELATION TO THE DAIRY INDUSTRY.

DR. E. B. HART, Madison Wis.

Prof. of Agricultural Chemistry.

I presume that some of you present, especially the busy cheese makers, who have looked over this program and noticed its fullness with new tests and apparatus, have thrown up your hands in horror only to exclaim, when are we to have time to make cheese? But the business of milk production and the business of cheese manufacture will sooner or later demand more complete means than are at present available for arriving at the composition of its raw materials.

A great forward step in the dairy industry was made when the Babcock test was evolved. This simple method succeeded in doing for the butter industry what the more technical chemical methods do for other industries—that is to control the amount of any single constituent of commercial importance in the raw material. Today no industry managed on a sound business policy would think for a moment of buying its raw materials without first knowledge of the amounts of the desired constituents in such material. The payment for milk for butter production by the fat test has become practicable and is widely used.

Another thing the fat test is accomplishing of equal if not greater importance, is to raise the fat producing capacity of our dairy cows and to eliminate unproductive animals from our herds. By processes of selecting and weeding out, the average fat content of milk, we are told, has been raised at last a half of a per cent since the introduction of the Babcock test. It it also preventing the skimming and watering of milk by maliciously-intended persons. These are great accomplishments.

THE IMPORTANCE OF A SIMPLE CASEIN TEST.

Parallel with the introduction of the fat test, has come the attempt to grade all milks by the amount of fat they contain. It is highly proper that the valuation of any milk for butter manufacture or cream production should be made on the amount of fat it contains; because fat is the most important and principal con-

stituent of these products. But the proposition that the percentage of fat is also a measure of the value of nearly all milks for cheese production, has not been generally accepted.

ARE FAT AND CASEIN IN DEFINITE RELATIONS IN MIXED MILKS?

Cheese is made up almost wholly of fat, casein, and water. The first two constituents of milk control the yield of cheese under uniform conditions of manufacture. If the process of manufacure is varied, then of course the yield would vary, but the fluctuations in weight of the product produced will depend upon its water content, granted we are working with the same milk.

Experiments by several investigators have shown that at the same season of the year rich milks do not yield as much cheese in proportion to the fat they contain as do poor milks, but that a rich milk toward the end of the season may do as well as a much poorer milk earlier in the season. Dean of Guelph, Canada, and Dr. Babcock have concluded that uniformly a rich milk yields less cheese in proportion to the fat contained in it, than does a poor milk. (Show Chart.)

But why is this? The reason for these conclusions is to be found in the variable relation of the amount of casein to fat. Two lots of mixed milks may contain exactly the same percentage of fat, and yet the amount of casein will be quite unlike. (Average composite of milk, patron's chart.) As an illustration, one of the patrons at our University creamery delivered milk containing four per cent of fat, and 2.4 per cent of casein, while another delivered milk containing four per cent of fat and 2.9 per cent of casein. If we accept the simple rule for the calculation of the cheese yield for one hundred pounds of milk when the fat and casein are known—multiply the per cent of casein by 2.5 and to the result add the per cent of fat multiplied by 1.1—then the first milk would yield 10.40 pounds of green cheese, while the second yields 11.65 pounds. This clearly shows that for cheese production the amounts of casein and fat should be known to both producer—the man who owns the cows—and the man who buys the milk. The recognition of the fact that even mixed milks do vary in the relative percentages of casein and fat, is not new. The practical man, as well as the investigator, has recognized this in his observed yields, but he has only had re-

course to a single test, the fat test, to control his raw material, and of necessity was compelled to rely upon it alone. This suggests the supplementary use of a casein tesa.

However it is pretty well established, that herd milks rich in fat, are also richer in casein, and further believed by many that cheese made from the richer milk results in a product of finer quality, and should bring a better price so that in the absence of a simple casein test, there is consequently no question but that the most equitable basis for the valuation of milk for cheese production has been on its fat content. Pooling of milk at any time is to be discouraged. It is unfair to the producer and does not encourage the improvement in the qualiy of the dairy herd, and may work serious injustice to the buyer by encouraging skimming and watering.

DOES THE RELATION OF CASEIN TO FAT VARY IN INDIVIDUAL COWS?

In the milk of individual cows, there is certainly no definite and constant relation between the amounts of fat and casein. One animal may yield a milk containing 2.7 per cent of casein and 6 per cent of fat, while another produces a milk of 2.7 per cent casein and 4 per cent of fat, and still another a milk carrying 3.5 per cent of casein and 6 per cent of fat. These figures are actual analyses of milks of individual cows in the University herd. Expressed in another way, we have milks where for every hundred pounds of fat, there may be anywhere from forty-six to seventy-three pounds of casein. Surely it is clear that for cheese production a milk carrying for every hundred pounds of fat seventy-three pounds of casein, would yield more cheese than one containing but forty-six pounds of casein. This is not fiction. (Discuss Chart.) Shuttleworth of Canada and Hill of Vermont emphasized the variety some years ago.

But why emphasize this fact of the variation of the casein and fat content of milk? Simply this, that in the minds of not a few dairymen, cow's milk contains these constituents in a definite and fixed relation. That when the fat increases, the casein rises in a fixed and definitely related proportion. This may or may not be the case. It may be true if we average a great number of milks, but here lies our most important point, and that is, that it is not the average that is to guide us in our methods of improvement, but rather the exception and the

deviation from the average. The producer and the cheese maker who pin their faith to such a belief are in the path for progress. Normal milks vary greatly in their composition and are greatly affected by a variety of conditions, such as individuality, breed, advance of lactation, etc. The estimation of any single constituent, as fat, only allows us to guess how much of any other of the milk constituents is present. The breeder, through the Babcock test, has made a butter cow, one where the fat is unusually high, and he has done this by selection. It does not seem at all impossible that with a simple casein test, the cheese cow can be developed, one where the relation of casien to fat is especially high. Where for instance, instead of a milk with 73 pounds of casein per hundred pounds of fat, we can produce a milk containing nearer one hundred pounds of casein for one hundred pounds of fat. It is probably extremely rare that the milk from a herd of cows contains casein and fat in the relation of 70 or 80 to 100, but it certainly is not uncommon in certain strains of certain breeds and among individuals in any breed, to find as high or a still higher relation. And here lies at least another important field for a simple casein test.

Another matter of considerable importance in the discussion of the relative amounts of casein and fat in cow's milk presents itself, and that is the relative commercial values of these two bodies. Both casein and fat are important foods, casein belonging to that generally more expensive class of nutrients—the proteids—and popularly called the flesh builders. Yet at prevailing prices at our creamery a pound of fat is worth 25 cents, while a pound of casein as allowed for skimmed milk at 30 cents a hundred is worth about 12 cents. If we allowed the same value for fat in cheese as it commands in butter, then the casein per pound in *whole* cheese is worth about 18 cents. On the theory that the feeding or nutritive value of these two constituents depends on the amount of heat they can produce, the fat could have about double the value of casein, but nutritive value and heat producing capacity are not with certainty to be so closely correlated.

On the basis of cost of production it is a fair assumption that it has cost the feeder as much to produce a pound of casein as a pound of fat. The proteins to which casein be-

longs, are nitrogen containing bodies and are the farmers' most expensive nutrients. When the farmer sells casein he is selling nitrogen, but when he sells fat he sells his cheapest source of nutrients—the air and water. It appears that there is something irrational and unbalanced in the relative commercial values of these two products. From the farm point of view the sale of casein is a greater agricultural drain than when the fat is sold, and from this view point alone it would appear that these two milk constituents should at least have a closer commercial value.

I am well aware of the fact that there are many factors entering into the valuation of commercial products,—a pound of protein from a lobster is worth commercially 8 times a pound of stew beef protein,—but it hardly seems rational that the milk constituents, when made into butter, whole cheese, or fed as skimmed milk should have values so widely divergent.

THE TEST.

PRINCIPLES INVOLVED IN THE METHOD.

1. Construction of tube and scale whereby percentages of casein in the milk are read directly.

2. Establishment of a proper volume of milk to be used that will conform to the tube and scale adopted allowing percentage of casein to be read directly.

In summarizing what I have said to you today, I beg to make clear; *First,* that milks vary in their composition, both as to the amount of casein and fat, *Second,* that casein and fat are not in a fixed and definite relation in milk, that we may have an increase of fat without a proportional increase of casein and that the actual composition of such milks can only be known by distinct and separate determinations of each of these constituents. *Third,* that there is a commercial difference between milks and this commercial difference is of such importance to the buyer of the raw material that he should not fail, if he is to father a keen business policy, to take cognizance of this fact. *Fourth* I think, that, admitting the variable composition of milks, we cannot deny that the fat test, as a basis for payment for milk for cheese production, has its limitations; but should we discard it or refuse to accept it? Most certainly not. We

should all adopt it. It is far and above the best guide we have today for this valuation. It not only, from actual data already shown, establishes the fact that milks rich in fat, increase the cheese yield, though perhaps not always proportionally, but it stands as an implement for moral regulation, a guard against fraudulent practice, against skimming and watering, which is a protection to the cheese maker, as well as a bonus for the cow owner and producer of richer milk.

As a Canadian authority in dairying has well said,—"should the hungry man refuse the half, because he cannot have the whole loaf and thereby starve?" Again I must say, most certainly not. *Fifth*, the ideal is the fat test, supplemented by a casein test, and this ideal we hope may soon be realized. Should the casein test that I am about to show you, fail because of impracticability, or unreliability, I still believe that the cheese makers of this state and the dairy interests in this state will profit most by the adoption and use of the fat test.

Still further, until the casein test has had the stamp of approval placed upon it by other experimenters than ourselves, although I believe, when properly conducted it is a reliable test, I do not advocate its hurried adoption at the present time. There are no patents or royalties pending, and none to be taken out. No manufacturer monopolizes any part of the apparatus. But I desire to be conservative in this matter; I am going to show it to you today as what I believe to be an accurate test and the solution of a very vexed problem and possibly an instrument for higher production of casein and should any of you desire to put it into practice, you are most certainly free to do so. It is simple and operative by the unskilled, but it requires care and is not absolutely fool proof. It will not stand abuses, but I do not know of any test that will, and give results at all accurate. The test itself is founded on a few simple principles. The principles involved are the use first of a simple glass tube of that construction (illustrates) in which, in the bottom bulb of barrel shape, is a scale that is measured off reading from one to ten, and carries the percentage marks of casein in the milk directly on this scale. The principles involved are these, that milk when mixed with any acid curdles and if, after curd-

ling, a proper contrifigual force is applied to that the casein drops into this little graduated tube in a pellet from which can be accurately read the exact amount of casein in the milk. The chloroform that we first add is added for the purpose of relieving the fat that is present. You understand that when you precipitate milk with an acid or as when you make cheese by adding rennet you coagulate the casein and incorporate the fat mechanically in the cheese. If the fat is incorporated in the fat mass, as it would be here, without any solvent, then there would be an increased reading due to the fat itself. That is avoided by the use of a solvent for fat. You know if you have a grease spot on your clothes and put chloroform or benzine on it it dissolves it, and so chloroform is used in this test. We accurately add 2 cc. of chloroform in the tube and then place on top of that solution a solution of very dilute acetic acid. Acetic acid is purified vinegar. However, we do not use vinegar but use acetic acid itself, which can be purchased as glacial acetic acid at 45 cents a pound. A pound of acetic acid will make some nine thousand determinations, so the expense of the acetic acid is absolutely nothing practically. That solution is made very dilute. If you take 10 cc. of glacial acetic acid and dilute it to 100, and then 25cc of that solution and dilute it to ten times 100 you will have the proper proportion. We add 20cc. of that solution on top of the chloroform.

Since the machine is a centrifigual one it is necessary to balance and it is necessary to run two in order to have the machine in perfect balance, so we have to prepare two tubes. Here we have the two sets of chloroform and dilute acetic acid. Here is a sample of milk that we got here in town, and we add accurately to that solution 5 cc. of milk. This of course must be accurately measured. Now we have the milk in the dilute acetic acid solution. It has become curdled. The chloroform, however, rests on the bottom, not mixing at all with the other constituents of the solution. In order to bring the chloroform in contact with the curdled mass and dissolve them, it is necessary to shake them. To do that, just place the thumbs over the barrel of the tubes and shake vigorously for fifteen seconds, no longer. Better look at the watch to have the proper time because if you shake longer you have an emulsion which is a little difficult to break up and is liable to

give you an indistinct reading on the bottom of the tube. This is one of the essential factors in making the test, that the shaking must not be longer than for fifteen minutes. The chloroform has disappeared, it has broken up in the form of emulsion through the mass, but it has dissolved the little fat globules.

An important factor in the test, besides the shaking, is the proper temperature. This test is regulated for 70 degrees. That is the temperature of the acetic acid and the milk should be 70 degrees F. That is the temperature that should be regulated by the thermometer. If you have properly regulated the temperature and precipitated the casein, which should not have taken you any more time than preparing a Babcock test, and you have prepared the tubes in that way they are ready to go in the test. This tester is one that we had built ourselves. The first one was made by the Creamery Package Co. and I notice they have another one here today. This one is made to go directly into the ordinary Babcock tester. They are made stronger than the Babcock tester because of the high speed at which the machine must run.

An essential factor in the determination is that the diameter of the wheel here must be a definite diameter. The test is so regulated that the diameter of this circulating wheel inside must be fifteen inches. That is a standard diameter, fifteen inches, if we are to turn the machine two thousand revolutions per minute, and the test is set for exactly that condition. A fifteen inch machine turning two thousand times per minute. The tubes now have commenced to settle, the casein has commenced to precipitate but we do not see any chloroform. We put the tubes in the casein tester; be sure ot give them a turn and get them down onto the bottom. I told you that the principle on which it is made is that you apply definite force within a definite time. The force that is applied is a revolution of two thousand times per minute for seven minutes. In order to regulate the speed of the machine it is necessary to have some point, and this is in the shape of what is called a metronone, which is used by music teachers for regulating the speed to make it easy for the child to follow in getting his music lesson. This metronone beats at a certain speed, fifty-five or fifty-six times a minute is the correct number for the number

of revolutions required. The test can then be begun. Start the machine at rather a low speed in order to see that everything is adjusted properly. I told you it was necessary to turn seven minutes after you got the proper speed. After you are in harmony with the machine it is necessary to turn for seven and a half or eight minutes, and after you have turned for that length of time, stop the tester, take out the tubes and let them stand for about ten minutes, and then read. You read, just as you would with the Babcock test, the percentage of casein directly in the milk.

DISCUSSION.

Mr. Marty: I would like to ask whether the temperature of the milk used for testing for the casein has any influence on the per cent of casein found in the milk?

Dr. Hart: The temperature is a very decided factor in influencing the accuracy of the test. The temperature that was chosen as the one most suitable is 70 degrees F., which is usually the normal temperature of the room. A few degrees above that or below may be allowed for an accurate test. Of course it is necessary that the milk be approximately the same temperature as the acetic acid solution.

Mr. Aderhold: Is it necessary to make a test frequently? Is there much variation?

Dr. Hart: I do not think the casein fluctuates from day to day in the milk of an individual cow. If your herd represents a select herd that is not being filled up by other cows, constantly changing your cows, the test does not vary very often, I think there is surely not a daily fluctuation. On the individual cow the casein test seems to be rather constant; it rises with the period of lactation but I think an accurate estimate of the casein produced by any cow can be made by testing at least once a week or once every two weeks. I do not consider it necessary to make a test oftener than that.

Mr. Aderhold: It would not be necessary to save a composite sample?

Dr. Hart: I do not think it would.

Mr. Haven: Then in a factory buying milk by the test, do you think a casein test once in two weeks would work satisfactorily in connection with the Babcock test?

Dr. Hart: The casein does not fluctuate the same as the fat but where a patron was bringing in new cows to his herd it would be necessary to make the test more often.

Member: Can we use a composite test?

Dr. Hart: A composite test can be used if you use the proper tablets, but if you use mercury, chloride tablets or sublimate tablets it cannot be done as it is better to make the test on fresh milk or milk only preserved a few days.

Mr. Dassow: According to that, we could probably pay our patrons on both these tests. Would that be an equitable basis for the payment of milk in cheese factories?

Dr. Hart: I am not going to discuss that. Dr. Benkendorf has a paper that will deal with that question.

Mr. Wallace: Are there more than six bottle machines made?

Dr. Hart: This is the first machine ever made by the Creamery Package Co. with six bottles. If they make them for more bottles they will, of necessity, have to change the diameter of the whirling disc, then the speed will have to be multiplied.

Mr. Aderhold: At the time of the invention of the Babcock test, nobody realized its value. This is a new invention and we do not know today what it is worth, but I have a resolution that I would like to offer, Mr. President.

WHEREAS, Professor Hart, of our State Experiment Station has invented a simple and inexpensive method of testing milk for its casein contents, and

WHEREAS, said invention promises to be a very valuable factor in the promotion of the dairy business in general, and

WHEREAS, In this invention the State of Wisconsin has through its Experiment Station been again brought prominently before the world as a leader in dairy thought.

Therefore, be it resolved, That our thanks are due and hereby tendered to Prof. Hart for his Casein test.

On motion, duly seconded, the resolution was adopted as read.

Dr. Hart: May I say one word, please? I want you to be conservative about this. At our station we are the only ones that have adopted this or worked it out, it has not been tried anywhere else in the country and I want you to wait until the approval and stamp of accuracy has been placed upon it by other stations. Do not be in a hurry. You have done a long time without it, now wait a year or so more.

Mr. Chas. Becker then introduced a German dialect monologist who entertained the audience for several moments and received a great deal of applause.

The Chairman: The next on the program for this afternoon is an address by Prof. G. H. Benkendorf.

AN EQUITABLE METHOD FOR THE PAYMENT OF MILK DELIVERED AT THE CHEESE FACTORY.

PROF. G. H. BENKENDORF, Madison, Wis.

In Charge Wisconsin Dairy School.

If we look over the programs of the Cheese Makers' conventions which have been held in this city for the past few years, and also the programs of the Butter Makers' conventions, held at various places over the state, we will note that both harp on the production of pure milk, the proper care of the same, the sale of its products, and kindred subjects.

There is, however, a topic discussed almost exclusively at cheese makers' conventions, which is not frequently discussed by the butter makers, and that is the proper method for the payment of milk delivered. I have looked over the cheese makers' programs for several years and notice that last year Professor Farrington was on for the topic entitled "Calculating Cheese Factory Dividends," and in the course of his paper he brought out what he deemed to be an equitable method

for the payment of milk. Two or three years previous there was another paper entitled "Cheese Factory Accounting," which practically amounted to a discussion along the same line.

It is usually a difficult task for the man who gets up the programs to introduce new features so they will not become monotonous. Our Secretary, however, deemed, inasmuch as the casein test was perfected by Professor Hart during the past year, that it would be entirely proper to introduce the subject of the payment of milk again this year. There is no question but what this will be threshed over and over again for years to come because, after all, I believe it is almost impossible to devise a method for the payment of milk that will be absolutely equitable and at the same time practical.

The payment for milk is such a complex problem that when looked at from one side it has a different aspect than when viewed from another, and it all depends on the points of view taken by the patron and the owner whether or not they will be satisfied as to the method adopted for the payment of the milk at the factory. There is no question, therefore, but that some of you may disagree with some of the statements in this paper. I, therefore, hope that when the question is open for discussion you will all feel free to express your opinions.

There are several methods for the payment of milk in use at the present time, which may be briefly mentioned. They are,

First, The pooling system, or buying milk at a flat rate of so much per hundred regardless of the quality of the milk.

Second, The payment for milk according to its fat content as determined by the Babcock test.

Third, The addition of 2 to the fat content, as proposed by Professor Dean of Canada.

Relative to the first method—that of paying for milk at a flat rate of so much per hundred—it is hardly necessary to say that this is not an equitable way for the payment of milk. The solids in milk which determine the yield of cheese vary so much that it is impossible to establish a flat rate that is in any way fair to all concerned. Yet in this state, the home of the Babcock test, there are stlll many cheese factories that pay for their milk at a flat rate.

The second, or the one whereby we pay for the milk according to its fat content, as determined by the Babcock test, is undoubtedly not only the most equitable but also the most satisfactory in use at the present time. This method for the payment of milk is so well known that an explanation is not necessary. Yet there are certain phases that we may discuss with profit.

To justify this method we frequently see the following table showing the yield of cheese from milk varying in richness. These cheese were made at the Dairy School, first, by the late Professor Decker; another set was made later by Mr. Baer; then by Mr. Noyes, Mr. Moore and others, and approximately the same results were obtained each time. It is as follows:

TABLE A.

Yield of cheese from milk varying in richness.

100 lbs. of milk, testing 0.1 per cent fat	5.5 lbs. cheese.
100 lbs. of milk, testing 1.0 per cent fat	6.7 lbs. cheese.
100 lbs. of milk, testing 2.0 per cent fat	8.0 lbs. cheese.
100 lbs. of milk, testing 3.0 per cent fat	9.2 lbs. cheese.
100 lbs. of milk, testing 4.0 per cent fat	10.9 lbs. cheese.
100 lbs. of milk, testing 5.0 per cent fat	12.4 lbs. cheese.

While this table does in a way show that the yield of cheese increases according to the fat content of the milk, we believe that it is not altogether a fair comparison because most of the cheese were made from abnormal milk and therefore the results ought not to be taken too seriously.

It is a favorite theory of the Holstein and Ayrshire breeders that milk from their herds is better for cheese than milk from the Jersey or Guernsey breeds. The 13th annual report of the New York Station gives the following figures, which may prove interesting:

TABLE B.

Yield of cheese per lb. of fat from milk produced by cows of different breeds.

Breed.	Per cent fat.	Lbs cheese per 100 lbs. milk.	Lbs. cheese per 1 lb fat.
Holstein	3.36	9.54	2 84
Ayreshire	3.60	9.98	2.77
Shorthorn	4.44	12.03	2.71
Guernsey	5.30	13.05	2.46
Jersey	5.60	13.62	2.43

From this table you will observe the gradual increase in the amount of fat per hundred pounds from 3.36 to 5.60, or a difference of 2.24 per cent between the Holsetin and the Jersey. You will also notice the increase in the yield of cheese, showing that 100 pounds of Jersey milk, testing 5.6, made 13.62 pounds of cheese while the 100 pounds of Holstein milk, testing 3.36, gave a yield of only 9.54 pounds; or, in other words, the Jersey milk produced 4.08 pounds of cheese more than the Holstein milk. Therefore there is no fair minded man who can in any way claim that the man that delivered the Jersey milk ought not to be paid more for his milk than the man who delivered the Holstein milk. However, if we notice the pounds of cheese made per pound of fat we observe that there is a gradual decrease in the amount of cheese made per pound of fat as the milk gets richer. In other words, the Holstein milk gave a yield of 2.84 pounds of cheese per one pound of fat and so on down the line until we come to the Jersey milk which produced only 2.43 pounds of cheese per pound of fat. This is, so far as I know, very reliable data.

Dr. Babcock, of our own station, published in the 11th Annual Report of the Wisconsin Experiment Station the following table:

TABLE C.

Yield of cheese from milk testing different per cents fat as found from 347 factory reports.

No. of Reports.	Test of milk.		Cheese lbs,.	
	Extreme.	Average.	Per 100 lbs of milk.	Per 1 lb. fat in milk.
24	Under 3.25	3.1	9.19	2.9
90	3.25–3.50	3.4	9 23	2.7
124	3.50–3.75	3.6	9.41	2.6
43	3.75–4.00	3.8	9.81	2.56
46	4.00–4 25	4.1	10 30	2.51
20	Over 4.25	4.4	10.71	2.41
		3.64	9.56	2.6

Now, gentlemen, please bear this in mind that all these cheese were made from normal milk and not from abnormal milk. There is no question however, but that under ordinary conditions a more palatable cheese can be made from milk that is rich in fat content than from poor milk, and therefore it should receive a better price.

We must also bear this in mind that although this may be a fact we find that actually a buyer when he goes to a factory in Sheboygan or Kewaunee county makes little distinctio as to whether or not the cheese was made from 3.5 per cent milk or 4 per cent milk, so long as the flavor is good and the cheese up to his standard.

These tables, showing that the yield of cheese decreases as the richness of the milk increases, are the strongest arguments against payment for milk according to the fat content. If these tables showed the same yield per pound fat whether the milk was rich or poor in fat, then no objection could be raised to the payment of milk according to this method.

Professor Dean of Canada sought to overcome this objection by adding 2 to the fat content and using the sum as a factor in making the computations. To illustrate, if a man's milk tested 3.5, he would add 2 making it 5.5 and use this number, 5.5, in the same way that we would use the test 3.5, when paying to the fat content.

This method would be quite satisfactory if the casein content of the milk was only about 2 per cent and if it did not vary in different milks. This, however, is not a fact because, as Professor Hart stated in his paper, it varies a great deal with the milks of different cows. Therefore the method is nothing more or less than paying for milk by the Babcock test and pooling the casein.

There is no question but what this method puts a premium on the adulteration of milk by the addition of water. It is very evident that a party having 4 per cent milk may add sufficient water to reduce the fat content to 3 per cent and in that way receive more for his milk than he otherwise would. This is possible because the factor 2 is always constant no matter whether the milk has been adulterated or not.

Inasmuch as Professor Hart has a method for the determination of casein in milk, which may prove to be practical and satisfactory in the hands of a man of ordinary intelligence, it may be well to look forward to the payment of milk according to both its fat and casein content. It is not the intention at this time to urge the adoption of this method, for we believe the invention should be given a thorough trial both in a practical cheese factory and at other experiment

stations than our own. Therefore we think that it is well for the cheese makers to look into this matter and watch this test closely so that they will be in a position to judge intelligently whether or not such a method is an improvement over those already mentioned.

This method for the payment of milk is very simple and consists in testing the milk for fat and also ascertaining its casein content. The two are then added together and the sum used as a factor. For instance, if the casein content was 2.5 per cent and the fat test 4.5 per cent, we would add the two together and get 7.00, which factor we would use in the computations. It is very evident, therefore, that by this method the patron is paid according to the pounds of casein and fat which he delivers. In no way can he adulterate his milk and be benefited, for should he add water, he would simply reduce both the fat test and the casein test.

In order to bring this matter before you in a more definite way I have prepared a table, showing the various amounts that patrons would receive according to the four methods mentioned.

TABLE D.

A comparison of the different methods for payment of milk delivered at cheese factories.

	White.	Black.	Brown.	Green.	Total.
Fat tests	3.00	3.00	4.50	4.50	15.00
Casein tests	2.00	2.50	2.50	3.40	10.40
Cheese yield	8.30	9.55	11.20	13.45	42.50
Value of cheese at 12 cents per lb	.996	1.146	1.344	1.614	5.100
Pooling method	1.275	1.275	1.275	1.275	5.100
Fat (only)	1.020	1.020	1.530	1.530	5.100
Fat + 2	1.108	1.108	1.441	1.441	5.098
Fat + casein	1.004	1.104	1.405	1.586	5.099

It is assumed that each patron delivered 100 pounds of milk varying in casein and fat content.

The cheese yield was found by multiplying the casein content by 2.5, to which was added the product obtained by multiplying the fat by 1.1. This method of determining the cheese yield has been found in practice to be approximately correct. The value of the cheese was obtained by multiply-

ing the cheese yield by 12, assuming that each pound of cheese was worth 12 cents. The sum of the four values is $5.10. This amount is then divided according to the different methods. We notice that in the pooling method, inasmuch as 400 pounds of milk were delivered, we divide the $5.10 by 4 and get a value of $1.27½ for each hundred pounds of milk regardless of its richness or the casein content. You can easily see, therefore, that Mr. Green delivering the rich milk should have received $1.61 when in reality he received only $1.27½.

According to the fat method for paying for the milk we find that White and Black both received $1.02 and Brown and Green $1.53, although the milk that Green delivered made 2.25 pounds of cheese more than the milk that Brown delivered and he should have been paid accordingly.

By the fat plus 2 method we would pay Mr. White $1.11 and Mr. Black the same, although as can be seen one delivered milk having a casein content of 2.00 per cent and the other 2.50 per cent. Similarly Brown and Green each received $1.44. In both cases it is plain that the man delivering the milk with the richer casein content does not receive his proportionate share.

In the fat plus casein method we notice that each one is paid a different price and the man delivering milk with a low fat and a low casein content does not receive as much as the man that has a higher casein content although he may have the same amount of fat.

In comparing the varying amounts paid these farmers, according to the different methods, with the actual value we note that the greatest variations from the actual value occur in the pooling system, which proves that under this system the greatest injustice is done. We note also that decidedly more variations occur in the fat plus 2 method and the straight fat method than in the fat and casein method. It is therefore very evident that this fat plus casein method, if it can be made practical, is the most equitable way of paying for milk at a cheese factory yet proposed.

In order to show the difference between the amounts received by the patrons and what they actually should have received, the following table has been prepared.

TABLE E.

Table showing differences between amounts received by patrons and what they actually should have received.

	White.	Black.	Brown.	Green.	Sum of diff.
Pooling system	.279+	.129+	.069—	.339—	.816
Fat system	.024+	.126—	.186+	.084—	.420
Fat + 2 system	.112+	.037—	.097+	.173—	.419
Fat + casein system	.008+	.041—	.061+	.028—	.138

(In the above tables the plus signs indicate the amounts the patrons received in excess of what they were justly entitled to and the minus signs indicate that they did not receive their share.)

If more accurate results are desired than obtained by the fat plus casein method, as illustrated, it will be necessary to multiply the fat test by 1.1 and the casein test by 2.5; add the two products together and use the sum as a factor in making the computations. Such a method would prove to be too laborious for ordinary use.

According to the fat plus casein method, the fat and the casein are placed on an equal basis pound for pound. This may be offered as a criticism against the method, but we do not think that the objection will hold inasmuch as it actually costs a farmer more to produce one pound of casein than it does to produce a pound of fat. A pound of casein removes more fertility from the soil than does a pound of fat and at the same time it is also more valuable to the cheese inasmuch as it is the casein in the cheese that really makes it so nutritious.

Taking everything into consideration we believe that we are entirely justified in placing as much value upon a pound of casein in the milk as upon a pound of fat. There will always be some slight differences, but we believe that this method comes nearer the real value of the milk than any other method yet proposed.

DISCUSSION.

The President: We have had a very interesting talk, gentlemen, and this topic ought to bring out lots of discussion. We have Professor Benkendorf here to answer any questions we desire to ask.

Before opening this discussion, I desire to announce that Mr. Carswell, the treasurer, will be at Room 78 of the Republican House, tonight from 7:30 to 9 o'clock to pay the pro rata funds.

Are there any questions you desire to ask Mr. Benkendorf?

Mr. Kasper: Has not the care of milk almost as much to do with the yield of cheese as anything else?

Prof. Benkendorf: I cannot tell. I think you can get more cheese from milk that is well taken care of than milk that does not receive good care for the reason that losses in the fat will not be so great. I am not a practical cheese maker, never made cheese in my life, but I understand that milk that is well taken care of has a better yield. I think any cheese maker will bear me out in that.

Mr. Kasper: If the factories would adopt that casein test, don't you think we would be back where we started ten years ago? Would it not have a tendency to have farmers breed cows with a lower per cent of butter fat?

Prof. Benkendorf: It would have a tendency to have farmers breed cows that would have both more fat and more casein. This test does not put aside the Babcock test in the least, we have it as well, the Babcock test to determine the fat and Hart test to determine the casein, and one would have to use both these tests to determine the value of the milk. We cannot put aside the Babcock test and adopt the casein test, we have to pay attention to the fat conent as well as the casein.

Mr. Anderson: Before you can apply this casein test, which do you consider the method nearest correct in paying for milk?

Prof. Benkendorf: You mean to ask which method is the most equitable for paying for milk outside of the casein test? I think the fat test is the nearest right. There are a good

many objections to the fat test only and I have pointed them out in my paper. I showed that the amount of cheese made per pound of fat decreased as the milk gets richer and therefore one can make more cheese from 3% milk than from 5% milk, everything else being the same; but if we do not adopt the casein test I think the Babcock test is the best way to pay for milk. Combining the Babcock test and the casein test, we have an ideal way if we pay according to these tests.

Member: For instance, if a man had 500 lbs. of milk and skimmed it thoroughly by running it through a separator, he kept the skim milk on the farm, mixed the cream thoroughly with water until it tested 5% by the Babcock test, how much cheese could be made out of that? Skimmed milk is supposed to be worth 35c per hundred for feeding purposes, while water is very cheap.

Prof. Benkendorf: I do not think I understand the question.

Mr. Dassow: It seems to me the gentleman wants to make out the patrons want to cheat the cheesemaker by keeping the skim milk and casein at home.

Prof. Benkendorf: There is no doubt but with the Babcock test, when you add two to the test according to the Dean method, a patron would cheat the factory; but with the Babcock test and the casein test if water is added to the milk there will be but little butter fat content and lower casein content and the patron will not be paid a cent more for his milk than it is worth. If you skim the cream off your milk you are not going to get so much fat and although you may get approximately the same amount of casein in the milk you are not going to gain anything there. You simply take away the fat and if you add water to the milk you are going to cheat the casein.

Mr. Dassow: It seems to me the gentleman thinks if he takes the casein out he will cheat the cheesemaker.

Prof. Benkendorf: He will only be paid according to the casein.

Mr. Haven: We people from other states recognize the fact that Wisconsin is bringing in a good many new ideas to dairy work. You brought out the Babcock test and the casein test, and it seems you have a method for manipulating milk

and cream, or at least it has been thought of, and you may have to fall back on the old lactometer test.

Mr. Corneilson: As I understand the gentleman, he thinks he can bring cream reduced with water to a cheese factory, and cheat the cheesemaker. That cannot be done. I would not give much for the services of a cheesemaker who did not know enough to see that was diluted goods if he offered him cream diluted with water. In such a case the cheesemaker ought to call an inspector and have the matter settled through the courts.

The President: I would like to ask, before we go farther, in removing the cream from the milk, how that man would expect the precipitation on the part of the rennet in that cream? Is it a possibility to precipitate cream with rennet?

Member: In manufacturing brick cheese, Swiss cheese and Limburger cheese during the warm weather our patrons bring their milk to the factory twice a day, the last coming generally about night fall. The patrons have no time to cool their milk down, they do not propose to cool their milk and you cannot cmpel them to do so, so that it comes to the factory at about 90 degrees. Well you are not going to put a thermometer in there if it is a little higher and you cannot take a lamp or candle and examine it thoroughly at night. With American cheese the milk must be cooled properly, as cream, being lighter than water, it will float on top the same as oil on water; but in Brick, Swiss or Limburger cheese the milk comes at practically the same temperature as it is drawn from the cow, and sometimes gets in as late as eight o'clock in the evening.

The President: In manufacturing Swiss cheese, the custom of delivering milk twice a day has become so common that it is the belief that the milk must be manufactured into cheese immediately after being drawn from the cows. This is not the case, nor is it necessary. However, the short time which elapses between the time the milk is drawn from the cows and when it is manufactured into Swiss cheese is hardly sufficient to develop any lactic acid, therefore it is not necessary to cool that milk; but Swiss cheese is very successfully manufactured in many places where the milk is delivered only once a day.

Under these conditions, however, the night milk is properly cooled and delivered in separate cans the next morning.

If there are no other questions we will close this discussion and listen to an announcement by Mr. Chas. Becker, of this city.

Mr. Becker: We have with us a gentleman by the name of Professor Martini who will entertain us a few moments, but I want to warn you gentlemen to look out for your watches. I take pleasure in introducing to you Professor Martini.

The convention was entertained for about half an hour by Professor Martini with slight-of-hand tricks, etc., which he afterwards explained, and which were very mystifying to the audience.

ELECTION OF OFFICERS.

MR. S. B. SHILLING called to the Chair.

The Chairman: Gentlemen, if we can have your attention for a few minutes we will soon dispose of this business. I want to say to you, before we commence, that it was with a great deal of reluctance I consented to take this position during the election of officers. I felt that it was presumptuous on my part, a man from another state, to step into the chair of the highest office of your organization, yet I feel honored to be permitted to preside over an audience of the size and intelligence of the Wisconsin Cheese Makers' Association and, as the hour is late, we are going to get down to business and carry on our elections as fast as possible.

The first office to be filled is that of president. Nominations are in order.

Mr. Aderhold: Mr. Chairman and Gentlemen: It is said that a fashion must run two years. It has been the fashion for the past year to have a strawberry blonde for president and that fashion has not yet run two years. Two years ago I had a strawberry blonde after me pretty hot and heavy; he had a

strong following then and I believe he has yet, and I want therefore to place in nomination at this time the name of Mr. J. B. McCready, of Sheboygan.

Nomination seconded.

The names of Mr. E. A. Aderhold and Mr. Fred Marty were also placed in nomination, but both gentlemen declined the nomination.

The Chairman: Are there any other nominations? If none, I will declare the nominations closed and according to Robert's Rules of Order you may elect viva voce.

Votes being called for, Mr. McCready was unanimously elected president of the association.

The Chairman: The next office to be filled is that of vice-president. Nominations are in order.

Mr. Myers: You all know a gentleman who has been working among you for a number of years and has done exceptionally good work. He has been connected with the dairy and food department, was treasurer of your association for two years and vice-president for one year, and I honestly believe we can make no mistake in continuing him in office, I therefore nominate Mr. Fred Marty, of Monroe to elect himself.

Nomination seconded, and there being no other nominations vote was taken and Mr. Marty was declared elected vice-president for the ensuing year.

The Chairman: The next to be elected is your secretary. Who will you have to fill that office?

Mr. Sherwood: I nominate for secretary the gentleman who has served us so well the last several years, Mr. U. S. Baer of Madison.

Nomination seconded and election unanimous.

The Chairman: We now have the office of treasurer to fill. Nominations are in order.

Member: Mr. F. E. Carswell is one of the most conscientious, painstaking dairy workers we have in the United States, and I place his name in nomination for treasurer only regretting that I cannot nominate him for Congress.

Nomination seconded, and election of Mr. Carswell was unanimous.

The chairman: There is to be a director elected to fill the place of Mr. John Grootemont whose term of office expires. Will you please nominate a director?

The names of John D. Cannon and Mr. John Grootemont were both placed in nomination, and nominations duly seconded, and tellers were appointed to count the ballots, as election was by ballot. The tellers appointed were Messrs. Larson, Noyes and Becker, who reported sixty-six votes cast, thirty-six of which were for John D. Cannon, thirty-two for John Grootemont and one for M. Michels.

The Chairman: As this finishes our business we will now stand adjourned until tomorrow morning at 9 A. M.

FRIDAY MORNING SESSION.

Meeting called to order at 9:30 A. M. by President Michels.

The President: We have two numbers on the program left over from yesterday, one of which is Dr. Kletzsch and the other a paper by Mr. Benkendorf. We will first call on Dr. Kletzsch, of this city, to give us an address.

ADDRESS.

DR. G. A. KLETZSCH, M. D., Milwaukee, Wisconsin.

Mr. Chairman, Ladies and Gentlemen:

I came yesterday to your meeting with a great deal of hesitancy, not knowing what I wanted to say, or whether what I did say would be in line with your thoughts, ideas and interests; but, after listening to several of the papers of the afternoon, I found that I was directly in line and the thoughts that I had jotted down on paper were directly of interest to your worthy body, but before I commence I would like to answer a few of the questions that were put and a few of the statements made yesterday.

First, in regard to the statement made by Mr. Cook as to the success of the milking machine, I have had six or eight of the B. L. K. milking machines in use on my farm for a year and I can say that they are an absolute success. I know from experience that the milking machine is very much better than the average milker and that the objections to the machine are not well founded. For instance, one that I will pick out as to the drying up of the cows earlier than usual. That is not the case. I do not know whether the agents for the B. L. K. milker are here but if they are here they will be able to bear me out in that statement.

Another question asked by one of the gentlemen present was whether the age of milk had any influence on the casein in the milk, and I do not believe that question was answered as positively as it should have been yesterday. We deal with casein in our nursing milk every day in the year, and we know from experience that old milk does not give in quantity and quality the casein that fresh milk does and I can say from my own experience that the fresher the milk the more profitable it will be for you to use it, because of the quality and quantity; the quantity is diminished and the quality deteriorated by letting it stand.

Another point that came up yesterday was in regard to the casein test. I believe this is a very fine thing and I am glad to see again that the men connected with our university have come forward and I believe you gentlemen will appreciate that test more in the future than you do today.

The subject of the address which I was asked to hold before your worthy body was left to me for selection. At first, I thought I would make some remarks upon the bacteria which are found in milk under different conditions. But, after a thorough consideration, I concluded that for all that this is of great importance from the hygienic standpoint, it was not of that practical use to you which other questions might have. So I chose the broad subject of Milk and will relate to you my experience in its production and handling. Before I take up the practical part of my subject, I will make a few introductory remarks. Milk is one of the grandest products which Nature produces and, in consequence, the cow is one of the most useful animals we have. It is the only product of its kind upon which man can live indefin-

itely and exclusively, for it contains all the elements necessary for the upbuilding and sustaining of the system.

When in its natural form, Milk is the keystone to the health and welfare of the whole nation and it is a wonder that the method of procuring such an wholesome product has been nearly entirely ignored for thousands of years. We have already approached the twentieth century before the public has been aroused to the necessity of requesting the regulation of the production of such an important food article.

What is it, then, that requires such drastic measures and has lighted the flame which is agitating the whole world at the present day, It is because milk is not produced from healthy cows; it is not produced in healthy surroundings; is not produced from healthy feed and is produced in very unclean ways and, as before stated, does no incalculable harm brought to the market as a result of such untoward conditions.

It will, therefore, not be amiss to have such an important subject discussed by an outsider and to get his views on the article which forms the foundation stone of your productions. The composition of milk is well known to you all. That it is made up of Butter fat, Casein, Salts and Water, need hardly be stated. The layman thinks that the Butterfat is the most important part of the milk and if rich in this article, he considers the milk good. We all know that the casein contained in the milk is what gives to it its highly nourishing qualities. It is the Protein in the milk and upon this is based its food value. When milk is unclean, contaminated or highly infected with bacteria, the casein is the part of the milk which is affected and changed in its character. In consequence, its nourishing properties are diminished. Any growth of bacteria in milk is at the expense of the casein. It is, therefore, imperative to prevent such changes or run the risk of handling an inferior milk and getting inferior products out of it.

The first question which arises can a normal milk be produced? Is it within the reach of the average farmer and we can say every farmer, to produce a healthy product? Can the authorities who regulate other things request the compliance with certain conditions through which a normal milk can be delivered? Will such requirements produce hardship upon the farmer? Many more questions of the same sort could be put, but these are enough to illustrate what I wish to get at

and that is that the requirements necessary for the production of a wholesome milk are not such, that they are not within the reach of every farmer who enters upon this particular branch of industry. The conditions which should exist on every farm where milk is produced and for whatever use it may be put to are the following:

1st, A healthy cow.
2nd, Sanitary surroundings.
3d, Wholesome feed.
4th, Clean milking.
5th, Proper care of milk after produced.

These few requirements are not exactions but every farmer can comply with the same if he wishes to. It is not necessary that a revolutionary spirit should be introduced, but a general compliance with the above requirements should be sought for. It may be possible to bring about good results by appealing to the pride and conscience of the farmer, and if this is not possible, I do not see why the product of the dairy farm should not be graded and each farmer rewarded for the kind of milk which he produces. A thing of this kind cannot be instituted by the individual but must be required by the association, and I am sure it would be a step in the right direction for an association of this kind to adopt such measures. They certainly would find a hearty support of the public at large.

It is of the utmost importance for whatever purpose desired, to use the milk as soon after milking as possible. This is what we are obliged to do in the production of our Nutricia Nursing Milk. In this preparation we endeavor to have the milk as pure and fresh as is to be had. Old milk, unless kept very cold, undergoes so many changes of a bacteriological as well as chemical sort that the milk in its nutritive properties is changed and also in its chemical composition. In warm milk the bacteria multiply very fast; for their propagation they use up the best part of the milk. The excrements which they leave back are of a very poisonous nature and affect the good qualities of the milk in many ways.

Professor Backhaus of Berlin, Germany, a scientist of high repute, and who as a physician made the study of infant feeding his life work, originated, after years of toil, the process,

which is used all over the world in making Nutricia Nursing Milk. In many cases and in many lands, Nutricia Nursing Milk takes the place of mothers' milk and is the nearest approach to breast milk which is possible to be had. A short description of the process employed might be of interest to you. For it is with the casein we deal and the changes brought about in it, that has made the results so marvelous.

The first requisite is a "whole milk," termed in Germany "voll Milch," which signifies that the product used must be milk and nothing more nor less. This means a normal product of a healthy cow, procured under sanitary surroundings.

The casein is the element which gives to the milk its nutritious properties. This is the part, however, which proves so hard to digest for the infant. You use the casein and get it from the milk by coagulating the same and precipitating it. We use a ferment and dissolve the casein, making the milk contain more soluble casein than ordinarily cows' milk contains. In mothers' milk there is normally a large percentage of soluble casein and hardly any insoluble casein. We endeavor to approach the normal mothers' milk as nearly as possible. After the action of the ferment on the casein, is completed, we then coagulate the balance of the casein left and remove it from the milk, so that the infant does not need to burden his stomach with this extraneous substance. In other words, I am allied to you in the use of casein, the only difference being that you work with the solid substance and I work with casein in a liquid form.

The process employed is as follows: In order not to make any changes in the other ingredients of this milk which are not wanted, the milk is skimmed by running it through a separator. The skimmed milk is then warmed to blood heat and the ferment added, which is allowed to act on the casein for thirty minutes. Then that casein which still remains undissolved is precipitated and removed from the whey in the form of a curd. To the prepared whey the cream is again added and the milk is ready for the bottle in which it is thoroughly sterilized, so that Nutricia Nursing Milk when properly prepared and put up will keep in a cool place for a long time. As the infant requires different qualities of milk as it grows older, we put up different grades to conform to its wants. The

character of the different kinds simply differ in the amount of the nourishing matter present.

In order to get "whole milk," I established the Nutricia Farm at Theinville, Wis. There I endeavor to carry out the above stated requirements which are necessary to get a wholesome product. When I bought the farm, the present buildings were on the land and they were of the same kind as the majority of farmers have them. I simply changed the old buildings, and made them as sanitary as possible. My herd, which consists of a hundred cows or more of grades, is tuberculine tested by the State Sanitary Board. The feeds which I use is ensilage all the year around, clover and alfalfa hay and of the concentrated feed, bran and ajax food. My milking cows are stable fed all the year round. These now number about seventy and are milked by milking machine. The springers I keep on my annex farm adjoining the Nutricia Farm where the stable arrangements are the same, however.

I am not, however, in the dairy business for that alone. I wish to exercise an influence upon the farmers in my neighborhood to follow my methods in dairy farming. From experience, I know that the changes which are necessary to be made by the farmers in order to come up to the above requirements are not beyond their means to make.

Now I would like to sugest to this worthy body, that each of you in your respective districts exercise also an influence upon the farmers who supply you with milk, to make gradually such changes in their stables and with their herd in order to come up to the requirements asked for. And if these farmers who comply and deliver to you wholesome milk, designate their product as whole milk. In Germany, this term find universal application and has proven beneficial.

I should be pleased to have all of you pay the Nutricia Farm a visit and see for yourselves what can be done with regular farm buildings and herds. I will also be pleased to supply you and the members of your association with floor plans for the arrangement of their stables. I know, now, after having first had experienced architects, carpenters, masons and concrete mixers that the same changes can be made much less expensive by regular workmen, when I changed my annex farm only this fall to the form of the Nutricia Farm. If your milk sup-

pliers would combine they could easily and with comparatively small expense, change their buildings and their herds gradually so that in a short time they would supply whole milk and with the modern arrangements, double their capacity and supply you with twice as much as you are getting today.

I have here some barn plans that are very suitable. A barn built on these plans furnishes accommodations for sixty-eight cows, and if the association desires I shall be glad to turn these plans over to your secretary and let him have photographs of this made, or I will have the photographs made myself and supply each of you individually with enough cuts so you can give them to your farmers so they can work on that plan, and I know it would be of benefit to them.

Mr. Dassow: I would like to ask the doctor whether it would be necessary to put boards on the cement floor where the cows lie?

Dr. Kletzsch: The floor under the cow is covered with concrete but on top of the concrete there are planks, and that is one thing I neglected to state and that is to be sure when you put in concrete not to forget to put in drain tile below. That is the most important thing I know of. I have had, as I said, a great deal of experience. I built a farm up North at Summit Lake, Wis., where we have our summer home and I have lost more money by the imperfect building of the barns up there in cows and a large number of pigs and poultry and sheep I keep, I have lost a great deal of money on account of the bad, moist condition of my concrete floors. At my farm near here I laid drain tile through each one of these roads, not only where the cows lie but also under the floors, underneath the feeding alley and right around, so I have eight or ten rows of three inch drain tile running from West to East, and you can stand in that barn, housing sixty-eight cows and two bulls, three or four box stalls filled with cows, and not have one particle of odor of the cow. It is not the ventilation in the ceiling that keeps it in that condition, it is the dry condition of the cement floor, and those cows are as healthy as they can be and they stand there day in and day out, with the excep-

tion of two hours each day when they are driven into a little park. I do not graze my cows at all, simply let them have a little airing. Where the cows lie there is planking.

Mr. Shilling: How far under the floor are the drain pipes laid?

Dr. Kletzsch: Just below the concrete. The concrete is six or eight inches. The drain tile must be in the ground because that is where the water collects.

Mr. Dassow: I would like to ask one more question. In our neighborhood the farmers are disregarding the planks under the cows. Their floors are dry but they are not having good results without the planks, although they have been doing that now for a year.

Dr. Kletzsch: Mr. Kickheffer, who has the Edgewood Farm, one of the finest in the world, has his old barns with the half where the cows lie planked and the other half concrete; but I believe the new barns he is building, one of which was completed last summer, have planking all the way through. I think he even discarded the concrete at the upper end and now makes plank all the way through.

The President: If there are no other questions we will go on with the program, and the next feature to be taken up is the introduction of your new officers.

Mr. Baer: First, Mr. Chairman, I would like to read a letter from the Citizens Business League of Milwaukee.

Milwaukee, Jaunary 8, 1908.

Wisconsin Cheese Makers' Association, In Annual Convention,
Milwaukee, Wisconsin.

Gentlemen: Again the Citizens Business League has the pleasure of extending to you a most cordial welcome to the city of Milwaukee for your annual convention and again, we take pleasure in asking that your next convention be held in this city. We are convinced that the very satisfactory conditions under which your conventions are held here, the marked growth in your membership and the growing interest in your association has demonstrated the peculiar fitness of Milwaukee

as the place in which to hold your annual sessions. We beg to assure you that as in the past we shall always take pleasure in co-operating with you to make your conventions here successful in every respect. We wish your association continued prosperity and all of your members a Happy and Prosperous New Year.

Yours very truly,
CITIZENS BUSINESS LEAGUE,
R. B. Watrous,
Secretary.

INTRODUCTION OF NEW OFFICERS.

MR. CHAS. BECKER, of Milwaukee, Chairman of Committee.

Mr. Becker: Mr. President, Ladies and Gentlemen and Cheese Makers of Wisconsin,—There has been a committee appointed, and it seems the committee has done me the honor of allowing me to introduce your new officers. I take great pleasure, therefore, in introducing to you the man who has been elected to serve as your president for the ensuing year, I take pleasure in introducing to you Mr. J. B. McCready, of Sheboygan.

REMARKS.

J. B. MCCREADY, Sheboygan, Wis.

Mr. Chairman, Ladies and Gentlemen:

I do not know that I need an introduction to the cheese makers of Wisconsin. However, I appreciate the kindly manner in which Mr. Becker has introduced me and I wish to say I believe I know the majority of you and those whom I don't know I want to get acquainted with. It will be to our mutual advantage to be individually acquainted. I would be glad to have any one who does not know me come up to me and call me "Mac," for that's my name usually when I am at home, and if I am acquainted with you you will have an opportunity to tell me your likes and dislikes, and your little troubles. If I can help you in any way I shall be only too glad to do it.

I do not think there is a man in the audience who is not well acquainted with "United States" Baer. That is one of the advantages he has and that is one of the secrets of the success of this organization, that he is personally acquainted I believe with every member, and it gives him quite an advantage. I want the same advantage.

If I were satisfied that this was the most important office in your institution, I would be rather chary of accepting it but I know it is not; the most important position is filled by the best man in Wisconsin for that position, your secretary. All I can do is help him and I am going to endeavor to help him to the best of my ability.

We have a membership, I think, this year of over five hundred; I want to see it just four times five hundred while I have anything to say in the matter. I know there are at least two thousand cheese factories in Wisconsin that must have two thousand cheesemakers, and it is pretty nearly time that the cheesemakers in this state were putting a little money to one side, if it is only their tobacco money say one day a week for fifty-two weeks, in order to come down here once a year. I think every member here will return again next year; try and bring someone else with you. Get them to come quietly if possible, but if they will not come that way take a club and drive them. After you get them here we will keep them.

In closing, I want to thank you all for electing me to this office. I trust and hope I will be worthy of the confidence you have placed in me; I shall endeavor, at any rate to feel worthy of that trust.

Mr. Aderhold: How about the blonde hair, Mac?

Mr. McCready: Mr. Aderhold I want to thank you for your kind remarks about the strawberry blonde. They tell me that about every ten years blonde hair is in style and after it becomes the style it remains in for about five years. That is what they tell me. However, mine is fading and I believe that probably one year will hold me.

Mr. Becker: I take pleasure in presenting to you next a man you all know. He has been your vice-president for one year and now you have placed him in office again. I take pleasure in introducing to you Mr. Fred Marty.

REMARKS.

FRED MARTY, Monroe, Wis.

Mr. Chairman, Ladies and Gentlemen:

I can only say again that I thank you for the honor you have done me in electing me once more for vice-president. I assure you that anything I can do for the association I shall gladly do. Being elected once more puts me in mind of a story:

At one time there was an army marching over the plains, commanded by a certain general. In some way they had strayed away from the fort which was their destination, and did not know exactly where they were, so finally they asked a man whom they met how far they were from this fort and he said "About four miles straight ahead." They kept on marching and after they thought the four miles had been covered and still they could not see the fort, they met another man and asked him how far it was to this place they were seeking and the answer was "Four miles straight ahead." The general kept on marching his army and after marching a couple of hours, with still no sign of the fort, he met a third party and asked him how far it was to this fort, and still the reply was "About four miles straight ahead." Turning to his army the general said "Well, boys, thank the Lord we are holding our own." That is my position, I am holding my own. I thank you.

Mr. Becker: We have now a man who belongs to us, U. S. Baer, our secretary. I take pleasure in introducing to you Mr. Baer.

REMARKS.

U. S. BAER, Madison, Wis.

Mr. Chairman and Gentlemen:

I don't know how long I am going to stand for all these bouquets that have been thrown at me. I am not a speaker, as is your president; I am not good looking, as is your vice-president, and a whole lot of this credit that has been given me largely belongs to the men behind the gun. I have been extremely fortunate in all the years I have served you, including this last year especially, in having a wise man as president, at the head of the organization, to give me counsel and advice. All along the line the officers of the association have always given me most excellent advice, counsel and assistance.

I certainly appreciate the honor you do me. It is hard work. It has been expensive work for my pocketbook for a number of years in a way, but yet, as the meetings grow larger and as the enthusiasm grows and the fame of this organization becomes greater, I feel more than amply repaid, and I today realize that I never before have been called to the discharge of any duty which requires a more conscientious exercise of all that is in me than this. I assure you that I shall try my level best to give you better service this coming year than I have ever done before. I want to remain yours to serve for 1909.

Mr. Becker: We have another officer with us, you all know the fellow that gets your dollars. I take pleasure in introducing to you Mr. F. E. Carswell.

REMARKS.

MR. F. E. CARSWELL, Richland Center, Wis.

Mr. Chairman and Gentlemen of the Convention:

As you all know, I am not a public speaker and I am not here to make a public address, but I do thank you sincerely for re-electing me as treasurer. This position came to me unexpectedly a year ago and you have seen fit to retain me in it, and I feel very grateful for the compliment. I am glad to

serve you to the best of my ability. This association is growing larger and stronger, more renowned and we are famous. I trust that another year, with the accommodations that we will receive here in Milwaukee, that this association will be half as large again as it is this year.

I do not know you all personally but I believe a good many of you know me because I have been after your money, but those of you whom I don't know I want to come and make themselves acquainted and I shall be pleased in any way I can to assist you. Gentlemen, I thank you.

The President: We will now call on Mr. Benkendorf to explain to us a new Method for Determining the Moisture in Cheese.

A NEW METHOD FOR DETERMINING THE MOISTURE CONTENT OF CHEESE.

PROF. G. H. BENKENDORF, Madison.

Mr. Chairman, Ladies and Gentlemen, Members of the Convention:

Your secretary thought it might be interesting to the members of the convention to explain to you what is termed the Wisconsin High Pressure Oven. This oven was designed to determine the moisture in butter. Little attention was paid to the cheese side and in fact I have made very few determinations for cheese moisture. I do not know very much about cheese making and I do not know whether it would be at all advisable to advocate trying to incorporate more moisture in cheese. I think it would be in a way detrimental to try to incorporate more moisture in cheese than the cheese normally would hold. However, that is for the cheesemakers to determine themselves. This method was designed for determining the moisture in butter and practically the same way will determine the moisture in cheese.

This particular oven was manufactured by the Creamery Package Manufacturing Co., of Chicago, but other ovens are also made. We have had some made by King and Walker,

of Madison, so I do not want to exactly advertise this oven but I want to explain how it is made and you can determine the principle.

The chemist, when he makes a determination, takes a small sample and places it in a water bath. This has to be at 212 degrees F. A determination for butter takes several hours and by using a water bath for cheese it will take sometimes two and three days to make a determination that is at all accurate, that is it takes about two days of having it placed under the water bath before the water will be evaporated. With this method it only takes a few hours. The reason this method will evaporate the water faster is because a higher temperature is used. As I said, with the water bath the temperature is 212 degrees but with this method a temperature of 250 or more is necessary.

The principle on which it is founded is very simple. You have all heard the story that if you go up the mountain the higher you go at a lower temperature the water will boil, that is if you go high enough you cannot cook coffee, the atmosphere is so light. The reverse is true, if you put water under pressure, the higher the temperature required to boil it. At low pressure the water will boil at 200 degrees F., at 5 lbs. pressure it will boil at 215 or 216 degrees, so if you go to 60 lbs. pressure you have a temperature of 270 degrees F. and, inasmuch as water will evaporate at 212 degrees, you can easily see the water will evaporate very readily.

On this particular oven, we have a plate below and a plate above connected with a pipe and these two plates are set so they will stand 100 lbs. pressure, and we connect steam here and have the steam pipe running off there. In this way the part in here (illustrates) will be under steam pressure. Then by having live steam under pressure you have pressure of 270 degrees. This part here (illustrates) is not under pressure and the small plates are placed inside with sample and will evaporate very readily.

In order to make a determination, a cheesemaker will take a sample of cheese or butter and weigh it out. Say we weigh out ten or fifteen grams in this small aluminum dish and put the dish in the oven. You can make four or five determinations, if you care to, at once. I have made as many as fifty

or sixty determinations of butter at one time. All you have to do is to weigh the sample in this dish, put it in the oven, turn on your steam and go about your work. After a while you can take it out and weigh your sample again and the difference in weights will be the amount of water evaporated; then if you care to, you can put it in the oven again, leave it there for a while and then weigh it again to see if there is any further loss. After a while you will know just how long it will have to stay in the oven, about two and a half to three hours will tell the story. Sometimes it depends on the temperature, if you have a higher temperature it will not take so long, and after your sample is done you weigh it and the difference will be the amount of water evaporated, the per cent of which can be easily obtained.

Now there are no patents or royalty on this. It is given freely to the public, anyone can purchase it and use it. It has given very good satisfaction in testing cheese; we have made quite a number of determinations and we come within a close per cent of the amount of water in cheese. Of course if you do not want to incorporate any water in cheese, which I hardly think it is advisable to do, I do not know that it is going to be of much value to you, but if you want to determine the moisture in cheese here is a method you can use without much bother. It is simple, has no chemicals, glassware or anything to bother with and it will last a long time. If anyone would like to ask any questions I am free to answer them.

DISCUSSION.

Mr. Cornielson: How is the sample of cheese taken?

Prof. Benkendorf: As I have said, I have never made many determinations of cheese. I have worked mostly with butter but Mr. Michels has made all the determinations for cheese in the scoring exhibitions and can probably answer that question better than I.

President Michels: I spent a number of weeks trying to find out which would be the best way to take a sample of cheese. I was told and believed at first that there was quite

a good deal of difference in the amount of moisture in different parts of cheese and especially in cheese that had been laying on one side, that the lower side would contain the most moisture. I tried a good many ways and even with the Long Horns that were resting on one end for two weeks I found no difference in the top or lower plug, that is a plug taken from the bottom and another taken from the top of the cheese. The way I sampled all of them was to take a simple cheese trier, take out a plug and put ten grams in one of the small dishes, put the sample in the oven until it turned brown. It takes some experience to know when the moisture has all evaporated; it is quite hard at first but one soon gets accustomed to it and by keeping close watch of the oven one can easily see when the moisture has all evaporated.

Gov. Hoard: By what process would you determine if cheese was lacking in moisture?

Mr. Michels: I find the average good cheese has a little more than one-third moisture.

Gov. Hoard: By what process would you determine if the cheese was deficient in moisture?

Mr. Michels: The same process would show. We have had some that contained a trifle over 32%.

Gov. Hoard: It would seem that we need some process by which we could determine quickly if the cheese was lacking in its proper proportion of water. Would this determine that?

Mr. Michels: This can only be used after the cheese is made up.

The President. We are very glad to see Ex. Governor Hoard in the audience this morning and we would like to hear from him at this time.

REMARKS.

HON. W. D. HOARD, Fort Atkinson, Wis.

Mr. President, Gentlemen of the Convention:

You take an old fellow like myself that was in at the birth of this state, in 1872 saw the cheese industry consisting of a few factories, and now look over the situation and see such a convention as this which this industry has evoked, and I might almost say with Stephen of old "Now, Lord, let Thy servant depart in peace for he has beheld the glory of the Lord." It is a remarkable contrast in my mind.

I remember with keen recollection my first effort to establish cheese factories in Wisconsin; I would go out in the school districts and talk to farmers, trying to get them to organize, and from that day to this the same principle has been holding good, the proposition of organized knowledge. The difficulty with the farmers and cheesemakers and the people of Wisconsin in 1872 was there was no organized knowledge, there were no organized minds, there was no organized study. I was a cheesemaker and a butter maker from my youth up in New York. I came to Wisconsin in 1857 and I might almost say that the average person in the state would hardly know a cheese if he met it in the road, and sometimes it could be found moving along very well. From that day to this the great struggle has been in the mind of the individual, the mind of the cheese maker, the mind of everybody connected with this industry to establish a clear organization of judgment and understanding. To do that your humble servant worked to the best of his ability, and we have today a state that stands without a peer in this Union or on this continent in the several points of its excellence. I will enumerate. We have the best dairy school in the United States in Wisconsin, we have the best bulletins, the best experiment station, the best dairy and food commission and I drew the bill originally; we have the best organizaions in its butter makers' association, its cheese makers' association and its dairymen's association. Your association is without a peer, and we have the best progress of any state in the Union. It is a proud picture to look at and I want to congratulate you young men, for I see

before me mainly young men. I remember of reading in the old Sanscrit literature this thought from a Persian author "Wouldst thou search in the book of prophecy for the fate of mankind read it in the faces of the young, for in them it has unfurled the coming of the years." Now I read in your faces. I am an old man, past seventy-one years of age but with a heart still young. My wife says that anybody can tell who has had the trouble of bringing up the family when they look at her hair and mine. She is a very knowing woman, and like most good mothers she is very close to the truth, but I have grown old in the service and I have never been able to do one hundredth part of what I wanted to do. I have never been able to create that degree of interest right back at the beginning of the industry, on the farm in the hearts and minds of the farmers, that I wanted to do.

In my lecture work in Canada and in the Eastern states, in particular, I have always found the people were looking to Wisconsin for future triumph, future discussion, future influence and future progress in great dairy interests of this country. It is a tremendous interest, gentlemen. We have a right to be proud if we are identified with it and I think there is no garter of knighthood or accomplishment in this nation that is of a higher degree of distinction than to stand steadily by the progress of agriculture, and particularly of dairy agriculture. I want you to feel proud, I want you to feel encouraged, I want you to feel elated with hope. Now we find that the great department of agriculture at Washington is coming to an understanding of the magnitude of this great industry and they see, men of genius and intelligence like President Roosevelt and others, men of broad minds and clear understanding, that the hope of this country lies, as James J. Hill and Samuel Alderton said in a recent number of the Saturday Evening Post and Mr. Hill said to me personally, that the hope of the nation lies not in its manufacture, not in its capital, not in the many lines for money that many men are following, but away back in the interests and understanding of these people, viz. in agriculture.

You are a part of the agriculture of this state. I do not want you to think you are cheesemakers alone, don't let

that narrow view point govern your profession; make your profession just as effective as you can but consider that in you, in your cheese factory and in the creamery is a little common school. If we had a map of Wisconsin and a little dot was made for every school house in the state we would have a picture at once of the central propositions that are at work for the enlightenment of our people. The little district school of the state is the foundation of all its culture and education. I happen to be connected with the University of this state as one of the Board of Regents of that great institution. Connected with the University is the college of agriculture, one of the most efficient and best in the world. Sir Henry Plunkett, of Ireland, was visiting here the other day and said he did not know of any college in the world that exceeded in usefulness to mankind the college of Wisconsin. High praise, for he is one of the most knowing men in Ireland or in the British Government. He went to Madison and addressed the boys; he talked to them on the great value of corporation, and what it meant, no more or less than the value of organized effort. It is said that "Birds of a feather flock together" and you will notice the value of that proposition of flocking together, coming together for common agreement, working together, in other words the principle of co-operation. It is due to that you are here today, proud representatives of this great industry.

Now you have a continent, you have an empire, you have this great North to civilize, organize and develop, and I want to say to you that no fairer heritage lies before the eyes of men today than Northern Wisconsin has, relating to the cheese industry. It is going to be a wonder to the world some day. Now, gentlemen, take heart and courage to yourselves and above all things do not think that in your relation with each little circle of farmers your duty is done, that your duty is done when you have made their cheese. Do not think that. Thousands of those men are weak, thousands of them have no knowledge, thousands of them are disorganized in their thought. Organize them, promote them, encourage them. Take the creameries of this state.—I have spent over four thousand dollars taking cow census for these United States from the Atlantic Coast to the Missouri River. In twelve of those states,

hurrying over the foundation work, of men who have kept cows and sent their milk or cream to the creamery for a year, nearly 45% of those farmers read not one single page connected with dairy literature, made no study. Just the same in cheese factories. The same percentage will exist there. If a man has sufficient brains with which to do his work on the farm he ought to have mind sufficient to be a student, and a reader and a thinker on these questions.

The trouble all over Wisconsin is a lack of study, a lack of thought, and you are right where you can stimulate thought. Every man among you can be a missionary, every cheese maker and buttermaker can be a teacher, if he will, to the men about, and that will be your greatest glory, that will be the theater of your best efforts, not alone that you will make good cheese but that your influence is felt clear out to the humblest man that brings milk to your establishment.

I have said repeatedly that if every cheese factory and creamery in this state would take a cow census once at the end of the year, show up to every patron just the difference skill and intelligence and the lack of it in the money that comes back to him, it would create a wonderful revolution in Wisconsin. The cheese factories and the creameries are the repositories of that knowledge; you hold it. Have you ever talked to your patrons? Have you ever shown them the difference between A, B and C clear down to the end of the alphabet? Have you ever tried to induce your patrons to take a clear cut census of the cows that supply milk to your factory, showing the difference between them? You can do more than anybody else to stimulate and encourage the industry among those men if you do that.

Gentlemen, I congratulate myself that I am still able to stand up and look you in the face and bid you God speed in your good work.

The drawing for the car of coal, donated by Mr. Chas. Becker of Milwaukee, then took place, the car being won by Mr. Oscar Knutson of Spring Green, Wis.

The President: Hon. Thos. Luchsinger, of Monroe, is here at this time and will give us a talk on the Foreign Cheese Industry of Wisconsin.

THE FOREIGN CHEESE INDUSTRY OF WISCONSIN.

HON. THOS. LUCHSINGER, Monroe, Wis.

President Southern Wisconsin Cheese Makers' Association.

Mr. President and Gentlemen of this Convention:

I have been called upon by your Secretary, Mr. Baer, to make a few remarks about the Foreign Cheese Industry of Southwest Wisconsin, and the kinds of cheese made in our territory and for one of which we enjoy a celebrity and reputation second to none, for the reputation of Green County's limburger is world wide and wherever we go we meet with that odor that reminds us of Green County fully as much as an orange or an orange blossom will bring home to the citizen of Florida or California recollections of his native state.

If we wish to explore the territory of a river, we usually begin at its mouth and follow its course to its source, which I propose to do today; also I know that the time allotted to me will not be much more than necessary to properly introduce my subject.

About ninety miles west of Milwaukee on the Mineral Point Branch of the C. M. & St. Paul Railroad, there is a fine little city called Brodhead, situated on the Sugar River, which rolls its quiet course through the eastern center of Green County, traversing it from North to South. Along this river runs a branch of the same railroad, which is called the Albany and New Glarus Division, and I propose to you to take a ride with me over it to its terminus, New Glarus, about twenty-four miles north. New Glarus, in which only a few years ago, everything, the houses, the people, and speech, reminded you of Switzerland, is today a pleasant village of about eight hundred inhabitants, which differs in nothing from the common American village of its size, excepting by the magnificence of its buildings both public and private; fine churches, banks, stores, and a host of fine private houses immediately remind you that you have struck a center of wealth, and public utilities are not wanting. Municipal light and water works are there, and the time is not far away when a network of street track, together with an interurban road to Monticello, six miles south, will make New Glarus an ideal country village . When you look over the landscape, the thought arises within you, what has caused all this wealth and appearance

of plenty? High, steep hills, narrow valleys with a small river or creek meandering through its tortuous course, it cannot be farmed in the true sense of the word, for these hills cannot be tilled, because the rains and snow would wash the humus away, so it must be something else which has worked all this wonder. There are no mines or factories, there is no water power of any magnitude to invite such, and therfore we must seek elsewhere for the source of this apparent wealth. Sixty-three years ago, a number of colonists were settled by the Canton of Glarus in Switzerland on the land surrounding the village of New Glarus. Twnty acres of land were allotted to each of these colonists, and which twenty acre piece, as the quaint instruction reads, which was given to the parties who were sent ahead to select this land should contain tilling land, hay land, timber and water. This was a hard task, and a hard quest had these select men, until they found what they wanted. Sections fourteen, fifteen, twenty-two and twenty-three, and parts of twenty-five and twenty-six, Town four north, range seven east, Green County, Wisconsin, were chosen, and a rugged, hilly spot it was, and many Americans, some of whom were settled in the Neighborhood, made it the subject of their jokes about this choice of the so called "Experts", as these select men were called. But they chose better than they knew, for these very hills and dales which reminded the colonists of their native foothills in the Alps, held the very substance and forces of nature which in after years became so valuable to them. Among the colonists were some who had been herders and dairymen in the old country, who had spent their short summers on the Alps, earning a scant living at herding cows which they rented from the people in the valley, and made their cheese and butter from the milk derived from the short but sweet grass of the Alps, and one or two of them were expert cheese makers. As soon as these owned a cow or two, they thought of the swiss cheese which they made in the old country and commenced to hanker after it as the Israelites did after the flesh pots of Egypt. They wondered if the American milk would also make cheese. They knew how to procur the rennet from a calf's stomach, their wash boiler had to serve for a cheese kettle, the nearest hickory or swamp burroak furnishd the hoops, which they well knew how to make, and the swiss cheese industry was born. A few more cows added, a copper kettle procured the world knows from

where, later on some were imported and others procured in the state of New York, and later on from the state of Ohio; but at first the old wash boiler for years held its place and position. Soon other colonists and settlers followed from Switzerland and among them some more experts in cheese making, and soon a half dozen or more little farms existed where swiss cheese was made. At first the cheese was all consumed in the settlement. Not all the Colonists, but only a small fraction of them being cheese makers, they naturally called upon their neighbors who were, and either bought their cheese, or delved into the mysteries of the art until they too commenced to utilize their milk and did the best they could. I remember my own grandfather trying his hand at it, making what he called Swiss cheese, which by January got so hard that if we wished to get a piece for breakfast we actually had to split it off from the small loaf with an axe.

As cows multiplied there was more cheese made, and of a larger mold, and a market was soon found for it at Galena, Freeport and Madison, and the more German a population of a city, the better was the market.

Packing was not very elaborate. Wagon boxes lined with fine sweet-smelling hay was all that was used. Into that came a layer of cheese, when the first layer was complete, hay was again laid on top, then another layer of cheese, and again a layer of hay and on top of that a few blankets or quilts to keep the hay from blowing off, and that was the entire outfit, and the industry of Swiss cheese making had been founded and commerce therein started and was destined to stay.

For twenty years nearly it remained in this state, excepting that copper kettles took the place of the wash boilers, and out houses were used for factories, and if the cellar under the house was too small for the output, then an extra cellar was dug into the hill side and covered with earth.

But you must keep in mind that only a few of the original settlers, and but a few of the newcomers were initiated in the handicraft and science of cheese making, and only a few derived benefit therefrom. The rest of the Colonists farmed and tilled their lands, raised wheat as long as the soil was ready and willing to produce it, but when they gave out they were at their wits ends and in a sorry plight on their steep and stony hill farms. But whenever a calamity is greatest, help is near, and it appeared in

a couple of cheese men from the east, whose names deserve to be on record forevermore, Gerber and Neumeister. They saw that the country was ready and ripe for a change and just what was needed. The high hills, giving a sweet and nutritious grass, which would produce the best of milk for their purpose, and they built a few factories and bought the milk of the farmers, which so far had been almost worthless to them, as butter brought but poor returns, and these men advised the farmers to purchase more cows and become dairy farmers instead of wheat growers. They were not slow to take their advice, because necessity compelled them to do something. Others followed Gerber and Neumeister, cheese makers commenced to flow in from Ohio and New York and then from Switzerland itself, and cheese factories, at least what represented and what was meant for such, sprung up at every cross-road like mushrooms after a rain, and the inevitable happened, for these factories produced more cheese, especially limburger, which was introduced and was then almost unknown, than the limited market could consume, and a great reduction in the price of cheese, and consequently of milk, took place, which, however, struck the cheese and milk buyers more and harder than the farmers, and proved the financial ruin of more than one. This time in the 70's is know as the panic in the cheese industry of Green County, and will be remembered for a long time by quite a few cheese makers and milk buyers who lost their all in that first hard blow.

But our industry did not die out as some predicted. From that time on the cooperative system came into practice so that today that is the rule, and milk *buying* the exception, and the time when one milk buyer operated from one dozen to twenty and more factories within our county is of the past. The most of the milk which is bought within our county is by some practical cheese maker who works up his own milk. Still there are a number of milk buyers who buy a few factories, but the number of cheese dealers is Legion and proves the magnitude of our present industry better and stronger that more figures and statistics. Suffice it to say that not only the Swiss of Green County, where they are the predominating nationality, but the American, Irish and Norwegian have followed the example of their Swiss neighbors and the Irish of Lafayette County and Norwegians in the Southern part of Dane County, the Pennsylvania Dutch of Northern Illinois were not slow to follow.

The official statistics are far from being correct, and it would be necessary in order to be accurate and correct to take a special census of cheese factories and their products in those counties named. A very conservative estimate by one of the cheese dealers who is well posted in this matter by the nature of his occupation gives his estimate that there are over four hundred fifty cheese factories in the territory embraced by the Foreign Cheese Industry, and gives the number of pounds of cheese as estimated by him at forty million pounds, and the returns from same at about $4,250,000.00, which is much nearer correct, a wonderful growth indeed. Giving employment to from twelve to fifteen hundred men, to say nothing of the thousands of farmers who furnish the necessary milk and all becoming well to do, as the fine buildings, residences and barns, are the best evidence.

This is what the Foreign Cheese Industry has done for Green County and its vicinity. That it is going to stay is another fact, and the past season is a good proof of that. When prices went sky high so that conservative dealers became alarmed and feared that it was a boom created by some unknown agency and that just as brilliant as the boom was, just so much dejection would come when the inevitable reaction would set in, but fortunately they were agreeably disappointed. And what is the reason that the prices did not drop as far as these men feared? It is this that while only a few years ago brick and limburger cheese were almost unknown in a good many localities of the United States, and only the better class of stores and saloons of the larger cities had it on their bill of fare, now every hamlet and village of any size in the United States from Washington to Maine and from Minnesota to Florida has some one or more places where it is not only kept, but sold; and where there were but a few dozen persons acquainted with this cheese, there are now hundreds of consumers, and the demand gets larger as the years roll by.

But we cannot expect to keep it all in Southwest Wisconsin. Jefferson, Dodge, and Winnebago Counties have manufactured this cheese in large quantities years ago, especially brick and limburger, and Northern Wisconsin has also through emigration from Green County commenced to manufacture, and a number of factories are springing up there, and in Minnesota and Iowa we have our competitors. But still the old hills of Northern Green County, southern Dane and Iowa, and the entire east portion of LaFayette County, can naturally be considered na-

ture's store house, where the materials grow which are necessary for the making up of a fine flavored Swiss cheese, and the Swiss people who still manufacture over ninety-one hundreths of it are still the people who can be depended upon to produce the best article, which, as is conceded, can be safely put side by side with the imported Swiss cheese without having to be ashamed of it, if it is well tended, cured and ripened. While we have learned a good many things in the United States which have been of great benefit to us, we have also adopted some which are not puite so beneficial, and foremost among them is great hurry. Swiss cheese, like no other, must have special care in its curing and tending. While, of course, the grass and the milk produced from it is a great factor, and the utmost care taken in the making process just as necessary, but the same care, if not more, must be given to the curing process, and unless the latter is well attended to, and the cheese left to ripen in the right temperature, it will be spoiled in the transportation and by the hurry by which it is put on the market. One of the reasons for this hurry is that the farmers want their money, the cheese maker his wages, the cheese dealer quick returns from his investment. Our cheese factories being too small, we must do something with our surplus, and unless we have a cold storage, we are not able to take care of it as it should be taken care of. Some attempts to procure cold storage for Monroe, Brodhead, Monticello and New Glarus were attempted, but without success. I will readily admit that a good deal of good milk is spoiled by unskillful cheese makers, who are not well enough skilled in their profession, and our farmers and cooperative dairymen often hire this class of men for the cheapness instead of the skill. We have tried to remedy this by a union of the cheese makers among themselves for the purpose of examination as to the necessary qualifications, but wonderul to relate we meet with the heaviest opposition by the farmers whom we are trying to benefit thereby. One farmer said to me the other day, "Are you really going to give us guaranteed cheese makers?" I said, "Yes". Then he asked, "Are the cheese makers going to guarantee their cheese?" I said "Yes, upon one condition,—that you farmers guarantee your milk."

We are trying our best in an humble way to do all we can to keep the foreign cheese industry at the high water mark, but there are a number of things which are still necessary, better

factories, better roads, better accommodations and conditions for cheese makers cold storages so that the surplus and overflow of the cheese cellars can be stored and brought to a condition of full ripeness for shipping and a host of other things which we are working hard to remedy and bring about reform. We have accomplished a great deal. A number of those old broken down shanties and mud holes called cellars which were formerly used for factories are disappearing fast, and fine modern structures are taking their place, worthy of the industry which they represent, and which gives life, wealth and pulsating commerce to all our community.

Now, gentlemen, one last word in conclusion: while we are in honest competition with each other to a certain extent, we are no more so than the farmers, one of whom raises beef, the other pork, and the third mutton. Variety is the spice of life, and when we tire of one kind of cheese, we like to get hold of another kind. Therefore, we are all working for the same purpose, and let us all make a strong pull, and a long pull and a pull altogether, and we will be able to keep Wisconsin on the map as one of the greatest, if not the foremost, dairy States in the Union.

The President: Mr. Luchsinger has certainly given us a very interesting and instructive talk at this time. We will now call on Mr. Peter Zumkehr, of Monroe, to give us a talk on Limburger Cheese Making.

LIMBURGER CHEESE MAKING.

PETER ZUMKEHR, Monroe, Wis.

Traveling Cheese Instructor for Southern Wisconsin Cheese Makers' Association.

Mr. Chairman, Ladies and Gentlemen:

About fifty years ago, when times were hard for the farmer, when he could raise only very poor crops, and market conditions being poorer still, the thought came to some farseeing farmers, that the dairy industry would be the ideal industry for southwestern Wisconsin. They started to make cheese,

first only on a small scale. Soon the product found ready market, co-operative factories were built and the industry spread out until today, it reaches far beyond the borders of the great state of Wisconsin.

In other countries, especially in Switzerland, cheese making is so old, that it is almost impossible to find a true history of its history. Some scientists even go so far and claim, that the first cheese was made in Switzerland in the year of 1200 before Christ.

I will not take up valuable time in discussing the history or the origination of cheese making, but will turn to my subject and tell you how this cheese is made today.

Limburger is a sweet curd cheese, it is largely made in sections, where there is lots of low land pasture. Now what are the main features to be observed in the manufacture of finest Limburger cheese? The first is a pure milk supply, the necessary utensils for manufacture, a maker that thoroughly understands his business, a curing room where the temperature can be controlled.

To make a high scoring cheese you must have your milk in first class condition, all milk that is not, should be returned. Having your vat of No. I milk, it is heated to a temperature of about 94 degrees, enough rennet is added to curdle the milk in from twenty to twenty-five minutes, according to the season of the year. The curd is ready to cut when it splits before the finger, it is then cut in much the same way the chedder cheese makers cut their curd, it is left in this condition for about 3 or 4 minutes, then it is stirred for about twenty minutes it is at this point that the cheese maker demonstrates whether he is master of his business.

A good many makers are making a great mistake by not working the curd long enough before turning on steam. A better bodied cheese can be made when the curd is worked slowly and time is taken in getting it firm and the loss of fat in the whey will not be as large as when the process is hurried along and the maker tries to firm his curd by applying too much heat quickly, we are having too many of those Union men in factories now. Steam should always be turned on slowly, it should take from 15 to 20 minutes to heat the curd up to 98 degrees, according to the conditions of the curd. The curd is stirred in the vat until firm enough to dip, it is hard

to explain, how firm a curd should be at time of dipping, but a cheese maker must know this from his experience. When firm enough, the whey is drawn off and the curd is dipped from the vat into moulds, which are 36 inches long and 6 inches wide, then the cheese is put in the cellar on a draining table, it is left on this table nearly 24 hours and during this time it is turned three or four times.

Some makers remove it in 12 hours from the draining to the salt table, but in most cases the cheese is not ready to be salted in that time. The cheese is cut into blocks 6 inches square and then the salt is applied to it. The cheese is salted usually three times, but I recommend salting it four times. I consider the salting the most important work after the cheese is made, I will not go into further detail of what effect too much or not enough salt will have on the cheese, but shall be glad to give my opinion in answer to any question which may be referred to me.

From the salt table the cheese is placed on the shelves and set on their edges, it is rubbed and turned every other day until it is ripe enough to pack which in most cases requires almost one month.

When the cheese is getting ripe, the color changes from a white to a reddish yellow. The temperature of the curing room should not go above 65 degrees, except in the room where the salt and draining tables are kept.

If cheese is cured at a high temperature it will be at the expense of the quality and the curing rooms are in many instances responsible for the poor grade of cheese, which are placed upon the market.

The cheese is packed in parchment paper and then in tinfoil and is then placed in boxes and it is ready for shipment.

DISCUSSION.

The President: Do you wish to ask Mr. Zumkehr any questions in regard to this subject.

Mr. Parkin: How much rennet do you use for a thousand pounds of milk?

Mr. Zumkehr: From three to four ounces.

Mr. Doane: What is the effect of over salting? Does it have any effect other than on the taste?

Mr. Zumkehr: The cheese will not ripen as well as otherwise. It will also spoil the texture, make it dry and crumbly.

Mr. Parkin: About how much time do you take for setting and dipping, as a rule?

Mr. Zumkerhr: The time taken from setting to dipping depends a good deal on the conditions of the milk, but it will not take much more than an hour or an hour and twenty minutes.

Mr. Corneilson: I would like to ask what effect salting of the curd in the vat has?

Mr. Zumkehr: I think it will injure the texture of the cheese. You will not get as fine and nice bodied a cheese as when you apply the salt afterwards. It makes a rather coarse cheese.

Mr. Marty: Does salting in the vat have any effect on the curing of the cheese?

Mr. Zumkehr: I do not know that it has. I never practice that at all.

Mr. Marty: I would like to ask the gentleman who put the question if he has had that experience?

Mr. Marty: I have had with gassy milk, and did it to overcome gas.

The President: Any other questions? If not we will take up the next topic.

BRICK CHEESE MAKING.

HARVEY HASKINS, Madison, Wis.

Instructor in Wisconsin Dairy School, Madison, Wis.

Mr. Chairman, Ladies and Gentlemen:

It is a pleasure to be here and talk with all these cheese makers; to exchange ideas with them and compare notes, so to speak, and with this feeling I come before you now to try and tell you something about brick cheese.

But before I start to talk about the subject assigned me, I

want to tell you a story. It is told of two Irishmen who were cutting logs on a side hill. After they had sawed off the log, it began to roll, and Paddy, being on the lower side, thought to hold it by jumping in front of it, but couldn't, so the log rolled over him; then Mike said, "Stick to it Paddy—you're on top half the time."

Now my talk may be to the point half the time, but to go back to my topic, I wish to say that the first thing necessary in order to make a first-class brick cheese (as well as any other type of cheese) is good milk.

We must educate the patrons along this line. We must show them how by kindness and not by force. The old saying, "You can lead a horse to water, but you can't make him drink" applies here. You may tell a farmer his faults, but they are not always corrected. A very good way is to show him. The Wisconsin curd test will show him what kind of cheese the milk he is bringing makes. This is the best way I know of to convince a farmer. When you have shown him his faults, help him to locate his trouble. There is a science in caring for milk properly and it is policy always to be kind to the patrons and teach them to be pains-taking people.

Again I say you must have good milk. You would not think of building a bridge out of rotten material and it is just as unwise to expect to make good cheese from poor milk. So insist on the patrons bringing good milk. That brings to my mind the story of a German couple who were living in a quiet town and had met financial troubles which caused the wife to worry considerably, and one day she said, "Ach! I vish I vas in heaven." I don't," said her husband, "I vish I vas in a beer saloon." "Dot's it! Dot's it!" replied the wife, "Dot's chust like you—you alvays vants de best."

Brick cheese factories are now being scattered all over the state and this industry has grown to large proportions since Dodge county started its first factory. I think we need more discussions at our conventions and elsewhere along the brick cheese line. The Wisconsin Dairy School, the Wisconsin State Dairyman's Association, and the Dairy and Food Commissioners are doing all in their power to teach the boys how to make a uniform product of cheese.

It is necessary to have milk with a low acid content for brick cheese. I would say that from .15 to .18 per cent should

be the limit for receiving milk, and I see no reason why it is necessary to cause a cheese maker to make cheese twice a day, provided, however, that his patrons are a clean careful people.

Milk should be aerated as quickly as drawn from the cow and cooled as quickly as possible to a temperature of about 50 to 55°, if you have water that cool.

Now after we have milk in our vats such as I have described, we are ready to proceed to the making of the cheese.

First, determine the acidity of your milk, then heat up to a temperature of 88° and add enough rennet to coagulate the vat in about twenty to twenty-five minutes, which will usually require from four to five ounces rennet per thousand pounds of milk. In ordinary cases, if the milk was working good, I wouldn't advise the use of a starter, but in the hot weather when gassy milk is frequently received, I think a starter is all right, as it will enable you to partly overcome the gas germs by the addition of the lactic acid bacteria. The per cent of starter would, of course, be regulated by the way the milk worked and the percentage of acidity of your milk before adding your starter.

When we have our vat set, we scald the moulds and get them placed on the draining table. By this time the curd is ready to cut. We proceed to cut the curd, the same as for American cheese, using the two knives. Having our curds evenly cut, we stir by hand for 10 to 15 minutes then turn on steam and cook up to a temperature of 114 to 120°, depending on the curds, and when we have a sufficient cook, we draw down the whey until there is just enough left in the vat to cover the curd nicely; then we dip in our moulds and allow the curds to drain and settle down; then board followers are placed on the curd in the moulds and pressed by means of two bricks.

At dipping time it is necessary to work very fast so we can get our curds out of the whey and thus prevent an overdevelopment of lactic acid, which would give brick cheese a decided Cheddar cheese flavor, which we do not want.

After the cheese have been in the moulds for a while they are turned over and pressure applied from the other side. when the cheese have pressed sufficiently, we are then ready to transfer them to the salting table and a coat of salt is ap-

plied to the outside. This operation is generally repeated once or twice before the cheese are ready for the curing shelves. It takes from two to four weeks before the cheese are ready to be shipped, when they are wrapped in parchment paper with a manilla wrapper. Some factories use a tin-foil wrapper in addition to the paper wrappers.

I don't know that I have told you anything in this talk that you didn't already know, but you have all been very attentive and I hope it wasn't for the same reason that the little boy paid such strict attention in church. When asked by his mother why he took such good notice of the preacher, he said, "I was watching his Adam's apple go up and down."

Mr. Luchsinger: Mr. Chairman, may I make an announcement at this time? I want to announce that we will hold a convention on the 30th and 31st days of January at Monroe, Wis., as the foreign cheese industry predominates there as much as the American cheese, and I wish to invite you all to be with us on those two days at Monroe. As president of the association I tender you all the invitation.

The President: Mr. Fred Marty will be the next speaker on the program and will talk to us about Swiss cheese making.

SWISS CHEESE MAKING.

FRED MARTY, Monroe, Wis.

State Cheese Factory, Dairy & Food Inspector.

Mr. President:

Swiss cheese making is again the subject assigned to me. As this has been the subject assigned to me for the last two or three years it would seem as if I was the only Swiss cheese maker able to take up this subject, now let me tell you that we have many very skillful makers in our section of the state who would be able to thoroughly discuss in detail any particular point in the process of manufacturing Swiss

cheese were they to explain themselves in the German language. But with the best efforts of Mr. Baer and myself we have failed to find anybody willing to take up this subject.

This article I have not prepared to describe in detail the process of manufacturing Swiss, but merely to introduce the subject.

It is also my purpose to make some general remarks which I have observed, and causing a great annual loss to our Swiss cheese industry.

However, should any member wish to take up and discuss any particular point in the process of manufacturing Swiss cheese, I would be glad to give my opinion in answer to any question.

In the manufacture of Swiss cheese it is perhaps more so than in any other kind of cheese that only certain condition of the milk will bring about the natural characteristic of a Swiss cheese.

Among the Swiss cheese factories the rule is universally adopted to deliver the milk twice a day which is manufactured into cheese immediately after the milk is received, the hours of delivering the milk are from 6—7 a. m. and 7—8 p. m. each day.

This rule of hauling milk twice a day has become so customary that no second thought is given to the possibility of delivering the milk only once a day. This method was perhaps a good plan in the early days of our cheese industry when the milk producers were unexperienced in handling and caring for milk and the necessity of such for the manufacture of Swiss cheese. The question of delivering the milk only once a day would hardly sound practical to many cheese makers and farmers as they have become so accustomed to deliver the milk twice a day. But I would say right here for an example that any part of the milk delivered once a day to the Monroe Milk Condensing factory could be manufactured into a Swiss cheese equal in quality to that of any average imported Emmenthaler.

Knowledge, experience and better financial condition of our milk producer today would permit them to arrange a suitable milk house and milk cooling system which would enable them to thoroughly care for the milk to be delivered once a day and manufactured into Swiss cheese. Then our hard work-

ing cheese maker after a hard day's work and in place of starting another would be blest with a night's rest. The patron in less than half the time required to deliver the milk could cool down the milk sufficiently to let it remain until morning, and the poor old faithful horse in place of making that dreadful hurry up trip to the cheese factory after a day's hard work would be released of the sweaty harness by several hours.

However a suitable milk house and necessary cooling system as delivering the night's and morning's milk in separate cans would in this case be absolutely necessary and should strictly be enforced. Whether he be a small or large parton of the cheese factory.

The Monroe Milk Condensing factory has 125 milk patrons, any of them keep just as many and as few cows as any cheese factory patrons, these patrons comply with the specification called for under contract such as only feeding certain kinds of feed, milk house, milk cooling system and all barns to be whitewashed twice each year. Any milk containing as high as .20 per cent of acidity is promptly rejected. Since our cheese factory patrons claim that they are getting more per pound of milk than the patrons of the condensing factory and besides get back the whey I fail to see why they cannot build similar milk houses and cooling systems and take advantage of hauling milk only once a day.

While it is a known fact that in the fermentation process of a Swiss cheese in developing the required eyes or holes we find that by far the largest per cent of termed "Glaesler" cheese (a cheese where the characteristic nature of developing the eyes or holes in the cheese has turned into long seams) are found among the morning's make, either due to unsufficient lactic acid or ripeness of the morning's milk. While a practical cheese maker wherever conditions were favorable, such as running water, I would set about 300 pounds of the night's milk into the water and hold it over for the next morning's cheese, this method I would practice all season as it would help the fermentation process very much.

It is true that the per cent of lactic acid or ripeness of the milk required in manufacture of Swiss cheese is not known to any maker and it very often occurs that a cheese maker seemingly is getting along very nice with his cheese until to his

surprise he learns that he has for some weeks been manufacturing a "Glaesler" cheese of a pasty texture, the body containing seams running throughout the cheese, the flavor being good—somewhat of a sweet taste. This cheese is classed as a No. 11 and manufactured from a very fine quality of milk.

Let it be understood that this particular kind of cheese is an annual loss to our milk producer of thousands of dollars, since many cheese factories are known to manufacture from one-third to one-half "Glaesler" cheese, or Glaesler with holes, and a so-called blind cheese, the latter however could be traced to improper temperatures in the fermentation process. The Glaesler cheese is mostly consumed by the Italian trade as it seems to answer their peculiar way of preparing it to consume. The cheese dealer often claims to them that it is a special make for their request.

If this particular point was known to the maker that the milk did not contain sufficient lactic acid or ripeness, the manufacture of a "Glaesler" cheese could be avoided to a large extent by working and holding the curd longer before cooking. But as this particular point, knowing just when to apply the steam to the curd, can not be determined by a test other than practical experience, is very often the cause of a "Glaesler" cheese. However, in my opinion, the proper time to avoid a "Glaesler" cheese would be at the time of setting, if the proper ripeness of the milk was known.

For the manufacture of Swiss cheese a home made rennet is used which is made and prepared in two different ways. One most commonly used is prepared out of three-fifths of common whey and two-fifths of water, as a rule about from 2 to 3 quarts in all. Sufficient calf stomach is then added with a little salt so as to give it the required strength. It is then allowed to stand for either 24 or 36 hours. Another home made rennet, which method is practiced by many Swiss cheese makers, is a whey which is heated to 165 degrees F. when a so-called (sour) whey which has gone through this particular process and allowed to stand until a very high per cent of lactic asid has developed, is then added and heated to 180 degrees F. Then another precipitation of the whey will take place. This is the albumen, which is much like the white of an egg and is in solution until precipitated by the so-called "sour" and heat, which is then separated from the

so-called precipitated whey and allowed to cool. This whey is then used for the home made rennet and is called a precipitated whey rennet. This rennet when prepared contains a higher per cent of lactic acid and is found to be much purer than the common whey rennet. It also has a good influence on the fermentation process as it produces a more uniform distribution of eyes or holes in cheese, while in the use of a common whey rennet with its ingredients there is a danger of developing abnormal fermentation, and its appliance to the manufacture of cheese very often causes too many and irregular holes also gassy fermentation.

In the precipitated whey rennet again is the danger that during the process of developing the rennet only a lactic acid is developed and is therefore on the same order as a starter, and in many cases where a trifle too much of the liquid is used it destroys the characteristic fermentation of the cheese and turns into a "Glaesler" cheese.

I am, therefore, of the opinion that if the milk patrons of a cheese factory of not more than about 3,500 lbs. of milk a day, could manage to put up a milk house and milk cooling system, then hold their night's milk until morning and deliver it in separate cans for the manufacture of Swiss cheese a commercial rennet extract of uniform strength could be used and the danger of manufacturing a "Glaesler" cheese could be avoided.

The purpose of the common and the precipitated whey rennet is in my opinion only guess work so long as we do not know the required per cent of ripeness of the milk and the amount of rennet to be used accordingly.

An experiment under the authority of the Wisconsin Experiment Station along these lines and under practical conditions in Green County would in my opinion produce valuable information.

DISCUSSION.

The President: Any questions you would like to ask? We will take up the discussion of brick cheese making first.

Mr. Doane: I would like to ask what particular influence the temperature of the curing room has on either brick or Limburger cheese, whether that temperature be high or low?

Mr. Haskins: I think if we are curing American cheese we aim to get the temperature as low as we can and in brick cheese we also want the temperature as low as we can conveniently have it because I believe it produces cheese of better texture, it does not cure out so fast. The lower you can get the temperature and the slower you cure American cheese the better it will be, and I think the same condition applies to Brick cheese. We also get less shrinkage.

The President: Any questions on the making of Swiss cheese?

Gov. Hoard: I want to ask if the process of excessive stirring does not throw off a great deal of excess moisture, because it is throwing off excess fat?

Mr. Marty: I have had an opportunity of experimenting along that line while engaged with the Wisconsin Dairy School in the breaking down of the fine curd particles in the process of making Swiss cheese. I might also add the roughage of handling that particular curd is largely the cause of the large per cent of fat expelled from the casein during the process. Dr. Babcock on this same point claims with a number of milks of different per cents of fat, some are expelled from casein through the misuse of the curd; that may apply to American cheese makers as well as to Swiss cheese makers, by so handling of that particular curd, and furthermore due to temperatures, that there are soluble and insoluble fats in milk, while some fats are not subject to that particular heat, other fats are and as you increase the temperature a certain kind of fat, which I am not able to name, will expel from the casein because of the excess high temperature.

Mr. G. Marty: Is it possible to make good Swiss cheese without this extensive stirring of the curd?

Mr. F. Marty: It is hardly possible for the reason that the fermentation of Swiss cheese is of such delicate nature that the Swiss cheese maker scarcely knows where he is at. In Swiss cheese we must keep the little curd particles separate, entirely separate, not as we often find in American cheese vats, especially when the cheese maker is trying to get a large yield, where you can reach into the vat and pick out a chunk of curd like a bunch of grapes altogether. In Swiss cheese we insist that every little curd particle must be

by itself, form by itself, and one of the most essential points that we insist on is having a copper kettle and keeping the curd in continuous motion.

Gov. Hoard: Swiss cheese is more like a skim cheese because a portion of the fat is taken out of it?

Mr. F. Marty: Analysis of Swiss cheese shows that it has on an average 32% butter fat. We take out a good deal but that amount remains.

Gov. Hoard: Then how does that square with the fact of your losing so much butter fat?

Mr. F. Marty: Perhaps we have less moisture, it is a firmer cheese, it is more compact, there is more goods there in the same space. We have less yield in Swiss cheese than in Cheddar cheese and that may account for the per cent of butter fat.

Mr. Doane: That question of fat, I think, has some connection with the question raised in Mr. Marty's paper when he refers to glass. I think Mr. Marty said if the acid was allowed to develop a litte more strongly in settling the curd it might prevent this. Where do you get your authority for this statement, Mr. Marty?

Mr. F. Marty: The reason is this. There is a particular acid (I am not a chemist and cannot tell you the name of the acid) but that acid is the first chemical reaction and forms and develops the holes in Swiss cheese, largely due to the fermentation of the milk sugar. In connection with that it is due to lacic acid. A great deal of the milk manufactured into Swiss cheese either contains insufficient lactic acid to produce that proper fermentation in the cheese, or the cheese makers insist on using home made rennet, not using the commercial rennet extract, so that they neglect to add a certain amount of lactic acid to help along that fermentation.

Gov. Hoard: The holes are due to the expansion of the gas evolved from fermentation?

Mr. F. Marty: I presume I am not answering Professor Doane's question in regard to fat?

Mr. Doane: What I am trying to get at is whether the butter fat in the cheese has any effect on whether the cheese may be glass or anything else.

Mr. Marty: Swiss cheese, we will say, with an excess amount of butter fat or made from milk with a very high per cent

of butter fat, would have more of a tendency to develop into glass cheese than that with a lower per cent of butter fat.

Mr. Doane: There is another question in regard to the loss of the butter fat in the whey. It is commonly believed that an excess of butter fat is the cause of glass cheese. It is claimed that you cannot make a perfect Swiss cheese with too high a percentage of fat; I believe Jensen says you can make a perfect Swiss cheese with milk containing as high as 4% fat but he does not believe you can make it with milk containing a much higher per cent. I might say right here that I am conducting experiments in Swiss cheese now. We have made Swiss cheese and lose only three-tenths per cent fat in the whey and we followed out practically all the rules and regulations laid down by expert Swiss cheese makers except that we cut our curd with a curd knife and we got a much more even cut, losing very little fat in the whey, but I am a little bit afraid how those cheese will turn out, we are afraid we are going to get glass cheese.

Mr. F. Marty: I say that a great many experiments carried on should be carried on right out in the field where cheese are manufactured. In our territory we find the highest per cent of glass cheese manufactured is in the month of June and July, when any dairyman knows the per cent of butter fat in milk is the lowest, therefore it cannot be due to the high per cent of fat in the milk. It proves that there is another cause. It proves that it is either due to some insufficient ripeness in the milk, which must be the main factor in the milk to have the influence on the fermentation of those eyes or holes.

Mr. Doane: On the other hand, if you are going to have ripe milk you would have it in July if at any time of the year.

Mr. F. Marty: As I said in my paper, the largest per cent of the glass cheese manufactured is made from the morning's milk. You understand that in our territory milk is delivered very early, not later than seven o'clock under any condition and lots of it is delivered from five to six. During June and July, during the harvest time, a great deal of the milk comes before six before the warm sun has had any influence on the milk.

Member: Do you make cheese twice a day, and what time do you get through in the forenoon?

Mr. F. Marty: About 11 o'clock in the morning. At night it is 11 and 12 and sometimes 1 o'clock in the morning before we are through.

The President: What do you do the rest of the day?

Mr. F. Marty: There is no man busier than a Swiss cheese maker, that is the reason that 99% of the Swiss cheese makers are Swiss. One man is doing two men's work.

Gov. Hoard: When do they sleep, Mr. Marty?

Mr. F. Marty: They sleep from 12 to 5 in the morning. As I said, our cheese is a cheese subject to curing, same as brick and Limburger, and it must be washed, turned and salted every other day. Where they make four a day you can see that a man has as much as a couple of tons of cheese on his hands every day between the two makings.

Member: How much do you pay your cheese makers?

Mr. F. Marty: They are paid by the hundred, a certain amount per hundred.

The President: Why do you make your cheese so large?

Mr. Marty: Well our Swiss cheese makers are quite muscular, to begin with, and they would rather put a little more muscle to one large load than to handle the thing twice. Another reason is that we find the fermentation of a large bodied cheese is more uniform than in a smaller one. For instance, a block cheese sometimes has too much rind and the peculiar characteristic of the Swiss cheese, the development of the eyes cannot go on.

Member: Do I understand he says Swiss cheese in his county is more glass in June and July? I am from Dodge County and have made Swiss cheese for fifteen years, as long as we could make it, but now we cannot make it, and we had our trouble in that respect in September and October.

Mr. F. Marty: During that time perhaps your curing room did not contain the proper temperature to get the cheese started in the fermentation process. The temperature in the curing room is a great factor and it requires skill to cure this cheese. It is something we cannot tell a man how to do, he has to get accustomed to that particular sound he must know when he touches the cheese what it is doing. Some cheese have a tendency to develop faster than cheese

made from milk more normal, and such cheese ought to go into a different place. Swiss cheese are at the mercy of the surrounding temperature. If we had three different curing rooms, which all the leading Swiss cheese factories in Europe have, regulated by different temperatures it would be the proper thing; then if one cheese was slower in developing we could have a temperature in one room ten or fifteen degrees higher and put that cheese there; if one was coming faster put in where the temperature was lower and thereby control the fermentation. We have not gone far enough yet so the cheese maker has any control over the fermentation process because the cheese is at the mercy of the temperature.

Member: I believe the finest cheese we have is in May, June and the first week in July, but later on we have trouble.

Mr. F. Marty: I would like to say that some three years ago I brought up this particular point about glass cheese at a convention held here in Milwaukee and I hoped then that some possible means would be brought about on this very particular point, and that some experiments could be carried on under practical field conditions. I do not say the experiment could not be carried out at an experiment station, but there you have not the conditions we have in regard to milk in Green County. Milk delivered ten or fifteen miles is of a different character than that delivered immediately from the cows.

Member: The longest distance I get milk is two and a half miles but I think the trouble is because we make cheese all the year round. We started seven years ago to have the cows coming fresh all the year round, so we have the old strippers and the fresh milk, and they do not make good Swiss cheese at all.

Mr. F. Marty: That is all very true, the stripper milk will not act right with the rennet.

The President: This closes the program this morning, and we will now stand adjourned until two o'clock this afternoon.

FINAL SESSION.

Meeting called to order at 2 o'clock by President Michels.

The President. Mrs. Kempfer is with us again this afternoon and has kindly consented to favor us with another solo.

Solo by Mrs. Kempfer.

The President: The first subject this afternoon is the Feeding Value of Alfalfa by Professor Otis, of the Agricultural College at Madison.

THE FEEDING VALUE OF ALFALFA.

PROFESSOR D. H. OTIS, Madison, Wis.

Animal Nutrition, Agricultural Experiment Station.

I assume that every cheese maker in Wisconsin is interested in the dairy cow and the man who is handling the cow, and that he is willing to study anything that will promote an increase in the production of dairy products. It should be his special delight to consult with the patrons of his factory as to the best methods of handling their crops and dairy cows in order to produce the largest net profit.

There are three important factors to successful dairying, first, the man; second the cow, and third, the feed. I wish to consider in this article only one phase of the last factor, viz, the profit secured from the feeding of alfalfa and the combinations of other feeds to use with it in order to produce the largest returns from the minimum expenditure for feeds and labor.

There are many things concerning the nutrition of farm animals that we don't know but there are some points that are well established. A study of our experiment station reports and bulletins show that an average cow, giving about 25 pounds

of 4 per cent milk daily, requires digestible nutrients per day of 1.8 pounds protein, 12 pounds cardohydrates and .5 of ether extract (fat). There is little difficulty to provide for the carbohydrates and other extract form the common feeds grown on the farm but when it comes to furnishing the protein, we find the problem a more difficult and usually a more expensive proposition. The large demand for oil meal, cotton seed meal, and gluten meal is because of their large percentage of digestible protein. Usually these feeds are expensive and if we can find a substitute for them, we will materially advance the dairy interests of this State.

Probably no one here has failed to hear of the merits of alfalfa for feeding purposes and yet I will venture to say that there are a large number who do not fully appreciate its value.

ALFALFA AS A FEED FOR DAIRY COWS.

Alfalfa and bran compared as to digestible nutrients.—The value of alfalfa from a chemical standpoint is shown in the following table:—

Name	Digestible nutrients per 100 lbs.		
	Protein.	Carbohydrates.	Ether extract.
Alfalfa	11.0	39.6	1.2
Wheat bran	12 2	39.2	2.7

This table shows that every 100 pounds of alfalfa contains 11 pounds of digestible protein and that wheat bran, which has for a long time been held in high regard as a feed for dairy cows, contains only 12.2 pounds of digestible protein. If an average sample of alfalfa contains 11 per cent of digestible protein, a good quality of alfalfa hay will contain practically as much digestible protein as bran. Records obtained at our experiment station and from farmers over the State indicate that we can produce at least four tons of alfalfa per acre. If our dairy farmers could produce four tons of bran to the acre, they would think that they were doing well but here is a chance to produce four tons of the equivalent of bran.

Alfalfa and linseed meal compared.—Linseed meal at the present time is worth about $35.00 per ton. A ton of oil meal contains 586 pounds of digestible protein and as we buy oil meal almost solely for that ingredient, we might value it upon its protein content alone which would make the protein worth six cents per pound. A ton of alfalfa contains 220 pounds of digestible protein, which at six cents per pound would be worth $13.20 and if we get four tons to the acre, we would have a value of $52.80. Of course, for a dairyman to realize this much from an acre of alfalfa, he must feed judiciously and in proper combination with other feeds but if he realizes only one-half of this amount, he is getting excelent returns from his land. As Wisconsin farm land increases in value, it becomes more and more important that we increase the value of our crops per acre and tho growing of alfalfa is one of the best steps in that direction.

Is the protein in alfalfa equivalent to the protein in grain?—At the New Jersey Experiment Station one lot of cows was fed a daily ration of 35 pounds of corn silage, 11 pounds of alfalfa hay, 6 pounds of mixed hay and 2 pounds of cotton seed meal. Another lot of cows was fed in comparison on the same amount of silage and mixed hay and received 4 pounds of wheat bran and 4 pounds of dried brewers' grains in place of the alfalfa wheat bran and dried brewers' grains $17.00, and cotton seed hay. The cost of feeds per ton for these experiments were meal $26.00. The roughage was placed at the cost of production, $2.50 per ton for silage, $5.34 for mixed hay and $6.38 for alfalfa hay. The results show that there was a saving of 12.7 cents per hundred in the cost of producing milk and 2.3 cents per pound in the cost of producing butter when the alfalfa ration was fed. On this basis, the New Jersey station estimated that when bran and dried brewers' grains can be purchased for $17.00 per ton, that the alfalfa is worth as a substitute $11.16 per ton. They figure that the average production of their land for three years at this rate amounted to $51.00 per acre and in one other year to $74.21 per acre. They judged from this experiment that the protein in alfalfa could be successfully and profitably substituted for the protein contained in wheat bran and dried brewers' grains.

A second experiment at the New Jersey station compared alfalfa hay and corn silage with corn stover, corn silage and a

grain mixture of distillers' grains, wheat bran and cotton seed meal. The analyses of the two rations showed that they were practically equal in both protein and total nutrients. The results at the end of one hundred and twenty days showed that although the purchased feed ration produced 20.6 per cent more milk, it was figured that the value of alfalfa hay in replacing a feed mixture of wheat bran, distillers' grains and cotton seed meal was worth $14.50 per ton. This experiment indicates that a pound of protein in alfalfa is not equal to a pound of protein in the grains used but as the alfalfa can furnish the protein much cheaper than the grains and while it may not be desirable to make an entire substitution of alfalfa for grain, it can to a large extent replace the grain.

At the Maryland Experiment Station fifteen cows were divided into two lots of seven and eight respectively. One lot was fed a ration of alfalfa and corn meal. The other lot was fed corn silage and a grain mixture of malt sprouts three parts by weight, linseed meal one part, gluten meal one part, and corn chop one part. These lots were fed for a period of twenty-eight days when the rations were shifted. The lot that changed from alfalfa and corn meal to silage and mixed grains produced 197.4 pounds less milk the second period than the first. The lot that changed from silage and mixed grain to alfalfa and corn meal gained 78.8 pounds of milk during the second period over the first. The total amount produced by both lots on alfalfa and corn meal was 7,248.3 pounds. The total amount of milk produced on silage and mixed grain was 6,972.1 pounds. This makes a difference in favor of the alfalfa and corn meal of 276.2 pounds of milk. It should be noted that where a small amount of grain is fed with the alfalfa that the total results are favorable to the alfalfa ration even though the other ration contained a greater variety of rich and appetizing grains.

The Maryland Station made an additional experiment in comparing a ration of alfalfa and silage without grain with a ration of silage and grain. The results show that the cows gave less milk when receiving the alfalfa and silage than those receiving the silage and grain. Although the ration of alfalfa and silage figured up well as far as digestible nutrients were concerned, it did not result in as large yields and indicates the desirability of feeding some grain, even though the cows are receiving roughage that is rich in digestible nutrients. This

experiment corresponds closely with the second experiment reported from New Jersey.

Alfalfa compared with prairie hay.—At the Nebraska Station twelve cows were divided into two lots of six each. At the beginning of the experiment each lot was producing practically the same amount of milk and butter. Lot 1 was fed for six weeks alfalfa hay, beets, and a small grain ration composed of equal parts of bran and corn. Lot II was fed for the same length of time on the same feed except that prairie hay was substituted for the alalfa hay. At the end of six weeks, the feed of each lot was changed, Lot 1 receiving the prairie hay and Lot 2 the alfalfa hay. At the end of twelve weeks the results were sumarized as follows:

	Milk.	Butter.
	Lbs.	Lbs.
The cows while receiving alfalfa produced..	9,862.74	511.47
The cows while receiving prairie hay produced.....	9,722.49	502.07
The cows while receiving alfalfa hay produced.....	140.25	9.40

In commenting on these results the Nebraska Station shows that the lots changed from prairie hay to alfalfa in the beginning of the second six weeks were at a disadvantage as their milk flow had been reduced the first six weeks and the claim is therefore made that the alfalfa gave even better results than indicated in the above figures.

Alfalfa as a factor in economical production.—In a more recent bulletin from Nebraska detailing the results with their dairy herd for ten years, record is given of the food cost of producing butter fat where alfalfa and silage constituted the roughage. These varied from 6 to 12 cents in 1905, the average for the year being 9.2 cents. The next year, 1906, the cost varied from 6 to 16 cents, the average being 9.4 cents. The profit per cow in 1905 (value of butter fat less cost of feed) was $41.93. In 1906 the profit increased to 43.54. These good results are in a large measure due to alfalfa.

The value of alfalfa meal.—The Pennsylvania Station divided ten cows into two lots. Both lots were fed daily, corn silage 30 pounds, mixed hay 12 pounds, corn meal 3 pounds,

and cotton seed meal 1 pound. Lot 1 received during the first period of three weeks 4 pounds of wheat bran per cow, while lot 2 at the same time received 4 pounds of alfalfa meal as a substitute for the wheat bran. The experiment lasted for four periods of three weeks each, and at the end of each period the wheat bran and alfalfa meal were shifted. The cows while receiving the alfalfa meal fell off in milk production in both cases more rapidly than those receiving the wheat bran. In commenting upon the results, the Pennsylvania Station says that there is no reason for believing that the alfalfa meal is any more digestible than the hay from which it is made and they claim that it may be less digesible on account of the temptation to use poor grades of alfalfa in grinding the meal. For this experiment the alfalfa meal cost $23.00 per ton while the wheat bran was purchased at $20.00 per ton. At this price alfalfa can not be recommended for the most economical milk production. Assuming that the alfalfa meal cost no more than bran ($20.00 per ton) the experiment shows that the alfalfa meal would have produced milk at a lower grain cost per one hundred pounds, viz, 44 cents as compared with 45.3 cents for bran. On this basis the station figured that if wheat bran was worth $20.00 per ton, alfalfa meal was worth $21.28. While this experiment does not prove the desirability of using alfalfa meal as a dairy feed, it does show emphatically the value of the alfalfa plant and coincides closely with the results at other stations where alfalfa was found practically equal to bran pound per pound.

Alfalfa hay compared with cotton seed hulls, mixed hay, and mixed hay with silage.—The Texas Experiment Station tested the relative value of these roughage feeds with four lots of cows receiving the same kind of grain. The prices of the feeds were alfalfa $16.00 per ton, cotton seed hulls $6.00 per ton, mixed hay $10.00 per ton and silage $4.00 per ton. The experiment lasted for twenty-eight days at which time the alfalfa hay lot showed a profit over the cost of feed of $10.18 per cow; the cotton seed hulls $8.50, the mixed hay $9.37 and the mixed hay and silage, $9.05 per cow. These results again show the superior value of alfalfa compared with other roughage feeds.

Alfalfa compared with mixed hay, with varying amounts of grain.—The Utah Station divided ten cows into two lots, one lot receiving alfalfa hay and the other mixed hay. The grains in each case were a mixture of wheat and bran, equal parts by

weight. The experiment lasted for seven periods of three weeks each. The amount of grain fed each lot varied from six to twelve pounds, all changes being made at the beginning of the period. The results indicate that any increase in the grain ration over six pounds per day increased the cost of dairy products, almost without exception with both kinds of roughage. The amount of roughage consumed was practically the same for both lots. The five cows receiving the mixed hay ate 56 pounds more grain during the 147 days under experimentation. Considered from an economical standpoint, the alfalfa proved the superior roughage.

A second experiment of a similar character was conducted at Utah with approximately the same results.

The value of alfalfa for wintering cows without grain.—The Kansas Experiment Station tested the value of alfalfa for wintering cows not in milk. Seven head composed of dairy and beef animals were placed in the feed lot in September and received nothing during the winter except alfalfa hay. The results are recorded in the following table:

Results in wintering cows entirely on alfalfa hay.

No. of cow.	Breed of cow.	Age.		Weight Sept. 2, 1901.	Weight April 4, 1902.	Total gain 213 days.	Daily gain.
		Yrs.	Mos.				
				Lbs.	Lbs.	Lbs.	Lbs.
1.....	Shorthorn.....	2	7	1,000	1,330	330	1.54
1.....	Hereford.....	1	10	840	1,111	271	1.27
3.....	Holstein	2	6	980	1,268	288	1.35
4.....	Holstein	2	6	950	1,238	288	1 35
5.....	Red Polled.....	1	5	450	701	251	1.18
6.....	Galloway.....	1	10	651	810	159	1.06
7.....	Galloway.....	1	10	829	1,039	210	1.40

It was noted that the cows greatly improved in their appearance while being fed alfalfa.

Alfalfa as a soiling crop.—The Kansas Experiment Station fed green alfalfa to a herd of ten cows for 74 days. Figuring the butter fat at creamery prices and deducting the cost of grain, the green alfalfa brought an income of $1.95 per ton or $25.26 per acre. Other crops were also fed as soiling crops in comparison with alfalfa but none were as well relished or

brought as large returns as shown by the fact that corn brought $22.79. sorghum $15.60, Kafir-corn $13.83 and otas $6.81.

Alfalfa as a silage crop.—The Kansas Experiment Station reports an experiment of putting the first cutting of alfalfa into the silo. On account of continuous rains, the alfalfa had been allowed to stand too long and consequently was rather coarse and badly rusted and contained a considerable quantity of horse weeds, (*Leptilon Canadense*). This alfalfa would have made exceedingly poor hay. When the silo was opened, it was found that the top two feet were moulded badly but below that it was in excellent condition. The mouldy silage was hauled into the pasture where it was noticed that the cows ate it readily. When fed in the stable, it was noticed that two-thirds of the cows ate the silage, weeds and all and the other third ate all but the weeds and it was possible to keep up the flow of milk in July when the pasture was dry and scanty by the use of this alfalfa silage.

ALFALFA AS A FEED FOR HOGS.

Experiments in feeding alfalfa to hogs are not as yet numerous but some interesting facts have been brought out from the few experiments that have been conducted.

Alfalfa hay for hogs.—The Colorado Experiment Station fed alfalfa to hogs as roughage and the results show that the pigs ate more grain and made larger gains than on a similar ration without alfalfa.

At Utah, alfalfa is reported as giving favorable returns in connection with a limited grain ration.

The Kansas Experiment Station divided twenty hogs into two lots as nearly equal as possible. One lot was fed Kafir-corn meal dry alone. The other lot was fed Kafir-corn meal with alfalfa hay. The results per bushel of grain are as follows:—

Kafir-corn meal dry and 17.83 pounds of alfalfa hay produced 10.88 pounds of gain.

Kafir corn meal dry alone produced 7.48 pounds of gain.

This shows a rate gain of 868 pounds of pork per ton of alfalfa fed. A second experiment showed that alfalfa hay which was poor in quality increased the gains at the rate of 333 pounds per ton fed. An experiment at the same station in grinding alfalfa hay for hogs resulted in a loss. A later experiment at the

Kansas Station showed that 102 pounds of alfalfa hay took the place of 64 pounds of grain. The extra gains due to alfalfa show the latter to produce at the rate of 235 pounds of pork per ton.

In connection with the results obtained in feeding alfalfa hay to hogs at the experiment station it is interesting to record the experience of Ex-Governor Hoard in successfully feeding his brood sows prior to farrowing on nothing but alfalfa with an occasional small allowance of skim milk.

Alfalfa as a hog pasture.—The Utah Station reports that alfalfa without other feeds, either pastured or cut and fed green, would barely maintain pigs but when grain was fed in addition, the rate of gain was nearly proportionate to the quantity of grain fed.

At the Kansas Station 36 pigs were divided into three lots, one receiving no pasture, another alfalfa pasture and the third rape pasture. Each lot was divided into two sections, one receiving skim milk, and the other butter milk. The mixture was the same for all pigs, viz., shorts one half, corn one fourth, and Kafir-corn one fourth. The results were as follows:—

Grain consumed per 100 pounds of gain.

	Skim milk.	Buttermilk.
	Lbs.	Lbs.
No pasture	333	379
Alfalfa pasture	297	313
Rape pasture	304	301

The gains of the hogs in the different lots were nearly equal but the amount of grain consumed per one hundred pounds of gain as indicated by the above figures is considerable less with the hogs on pasture. It will also be noted that there was little difference between the gains and grain consumed per one hundred pounds of gain between the alfalfa and rape pasture. The area required in furnishing this pasture was only one half as much with alfalfa as with rape.

Alfalfa has also produced excellent results in feeding steers, brood mares, growing colts, and some have even had good results in feeding alfalfa hay to work horses. Poultrymen are advocating alfalfa for the production of eggs. A review of the

results of feeding alfalfa with the various classes of animals shows it to be by far the best known roughage for farm animals. Red clover has been rightly held in hign esteem but according to its composition and the results obtained in feeding farm animals, it has been found that two tons of alfalfa hay is practically equal to three tons of red clover. When we think of alfalfa as a perennial plant, that it produces a larger yield than any other hay crop, that it extends its roots into the lower soil and brings up plant food from the sub-soil, that its roots are covered with tubercles, the home of micro organisms that have the power to lay hold of the nitrogen in our atmosphere and convert it into plant food, thus leaving the soil richer than it was before the alfalfa was grown, we cannot help but think that alfalfa is a wonder plant. There seems to be little or no question as to its adaptability to Wisconsin conditions and as the feeding trials almost invariably show its superior results, it behooves us to urge our farmers cautiously but earnestly to grow this crop as soon as possible in order to get the largest net returns from their land.

DISCUSSION.

The President: We have had a very good address on this subject and I presume there are some questions you would like to ask the professor in regard to this matter and if you have any questions to ask I would like to have you bring them up as rapidly as possible and right to the point.

Mr. Dassow: Is the hay fed to hogs cut or fed whole?

Prof. Otis: Fed whole.

Mr. Dassow: Will they pick it all up clean?

Prof. Otis: Reasonably clean, yes, but they were charged up with it in this instance.

Member: Where do you find the alfalfa seed and how much does it cost per pound?

Prof. Otis: That is something for you to take up with your seed man or if you will write to Prof. Moore, of the Agricultural College, I think he can refer you to a number of our short course students over the state who are raising alfalfa. He undertakes to order a considerable quantity of alfalfa seed for those who are interested. Alfalfa seed commands a pretty good price but when you consider that you only need about 20 lbs. to the acre it is not so very expensive.

The President: The next on the program was to have been an address by Honorable E. H. Webster of Washington, D. C., but as Mr. Webster is not here we have with us Professor Doane as his representative, and I will call on Professor Doane at this time.

ADDRESS.

PROFESSOR C. A. DOANE, Washington, D. C.

Dairy Expert, U. S. Dept. of Agriculture.

Mr. Chairman, Ladies and Gentlemen:

Mr. Webster asked me to express his very deep regret that he has never yet been able to attend a convention of the Wisconsin Cheese Makers. I think he feels that he necessarily had to slight this convention; it has been his desire for two or three years to come and he expected to be here this year but something came up which brought him to Canada.

The few words I am going to say today is along the business side of cheese factory management. The dairy school has been established largely to turn out good cheese makers. I think everything that has been said here has been in regard to the necessity for making good cheese. That is all right in its place but there is another side to that. A man has to be a good business man in a creamery or cheese factory if he is to make a success of the work. I have had my attention brought to that fact particularly in the last couple of years as the dairy division does considerable work in a factory north of Plymouth. The man we happen to be in with there always manages to pay his farmers just a little above, sell a little bit better than any of the factories around there and at the same time is making an exceptionally good living for himself. The result is that some farmers are leaving other factories and coming to his. It is natural and in the keen competition which cheese makers experience in the cheese districts, it is the best business man, the man that pays his farmers the most for their milk, that will come out ahead.

I was interested in Mr. Benkendorf's talk regarding the moisture test for cheese. You know in the butter making world this is quite an important item. There is much going

on right along about the moisture in butter, its control and effect on butter so they can get that down to a pretty fine point, and the best man is the man who rubs just as close to the 16% standard as he can or dares to, and does not get caught by the revenue officers. That is a pretty strong way to put it, but it is a fact nevertheless. There are a good many things to be known about moisture in cheese and the time is coming when the moisture test which Mr. Benkendorf talked about, or some other simple test, is going to play an important part in the business management of cheese factories. We have to know, of course, several things before that, the effect of too much moisture on cheese, etc. I suppose a good many people will be trying to figure out how they can get the most moisture in cheese and not affect the cheese so as to affect the price.

The casein test illustrated by Mr. Hart, in connection with the Babcock test, the moisture test and experiments to be conducted with those things I hope in the not far distant future, are going to open up a problem which will put the cheese makers who want to learn in a position to be a little ahead of any competition they have in their districts.

The President: The next subject to be discussed is the National Dairy Show and its relation to the cheese makers. This subject was to be taken up by Mr. E. Sudendorf, of Chicago, Secretary National Dairy Show Association, but Mr. Sudendorf was called away and Mr. A. J. Glover, of Fort Atkinson, has consented to say a few words in his place.

THE NATIONAL DAIRY SHOW AND ITS RELATION TO THE CHEESE MAKERS OF WISCONSIN.

A. J. GLOVER, Fort Atkinson, Wis.

Editorial Staff, Hoard's Dairyman.

Mr. Chairman, Ladies and Gentlemen, Members of the Wis. Cheese Makers' Association:

I promised Mr. Sudendorf that I would try to set before this organization the objects of the National Dairy Show. You are all aware, perhaps, that we have held two successful national dairy shows in the city of Chicago. We have brought together at those meetings all the different appliances for the manufacture of butter and cheese, for the bottling of milk and delivering of it to the consumers of the city. Lack of funds has prevented us from appointing a cheese superintendent and therefore we have not had the cheese makers with us to any great extent. This was not because we did not want them or because we had forgotten them, but it was due largely to the fact that we lacked funds that we have not extended to you a hearty invitation and offered you a premium in order that you might exhibit your cheese.

A show of this kind is a large undertaking; it cost us in the neighborhood of thirty thousand dollars to hold this last show and that amount was made up by the men that made the exhibits and by admission to the show, and I believe that everyone that attended it feels that the National Dairy Show has been a success. It brings together all the different interests in dairying. It offers a place for the exchanging of ideas among butter makers and cheese makers, dairymen and breeders of cattle of dairy type. We had at the last show the largest exhibit of dairy cattle that was ever brought together on this continent. There was represented the Ayershire, the Holstein, the Jersey, the Brown Swiss, the Guernsey and the Dutch Belted. There was an opportunity for the farmers to study the characteristics of each of these breeds to see what the breeders' skill had developed in our country and in other countries, for we had four herds from Canada.

Now this organization we represent has been brought about to improve the dairy industry of the country, to add strength

to it, to make it appear before the American people that dairying is of some importance. The International Stock Show has been of great benefit to the beef interests; it has made the beef interests well known, not only in this country but in foreign countries, and here are the great dairy interests of the United States that have been little known and little appreciated by the people of this country, with the exception of those directly interested in the industry. Very few indeed realize that the dairy industry is anywhere nearly as important as the beef industry, yet it is larger and is of more importance to the people of this country. Therefore we have organized this National Dairy Show, by which we can bring together all the different breeds for the purpose of educating ourselves in the subject of dairying, and at the same time let the people know what we are doing.

Now my object this afternoon in appearing before you is to urge and invite you, if you please, to co-operate with us in making the National Dairy Show larger and better than ever before. It is not organized for profit. I have given my time, Mr. Sudendorf and others have really given their time with no compensation; we have given money and we have lost this last year between three and four thousand dollars; but that did not stagger the stockholders who are interested, sixty-five men holding the shares. I believe the next National Dairy Show will be able to pay good premiums to the cheese maker, to the butter maker and to the cattle exhibitors; we will offer you a place for holding your meetings, offer a place to the butter makers and also to the dairymen, and our show will in no way conflict with your society, will in no way attempt to absorb or control it. The only thing we would like is to have you meet at the same time we hold our show, holding your convention in the same way as you are doing now. You could hold it in this hall but we would have the show in the new auditorium and perhaps there would be room in there for you. The only difference would be, you would hold your meeting at the time of the show and each of you would be asked to encourage your patrons to come and see the different breeds of cattle, have opportunity to exchange ideas with the best men from all over the United States. We can be a sort of national organization and by bringing together all those different societies we would have greater strength than we

have acting singly, and that in brief is the object and purpose of the National Dairy Show. I thank you.

The President: Any questions you would like to ask Mr. Glover at this time in regard to the National Dairy Show? If not we will pass on to the subject next on the program, and listen to a talk by Mr. Shilling, President of the National Dairy Union and Associate Editor of Chicago Dairy Produce.

WORK OF THE NATIONAL DAIRY UNION.

S. B. SHILLING, Chicago, Ill.

President National Dairy Union, Secretary National Butter-Makers' Association.

Mr. Chairman, Ladies and Gentlemen:

I assure you I am not going to stand before you for more than a few moments. It is not my first appearance, I was up there last night and I am not going to take much more of your time.

First I want to congratulate you and tell you I think I have attended the best meeting of the kind that I have ever attended in my life. I am not going to undertake to tell you any thing about cheese making because if I did you would find out pretty quick what I did not know would fill a mighty big book.

I have noticed while sitting here and listening to the papers and discussions that you are up against pretty near the same problems the butter makers are out in Iowa, my state. Your chairman introduced me as from Chicago but I live in Iowa, although I stay in Chicago. It seems to me you are up against the same propositions only not quite so bad; for instance, you have not to contend with the centralizing plants in this state the way the boys have over there, and for years they have argued the same questions about quality that you are discussing here today. Every man who spoke said that you must have a fine quality of milk to make a good cheese. We have

been up against the same proposition and have told the boys they should reject all poor milk but we have quit that. That may seem strange to you over here but we do not do it there any more. We tell them to take it, we have to take it. That may seem a strange condition to you but if you were threatened over here with the invasion of your territory by centralizing plants that dropped in here and there and took a man, you would have to act upon the same advice that we are giving the boys there now, take it. You have to take it, you cannot help it, but at the same time we say "Do your very best with your personal efforts and influence to get the quality better." That is all we can do over there. I believe you can still resort to drastic measures here and I think you ought to continue that as long as you can, but if the time comes when you are threatened with the invasion or a foreign enemy, threatened with destruction of your factory. I would say "Take it and do the best you can with it," but use your own personal influence to get the quality improved, work with your patrons. I heard one man say during this convention, and I was glad to hear him say it, that during thirteen years' experience in a cheese factory, he never insulted a patron. That was a nice thing to say if I were going to give you boys a word of advice, it would be to work along the line of improvement with your patrons; to improve the quality of your milk.

I am going to say a few words to you about the National Dairy Union first. I know you gentlemen in the cheese making industry are interested in the organization; you are interested in a financial way if for no other reason, because you must realize the more milk that is made into the butter product, the greater sale of that product, the more sale there is of your product. You are interested as much as the man that is making butter today. We have had during the last year butter at the highest price it has been for years, 27.79 cts. per pound on the average in New York during the past year. That is higher than it has ever been in the history of butter. Ten years ago the average price was 16½ cts. for the year and from that time on it has been gradually going up, until last year we averaged nearly 28 cts.

I have made this statement before audiences before, and at one time was laughed at for it, but the longer I live the nearer

it comes to bearing out the prophecy I made, that you can turn every foot of available land in this country into the production of butter and if you only make the product fine enough you will never overdo the business. I wish you would remember that; I have said that for ten years and I believe the history of the butter production in this country bears me out in that statement, and I believe the same thing is true with the cheese industry,—I believe if you can make your product fine enough you may put every available foot of land in this country into the production of cheese and you will not overdo it. I do not think you will ever again see a low price for butter or cheese. I speak more confidently of butter because I know more about it, but I want to say that you will never again in the history of this country see a time when butter will be at a low price.

The last time I stood before you I said that I did not think there would be a time for some years to come when the dairy interests would not be threatened by oleomargarine, that I did not believe it was possible for the National Dairy Union to dissolve their organization and leave the fraud open, and the longer we study the situation the more convinced are we that such is the fact. The high price of butter the past year has been used as an excuse for the oleomargarine people to go to the consumers and tell them the high price of dairy goods was because of the oleomargarine law and if they will join with them and secure the repeal of that law that they will see butter down again. It is an argument that is having more influence and effect than any argument they have ever been able to use against us. The high price of butter has made it prohibitive for the average wage earner to consume, he cannot afford to consume butter at 32 to 40 cts. a pound. The oleomargarine people have taken advantage of that fact, but here is the thing that is going to save us now, if there is anything on earth to save us. Already there have been two or three organizations formed, particularly at St. Louis, to go to Congress and endeavor to secure a repeal of the law. What this move will amount to we do not know but we do not think they can do anything. We have assurances from the same men who steered us clear of the breakers when we secured this law that it is impossible for the oleomargarine people to do anything this year, for this reason,—we know we are on

the verge of an election and no party is going to take the chance of jeopardizing its interests by taking on a bill that is going to be antagonistic to a large number of the people, and on that one fact at this time we are building our hopes that nothing will be undertaken during the present session of congress. You know as much about that as I do. We have the assurances of the loyal men in Congress that this will be the status of affairs. If anything is undertaken we do not look for it until the end of the session anyway.

Now I want to say to the Members of the Wisconsin Cheese Makers' Association, do not forget the National Dairy Union. Remember it is an organization guarding your interests, not directly perhaps but indirectly.

While I am before you I want to say a few words more about another organization and that is the National Butter Makers' Association. I am sorry we could not unite the two interests and have a great national convention to come together at least once a year. We will have a large convention that will meet in St. Paul in March and it is our intention to try and make that convention one of the largest that has ever been held. We have the grandest building there, erected for that purpose and probably that ever will be, unless perhaps the new auditorium in this city.

We are going to hold that convention in March and I am going to take it on myself to invite as many of you as possible to come. There will certainly be something there that will be of interest and instruction to you and I know I am voicing the sentiment of the butter makers of the United States when I say I wish you could meet with us in St. Paul in March.

Mr. Glover: I had the pleasure this afternoon of being at two meetings with Mr. Shilling and his remarks at these two different meetings has suggested to me this pun—"If the devil was sick, the devil a monk would be, but if the devil was well a devil of a monk was he." At the first meeting this afternoon Mr. Shilling said he was from Chicago, at this meeting he said he was from Iowa. I would like to know where Mr. Shilling comes from and where he belongs.

Mr. Shilling: I did not expect Mr. Glover would come over and tell that but it was put up to me so hard at the other meeting that I had to say something. I stay in Chicago,

didn't I acknowledge that, but live in Iowa. I do not think I made any misstatements because I am willing to stand before you and say again I stay in Chicago, and already I have told you that I live in Iowa.

Mr. J. G. Moore: I believe, under the legal definition, where a man lives is where he sleeps and has his washing done. I would like to know whether Mr. Shilling has his washing done in Iowa or in Chicago?

Mr. Shilling: Now, Mr. Chairman they are twitting me because I am an old bachelor.

The President: What do you wish to do with the topic Silos and Silage?

Mr. J. G. Moore: Mr. Hill is unavoidably not here, I would suggest that Mr. Glover is conversant with the subject and undoubtedly would be kind enough to tell us something about ensilage and its effect on milk.

The President: Mr. Glover we would like to hear from you.

SILOS AND SILAGE.

A. J. GLOVER, Fort Atkinson, Wis.

Mr. Chairman and Gentlemen:

I presume there is not a man in the audience that does not know something about the merits of silage. I think as we go more and more into the subject of caring for and feeding dairy cows the more imperative is the need of a silo.

There is no reason why the cheese makers of Wisconsin should not make cheese twelve months in the year. There has been, and I presume there always will be in the early part of the spring when cows are being fed on dry corn stalks and fodder which does not keep them in the best of condition, more or less trouble with the milk in manufacturing cheese. We speak of the fodder cheese, it is apt to be more or less dry, the milk is hard to convert into a good cheese. I do not think it is the season of the year that has anything to do with

this, perhaps the period of lactation does, but I do think at the bottom of it all is this, that the farmer does not properly feed his cows. A cow on a hay stack or straw stack, fed dry fodder with very little if any grain, does not produce a milk that will make a good cheese, but with the use of a silo all that can be overcome and the cow would be in as good condition for producing milk in the middle of January as in the middle of June. For instance, we will refer to the herd on Hoard's Dairy farm. Our cows are as sleek today, their coats are as smooth and they are giving as much milk as they did in June, and I believe that milk will make as good cheese today as it would make in June because those cows are properly nourished. Those cows are in good, first class condition and they are kept that way by the use of the proper kind of food. They have silage, which is a succulent food, it tends to keep their bowels in good condition; in other words, it has a certain effect upon the animal's digestion that dry fodder does not have. In connection with this they were fed alfalfa and a little grain, but the basis, Members of the Cheese Makers' Association, of our ration is farm silage and alfalfa hay.

In my early days I was a cheese maker. I know what it is to lean over three or four vats in a factory and turn out a cheese a day. I know what some of you men have to contend with early in the spring and in midsummer when the farmers do not take the right kind of care of their milk. I believe if the farmers would build a silo and feed the dairy cows as they ought to be fed there would be no reason for laying off three or four months in the winter because you did not get the proper kind of milk or no milk. Your factories would have to be made somewhat different, your curing rooms would have to be somewhat different.

I would ask you then to urge upon your patrons the importance of building a silo. You may ask what kind of a silo. There are a great many good kinds of silos and the kind to build depends a great deal on the locality in which you are living. If you have plenty of gravel at the farmers' command I would have you encourage them to build a cement silo, if you have the stone build a stone silo, if you have not that build a stave silo. A stave silo is good silo. It does not last forever but it is a good silo.

The first thing you should bring before your patrons in the

construction of a silo is to be sure and have them build a silo in accordance with the size of their herds. If a man has twenty cows he does not want to build a silo large enough for the feeding of forty cows; he wants to be sure and build a silo so that a certain amount of silage may be fed each day. You should always bear in mind this point,—that silage is nothing more or less than canned corn and there is just simply the difference between canned corn and corn fodder as there is between canned peaches and dried peaches. One of the mistakes the early builders of silos made was to build their silos too large in diameter and they could not feed off enough of the silage so it spoiled, just as your fruit will spoil if you open more cans than you can consume in several days. One rule I have given is to build a silo twice as high as its diameter; if 16 feet in diameter, build it 32 or 35 ft. high; if you build a silo 20 ft. in diameter, and that would be the limit, build it 40 or 45 ft. high and let it extend into the ground four to six feet. That, however, is not as necessary as it was when we had the carriers to put up. If any of you had experience in that you know what a job it was, but with a blower it is easy to fill a 60 ft. silo.

A silo 16 ft. in diameter and 35 ft. high will carry twenty-five to thirty cows, I think, (I am not just sure of this) for 250 days, so you can figure the capacity of a silo for yourself. Remember a cubic foot of silage weighs 45 lbs.; a cow consumes 35 to 40 lbs. of silage a day; if this man wants to feed 200 days, you can figure how large a silo he wants by the number of cows he has. Encourage him to build one large enough to have a summer silo. You know in August the milk is apt to fall short and if your patron has a silo so as to have succulent silage while the pasture is dry you are apt to find great difference in your milk receipts. I sometimes think the dairy herds of Wisconsin like silage twice as much in August, in the dry period, as they do in the middle of winter. If your herd drops down it is very hard to bring them back to their normal flow again.

Moreover, the silo makes the farmer more independent of high priced feeds. With a good silo, which will furnish succulent food, and with plenty of alfalfa hay the farmer is very, very independent indeed of the high priced feed, and we all know at the present time that is a very important point. We

are asked many questions in regard to rations for the dairy cow at this time, some people writing us that their rations are exceeding twenty to twenty-five cents per cow per day. If a farmer provides himself with ensilage and alfalfa he has one of the best rations that it is possible to produce and I am sure if you makers can induce your patrons to feed their cows that way your factories will run the year round, that you will of necessity increase your milk supply, that it will mean better milk to you, mean constant employment, it would mean the making of better dairymen out of the farmers that come to your factories.

You boys do not realize, at least I did not realize when I was a cheese maker and a butter maker how much I could do for the patrons that came to my factory; I did not realize that I could supply them with good dairy literature. I talked to them in my limited way about this, that and the other thing, but I did not reach out far enough and put into their hands bulletins from our experiment stations, agricultural papers, etc. I was not on the lookout to pick out the different papers that came to me and put them into their hands. You can be of great service in helping your patrons to make better dairymen of themselves if you will only grasp the opportunity. I thank you.

DISCUSSION.

Mr. Marty: I would like to ask Mr. Glover if he believes the feeding of silage has any influence on such cheese as Swiss cheese, when manufactured from silage fed milk?

Mr. Glover: You have asked me a question that I cannot answer with satisfaction to myself. I know of no experiments that have been conducted to determine whether silage has any effect upon cheese or not; but when I was connected with the Minnesota Experiment station I made sweet curd cheese from milk from silage fed cows and I had no trouble with the cheese huffing. I made Edam, Brick and a limited amount of Limburger but I never made any Swiss cheese from silage made milk, but I do know that some of the best milk that has ever been produced in this country, milk that has been selected

as being the best, has been made by men who fed their cows silage three hundred and sixty-five days in the year if conditions required it. The milk that was shipped from H. B. Gurler's farm to Paris was eighteen days in transit and three days in Paris before it was sour to the taste, and it was made from silage. However if a farmer is careless and does not properly ventilate his barn, if he permits silage to be strewn around in the alley and allows some to fall in the milk, I can see that the silage would have a tendency to have an injurious effect upon the milk for Swiss cheese, but in the Cheddar cheese factories, where they develop lactic acid, they would have no trouble whatever from silage. They are making thousands of pounds of condensed milk now in this country from silage made milk. Only this fall I was down at St. Louis and out to Greenville, where there is a big condensed milk factory, and I was lecturing on feeding in particular and they said "Glover, urge them to build silos. We can make condensed milk from silage made milk if the farmer will but take the necessary precaution of keeping the alley clean and feeding the silage in the proper manner."

Mr. Marty: I would like to say that I have had the opportunity of seeing some experiments carried on where they manufacture Swiss cheese. About two-thirds of the milk furnished to one factory was furnished by the herd of one of the officers of that factory and he fed his cows silage. When the cheese maker called his attention to the fact that his silage made milk was not making good cheese, he insisted that his barn was kept perfectly clean and the fault was not with his silage, and it took about three weeks before it got to the point where it began to show the result of manufacturing cheese from silage made milk. Whether this man employed the best method in feeding I do not know but when he stopped feeding silage the trouble was all over with; he tried feeding silage again, experimented for about three weeks and finally came to the conclusion that it was best for him not to feed the silage.

Mr. Glover: I would say, in reply to Mr. Marty's statement, that there is hardly a feed, unless it be bran, that cannot be fed so it will more or less injure the milk. You feed a cow a combination of timothy hay, rye and corn and silage, if you please, feed them freely and I dare say you will have

your cows in rather poor condition and not producing good wholesome milk. I have seen that tried. One of the patrons I visited in my work in Illinois was feeding that same ration I just told you of and he could not feed his baby the milk he produced. That combination is bad. You feed a cow too much oil meal and you will get a certain flavor in your milk; you let a cow graze on rich, new grass and you will get a flavor. I saw a time when I could not make Edam cheese when cows were grazing on rye feed. If you feed cows too much clover you cannot make good cheese, you will more or less injure the milk. I know of one creamery that had to forbid their patrons feeding certain feeds because they fed too much of them. It is feeding right that we are talking about and we must stick to that. Whether silage fed right to dairy cows will affect the milk so as to have a bad effect on Swiss cheese I do not know, but my judgment is if fed properly you can make good Swiss cheese from it.

Mr. Dassow: One of my neighboring cheese factories has had trouble with silage milk, and the man owning the silage fed cows divided them into two lots, feeding one-half with silage and the other not having any, and there was a difference in the silage made milk. What was the matter with that silage?

Mr. Glover: I do not know.

Mr. Aderhold: Did he feed silage before the cows were turned out and did that injure the milk?

Mr. Dassow: Yes, but his neighbor fed silage almost at the same time and his milk was good. The first man's silo was almost empty.

Mr. Glover: Perhaps the silage was mouldy. You can put up silage so it becomes very sour, put it up before it is mature enough.

Mr. Dassow: We have had some experience with silos in my neighborhood. My father fed a herd entirely on silage one spring and I made the milk into cheese and had no trouble with it.

Mr. J. G. Moore: I think Mr. Chas. L. Hill furnishes cream from his farm to one of the best hotels in Milwaukee and he feeds ensilage to his cows. Last winter, when we were getting ready for the Dairymen's convention, in judging milk for that, the inspector of the dairy and food commission judged

silage milk as perfect where it was properly fed, not knowing where the milk came from or how it was produced.

The President: Are there any other questions? If not, that ends the program for this afternoon and we will now take up the report of committees. There is only one committee to report and that is the committee on resolutions. I will call on the chairman of that committee to report.

REPORT OF RESOLUTION COMMITTEE.

E. L. ADERHOLD, Neenah, Wis.
Chairman.

WHEREAS, This Sixteenth Annual Convention of the Wisconson Cheese Makers' Association through the good efforts of its officers and of other persons, and because of the exceptionally excellent program which had been prepared by our Secretary, Mr. Baer, has been a success in the attainment of our purpose,

Therefore, Resolved, That our thanks are hereby tendered collectively to all of those whose efforts have contributed to this success.

Resolved, That the thanks of this association is due the citizens of Milwaukee who through the Citizens Business League and their honorable mayor have contributed materially to the success and entertainment of this convention.

Resolved, That this association is deeply grateful to and hereby tenders its thanks to the Hon. S. A. Cook, of Neenah, to Chas. Becker of the Wisconsin Coal Co., Milwaukee, to J. B. Ford & Co., manufacturers of Wyandotte Washing Powder, to the Marschall Dairy Laboratory, Madison, and F. A. Averbeck & Co., Jewelers of Madison for the handsome and valuable presents offered the participators in the scoring contests.

WHEREAS, The Supreme ruler of the universe has seen fit to remove from our midst a man who, inspired by the spirit of progress, had labored long and faithfully to fit himself as an

educator in dairying, and who later, through his untiring zeal, became recognized as a force in the uplifting in the dairy industry, therefore,

Resolved, That in the death of our Professor John W. Decker the dairy industry has lost a champion and promoter and the country at large has lost the services of a most useful man.

Be it further resolved, That we extend to his widow and to his parents our sincere sympathy in their bereavement and hereby direct that copies of these resolutions be sent to the said relatives and also be spread on our records.

Resolved, That our thanks are hereby tendered to the Kilburn Male Quartette, to Mrs. Kempfer, and others, for the beautiful songs rendered at our sessions.

Resolved, That Chas. Becker is entitled to special thanks for his instrumentality in furnishing entertainment for our members.

Resolved, That the thanks of this association are due and are hereby tendered the supply men and the transportation men for their moral and substantial support in the past and present.

WHEREAS, It has been known that certain cheese factory operators are evading the spirit if not the letter of the skim cheese law, by shipping skim milk curd out of the state where it is pressed into cheese and sold in competition with our full cream cheese, therefore,

Resolved, That we, the Wisconsin Cheese Makers' Association condemn such practice, for we consider it a serious menace to the welfare of the cheese industry of Wisconsin, and be it further,

Resolved, That the officers of this association be hereby instructed to consider ways and means to abolish said practice.

Resolved, That should the officers of the National Dairy Show Association deem it propitious to hold a National Dairy Show at Milwaukee in 1909, that we hereby pledge our moral support and co-operation in furthering such movement.

Resolved, That the monthly scoring exhibitions as carried on by our State College of Agriculture have proven an unqualified success and are, indeed, an important factor as an educational feature.

WHEREAS, On account of our laws enacted for the regulation

of dairy stable sanitation the question of improving stables is a very live one, and

WHEREAS, The majority of cow keepers are not sufficiently posted on stable matters, and are therefore unable, properly, to make the necessary improvements, and

WHEREAS, No means are at hand for supplying in a general way the necessary information, therefore,

Resolved, That we petition the management of our State Agricultural College to issue a bulletin giving concrete illustrations and descriptions of the better class of cow stalls, stable floors and stable sanitation in general. Be it further

Resolved, That copies of this resolution be sent to Dean H. L. Russell, Prof. Henry, and Ex-Governor Hoard.

WHEREAS, The dairy industry has become of such great importance and its effects on general agriculture is so great, therefore, be it

Resolved, That it is the sense of this convention that the dairy division of the United States Department of Agriculture be made an independent bureau. Be it further

Resolved, That certified copies of this resolution be sent to the United States Senate and members of Congress from this state asking that they use their influence to bring about this change at the present session of Congress.

WHEREAS, State inspection and regulation of our dairies and dairy stables is an exceedingly important and necessary function of our state Dairy and Food Commission, and

WHEREAS, Aside from their other duties it is clearly impossible for the present force of inspectors to inspect and enforce sanitation on our one hundred thousand dairy farms.

Therefore, resolved, That it is the sense of this association that the force of the Dairy & Food Commission should be materially increased.

WHEREAS, Professor Hart, of our State Experiment Station has invented a simple and inexpensive method of testing milk for its casein contents, and

WHEREAS, Said invention promises to be a very valuable factor in the promotion of the dairy business in general, and,

WHEREAS, In this invention the State of Wisconsin has through its Experiment Station been again brought prominently before the world as a leader in dairy thought.

Therefore, be it resolved, That our thanks are due and hereby tendered to Prof. Hart for his casein test.

WHEREAS, The question of cream rates has a decided bearing on the future prosperity of the cheese industry and whereas this question is to be argued before the Interstate Commerce Commission at Washington, and whereas, the Wisconsin Dairy Manufacturers' & Milk Producers' Protective Association has been organized for the express purpose of representing the dairy interests of Wisconsin in this and other matters affecting their prosperity and have employed counsel to properly present Wisconsin claims in the case now pending, and feeling that the cheese makers are rightly interested in this matter, therefore be it

Resolved, That we hereby pledge our support to the advancement of this cause.

Respectfully submitted,
E. L. ADERHOLD, *Chairman,*
Neenah, Wis.
J. W. MOORE,
Madison, Wis.
P. H. KASPER,
Welcome, Wis.

On motion, duly seconded, the resolutions were adopted as read.

Mr. Carswell: I wish to offer a resolution that was unanimously adopted at the Executive Committee meeting this afternoon at 1 o'clock.

WHEREAS, A number of cheese buyers have cheese entered for which premiums have been awarded and said buyers had the premiums and prizes awarded to them, be it Resolved, That it is the sense of this association that the prizes should only be awarded to the bona fide makers, and the names of such makers be furnished with each entry, the cheese factory operator under whose manufacture the prize winning cheese has been made and entered, shall receive diploma,—or certificate. Be it further Resolved, That any cheese which takes prizes is not entitled to any part of the pro-rata premium fund.

WHEREAS, Prizes and premiums have been awarded on the first day of the convention, be it Resolved, That prizes and premiums are to be awarded next year on the third day of the convention.

A motion was offered and duly seconded to adopt the resolutions as read.

Mr. J. G. Moore: I would like to suggest this, that in thinking over this matter it seems to me that no man who secures a first or second prize trophy, through the absence or non-attendance of the man who rightfully ought to have it, can get any satisfaction out of it. It would seem to me a better plan if the association would adopt a rule that the exhibitor must be here in person or else the trophy will be left with the association and not awarded to any one. That would seem to me to be the fairest means of overcoming this difficulty.

Mr. Carswell: I think this was decided by the executive committee and we overlooked putting it in the resolution and I will willingly accept this as an amendment, because that was the sentiment of the officers and directors when we had the meeting.

The resolutions of the executive committee were adopted as read and on motion, duly seconded, Mr. Moore's amendment was adopted.

Mr. Aderhold: I want to inquire whether the cheese dealer or cheese factory owner who does not make cheese but ships cheese in here can get any pro rata money if he exhibits? Otherwise, can an exhibitor get pro rata money if he is not a cheese maker? There is no reason why they should not send in their cheese and get a score but I do not think they ought to get any pro rata money.

Mr. Carswell: I think this resolution will cover that. It says "All cheese entered must be entered in the name of the maker." All the dealer can receive is the diploma.

Convention adjourned.