# Fifteenth annual meeting of the Wisconsin Cheese Makers' Association held in the Convention Rooms, Republican House, Milwaukee, Wisconsin, Wednesday, Thursday and Friday, January 9, 10 and 11, 1907. ...

Wisconsin Cheese Makers' Association
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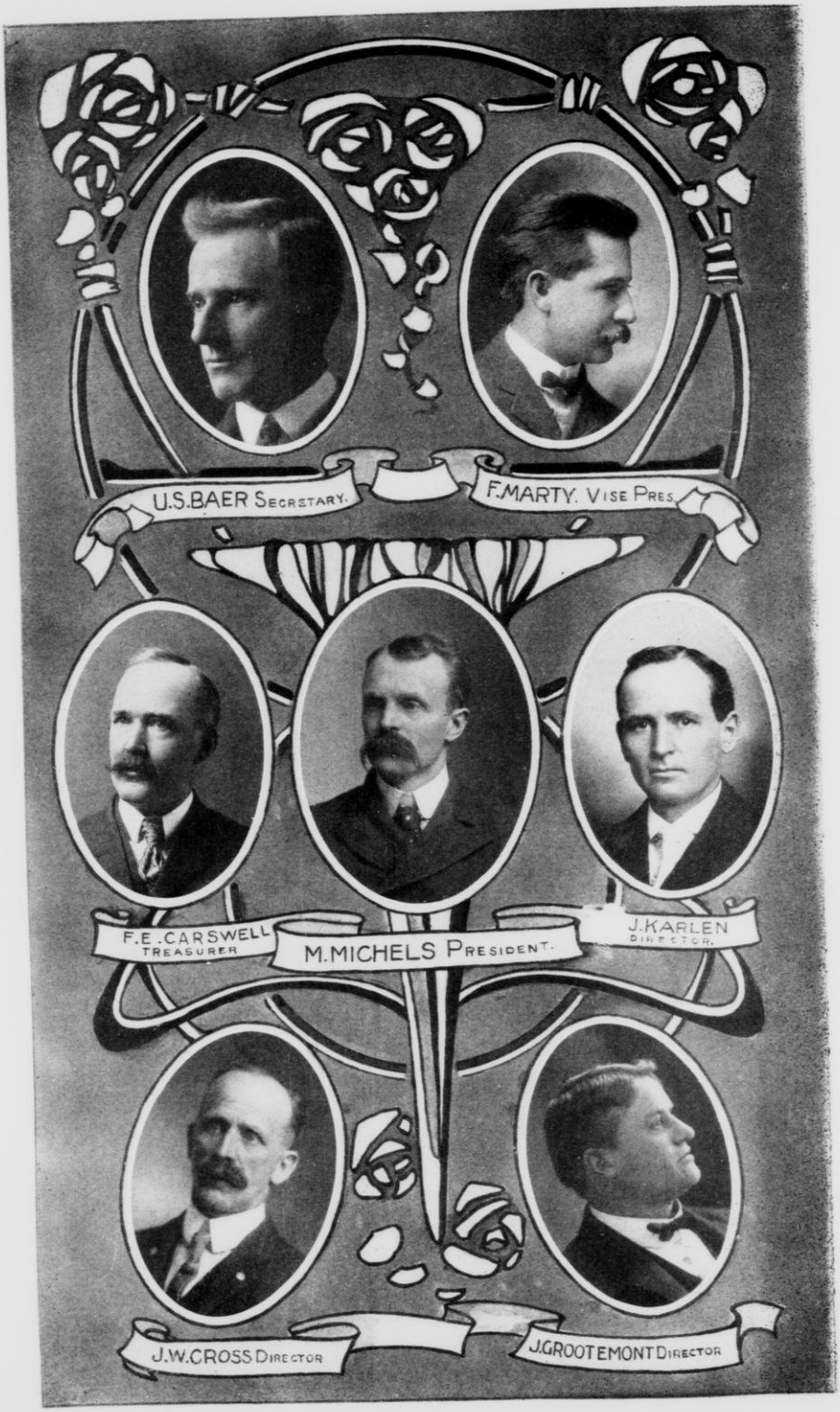


OFFICERS OF THE WISCONSIN CHEESEMAKERS' ASSOCIATION.

# FIFTEENTH ANNUAL MEETING

OF THE

# WISCONSIN

# Cheese Makers' Association

HELD IN THE

Convention Rooms, Republican House, Milwaukee, Wisconsin, Wednesday, Thursday and Friday, January 9, 10 and 11, 1907.

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

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

MADISON, WIS.
DEMOCRAT PRINTING COMPANY, STATE PRINTER
1907

# LETTER OF TRANSMITTAL.

Office of the Secretary,
Wisconsin Cheese Makers' Association,
Madison, Wis. 1907.

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

I have the honor to submit the fifteenth 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 9–11, 1907.

Respectfully submitted,
U. S. BAER,
Secretary

# OFFICERS, 1907.

President:—

MATTHEW MICHELS.....Madison, Wis.

Vice President:—

FRED MARTY.....Monroe, Wis.

Directors:—

Three Years—JAKE KARLEN.....Monroe, Wis.
Two Years—J. W. CROSS.....Mauston, Wis.
One Year—J. GROOTEMONT.....Brillion, 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.)

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## 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 cheesemaking; 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 cheesemaker, and such other persons as are

directly 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, except 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.

Section 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 calendar year at such time as may be determined by the Board of Directors.

# MEMBERS WISCONSIN CHEESE MAKERS' ASSOCIATION, 1907.

## A.

| | | |
|---|---|---|
| Aderhold, E. L. | Neenah | Wisconsin |
| Anderegg, Henry | La Crosse | Wisconsin |
| Anderegg, Casper | La Crosse | Wisconsin |
| Auer, G. E. | Boaz | Wisconsin |
| Akan, Tom | Richland Center | Wisconsin |
| Ackerman, H. | Manitowoc | Wisconsin |
| Austin, H. E. | Boscobel | Wisconsin |
| Arndt, John | Cedar Grove | Wisconsin |
| Ackerman, Joseph | Monroe | Wisconsin |
| Ast, B. | Dodgeville | Wisconsin |
| Adams, C. R. | Wyoming | Wisconsin |
| Adams, M. J. | Waukesha | Wisconsin |
| Adams, Thomas | Wyoming | Wisconsin. |
| Alexander, C. B. | Chicago, 4 Sherman St. | Illinois |
| Albert, F. | Mayville | Wisconsin |
| Anderson, H. | Sheboygan Falls | Wisconsin |
| Austin, W. A. | Kewaunee | Wisconsin. |
| Albrecht, John | Algoma | Wisconsin |

## B.

| | | |
|---|---|---|
| Biddulph, J. R. | Tiskilwa | Illinois |
| Baer, U. S. | Madison | Wisconsin |
| Boeing, E. G. | Hustisford | Wisconsin |
| Bartz, Alfred | Granton, R. R. No. 2 | Wisconsin |
| Benkendorf, G. H. | Madison | Wisconsin |
| Blaser, Fred | Hollandale | Wisconsin |
| Beeman, Charles | Viola, R. F. D. | Wisconsin |
| Bremmer, C. A. | Plain | Wisconsin |
| Benishek, Anton | Kellnersville | Wisconsin |
| Barton, Rex | Viola | Wisconsin |

| | | |
|---|---|---|
| Bender, F. J. | Boaz | Wisconsin |
| Bennett, Andrew | Belmont | Wisconsin |
| Brinkmann, C. F. | Coon Valley | Wisconsin |
| Briewaldt, Alex | Shawano | Wisconsin |
| Baeller, Christ | Belleville | Wisconsin |
| Buss, R. | Neilsville | Wisconsin |
| Buss, Theo | Marion | Wisconsin |
| Berdaur, Joseph | Auberndale | Wisconsin |
| Brandt, Aug | Forestville | Wisconsin |
| Buholzer, Caver | Woodford | Wisconsin |
| Baumbach, W. L. | Milwaukee | Wisconsin |
| Bahr, C. A. | New Holstein | Wisconsin |
| Bagley, F. R. | Chicago, 40 Dearborn St. | Illinois |
| Baumgartner, David | Barneveld | Wisconsin |
| Becker, O. W. | Lynn | Wisconsin |
| Bruhn, A. T. | Spring Green | Wisconsin |
| Behnke, R. C. | Brillion | Wisconsin |
| Berg, Julius | Sturgeon Bay, R. F. D. No. 3. | Wis. |
| Brandt, A. K. | Plymouth, R. F. D. No. 27. | Wis. |
| Blickensdorf, John | Darlington | Wisconsin |
| Burg, Edgar | Elkhart, R. F. D. No. 32. | Wisconsin |
| Bates, R. R. | Madison | Wisconsin |
| Becker, Phil | Hubertus | Wisconsin |
| Brickhouse, A. N. | Madison, Ave. Hotel. | Wisconsin |
| Brinkman, J. E. | Plymouth | Wisconsin |
| Bamford, H. J. | Plymouth | Wisconsin |
| Brummel, J. A. | Cecil | Wisconsin |
| Brink, Adam | Kewaunee, R. F. D. No. 1. | Wis. |
| Becker, Henry | Random Lake | Wisconsin |

## C.

| | | |
|---|---|---|
| Carswell, F. E. | Richland Center | Wisconsin |
| Cejka, E. | Antigo, R. F. D. No. 4. | Wisconsin |
| Cranston, P. E. | Sabin | Wisconsin |
| Cross, J. W. | Mauston | Wisconsin |
| Cannon, John | New London | Wisconsin |
| Cornelison, Thomas | Eau Claire | Wisconsin |
| Conrad, R. | Haven | Wisconsin |
| Chapin, B. J. | Cedarburg | Wisconsin |
| Curtin, D. R. | Hilbert | Wisconsin |
| Constantine, W. B. | Plain | Wisconsin |
| Cornish, O. B. | Ft. Atkinson | Wisconsin |
| Cannon, S. D. | Neenah | Wisconsin |

Chaplin, E. W.....Plymouth .....Wisconsin
Chicago Dairy Produce.....Chicago .....Illinois
Corner, C. A.....Milwaukee .....Wisconsin
Chaplin, H. A.....Plymouth .....Wisconsin

## D.

De Haan, Matthew.....Lineville .....Iowa
Dobbie, G. S.....Madison .....Wisconsin
Durst, Henry.....Twin Buffs .....Wisconsin
Durst, S. H.....Twin Buffs .....Wisconsin
Damrow Bros.....Fond du Lac .....Wisconsin
De Zwarte.....Sheboygan Falls .....Wisconsin
Dillon, H. P.....Oshkosh .....Wisconsin
Doudna, L. H.....Woodstock .....Wisconsin
Deicher, J. H.....Glenbulah .....Wisconsin
Ditmer, John.....Kewaunee .....Wisconsin
Dibble, C. A.....Milwaukee .....Wisconsin
(Room 28 Chamber of Commerce Bldg.)
Dassow, R. P.....Sheboygan Falls .....Wisconsin
Damrow, O.....Sheboygan Falls .....Wisconsin
Dehler, Mike.....Darlington .....Wisconsin
Danghhette, J. B.....Granton .....Wisconsin
Dietrich, Chas.....Marshfield .....Wisconsin
De Land, A. D.....Sheboygan .....Wisconsin
Daly, T. J.....Muscoda .....Wisconsin

## E.

Elmer, John H. & Son.....Monroe .....Wisconsin
Ebert, Lornz.....Bonduel .....Wisconsin
Engelland, Wm.....Manitowoc .....Wisconsin
Emenegger, Fritz.....So. Wayne .....Wisconsin
Elmer, Henry.....Belleville .....Wisconsin
Elmer, Jacob.....Belleville .....Wisconsin
Emery, Hon. J. Q.....Madison .....Wisconsin
Ericsson, E.....St. Paul .....Minnesota
Ellbrecht, Dr. G. Von.....Kopenhagen .....Denmark
Eichel, G. F. .....Fond du Lac, R. F. D. No 8....Wis.

## F.

Fischer, E. H.....Sheboygan Falls .....Wisconsin
Fries, Anton.....Glidden .....Wisconsin
Fischer, John.....Boaz .....Wisconsin
Flynn, F. A.....Baraboo .....Wisconsin

| | | |
|---|---|---|
| Falk, Emil | Waldo | Wisconsin |
| Furrer, Michael | Hollandale | Wisconsin |
| Furrer, Kasper | Blanchardville | Wisconsin |
| Fenn, Oscar | Sheboygan | Wisconsin |
| Frazer, Geo. W. | Appleton | Wisconsin |
| Failey, Owen | Black Creek | Wisconsin |
| Fetton, John | Black Creek | Wisconsin |
| Falch, W. C. | Shirley | Wisconsin |
| Franting, August | Split Rock | Wisconsin |
| Fecker, W. | Cleveland | Wisconsin |
| Fokett, C. J. | Reedsville, R. F. D. No. 2 | Wis. |
| Flannery, H. E. | Avoca | Wisconsin |
| Fenner, Frank | Sheboygan Falls | Wisconsin |
| Fulmer, F. B. | Oshkosh | Wisconsin |
| Falk, J. W. | Mayville | Wisconsin |
| Fitzgerald, Michael | Watertown | Wisconsin |
| Fremon, Leonard | Fenton | Michigan |
| Fiechter, Emil | Monroe | Wisconsin |
| Fetting, E. | Cochrane | Wisconsin |

## G.

| | | |
|---|---|---|
| Grimm, Arnold | Fremont, R. F. D. No. 17 | Wis. |
| Grimm, Samuel | Fremont, R. F. D. No. 17 | Wis. |
| Goetschel, S. E. | Cleveland | Wisconsin |
| Greunke, O. F. | Clintonville | Wisconsin |
| Ganschow, W. C. | Bonduel | Wisconsin |
| Groves, Oscar | Viola | Wisconsin |
| Gartman, Aug. | Edgar | Wisconsin |
| Green, R. D. | Albion | Wisconsin |
| Grootemont, J. | Brillion | Wisconsin |
| Geutig, L. M. | St. Colud | Wisconsin |
| Greunke, O. F. | Clintonville | Wisconsin |
| Gasche, Jacob | Luxemburg | Wisconsin |
| Gerner, R. | Barton | Wisconsin |
| Glidden Dairy Co. | Glidden | Wisconsin |
| Gartman, Chas. | Sheboygan, R. F. D. No. 4 | Wis. |
| Glover, A. J. | Ft. Atkinson | Wisconsin |
| Giffin, W. W. | Plymouth | Wisconsin |
| Gehl, M. C. | Milwaukee | Wisconsin |

## H.

| | | |
|---|---|---|
| Henseler, Anton | Marshfield, R. F. D. No. 1 | Wis. |
| Hoffemann, F. W. | Naugart, R. F. D. No 1 | Wisconsin |

Heilmann, Fred.....Sawyer, R. F. D. No. 3..Wisconsin
Hanson, L. W.....Seattle, 407 Wash., Bldg ....Wash.
Hostak, E.....Kellnersville, R. F. D. No. 2..Wis.
Halverson, H. W.....Appleton, R. F. D. No. 3.....Wis.
Helm, A. B.....Oshkosh .....Wisconsin
Hubert, W. F.....Sheboygan .....Wisconsin
Hangartner, J. J.....Marion .....Wisconsin
Hoeppner, John.....Marion .....Wisconsin
Hendy, J. C.....Platteville .....Wisconsin
Happel, J.....Kiel .....Wisconsin
Hamm, W. P.....Allenton .....Wisconsin
Homuth, A. E.....Spring Green .....Wisconsin
Hansen, J.....Little Falls .....New York
Hilliker, C. E.....Milwaukee .....Wisconsin
Hense, Aug.....Fond du Lac, R. F. D. No. 3..Wis.
Hamm, A. E.....West Bend, R. F. D. No. 5....Wis.
Hatch, W. B.....West Bend, R. F. D. No. 5....Wis.
Hickert, C. A..... Chilton .....Wisconsin
Habhegger, John.....Watertown .....Wisconsin
Hannawell, F. C.....Livingstone .....Wisconsin
Hanson, E. R.....Madison, 22 W. Doty St..Wisconsin

## I.

Iciler, Rony.....Belleville .....Wisconsin
Iserloth, Arthur.....Antigo .....Wisconsin
Indermuehle, Fred.....Oakfield .....Wisconsin
Indermuehle, Carl.....Knowles .....Wisconsin

## J.

Joseph, Frank.....La Farge .....Wisconsin
Johnston, Robert.....Woodstock, Ontario .....Canada
Jenks, A.....Dodgeville .....Wisconsin

## K.

Kane, James.....Stanton .....Wisconsin
Kohli, Christ.....Mayville, R. F. D. No. 3..Wisconsin
Kraak, Christ.....Muscoda .....Wisconsin
Kuehl, W. M.....Kewaunee .....Wisconsin
Kadlec, Frank.....Oconto, R. F. D. No. 2..Wisconsin
Klessig, August.....Cleveland, R F. D. No. 3.Wisconsin
Kramer, Walter.....Chilton, R F. D. No. 4..Wisconsin
Kelly, S. M.....Quincy .....Wisconsin

Kuschel, H. J.....Manawa, R. F. D. No. 2..Wisconsin
Kidd, Otis.....Sabin .....Wisconsin
Krubrack, G. W.....Embarrass .....Wisconsin
Karlen, Jacob Jr.....Monroe .....Wisconsin
Kopetsky, Menzel.....Kewaunee .....Wisconsin
Kust, Geo.....Kewaunee .....Wisconsin
Kolpack, Albert.....Wittenburg .....Wisconsin
Klumm, Edw.....Watertown .....Wisconsin
Kastenmeier, Wm.....Beaver Dam .....Wisconsin
Kachel, T. A.....Whitewater .....Wisconsin
Kessig, L H.....Cleveland .....Wisconsin
Kerscher, F. J.....Manitowoc .....Wisconsin
Kalmerton, Ed.....Sheboygan Falls .....Wisconsin
Konz, Joe.....Kiel .....Wisconsin
Koehler, M. A.....West Bloomfield .....Wisconsin
Kunth, H.....Hortonville .....Wisconsin
Kuhn, J. J.....Cleveland .....Wisconsin
Kasper, P. H.....Welcome .....Wisconsin
Kalk, H. A.....Plymouth .....Wisconsin
Kloetzli, John.....Barneveld .....Wisconsin
Kapelka, J. A.....Avoca .....Wisconsin
Kanera, John.....Kewaunee .....Wisconsin
Koopmann, A.....Port Washington .....Wisconsin
Kaley, M. A.....Spring Green .....Wisconsin
Knickerbocker, S E.....Wyoming .....Wisconsin
Kirkpatrick, John.....Richland Center .....Wisconsin
Knickerbocker, Joe.....Madison .....Wisconsin
Klessig, H. R.....Fredonia .....Wisconsin
Karlen, John.....Monroe .....Wisconsin
Kusal, L. H.....Watertown .....Wisconsin
Kielsmeier, Otto.....Columbus .....Ohio
Karlen, Fred.....Monroe .....Wisconsin
Karlen, Jacob Sr.....Monroe .....Wisconsin
Koehler, A. C.....Plymouth .....Wisconsin
Kreul, G. W.....Plain .....Wisconsin

## L.

Lenn, Jacob.....Belleville .....Wisconsin
Larson, H C.....Dodgeville .....Wisconsin
Laabs, A. G.....Madison .....Wisconsin
Luseberg, Ralph.....Milwaukee, 933—7th St..Wisconsin
Loewenhgen, O. W.....Alma, R. F. D. No. 1....Wisconsin
Lord, James.....Neptune .....Wisconsin
Lord, John.....Sandusky .....Wisconsin

Lepley, Fred.....West Lima .....Wisconsin
Larson, P. A.....Holman .....Wisconsin
Leumberger, John.....Davis .....Illinois
Leon, H.....St. Cloud .....Wisconsin
Lindow, N. C.....Plymouth .....Wisconsin
Lenrike, Arthur.....Kaukauna .....Wisconsin
Lee, J. E.....Yuba .....Wisconsin
Lord, Frank.....Boltonville .....Wisconsin
Luchsinger, John.....Monroe .....Wisconsin
La Croix, J. N.....New Holstein, R. F. D. No. 3..Wis.
Loeffel, Fred.....Monroe .....Wisconsin
Lepley, Edgar.....Viola .....Wisconsin
Lepley, Reba.....Viola .....Wisconsin
Leizen, G. J.....Belgium .....Wisconsin
Loomis, H. K.....Sheboygan Falls .....Wisconsin
Laabs, Emil.....Curtiss .....Wisconsin
Last, B. O.....Luxembourg, R. F. D. No. 1..Wis.

## M.

Mueller, Alfred.....Monroe .....Wisconsin
Moenning, G. C.....Sheboygan, R. F. D. No. 5....Wis.
Mendez, A. E.....Alphan Hidalgo .....Mexico
Meyers, Martin.....Madison .....Wisconsin
Moore, J. W.....Madison .....Wisconsin
Martin, E. W.....Spencer .....Wisconsin
Mueller, Anton.....Hayton .....Wisconsin
Monday, E. J.....Granton, R. F. D. No. 2.Wisconsin
Maedke, W E.....Algoma, R. F. D. No. 3..Wisconsin
Madding, Wallace.....Woodstock .....Wisconsin
Murray, Robert.....Yuba .....Wisconsin
McCready, J. B.....Fond du Lac.....Wisconsin
Marschall, A. J.....Madison .....Wisconsin
Middle Ridge Cheese Co.....Bangor .....Wisconsin
Moersh, Math.....Calumet Harbor .....Wisconsin
Moore, J. G.....Madison .....Wisconsin
Michels, Matthew.....Madison .....Wisconsin
McAdams, Wm.....Waukesha .....Wisconsin
Meyer, M.....Kiel .....Wisconsin
Martin, M. W.....Shirley .....Wisconsin
Matznick, G. M.....Kiel .....Wisconsin
Mass, Emil.....Oostburg .....Wisconsin
Maechtle, A. G.....Port Washington .....Wisconsin
Mayhew, A. B.....Clintonville .....Wisconsin

McNichols, Frank.....Plymouth .....Wisconsin
Mayhew, E. B.....Greenbush .....Wisconsin
Mahlick, M. J.....Pilsen .....Wisconsin
Matti, Jacob.....Mt. Horeb .....Wisconsin
Mroteh, Peter.....Kewaunee .....Wisconsin
Muller, H. L.....Sheboygan Falls .....Wisconsin
Martin, H. A.....Spencer .....Wisconsin
Marty, Gottlieb.....Madison .....Wisconsin
Marty, Fred.....Monroe .....Wisconsin
McManners, H. S.....Melrose .....Wisconsin
Murray, R. A.....Yuba .....Wisconsin
McClusky, J. W.....Linden .....Wisconsin
McCaig, J. H.....Watertown .....Wisconsin
McCaig, W. A.....Watertown .....Wisconsin
McCaig, J. F.....Watertown .....Wisconsin
Mecheke Bros.....Cascade .....Wisconsin
Murphy, M. C.....Chicago, So. Water St.....Illinois
Moser, Joe.....Brillion, R. F. D. No. 2.Wisconsin

## N.

Newman, B. W.....Madison .....Wisconsin
Natzke, John.....Wayside, R. F. D. No. 1.Wisconsin
Natzke, Dan.....Wayside, R. F. D. No. 1.Wisconsin
Nejedlo, J. A.....Luxemburg .....Wisconsin
Noyes, H. J.....Muscoda .....Wisconsin
Noyes, H. L.....Muscoda .....Wisconsin
Nenlin, Willie.....Waldo .....Wisconsin
Noll, A. L.....Alma, R. F. D. No. 1....Wisconsin
Naumann, Robert.....Two Rivers, R. F. D. No. 3....Wis.

## O.

O'Brien, James.....Boscobel .....Wisconsin
Ouradnik, W. J.....Cincinnati, 417 Court St.....Ohio
Osborn, John.....Boscobel .....Wisconsin
Olm, F. H.....Cleveland .....Wisconsin
Ostrander, J. M.....Mineral Point .....Wisconsin
Okonskey .....Kewaunee .....Wisconsin

## P.

Possley, N. E.....New Holstein .....Wisconsin
Parkin, A. W.....Cannon Falls .....Wisconsin
Plauskey, F. A.....Kewaunee .....Wisconsin
Peacock, P. H.....Sheboygan .....Wisconsin

Parfray, E. H.....Richland Center .....Wisconsin
Pheatt, H. D.....Milwaukee .....Wisconsin
Parkhurst, S. D.....Chicago, Victor Bldg.....Illinois
Peters, J. H.....Sheboygan Falls .....Wisconsin
Priebe, Henry.....Loganville .....Wisconsin
Pipal, Van W.....Blue River .....Wisconsin
Pingel, E. C.....Elkhart .....Wisconsin
Poole, A. C.....Darlington .....Wisconsin
Pasch, A. F.....Green Bay, R. F. D. No. 8....Wis.

## R.

Roycraft, A. J.....Chippewa Falls .....Wisconsin
Rice, J. F.....St. Cloud .....Wisconsin
Regez, J. F.....Monroe .....Wisconsin
Regez, Jacob & Son.....Monroe .....Wisconsin
Rusch, Chas.....Antigo .....Wisconsin
Riedel, F. W.....Hilbert .....Wisconsin
Reinhold & Meyers Mfg. Co.....Plymouth .....Wisconsin
Radtke, A. M.....Lapolis .....Wisconsin
Regez, Ernst, Jr.....Blanchardville .....Wisconsin
Regez, Ernst, Sr.....Blanchardville .....Wisconsin
Riesen, Christ.....Madison .....Wisconsin
Reineck, Herman.....Kiel .....Wisconsin
Regez, August.....Dodgeville .....Wisconsin
Rappel, J. F.....Reedsville .....Wisconsin
Reid, J. J.....Oconomowoc .....Wisconsin
Rodhl, Otto.....Manawa .....Wisconsin
Radloff, M. P. E.....Hustisford .....Wisconsin
Richardson, A. L.....Spring Green .....Wisconsin
Roder, John.....Monroe .....Wisconsin
Roettlesberger, Fred.....Monroe .....Wisconsin
Roth, Christ.....Monroe .....Wisconsin
Ryder, A. F.....Juneau .....Wisconsin

## S.

Schwingel, Frank.....Avoca .....Wisconsin
Sette, Fred.....Iron Ridge.....Wisconsin
Schils, G. S.....Cedar Grove, R. F. D. No. 15..Wis.
Schenk, C.....Stitzer .....Wisconsin
Schmall, G.....Manawa, R. F. D. No. 2..Wisconsin
Storms, E. C.....Merrill, R. F. D. No. 4..Wisconsin
Schwandt, Paul.....Beaver Dam, R. F. D. No. 5..Wis.
Schoepfer, Herman.....Hollandale .....Wisconsin

| | | |
|---|---|---|
| Snyder, E. F. | Bloom City | Wisconsin |
| Schauf, Albert | Ithaca | Wisconsin |
| Strasburg, C. L. | Loyd | Wisconsin |
| Schaefer and Simmons | Viola | Wisconsin |
| Schwalenberg, Albert | Potters | Wisconsin |
| Sawyer, L. H. | Neptune | Wisconsin |
| Starkey, Wm | Richland Center | Wisconsin |
| Swenink, O. H. | Cazenovia | Wisconsin |
| Stettler, James | Richland Center | Wisconsin |
| Schneider, Henry | Merrill | Wisconsin |
| Spimek, Emil | Branch | Wisconsin |
| Stanton, W. O. | Oostburg | Wisconsin |
| Sweeting, C. W. | Manitowoc | Wisconsin |
| Steffen, J. H. | Hortonville | Wisconsin |
| Strub, Jacob | Plymouth | Wisconsin |
| Sampe, G. C. | Hilbert | Wisconsin |
| Sampe, O. F. | Manitowoc | Wisconsin |
| Schuster, Geo | Marshfield | Wisconsin |
| Schmitt, W. F. | Byrds Creek | Wisconsin |
| Seidl, Adolph | Mishicott, R. F. D. No. 1 | Wisconsin |
| Schmitt, C. J. | Byrds Creek | Wisconsin |
| Schwingel, E. G. | Avoca | Wisconsin |
| Schiffler, F. | Avoca | Wisconsin |
| Smith, O. J. | Loyal | Wisconsin |
| Skinner, D. P. | Milwaukee, 412 R. R. Ex. Bldg. | Wis. |
| Schaller, Alex | Barneveld | Wisconsin |
| Schaller, Rudolph | Barneveld | Wisconsin |
| Snyder, John | Mt. Horeb | Wisconsin |
| Sherwood, Arthur | Milwaukee | Wisconsin |
| Schmidt, Carl | Oconomowoc | Wisconsin |
| Styger, Morris | Oregon | Wisconsin |
| Scholl, Wm | Spring Green | Wisconsin |
| Schaefer, P. J. | Chicago, 201 So. Water St. | Illinois |
| Steinman, Jacob | Monroe | Wisconsin |
| Sudendorf, E. | Clintonville | Illinois |
| Steinhart, G. J. | Kewaunee | Wisconsin |
| Simon, G. H. | Kiel | Wisconsin |
| Steffen, Fred | Monroe | Wisconsin |
| Schunck, Dan | Wayside | Wisconsin |
| Sixel, H. G. | Cleveland, R. F. D. No. 1 | Wisconsin |
| Schulte, A. W. | Medford, R. F. D. No. 9 | Wisconsin |

## T.

Thoni, Mike.....Hollandale .....Wisconsin
Turk, E. P.....Beaver Dam.....Wisconsin
Tess, W. A.....Tisch Mills.....Wisconsin
Trudelle, S. F.....Milwaukee, 87 Michigan St...Wis.
Theisen, Jacob.....Fredonia .....Wisconsin
Thomas, W. C.....Sheboygan Falls.....Wisconsin
Teske, A. W.....Kewaunee .....Wisconsin

## U.

Urben, Rudolf .....Ridgeway .....Wisconsin
Urben, Alfred.....Blue Mounds.....Wisconsin
Ubbelohde, J. A.....Glenbeulah .....Wisconsin
Ubbelohde, F.....Glenbeulah .....Wisconsin
Ubert, Christ.....Woodford .....Wisconsin
Ullmer, J. S.....Seymour, R. F. D. No. 37....Wis.
Ungerman, J. B.....Wauzeka .....Wisconsin

## V.

Vogel, Otto.....Mt. Horeb.....Wisconsin
Von, Langi, Oscar.....Madison .....Wisconsin
Van Duser, J. E.....Hebron .....Wisconsin
Vogel, G.....Mt. Horeb .....Wisconsin
Voeks, Robt.....Fredonia .....Wisconsin

## W.

Wurgler, Alfred .....Belleville .....Wisconsin
Wilhchin, A. J.....Grimms .....Wisconsin
Wagner, J. H.....Fond du Lac, R. F. D. No. 8..Wis.
Winder, Wm.....Richland Center.....Wisconsin
Wilkowske, H. A. F.....Mishicott .....Wisconsin
Wiska, John .....Lena .....Wisconsin
Walsh, J. J.....Kaukauna .....Wisconsin
Waterstreet, Wm.....Spring Green.....Wisconsin
Ward, J. E.....Sandusky .....Wisconsin
Welinghoff, F. F.....Chicago, 182–188 Kings St., Illinois
Weyer, Otto.....Manitowoc .....Wisconsin
Wehinger, J.....Woodford .....Wisconsin
Wuerger, Wm.....Greenleaf .....Wisconsin
Wyss, John.....Mt. Horeb.....Wisconsin
Wenzl, Paphlen.....Kewaunee, R. F. D. No. 2....Wis.
Weber, Albert.....Allenton .....Wisconsin

Winkler, John.....Merton .....Wisconsin
Westphal, August.....Neosho .....Wisconsin
Westphal, C. F.....Columbus .....Wisconsin
Williams, C. H.....Chicago, 21 Quincy St.....Illinois
Winger, Christ .....Oregon .....Wisconsin
Wild, John.....Monticello .....Wisconsin
Wuethrich, Fred.....Mayville .....Wisconsin

## Y.

Yankee, Chas.....Granton, R. F. D. No. 3.Wisconsin

## Z.

Zwicky, Casper.....Belleville .....Wisconsin
Zumkehr, Peter.....Monroe .....Wisconsin
Zehren, J. L.....Marion .....Wisconsin
Zimmerman, Wm.....Elkhart .....Wisconsin
Zimmerman, Louis.....Haven .....Wisconsin
Zickert, Ed.....Watertown, R F. D. No. 6..Wis.
Zimmermann, Bruno.....Shlisingerville, R. F. D. No. 2.Wis.
Zietlow, W. A.....Hunting .....Wisconsin

# FIFTEENTH ANNUAL CONVENTION

OF THE

# Wisconsin Cheese Makers' Association

HELD IN THE

CONVENTION ROOMS, REPUBLICAN HOUSE,

MILWAUKEE WISCONSIN,

Wednesday, Thursday and Friday, January 9, 10, and 11, 1907.

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## PROGRAM.

INTRODUCTION SESSION.

*Wednesday*, 10 *A. M.*

Address of Welcome .....

R. B. Watrous, Milwaukee, Wis., Secy. Citizens' Business League.

Response..C. H. Everett, Racine, Wis., Editor Wisconsin Agriculturist.

President's Annual Address.....E. L. Aderhold, Neenah, Wis.

Report of Secretary.....U. S. Baer, Madison, Wis.

Report of Treasurer.....Fred Marty, Monroe, Wis.

Report of Board of Directors.....John Grootemont, Brillon, Wis.

"The Possibilities of the Cheese Industry in North Central Wisconsin." .....

A. G. Laabs, Madison, Wis., Cheese Instructor, Wis. Dairy School.

"My Experience with the Acidimeter in Practical Cheese Making" .....Otto Kielsmeier, Manitowoc, Wis.

Appointment of Committees.

Inspection of Joint Cheese Exhibit.

SECOND SESSION.

*Wednesday, 2 P. M.*

Stereopticon Views—"Milwaukee, The Beautiful".....
R. B. Watrous, Milwaukee, Wis., Secy. Citizens' Business League.
REPORTS OF EDUCATIONAL CHEESE SCORING CONTESTS.
Reading of the scores of those participating in the Cheese Makers' Association Contest.....
.....J. W. Cross, Mauston, Wis., Supt. of Exhibits.
Reading of the scores of those participating in the Wisconsin Monthly Educational Scoring Contests.....
J. G. Moore, Madison, Wis., Secy. State Scoring Contest Association.
Awarding of Special Prizes, Medals, Diplomas and Pro rata Premium Fund.....
Hon. J. Q. Emery, Madison, Wis., Wisconsin State Dairy and Food Commissioner.
Question—"Shall We Have Another Contest?"
Short Statements from Prize Winners—"How Cheese Was Made."
General Discussion—"What Is a Good Cheese?"
Cutting of the Prize Cheeses.

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THIRD SESSION.

*Thursday, 9 A. M.*

"Limburger Cheesemaking".....
Peter Zumkehr, Monroe, Wis., Traveling Cheese Instructor for Southern Wis. Cheesemakers' Association.
"Brick Cheesmaking".....
Gottlieb Marty, Madison, Wis., Instructor in Foreign Cheese Making, Wis. Dairy School.
"Swiss Cheesemaking".....
Fred Marty, Monroe, Wis, State Cheese Factory, Dairy and Food Inspector.
"Cheddar Cheesemaking".....
Robert Johnston, Woodstock, Ontario, Canada, With The A. F. MacLaren Imperial Cheese Company.

FOURTH SESSION.

*Thurday, 2 P. M.*

"How to Produce Clean Milk".....
Prof. A. J. Glover, Ft. Atkinson, Wis., With Hoard's Dairyman.

"Some Reasons Why Tuberculosis in Cattle Is Important to the Cheesemaker" .....
Prof. E. G. Hastings, Madison, Wis, Assistant Bacteriologist, Agricultural Experiment Station.

Address .....
Hon. H. R. Wright, Des Moines, Iowa, Iowa State Food and Dairy Commissioner.

"The National Dairy Show and Its Relation to the Cheesemakers of Wisconsin".....
E. Sudendorf, Clinton, Ill., Secy. National Dairy Show Association.

NOTE.—Reports of committees, Election of Officers and Business Meeting will take place at the close of this session. All are requested to remain to this Business Session.

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FIFTH SESSION.

*Friday, 9 A. M.*

"The Up-to-date Cheesemaker".....
Robert Johnston, Woodstock, Ontario, Canada, With The A. F. MacLaren Imperial Cheese Company.

"Calculating Cheese Factory Dividends".....
Prof. E. H. Farrington, Madison, Wis., In charge Wisconsin Dairy School.

"Sewage Disposal".....
Prof. F. E. Turneaure, Madison, Wis., Dean College of Mechanics and Engineering.

"Pacific Coast Cheesemaking".....
L. W. Hanson, Seattle, Wash., State Traveling Dairy Inspector.

NOTE.—After the reading of each paper all persons present are kindly requested to ask questions and discuss thoroughly the articles as read.

FINAL SESSION.

*Friday, 2 P. M.*

Address .....

Prof. C. A. Doane, Washington, D. C., Dairy Expert, U. S. Dept. of Agriculture.

"Dairy Barn Sanitation".....

E. L. Aderhold, Neenah, Wis., State Cheese Factory, Dairy and Food Inspector.

"A New Numerical Scale for the Judging of Cheese".....

.....H. Anderson, Sheboygan Falls, Wis.

"Report of Two Farm Dairies in Cheese Making".....

.....G. C. Hendy, Platteville, Wis.

NOTE.—Anyone having questions not dealt with in the program is requested to hand them to the Secretary and they will be called up for answers when there is an opportunity.

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REGARDING THE SCORING CONTEST.

The Ninth Monthly Wisconsin Cheese Scoring Contest.

Cheesemakers now in the monthly scoring contests will please remember that the January or final contest in the series of nine for the year 1906 will be held at this convention, and that they may compete for the premiums offered by the Association by paying the usual membership fee of $1.00, and at the same time retain their respective positions in the monthly scoring contests in competition for special premiums, diplomas and high average scores. A single entry of cheese in any class will suffice for competition in both exhibits. Remember, no entry fee is required. Cheesemakers holding Association membership cards may exhibit cheese in any one or all of the four classes namely, American or Cheddar, Swiss, Brick and Limburger. Members will be permitted to exhibit both Drum and Block Swiss in the Swiss Cheese class. Any person not a paid up member wishing to exhibit cheese may enter such and take out his membership at the convention' but it is strongly recommended that he secure his membership when sending in his entry blank, to avoid possible confusion at the convention meeting. Any person not a paid-up member wishing to exhibit cheese, should send one dollar membership to Secretary U. S. Baer, 22 West Doty St., Madison, Wis.

*Entertainment Announcement.*

"YODLERS" (SWISS WARBLERS).

LOUIS ALDER.....Barneveld, Wis.
ALBERT STRUEBEN.....Monroe, Wis.
HANS BAER.....Albany, Wis.

The above gentlemen will render musical selections from time to time during the regular sessions of the convention.

*Special Premiums.*

The following prizes will be awarded at the second session of the meeting to the successful participants in the 1906 monthly cheese scoring contests:

HON. S. A. COOK of Neenah, Wis., will give to the cheesemaker having the highest average score in the contests one $35.00 chair; to the cheesemaker having the second highest average score one $25.00 chair, and to the cheesemaker having the third highest average score one $15.00 chair

THE J. B. FORD COMPANY of Wyandotte, Mich., will give to those cheesemakers exhibiting in the ninth monthly contest, who use *Wyandotte Dairyman's Cleaner and Cleanser*, the following prizes: For first highest score, gold watch and chain; for second highest score, large size carving set, with French stag horn handles; for third highest score, silver plated bird and steak set.

THE A. F. AVERBECK & CO., Jewelers, of Madison, Wis., will give a gold watch chain charm, suitably engraved, to the cheesemaker whose cheese scores highest of all those exhibited at the convention.

THE SCORING CONTEST ASSOCIATION will give every cheesemaker whose score was 90 points and above in the 1906 series of monthly contests a beautiful diploma or award of merit.

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## PREMIUMS.

### CHEESE EXHIBIT.

*Medals and Diplomas.*

The Association offers handsome gold, silver and bronze medals, artistically engraved, and of beautiful design, to those exhibitors securing the first, second and third highest scores on cheese in the *American* or *Cheddar* class.

Gold silver and bronze medals will be awarded to those exhibitors securing first, second and third highest scores in the *Swiss* cheese class.

Gold, silver and bronze medals will be awarded to those exhibitors securing the first, second and third highest scores in the *Brick* cheese class.

Gold, silver and bronze medals will be awarded to those exhibitors securing the first, second and third highest scores in the *Limburger* cheese class.

All the medals offered in the above classes are of one make and design. Each medal will be properly engraved, giving the score of the cheese and the name of the winner.

Every exhibitor whose cheese scores above 90 points, 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.

All cheese will be judged before the opening day of the convention. All the cheese judges have been selected from outside the state. All medals, diplomas, and pro rata premium money will be awarded to exhibitors on the opening day of the meeting. No disappointment in this. No cheese lost, strayed or stolen. Every precaution will be taken to protect the exhibitor's goods. All exhibits will be sold at the close of the convention by the Association, and money received, sent to the exhibitor.

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## $100.00 EDUCATIONAL CONTEST.

Cheddars, Flats, Daisies, Specials, Picnics, Longhorns, Young Americas, Swiss, Brick, Limburger, Edam, Gouda, Pine Apple, Print, Etc.

The above cash premium will be awarded on the excess pro-rata plan to all entries scoring 92 points and above. Exhibitors will be limited to one entry only in each class, except in the Swiss cheese class. Drum and Block Swiss may be entered in this class by all exhibitors. Entries from the same factory under different names or by different exhibitors, are prohibited.

On all premiums amounting to $5.00 or over, fifty per cent. will be deducted if the exhibitor does not attend the convention. Makers exhibiting cheese, and not attending the meeting in person will in no instance be awarded a medal.

The educational contest is open to the world. Mr. U. S. Baer will

follow the judges in their work of scoring and take notes of the points criticised by them. From the data thus secured in connection with the method of manufacture, as reported in the entry blanks, he will point out, the faults and defects if there be any and offer suggestions and instructions whereby such defects may be overcome and avoided in the future. This will be done by personal letters addressed to each exhibitor.

Superintendent:
J. W. Cross, Mauston, Wis.

Judges:

Robert Johnston, Woodstock, Ontario, Canada.
D. S. Crosby, Chicago, Ill.
Geo. Ehrat, Chicago, Ill.

## RULES.

### *Cheese Exhibit.*

Each cheese factory represented in the Association has the privilege of entering the competition for medals and the pro-rata fund, either by owner or maker, one or more full cream cheese, the exhibit not to weigh less than twenty pounds, made at any time, unbored and properly vouched for in writing by the owner, maker and one disinterested party, giving the full data required by the entry blank.

Entry blanks and shipping tags will be furnished by the secretary, U. S Baer, 22 W. Doty St., Madison, Wis. Order entry blanks in due time to avoid delays.

Any person not a paid up member wishing to exhibit cheese, should send $1.00 membership fee to the Secretary.

Cheese should be shipped by express (*charges prepaid*) to the Secretary, at Republican Hotel, Milwaukee, Wis.

All cheese must be in the city not later than 10:00 A. M. January 7th. All express companies will deliver cheese promptly on Sunday, January 6th.

The tag upon the box shall contain the name and address of the exhibitor, a duplicate of which shall be pinned on the cheese inside the box. This will prevent mistakes should the outside tag be destroyed in transit.

Swiss cheese may be entered in either drum or block shapes.

It is earnestly requested that Brick and Limburger cheese be exhibited in full commercial cases. In no instances will an exhibit of less than twenty pounds be permitted to enter in competition for medals and the pro-rata premium fund. Cheese weighing less than twenty

pounds singly, should be exhibited two or more in a box. Daisies, Young Americas, Prints, etc., should be exhibited in lots equivalent to twenty pounds.

Upon receipt of cheese at the exhibition hall, all tags, cards and markings will be removed by the Superintendent, and will be substituted by entry cards of the Association, designating number of entry.

The Superintendent of this department shall have the right to call for proof as to owner or maker of an exhibit: *any fraudulent entry shall be barred from competition.*

*No cheese previously tested with a trier will be considered as an exhibit for premium. Such cheese will be entitled to a complimentary score only.*

The cheese scoring the highest number of points in the gold medal classes will be retained as the property of the Association to be cut up and distributed to those present, except in those instances where the premium cheese is of the large Swiss Drum type, in which case the Association will not retain more than one-fourth of the cheese. The Judges will address the meeting on the qualities of fine cheese in the discussion "What Is a Good Cheese."

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## Scale of Points for Judging.

*Scale of points for judging American cheese:*

| | |
|---|---|
| Flavor | 45 |
| Texture | 30 |
| Color | 15 |
| Make-up | 10 |
| Total | 100 |

*Swiss and Block cheese will be scored on scale of 100 as follows*

| | |
|---|---|
| Flavor | 35 |
| Appearance on trier (holes) | 30 |
| Texture | 20 |
| Salt | 10 |
| Style | 5 |
| Total | 100 |

*Brick and Limburger cheese will be scored on a scale of 100 as follows:*

| | |
|---|---|
| Flavor | 40 |
| Texture | 40 |
| Color | 10 |
| Salt | 5 |
| Style | 5 |
| Total | 100 |

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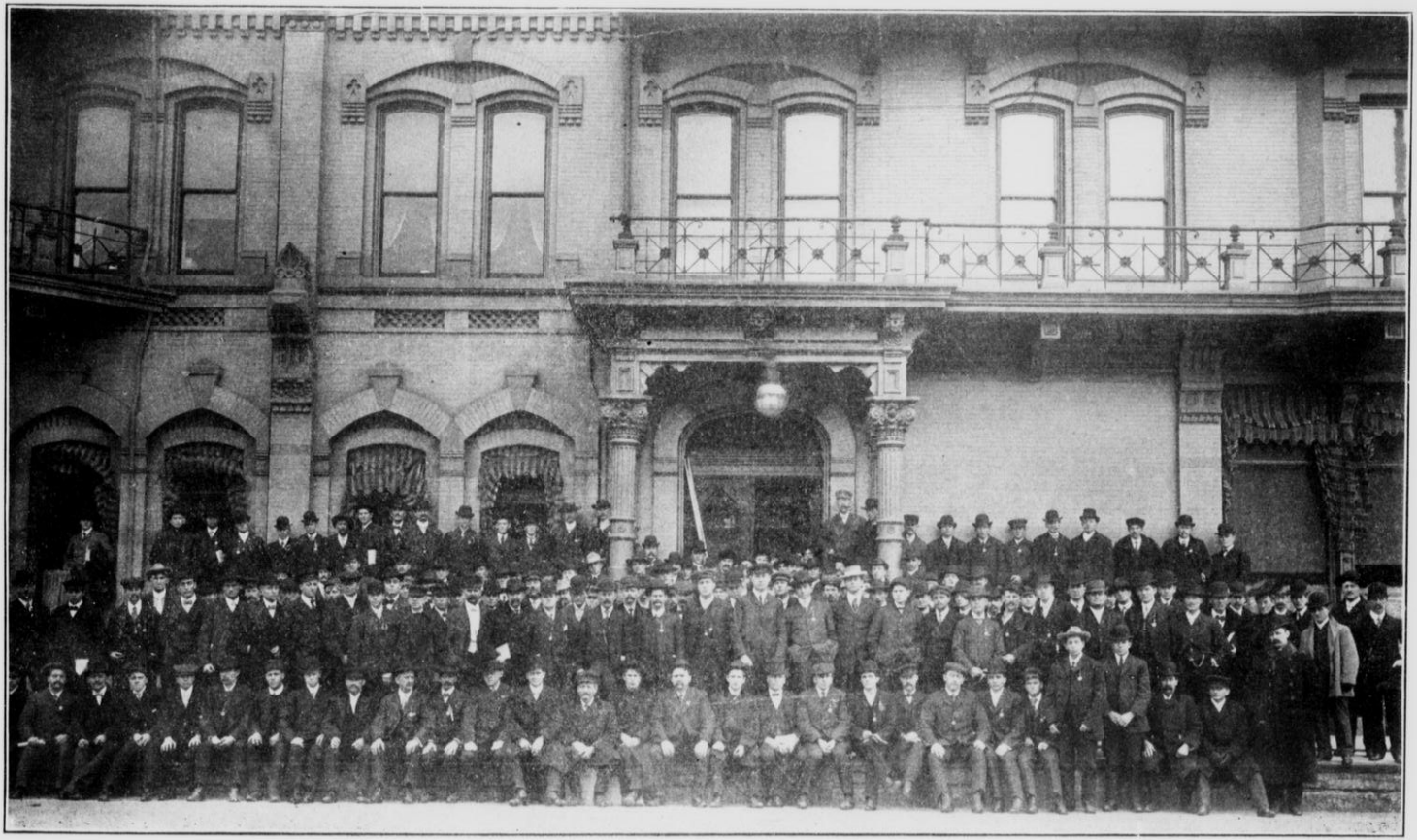
LIST OF CONTRIBUTORS.

Hon. S. A. Cook, Neenah, Wis.
Republican House, Milwaukee, Wis.
Continental Cereal Co, Peoria, Ill.
E. A. Roser & Co., Chicago, Ill.
Chicago Cold Storage Warehouse Co., Chicago, Ill.
P. H. Peacock, Sheboygan, Wis.
J. Hanson & Co., Neenah, Wis.
S. J. Stevens & Co., Sheboygan, Wis.
Wisconsin Dairy Supply Co., Whitewater, Wis.
Waverly Oil Works, Pittsburg, Pa.
A. Booth & Co., Chicago, Ill.
The J. B. Ford Co., Wyandotte, Mich.
Frank L. Jones, Utica, N. Y.
Diamond Crystal Salt Co., St. Clair, Mich.
E. H. Hadfield, Waukesha, Wis.
Cornish, Curtis & Greene Mfg. Co., Ft. Atkinson, Wis.
Chr. Hansen's Laboratory, Little Falls, N. Y.
Colonial Salt Co., Akron, Ohio.
The Root Dairy Supply Co., West Grover, Pa.
A. H. Barber Creamery Supply Co., Chicago, Ill.
Wisconsin Coal Co., Milwaukee, Wis.
Del-Mar Brokerage Co., Indianapolis, Ind.
Creamery Package Mfg. Co., Chicago, Ill.
The Marschall Dairy Laboratory, Madison, Wis.
International Salt Co., Milwaukee, Wis.
International Harvester Co. of America, Chicago, Ill.
The Kiel Wooden Ware Co., Kiel, Wis.
Wallace B. Crumb, Forestville, Conn.
H. D. Thatcher & Co., Potsdam, N. Y.

Schmidt & Keihl, Milwaukee, Wis.
Elov Ericsson, St. Paul, Minn.
The De Laval Separator Co., Chicago, Ill.
A. H. Barber & Co., Chicago, Ill.
Crosby & Meyers, Chicago, Ill.
M. C. Gehl Co., Milwaukee, Wis.
Brillion Woodenware Co, Brillion, Wis.
Sheboygan County News and Dairy Market Reporter, Sheboygan Falls, Wis.
Muscoda Dairy Board of Trade.



ANNUAL MEETING, WISCONSIN CHEESE MAKERS' ASSOCIATION, 1907.

# TRANSACTIONS

WITH

ACCOMPANYING PAPERS AND DISCUSSIONS

OF THE

# Wisconsin Cheese Makers' Association

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## Fifteenth Annual Meeting, 1907.

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The Wisconsin Cheese Makers' Association met in its fifteenth annual session at the Republican House, Milwaukee, and was called to order at 10 o'clock A. M., Wednesday, January 9, 1907, by the president, Mr. E. L. Aderhold.

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The President: I do not know of any convention that we have held that promises to be quite as good as this one, and yet they have all been good, but we have a few special features this time that will make this meeting of special interest and value. I refer especially to the scoring contest that has been carried on during the season and the special premiums that have been offered in connection with it. these chairs that you see up here. These three chairs are special premiums, and this watch is another special premium.

I am not going to say much in the way of opening remarks. We have a full program so I will not take much time, but I want to say that the conditions in Wisconsin are indeed very hopeful. A few years ago we could find in some factories men who had charge of the factory who were entirely out of place there, but we do not find that state of affairs to any great extent any more.

I am going to introduce now Mr. R. B. Watrous, representing the Citizens Business League of Milwaukee, who will deliver the address of welcome.

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## ADDRESS OF WELCOME.

R. B. WATROUS, Milwaukee, Wis.

Secretary Citizens' Business League.

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

Over on the city hall, right up in the most conspicuous place on the building, are the words and letters "WELCOME W. C. M. A." Those are probably the first welcoming letters on the city hall for this year of 1907. That was the case a year ago. They express to you the welcome of the municipality and if the cordiality was all there as it really exists they would be lighted up in the day time as well as at night, because Milwaukee has a very cordial feeling for the Wisconsin Cheese Makers' Association and it is my good fortune and my pleasure to have been selected as the one to express to you a greeting, representing the Citizens Business League and through that representing various commercial interests of the entire city of Milwaukee.

A year ago when you came here I had to make at the start some apologies for the weather, and I think I assured you at that time that that thing would never happen again, that you should have good weather. I delivered the goods this morning and expect you will have it every day this week. We certainly want you to have, as your president expressed it, the best convention in the history of your organization, and there are sev-

eral factors which ought to contribute to make it a great convention. The contest which you have been conducting for the last eight or nine months, and for which the awards are to be made at this convention, makes it unique in your history of fifteen years.

I think, gentlemen, I am entitled to call you today, for the first time brethren. I believe if I were to hand in my dollar for membership I would be elegible because you may have noticed a few days ago that the governor named me as a member of the Wisconsin State Board of Agriculture, so I am one of you and if there is any place near to my heart in the agricultural line it is the cheese and butter industry, because I have had so much to do with these particular industries for several years past.

I am not going to talk much to you this morning because Secretary Baer has me down on the program this afternoon. I told him he was getting my name on the program a little too frequently, not because I would not be glad to be here at every session with you but I am thinking of your best interests. So when I have a chance to talk this afternoon it will be more at length and I hope to be able to say more to you then about Milwaukee, about our achievements the past year, and also about the particular industry in which you are interested, but I want to extend to you now a most cordial welcome; I assure you it is hearty. Our business men want you to come and become acquainted with them; you are welcome at any store you may visit, not with a view of buying particularly, they want to become acquainted with you and whenever you come here you may be assured that all the people of Milwaukee will be glad to greet you, to extend the hand of good fellowship to you. I hope you will be with us to start the convention season next year. I thank you.

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The President: We have with us Mr. C. H. Everett, of Racine, who was formerly an active dairyman, at one time president of the Wisconsin Dairymen's Association. He will now give us the response to this cordial address of welcome.

## RESPONSE TO ADDRESS OF WELCOME.

C. H. EVERETT, Racine, Wis.

Editor Wisconsin Agriculturist.

*Mr. President, Mr. Watrous, Fellow Citizens of Milwaukee who may be present and members of the Wisconsin Cheese Makers' Association:*

It is certainly a pleasant duty to acknowledge this courteous address of welcome and to thank Mr. Watrous for it. I am sure that we are always glad to come to Milwaukee and I believe that each and every one of us would be pleased to abide with you forevermore, Mr. Watrous, if we were not fearful that should we do so your prosperity as a city might cease because we contribute so largely to its greatness and grandness.

On this map (pointing to map on wall, showing the location of cheese factories in Wisconsin), you will notice we have a lot of cheese factories make a lot of cheese which make a lot of money. Sixteen hundred forty-nine cheese factories in the state, which produced last year 111,884,942 pounds of cheese, which sold for the large sum of $10,693,130. Just think of the number of men this industry gives employment to; think of the large number of cows, the value of them and the farm equipment that produces the milk that made the cheese for this sum of money! Aside from that, we have in the state a large number of creameries. The Cheese Makers' Association is only one branch of this great dairy industry in the state. We have 1017 creameries, making 122,002,765 pounds of butter, worth $25,762,258. Aside from that, the milk used directly and indirectly was worth over $9,000,000, making in the aggregate nearly $46,000,000 for dairy products last year. We are proud of that record as cheese makers and as dairymen. It involves a large sum of money; it brings prosperity to the state in abundance. Dairymen do a cash business; they get paid once or twice or oftener a month for the products they deliver to the creameries and cheese factories; they are an independent class of men, pay cash for everything they buy, which makes the local merchant prosperous, and directly and indirectly makes wholesale and retail establishments of this great city profitable.

We know very well of your greatness as a city, Mr. Watrous, and we are proud of Milwaukee as the metropolis of the state, but we claim a large share in making of this prosperity. We know of your numerous institutions and of the push, enterprise and energy of your citizens, and I assure you that we as cheesemakers are glad to come to Milwaukee to enjoy your hospitality and we shall endeavor to behave well while in your city. We accept your kind invitation to go where we like and to do what we like, and to do what we have a mind to. Thank you.

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Vice-President Michels takes the chair.

The Chairman: The next topic on the program this morning is the President's annual address, by Mr. E. L. Aderhold.

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## PRESIDENT'S ANNUAL ADDRESS.

E. L. Aderhold, Neenah, Wis.

*Mr. Chairman and Members of the Wisconsin Cheese Makers' Association.*

Not much has transpired in the past year to change the conditions of the industry we represent, so what your president had to say in his last annual address may still be pertinent to the affairs of this association. However, if I were to allow this opportunity to slip by without doing some scolding, you would be disappointed.

The efforts of this association in the past have been directed mainly towards educating the cheese makers in the technicalities of their profession and improving the character of the milk supply.

It is the opinion of your president that during the life of this association the average skill of our cheese makers has increased very materially and that improvement in our milk supply with reference to its purity has been much too slow.

Of course the task of educating the milk producers is much

greater than that of educating cheese makers, owing to the difference in numbers, but I am satisfied that associations of this kind have been paying more attention to the manufacturing end of the industry than to improving the character of the milk supply. They have tackled the smaller job first. What your president has to say at this time refers mostly to the bigger job.

In the president's message of a year ago, this quotation appears: "I found cheese makers who preach cleanliness to their patrons, but never refuse to accept dirty milk from one patron and mix it with clean milk delivered by another."

I have entertained some strong views regarding that practice, and what I have seen since our last convention while inspecting milk at factories, hasn't weakened those views any.

The difference in the cleanliness of milk offered at different factories is astonishing, and I have found the widest range of difference existing in milk delivered to neighboring factories, in some cases located only a mile apart. That would indicate that the reason for accepting unclean milk cannot be ascribed to competition but rather to mismanagement.

I have seen, at one factory, the manager reject over one-third of the milk offered, which was very dirty. He didn't reject it because it was dirty, but because the inspector was watching him. If dirty milk hadn't been acceptable to him, the farmers wouldn't have offered it in that condition.

At another factory over half the patrons offered dirty milk and took it back home on the morning of the inspection. No one will think the majority of the patrons *happened* to have dirty milk on the same day.

Their milk was dirty because of gross negligence. The manager had made a practice of accepting such milk and by so doing had placed his stamp of approval on the practice of that negligence.

The bad effects resulting from such practice are varied and far-reaching. It tends to demoralize the milk patrons and the cheese maker; it imposes on the consumers; it works harm to the factory and to the industry in general; it also implies repeated violations of our state laws by the cheese maker and by those patrons who offered dirty milk.

It is the duty of the factory manager to criticise the condition of the milk; to advise and instruct the patrons to the end

that all milk offered shall be clean. The patrons look to him to assume that duty.

I submit an illustration: The cheese maker lecturers Mr. Brown and Mr. Smith because of unclean milk. Brown is admonished and takes pains thereafter always to have his milk clean and above criticism. Smith does not need the lecture; is rather defiant and possibly jeers others for taking more pains than he himself does. Isn't the cheese maker in duty bound to protect Brown from possible bad effects arising out of the negligence of Smith.

If he continues to accept the inferior stuff from Smith he not only nullifies the good effects that should result from Brown's efforts, but also treats the practice of his precepts by Brown with the utmost contempt.

I can't conceive of any other thing a factory manager could practice that would imply so great an abuse of his position as that of accepting dirty inferior milk, and whoever is guilty of it I fear doesn't realize his relative standing as a man unless he feels that he is about the smallest individual in his respective community.

If this association could bring this proposition, properly dissected, before every factory manager in the state and in such a manner that it could be fully appreciated it would, in my opinion, prove lastingly effective in improving the purity of our milk supply.

During the month of November I inspected a cheese factory that was being operated by a candidate for a certificate of graduation from our dairy school. As regards his standing at that school and the sanitary conditions of his factory he would, so far as I know, have been granted such certificate. Upon inspecting the milk delivered at his factory I found over half of it badly polluted with stable dirt, some of it being a good sample of so-called "dung tea."

The appearance of that milk was disgusting, and any sensible person upon seeing it would pronounced it unfit for human food purposes, yet that man with a dairy school training was resorting to that practice of accepting impure stuff and working it into cheese for people to eat.

I was forcibly impressed with the idea that whoever is guilty of such a contemptible practice is not deserving of a certificate of graduation from any dairy school. Following out that idea I would recommend that this convention petition the man-

agement of our dairy school at Madison, by resolution, to grant no certificate of graduation to the manager of any cheese factory or creamery unless the raw material offered there is comparatively clean and superior in quality.

I might further suggest that in the event of the establishment of a permanent scoring contest supported and supervised by the state it might be wise to make it one of the requisites of candidates for a certificate of graduation to "make good" in a series of such contests covering a season's work.

The question of fixtures for dairy stables has a very important bearing on the purity of milk. In my experience of stable inspection I found localities where filthy cows were the exception because superior types of fixtures were being used. In other localities the fixtures are so impractical that cows become very filthy and a herd of clean cows is almost an impossibility in the winter season.

In such localities a very large proportion of the dairymen are not familiar with any arrangements whereby cows may keep clean in a stable and wouldn't know just how to provide them should they so desire.

Since our state law now forbids the sale of milk drawn from filthy cows, the question of stable arrangements is a live one and an excellent opportunity for missionary work presents itself to factorymen.

In his last annual address your president suggested that our members study the question of stable sanitation and do missionary work along that line in their respective localities. I desire again to urge action of that kind and would suggest in particular that patrons be given an opportunity of seeing in actual use one or more styles of the best cow stalls and fasteners. Convince them that they may just as well have clean cows as filthy ones, and the battle is half won.

For such missionary work circulars or leaflets illustrating and describing the construction of approved stalls and fixtures would be exceedingly helpful.

If the condition of the treasury warrants it I believe this association to be justified in issuing and distributing such leaflets.

The educational scoring contest which was discussed at our last convention has been ably and successfully carried out. The results demonstrate beyond question the importance of such an institution as an educational factor. The education

afforded by a series of properly conducted contests cannot readily be derived from any other source. The expense of conducting such contests is insignificant when compared with the benefits derived.

A permanent scoring contest should be established and should receive its financial support from the state. I consider it the duty of this association to use its influence in securing such support.

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President Aderhold resumes the Chair.

The President: We will now listen to the report of Secretary Baer.

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## REPORT OF SECRETARY.

U. S. Baer, Madison, Wis.

*Mr. President and Members of the Association:*

I have the honor to report upon the work of this office for the year ending January 3rd, 1907.

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 preceeding 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 rapidly 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 State 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 diversfied interests of agriculture none have prospered or afforded the people of the state more substantial returns than the cheese business the past season.

The National Dairy Show was held in the city of Chicago, in the Coliseum Building, February 15th to 24th, 1906, inclusive.

After careful and thoughtful consideration and exhaustive discussion on the part of the officers of this organization, it seemed to those interested, most fitting that Wisconsin, the leading cheese producing district in America, should have commendable representation at that great show.

Your humble servant was instructed by your officers to secure space and to solicit cheese of all kinds and varieties made in the state, of dealers and makers, in fact of any one, that was in any way locally connected with the industry, such cheese to be used for exhibition purposes on the occasion previously named. It was further planned to have the freight, express and drayage charges on Wisconsin cheese, together with such other expenditures, necessary to insure a respectible exhibit, paid out of the funds of the state appropriation granted by legislation to this Association.

As a result a most creditable and attractive exhibit of Wisconsin cheese graced a very prominent and sightly place on the main floor of the Coliseum building. However, a grave mistake was made in locating and providing for the exhibit in the north end of the great structure, as there was no protection whatever from the heat of the building and that given off by the large chimneys on either side of the cheese booth. The damage to the cheese on exhibition was heavy. To those exhibitors presenting bills for damages, I made good the losses out of my own pocket.

That the vast and important cheese industry of Wisconsin was creditably and conspiciously represented with a fine display of all the leading styles and types of cheese made in the state, will not be disputed by any of those who saw it. Some little criticism has come from the stayat-homes.

In the city of Whitewater, Wis., was recently being published a Journal known as "The Cheese and Dairy Journal and Creamery Reporter." It was the official organ of this Association as well as of our State Butter Makers' Association. My name appeared at the head of the list of the editorial

staff of that publication. Every copy of the Journal issued contained from one to five reading pages from my pencil. In order to put quietus on certain rumors afloat that I was financially interested in this publication I desire at this time to make the following statement. "I have never at any time been directly or indirectly, financially interested in the "Milk and Cheese Journal", "The Cheese and Dairy Journal", or "The Cheese and Dairy Journal and Creamery Reporter", the name under which it was known at the time of the suspension of its publication. I have never at any time received any salary or any compensation for any of my writings, or articles, published over my signature, or for any services rendered the "Journal" in any capacity whatever. No complimentaries were ever handed to me by the publication in question, other than three extra copies of the paper each month for the last eight months of its existence, which extra copies I in turn placed with my compliments, in three public libraries in this state.

That the progressive and up-to-date cheesemakers and butter makers of the state fully realize the value and importance to their profession of the monthly scoring contests in operation for the first time in the history of the dairy industry of the state, has been most conspicuously manifested by the large number of exhibitors or contestants who have taken part in same, from month to month during the past season. All the financial obligations necessary to the successful carrying out of these contests have been cheerfully and uncomplainingly disbursed, on the pro rata plan, by the participating parties.

All the officers having the affairs of the contest in charge have contributed their time and traveling expenses to the cause with no emuneration of any kind whatever for any services rendered. Mr. J. G. Moore, as secretary of the contest association, has worked long and faithfully in the interests of the cause and is entitled to the best thanks of every true loyal dairyman of the state.

Through the liberality and courtesy of Dean W. A. Henry, the cold storage rooms of the Dairy School building of the Agricultural College of the University, together with drayage service, to and from Madison city railroad shipping depots, has been furnished at no expense to the Contest Association.

Hon. J. Q. Emery, State Dairy and Food Commissioner, has contributed freely of the time and energy of several of the members of his official staff to this work, during the whole of

the nine months, and it is largely due to his hearty co-operation, timely counsel, valuable advice and generous support accorded the cause all along the way, that has made it possible for Wisconsin to have monthly cheese and butter scoring contests as they exist in this state today.

The Cheese and Dairy Journal and Creamery Reporter was largely instrumental in molding public dairy sentiment in this state in favor of monthly educational scoring contests for dairy products. In fact it was the prime instigator in Wisconsin dairy journalism to push the movement to a successful ending.

The "dairy press" of the state, as well as the "dairy press" of the country at large, has ever been and is still loyal to Wisconsin. It has given publicity to the scores of our cheese and our butter, it has endorsed our method of scoring, it has commented favorably upon our call system, it has advertised us as a progressive and up-to-date cheese and butter producing state and has congratulated us upon the work accomplished along this line without one cent of state aid.

I very much favor a great international dairy show to promote the dairy interests of the country at large. I am also much in favor of a "State Dairy Show" to advertise in an effective way the excellency of Wisconsin's dairy products.

Milwaukee should take a hand in spreading the fame of the state's dairy products by assisting in aranging such a show. It should be held every winter, as cold weather is the best time for holding a dairy show, and it should be held in Milwaukee. To the visitor 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 an annual monster dairy show that would be of incalcuable good to the dairy interests and would be most helpful to the city and to the state.

Following is a statement of the various styles of American or cheddar cheese held in Wisconsin on January 1, 1907, as reported by 35 dealers, which includes all except the Fond du Lac Cheese and Butter Co., who though one of the largest, failed to report Mr. W. C. Thomas, Editor of the "Sheboygan County News and Dairy Market Reporter" is the source of information from which these statistics were secured.

Wisconsin Cheese Stocks Jan. 1, 1907.

| | No. of Bxs. |
|---|---|
| Twins 65, lbs. | 29,408 |
| Baby Twins, 24 lbs. | 242 |
| Singles or Flats, 33 lbs. | 736 |
| Young Americas, 42 lbs. | 5,145 |
| Single Daisies, 21 lbs. | 68,855 |
| Double Daisies, 42 lbs. | 7,901 |
| Longhorns, 48 lbs. | 4,844 |
| Cheddars, 60 lbs. | 391 |
| Cheddars, 40 lbs. | 454 |
| 10-lb. Sq. Prints, 20 lbs. | 12,987 |
| 20-lb. Sq. Prints, 20 lbs. | 4,247 |
| Total | 135,210 |

Wisconsin Cheese Stocks Jan. 1, 1906.

| | No. of Bxs. |
|---|---|
| Twins | 46,743 |
| Baby Twins | 344 |
| Singles or Flats | 2,950 |
| Young Americas | 19,370 |
| Single Daisies | 103,824 |
| Double Daisies | 3,599 |
| Longhorns | 14,212 |
| Cheddars | 1,876 |
| Baby Cheddars | 473 |
| Square Prints | 15,209 |
| Total | 208,600 |

Of the cheddars in above list 1,010 were reported as 40 lb. cheese.

Total number of boxes of American or cheddar cheese stocks in Wisconsin Jan. 1st., 1907, is given as 135,210 as compared to 208,600 in stock Jan. 1st., 1906, a difference of 72,390 boxes in favor of Jan. 1st., 1906 holdings. The total number of pounds of cheese stocks held in Wisconsin Jan. 1st., of this year is given as 4,554,315 pounds.

Respectfully submitted,

U. S. BAER,

*Secretary.*

## TREASURER'S FINANCIAL REPORT FOR 1906.

FRED MARTY, Monroe, 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.*

| 1906. | | | |
|---|---|---|---|
| Jan. | 3 | Balance carried forward ..... $ | 145 70 |
| Jan. | 5. | Paid memberships ..... | 406 00 |
| Jan. | 5. | Contribution, Hon. S. A. Cook ..... | 25 00 |
| Mar. | 8. | Paid memberships ..... | 12 00 |
| July | 7 | Draft from State Treasurer ..... | 600 00 |
| Nov. | 3. | Republican Hotel ..... | 10 00 |
| Nov. | 3. | Continental Cereal Co..... | 10 00 |
| Nov. | 5. | The J. B. Ford Co. ..... | 20 00 |
| Nov. | 7. | Chicago Cold Storage Warehouse Co. .. | 5 00 |
| Nov. | 8. | P. H. Peacock ..... | 5 00 |
| Nov. | 8. | S. J. Stevens Co. ..... | 10 00 |
| Nov. | 8. | Wisconsin Dairy Supply Co. ..... | 15 00 |
| Nov. | 8. | Waverly Oil Works ..... | 10 00 |
| Nov. | 8. | A. Booth and Co. ..... | 10 00 |
| Nov. | 9. | J. Hanson & Co..... | 10 00 |
| Nov. | 9. | E. A. Roser & Co. ..... | 10 00 |
| Nov. | 9. | Frank L. Jones ..... | 10 00 |
| Nov. | 9. | Diamond Crystal Salt Co. ..... | 10 00 |
| Nov. | 9. | E. H. Hadfield ..... | 10 00 |
| Nov. | 10. | Cornish, Curtis & Greene M'f'g. Co... | 10 00 |
| Nov. | 12 | Chr. Hansen's Laboratory ..... | 10 00 |
| Nov. | 12. | A. H. Barber Cry. Supply Co. ..... | 10 00 |
| Nov. | 13. | Wisconsin Coal Co. ..... | 5 00 |
| Nov. | 14. | Del-Mar Brokerage Co. ..... | 5 00 |
| Nov. | 15. | Creamery Package M'f'g. Co. ..... | 25 00 |
| Nov. | 15. | The Marschall Dairy Laboratory ..... | 10 00 |
| Nov. | 15. | International Salt Co..... | 10 00 |
| Nov. | 16. | International Harvester Co of America | 10 00 |
| Nov. | 17. | Kiel Wooden Ware Co. ..... | 10 00 |

| | | |
|---|---|---|
| Nov. 19. | Wallace B. Crumb | 10 00 |
| Nov. 19. | H. D. Thatcher & Co. | 10 00 |
| Nov. 27. | Schmitt & Keihl | 5 00 |
| Dec. 1. | Elov Ericsson | 5 00 |
| Dec. 1. | The De Laval Separator Co. | 10 00 |
| Dec. 1. | A. H. Barber & Co. | 10 00 |
| Dec. 1. | M. C. Gehl Co. | 10 00 |
| Dec. 1. | Crosby & Meyers | 10 00 |
| Dec. 5. | The Root Dairy Supply Co. | 10 00 |
| Dec. 6. | Colonial Salt Co. | 10 00 |
| Dec. 7. | Brillion Woodenware Co. | 5 00 |
| Dec. 12. | Sheboygan Co., News and Dairy Market Reporter | 5 00 |
| Dec. 22. | Muscoda Dairy Board of Trade | 15 00 |
| Dec. 31. | Hon. S. A. Cook | 25 00 |
| | Total | $1,578 70 |

*Disbursements.*

| | | |
|---|---|---|
| 1906. | | |
| Jan 4. | Pro rata premium fund | $ 100 00 |
| Jan. 5. | Expenses of Secretaries' office. | 150 00 |
| Jan. 6. | J. W. Steinhoff, traveling expenses | 35 00 |
| Jan. 6. | Miss Emma Conley, traveling expenses | 7 25 |
| Jan. 6. | J. H. Monrad, traveling expenses, | 37 75 |
| Jan. 6. | Republican Hotel, hotel bill | 80 16 |
| Jan. 6. | Kramer & Burkhardt, signs | 2 00 |
| Jan. 6. | Miss B. B. Spicer, stenographic services | 3 00 |
| Jan. 7. | Postage on reports | 2 40 |
| Jan. 7. | Express on reports | 75 |
| Jan. 7. | Freight on reports | 1 20 |
| Jan. 7. | Postage | 3 00 |
| Jan. 8. | Photos, convention and cheese exhibit | 7 25 |
| Jan. 8. | Carriage hire (Jan. 5th) | 3 00 |
| Jan. 11. | Postage | 5 00 |
| Jan. 15. | Walter Mayer, printing, | 89 65 |
| Jan. 15. | J. W. Cross, expenses incurred, cheese exhibit | 45 88 |
| Jan. 15. | D. S. Crosby, traveling expenses, hotel | 12 00 |
| Jan. 15. | Hon. E. K. Slater, hotel and traveling expenses | 21 25 |
| Jan. 15 | Schwaab Stamp and Seal Co., 500 badges | 60 00 |

| | | |
|---|---|---|
| Jan. 16. | Lewis Ostenson, traveling expenses .. | 3 04 |
| Jan. 16. | Carl Marty, traveling expenses ..... | 7 59 |
| Jan. 16. | Miss A. B. Roump, stenographic services ..... | 9 65 |
| Jan. 17. | Prof. E. H. Farrington, hotel and traveling expenses ..... | 6 04 |
| Jan. 17. | Oscar Burgi, hotel and traveling expenses ..... | 11 00 |
| Jan. 18. | Dr. H. L. Russell, hotel and traveling expenses ..... | 6 75 |
| Jan. 20. | U. S. Baer, traveling expenses, National Dairy Show ..... | 12 68 |
| Jan. 24. | J. G. Moore, hotel and traveling expenses ..... | 9 04 |
| Jan. 26. | C. & N. W. R. R. Co., freight on reports ..... | 7 25 |
| Jan 26. | Postage, freight, telegrams and express | 4 10 |
| Jan. 27. | Walter Mayer, printing ..... | 11 27 |
| Feb. 3. | M. H. Meyer, hotel and traveling expenses ..... | 5 88 |
| Feb. 5. | Postage ..... | 5 00 |
| Feb. 5. | Fred Marty, printing stationery ..... | 1 00 |
| Feb. 5. | Interest on borrowed money ..... | 2 50 |
| Feb. 10. | Miss A. B. Roump, stenographic services ..... | 36 65 |
| Feb. 10. | F. A. Averbeck, 12 medals ..... | 51 50 |
| Feb. 10. | Money orders, postage and express .. | 3 27 |
| Feb. 19. | Mrs. A. L. Kelly, (official reporter). | 125 60 |
| Feb. 27. | Chas. J. Kruse, 2 banners, 1 sign.... | 18 59 |
| Feb. 27. | Expenses, cheese exhibit, National Dairy Show ..... | 106 68 |
| Mar. 30. | Chas. Gartman, premium money .... | 3 12 |
| Apr. 2. | S. J. Stein, photos and cuts..... | 12 00 |
| Apr. 2. | Mayer's electric press, printing..... | 8 50 |
| Apr. 2. | Stamps, postage ..... | 5 00 |
| Apr. 9. | 1 half-tone, express and postage..... | 4 60 |
| April 23. | U. S. Express Co. ..... | 30 |
| May 14. | Walter Mayer, printing ..... | 6 25 |
| July 1. | Postage, April 29th, to July 1st., .... | 5 84 |
| July 16. | Fred Marty, expenses of Treasurer's office ..... | 1 26 |
| July 16. | Interest on borrowed money ..... | 10 30 |

| | | |
|---|---|---|
| Aug. 10. | Postage, drayage and express ..... | 4 00 |
| Aug. 16. | Postage, 500 cloth bound reports .... | 50 00 |
| Sept. 1. | Postage, 700 cloth and paper bound reports ..... | 60 00 |
| Sept. 3. | Postage ..... | 3 00 |
| Oct. 1. | Chicago, Milwaukee and St Paul R. R. Co., freight ..... | 4 56 |
| Oct 4. | Postage ..... | 5 00 |
| Oct. 5. | American Express Co., express ..... | 1 40 |
| Nov. 19. | Fred Marty, circular letters, postage | 2 25 |
| Nov. 19. | Expenses of Secretaries' office ..... | 27 40 |
| Dec. 14. | U. S. Express Co., express..... | 30 |
| Dec. 18. | Miss A. B. Roump, stenographic services ..... | 26 25 |
| Dec. 24. | Western Passenger Assn., Joint Agent Fee ..... | 17 00 |
| Jan. 1. | J. W. Cross, traveling expenses ..... | 17 72 |
| Jan. 2. | Expense of Secretaries' office ..... | 89 93 |
| Jan. 2. | Miss A. B. Roump, stenographic services ..... | 11 00 |
| | Total Disbursements..... | $1,488 63 |
| | Balance in hands of treasurer..... | 90 07 |
| | | $1,578 70 |

## REPORT OF BOARD OF DIRECTORS.

JOHN GROOTEMONT, Brillion, Wisconsin.

Gentlemen: A meeting of the directors and officers of the Wisconsin Cheese Makers' Association was held at the State Fair Park on the thirteenth day of September, 1906.

Present: E. L. Aderhold, president; M. Michels, vice-president; Fred Marty, treasurer; U. S. Baer, secretary; J. Karlen, director; J. W. Cross, director.

Upon the motion of Mr. Cross, seconded by Mr. Karlen the secretary was instructed to call the fifteenth annual meeting of the Wisconsin Cheese Makers' Association for the 9th, 10th and 11th days of January, 1907.

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

The Chair appointed Sec'y U. S Baer a committee of one to prepare a program for convention.

The Chair appointed U. S. Baer, Sec'y. Wisconsin Cheese Maker's Association as committee of one on entertainment. Said committee being instructed to make complete and final arrangements with reference to convention halls, exhibition cheese rooms and hotel headquarters in the city of Milwaukee.

Upon the motion of Mr. Karlen, seconded by Mr. Marty, 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 changed so as to admit of the entry of all the cheese of the ninth monthly Wisconsin Cheese Scoring Contest Association in connection with the regular Education 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,
FRED J. KARLEN,
J. W. CROSS.

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The President: The next is a paper by Mr. A. G. Laabs of Madison, Cheese Instructor in the dairy school.

# THE POSSIBILITIES OF THE CHEESE INDUSTRY IN NORTH AND CENTRAL WISCONSIN.

A. G. Laabs, Madison, Wis.

It has been assigned to me by our worthy Secretary to read a short paper on the "Possibilities of the Cheese industry in North and Central Wisconsin."

In olden times, when the luxuries of the table were less numerous than at present, milk and honey were highly esteemed, if we may judge from old writings. Thus it is related in the good old book that the leaders of the host of Israel sent in scouts to reconnoiter the Promised Land before they began the invasion in force and that the scouts returned with favorable reports as to the resources of that country and described it a land flowing with milk and honey but promising plenty of fighting ahead if they would possess the land.

If these same scouts had been seen into Northern Wisconsin on a similar mission today they would no doubt have given the same report. "A land flowing with milk and honey." But instead of a hostile people to conquer and dispossess the land they would report to have found a progressive, hard working people whom it would neither be possible, necessary, nor even yet desirable to drive out, but that there was plenty of room for all who wished to come and possess the land or some of it. Fighting there would be and plenty of it, but it would not be against the people but against the wildreness, against rubbish, brush stumps, etc.

Now, I will go back to about twenty-five years ago and describe some of the conditions of the country as they were at that time.

The country then was almost nothing but a vast territory of forests. By the work of the lumberman these large forests were greatly and rapidly reduced taking out mostly only the first class timber, and at times frightful forest fires going through leaving it a howling wilderness on which was written desolation but not despair. Underneath the brush and stumps was a wonderful fertile soil which when once rescued from the wilderness would not fail the husbandman.

The soil according to location varies from a light sand to a

heavy clay, but by far the largest portion of this territory has a clay loam soil. This is a fertile soil on which agricultural crops of any variety can be raised. This has been proven time and again in many different ways; for instance the last number of years the first prizes of agricultural exhibits at the State fairs went to our Northern and Central counties.

The climate is not essentially different from that of Southern Wisconsin. The temperature as a whole is somewhat lower which is due to the territory being further north. The winters are naturally longer and colder; generally from the middle of November until the latter part of March the ground is covered with a layer of snow which aids greatly in preventing the freezing out of clover pastures, winter grains, etc., which is so often experienced in southern districts.

The summers as a rule do not become so excessively hot and dry. Showers are more frequent. The excessively hot and dry winds from the south do not seem to penetrate Northern Wisconsin but when the wind does prevail from that quarter it is generally follwed by rain.

During the growing season there is a more even rainfall, this together with the great depth of soil accounts abundantly for the great growth of vegetation throughout this section.

The water in this territory is clear and in most places soft.

Twenty-five years ago, there were some farms scattered throughout this territory, but they were mostly small and few. But this land the so-called wilderness was taken up rapidly, people coming in from all parts of the United States and countries of the world.

The farmer then had hard problems to deal with, such as poor markets for timber that the lumberman had left, poor roads, high prices were asked for articles that he needed and low prices were paid for the few products that he had to offer. He was handicapped to make fast headway and to wrest a farm from such a wilderness is no child or weaklings job.

But nevertheless he realized what great country this would be if once cleared up. The farmer then had but a few cows, just enough to supply milk and butter for table use.

As this process of clearing up was going on, times seemed to become more favorable, there was a more ready market for the products that he could dispose of, better roads, etc.

Up to this time the income that he had was mostly from the timber that was left by the lumberman. He soon realized that he must go deeper into dairying.

The population increased rapidly. As the number and size of farms were increased the number of stock was increased accordingly. Cheese factories and creameries were started as soon as there was sufficient patronage, but this wonderful production of milk promised sure returns to the dairymen, which caused a rapid increase in number and size of farms and stock, which increased the number and patronage of cheese factories and creameries very rapidly.

We have at the present time about 3,000 cheese factories and creameries in this state, of which about one third are in the northern half. This speaks well for the country since it took its first step in dairying.

At the present time, in some districts it is wonderful to see the large and beautiful farms that but only a few years ago were nothing but slashing, underbrush, stumps, etc.

On these farms we now find beautiful houses, modern dairy barns, granaries and other smaller buildings that are necessary.

This was brought about by progressive people, by toiling day after day, for they realized their returns if once their task would be done.

The farms in size range mostly from 40 to 160 acres with the exception of some smaller and larger ones.

Upon these lands the clovers, timothy, blue grass, red top and other grasses grow luxuriantly and produce regular and heavy yields. On account of the abundance of rain and the snows of the winter, with a great depth of soil and the connection with soil water, these forage plants root deeply, suffer little during winter and start with an extraordinary vigor in the spring, and grow continuously through the summer and are therefore not so much affected by slight frost in early fall as are the grasses, which have started to grow afresh after a summer's rest.

Oats, peas, barley, wheat, rye and corn all do well. The oat, pea, and barley crops are entitled to special mention. These crops do not seem to ripen so quickly but seem to grow to full maturity so that the yield is heavy.

Dairy men will concede that with an abundance of oats, barley, peas,clover, and timothy hay, a fairly well balanced and good feeding ration can be made for the dairy cows, especially if this is supplemented by corn and corn silage

While the dent corns on the purely clay and clay loam soils have not ripened as successfully as on the warmer sandy and

sandy loam soils, flint corn matures well and either variety matures sufficiently for first class silage.

As the country has become older and more cleared up in larger areas the corn has done very much better.

With reference to the cow it can be said that the people settled there are just as much in the fog as to what they ought to have for best results as they are elsewhere in the state.

As you drive through the country you will see all kinds of breeds. Sometimes in one bunch you will see Jersey, Holstein, Ayshire and Guernsey breeds, and always some of no breed at all—just common cows in which you can detect no particular known breed.

The idea is gaining strength, the lower grades are being weeded out and higher grades placed instead.

The erection of cheese factories has been going on within the past few years with double the rapidity ever before witnessed in this territory.

Milk for cheese production must be pure and wholesome.

Now, because of its abundance of luscious grasses, its healthful climate, and its cool pure waters everywhere present, the dairymen of Northern Wisconsin have special advantages for the production of milk of unusual excellence, and from such milk there can be made a quality of cheese that is equalled nowhere else in all this great country.

Now in conclusion, we have a country with sparkling waters, a delightful and embracing climate, a deep and productive soil. Carrying the humus shed annually for a thousand years, unrivaled railroad and water communication with the great centers of population and to which are coming the young and intelligent, the active and energetic.

It is only a question of time and a short time at that, when Northern and Central Wisconsin will be one of the greatest and most successful dairy districts in the United States.

I thank you.

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DISCUSSION.

The President: A few years ago your president was up in North Central Wisconsin territory spending a couple of days at a cheese factory. A very young, innocent, light complexion-

ed lad worked in that cheese factory and I did not think he was ever going to develop into much of anything particular, but you see how very ably he has presented the subject to you here today. That is the same man. It shows what a little dairy school training will do for a man that has stuff in him .The subject has been very ably handled and it ought to bring out some good discussion. Are there any questions? Any questions you wish to ask Mr. Laabs about that territory for cheese-making the possibility of the cheese industry in North Central Wisconsin? Mr. Laabs, are the factories increasing rapidly up in that section?

Mr. Laabs: Yes, they are.

The President: How about the quantity of milk? Is it increasing rapidly?

Mr. Laabs: Yes, it is from my own experience. My father started a factory in the year 1902. At that time in the flush of the season we had 1,700 pounds of milk, while last year at the same factory our largest receipts in one day were 5,900 pounds, so I think that shows a great increase in that short time.

The President: In the meantime were there any other factories started around you that would, perhaps, take away some of your patronage?

Mr. Laabs: Yes, there were.

The President: So that increase does not represent the entire increase in the quantity of milk produced in your locality?

Mr. Laabs. No, it does not.

Mr. Michels: Where do you find the market for your cheese?

Mr. Laabs. We ship most of our cheese to this city, Milwaukee.

The President: Any more questions? How about the clovers and grasses? Do you ever have a failure there? We think it is serious down here when we have a faiure of clover. Do you ever have a failure of clover there?

Mr. Laabs: Very seldom. For the last number of years the Southern part of the state seems to be very dry, but up there we had plenty of rain and good pastures.

Mr. Everett: Is the quality of milk good, and do you have trouble in educating the farmers to bring good milk?

Mr. Laabs: Well yes, we have some trouble, but of course the country is somewhat newer in the Northern part.

Mr. Everett: The farmers are not disposed to take kindly to a little teaching sometimes. I know, as editor of an agricultural paper that goes to sixty thousand farmers in Wisconsin, a great many letters come to me from a class of dairymen who are very strongly opposed to certain actions taken by members of the Dairy and Food Commission, and I am frequently asked if they have any right to come on to their farms, go into their cow stables, inspect them and tell them what kind of milk they shall deliver at the factory. We have a good many dairy farmers in the state who are disposed to be a little cranky, and they are of course the ignorant class of farmers who do not take kindly to instructions, would like to furnish as dirty milk as has been described by your president and do not care to be interfered in doing so. Of course I write some plain letters to that class of men, telling them what the laws are in effect for, and what they may expect if they do not take proper care of their milk. I was much pleased with what your president said this morning on this one point of clean milk, and I want to tell you it is your duty as cheesemakers to take this branch of cheesemaking, to get after the milk producer, for good milk is the secret of your success in making cheese. You must keep after every man delivering you milk, keep punching him up or he will keep on furnishing you poor milk.

Mr. Corneliuson: I would like to ask Mr. Laabs if he has any knowledge of the average amount of milk produced per cow in his neighborhood?

Mr. Laabs: I have no figures on that subject.

Mr. Corneliuson: Is it not a fact that the average production is rather low?

Mr. Laabs. Yes, we find as a rule the dairymen are behind the times in some districts, but they started in with a low grade of cows and are working up as fast as they can, weeding out the poor ones and getting good ones in their place.

Mr. Everett: Is not the low average production considerably due to the fact that the season is much shorter and the farmer is not educated in the matter of silos, therefore he is a summer dairyman rather than the year round dairyman, and that would bring the average of his cows down?

The President: Mr. Laabs, from my experience in that district, which dates some years back of course, I formed the opinion that quite a few of the settlers there did not care to

have much to do with cows. They did not give the cow the proper treatment they should so she could perform as she was able to. Is not that true to a certain extent up in that country? They like to handle wood, logs and such things and do not care much about keeping cows.

Mr. Laabs: That is true to a certain extent but the woods are getting smaller right along. The settlers have to go into dairying and they find that a profitable business, and are going farther along the right line.

The President: That is true, they have to now. I remember what one farmer told me. He had a fine piece of timber land and a big family and he relied on selling the timber off a certain number of acres every winter in order to make both ends meet. The time came when that timber was gone and he had to turn his attention to farming. Sometime after that he told me his experience and he made the statement that if he had never had anything to sell out of his woods he would have been a great deal beeter off, because when he turned his attention farming he did a great deal better than he had ever been able to do while he was relying on the timber for revenue. Are there any more questions?

Mr. Michels: In regard to the small yield of the cows in the Northern part of the state, I think it is a good point that Mr. Everett brought up, but I believe the fault is mostly due to the farmers not being in winter dairying. We had the same experience in Southern Wisconsin; until we got into winter dairying there was not much progress made in the amount of milk or butter fat the cows produced, but just as soon as the people got an outlet for their winter milk from that time on there was continuous prosperity. I remember in my own experience,—not over fourteen years ago the man with the highest average at our cheese factory was $35 per year, per cow, and I believe half the patrons of that factory did not believe the statement was true; today the man with the smallest average per cow will do as well as that, and I would say that last year I had one man whose average was $85 net from each of his cows for the year. He was a young dairyman and strictly up-to-date.

The President: I will name on the committee on resolutions the following gentlemen: Messrs. M. Michels, Alex. Schaller, and Frank Schwingel.

The secretary has an announcement to make.

The Secretary: I have a telegram from Wyandotte, Mich., from the J. B. Ford Company.

"We wish Cheese Makers Convention success. Sorry we are unable to be with you."

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The President: These three chairs here are to be given away to the three highest winners in the educational scoring contest that has been carried on during the past season. Hon. S. A. Cook, of Neenah, (that is the town in which I live) donated those chairs. The first one, according to our program, was to cost $35, the next $25, and the other $15.00. I helped Mr. Cook purchase those chairs and I know we got a great deal better than the retail price. Mr. Cook was very anxious to furnish chairs of a much better quality for the price than could be purchased anywhere at retail, and these are the chairs we got. I am sorry to say Mr. Cook is not here today. We hope to have him here on Friday. I saw him for a minute yesterday when he was on his way East and he gave us a $25 check and $1 for membership. That is the kind of man Mr. Cook is. He is not a producer of cheese, he is not a dealer in cheese or in dairy products, but he is a consumer and is very much interested in anything that makes for purity and excellence in dairy products, and I am sure his donation to this contest will help us very materially in our work.

We have a good program for this afternoon and I want you all to be here promptly at 2 o'clock. We will now adjourn to the cheese exhibition room to inspect the cheese exhibit. We will stand adjourned, therefore, until 2 o'clock this afternoon.

## WEDNESDAY AFTERNOON SESSION.

Meeting called to order at 2 o'clock by President Aderhold.

The President: Mr. Watrous, Secretary of the Citizen's Business League, will give us an illustrated lecture on Milwaukee.

## STEREOPTICON VIEWS—"MILWAUKEE THE BEAUTIFUL".

R. B. Watrous, Milwaukee, Wisconsin.

*Mr. President, Ladies and Gentlemen*:

It was my pleasure to appear before you a while this morning and give you greeting. From here I went over and gave an illustrated talk to one of our Women's Clubs in this city, and, as I hurried about today trying to make two days in one, I have been reminded of the story of the little five year old who asked his mother to read the story of Paul Revere's ride. The little fellow listened intently and when he heard of the wonderful ride through the darkness, getting the lanterns displayed at the proper time, he asked, "Wasn't Paul Revere afraid to be out in the dark?" His mother said "No, he was a very brave man." Then the little fellow said: "Why didn't he use the telephone?" She replied that they did not have telephones in 1776. But I sometimes wish I could give some of my talks by telephone. I am glad, however, to have an opportunity to tell you of this city which you have visited several times. Perhaps some of the views will give you a little more comprehensive idea of what Milwaukee is, the metropolis of your commonwealth of which we are all so proud.

Before I leave this place I want to add a few remarks in reference to a subject which is of interest to me, and I trust will be of interest to your association. In the first place, I want to say it has been my pleasure this year to co-operate with your

officers somewhat in promoting information relative to this meeting. Your dairy papers have been cordial in mentioning the State Cheese Makers' Association, and the state press is always ready to mention it and this year I sent out some notices to the state press of Wisconsin, in reference to your Association, asking that they send me clippings of the articles printed, and I shall leave with your secretary the scrapbook which contains these clippings from our Wisconsin state press, the press upon which we all rely so much out in the country. We may read our papers from Chicago and Milwaukee, but when we want to get to the heart of things we read our local papers, and I want to add now a testimonial to the Wisconisn state press and I trust you will pass resolutions thanking the editors for their assistance tendered to your association.

We are talking now of having a Wisconsin Dairy show in Milwaukee, which shall be representative of all the dairy interests of the state of Wisconsin I have talked with your officers about it and with officers of other kindred associations, and I believe they are in favor of it. Some day we are going to have a great auditorium which will accommodate such a show better than any other city in the United States. We have the state which leads the dairy states of the Union in the dairy interests. I believe Wisconsin is the leading dairy state in the Union and it is fitting that we should have a dairy show which shall be representative of and typical of the dairy interests, whatever they may be, of the state; that we should have the animal that produces the product, that we shall have the product in its various manufactured kinds. There you will be given the opportunity to see the machinery and utensils used for converting the raw material into cheese and butter, and I hope that this subject may be brought up for discussion at this convention and that you will give it your association endorsement. If the auditorium is not completed we can use another building which will answer the purpose very well.

We propose to have the show if we have the hearty co-operation of the representatives of the dairy industry of Wisconsin.

Now, ladies and gentlemen, I am sure that with the two times you have given me an opportunity to address you I have taken all of your time I should. I want to thank you from my heart for the privilege you have given me, because I esteem it as a personal favor, aside from my duties as Secretary of the

Citizen's Business League, to be one of you. I wish you great success during this convention and all through the year.

(Previous to his remarks Mr. Watrous gave some very fine views of different places of interest in the city of Milwaukee, also pictures of people prominent in the dairy industry of the state, among the latter being Mr. Aderhold, president of the association, Mr. Baer, secretary, Mr. J. G. Moore, of the Wisconsin Buttermakers' Ass'n, and several others.)

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The President: I am sure every one of us is very much pleased with this illustrated lecture.

Mr. Albert Strueben, of Monroe, Wis., sang a Swiss Yodel song, for which he was warmly applauded.

The President: We shall have to have a larger hall next year in which to hold our meetings.

The next on the program is the reading of the scores of those participating in the Chesse Makers' Association contest. These scores will be read by Secretary Baer.

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## CHEESE SCORES.

The following announcement of the report of the judges on cheese was made by Mr. Robert Johnston of Woodstock, Ontario, Canada.

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

As Chairman of the Committee on Cheese Judging I will say that in our work we had critics who followed us and made notes which, no doubt, you will hear of later.

The cheese scores are as follows.

## *American Cheese.*

| No. | Style of cheese. | Name of exhibitor. | Postoffice. | Flavor. | Texture. | Color. | Make-up. | Total. |
|---|---|---|---|---|---|---|---|---|
| | | | | 45 | 30 | 15 | 10 | 100 |
| 1 | 1 Flat. | James Lord | Twin Bluffs, Wis | 43 | 28 | 15 | 10 | 96 |
| 2 | 1 Flat. | Otis Kidd | Sabin, Wis | 44 | 30 | 15 | 10 | 99 |
| 3 | 1 Daisy. | Henry Priebe | Loganville, Wis. | 43 | 29 | 14 | 8 | 94 |
| 4 | 1 Daisy. | G. M. Matznick | Kiel, Wis | 43 | 27 | 13 | 6 | 89 |
| 5 | 1 Flat. | John Fischer | Boaz, Wis | 42 | 27 | 12 | 10 | 91 |
| 6 | 1 Flat. | Albert Schauf | Ithica, Wis | 43 | 27 | 13 | 10 | 93 |
| 7 | 1 Flat. | O. F. Greunke | Clintonville, Wis. | 43½ | 28 | 12 | 10 | 93½ |
| 8 | 1 Daisy. | Anton Henseler | Marshfield, Wis. | 40 | 27 | 13 | 8 | 88 |
| 9 | 1 Flat. | Theodore Schaefer | Viola, Wis | 44 | 28 | 15 | 10 | 97 |
| 10 | 1 Daisy. | Wallace Madding | Woodstock, Wis. | 40 | 27 | 13 | 8 | 88 |
| 11 | 1 Daisy. | John Lord | Sandusky, Wis | 42 | 27½ | 13 | 10 | 92½ |
| 12 | 1 Flat. | Jacob Theisen | Fredonia, Wis | 41 | 26 | 12 | 8 | 87 |
| 13 | 1 Flat. | Chas. Beeman | Viola, Wis. | 43 | 27 | 13 | 10 | 93 |
| 14 | 1 Cheddar | Robert Murray | Yuba, Wis | 43 | 29 | 13 | 10 | 95 |
| 15 | 1 Cheddar | Fred Lepley | West Lima, Wis. | 43½ | 28½ | 15 | 9 | 96 |
| 16 | 1 Cheddar | Wm. Winder | Richland Ctr Wis | 44 | 30 | 15 | 9 | 98 |
| 17 | 1 Flat. | Arnold Grimm | Fremont, Wis | 38 | 27 | 13 | 8 | 86 |
| 18 | 1 Flat. | Chriss Kraak | Muscoda, Wis | 42 | 27 | 15 | 9 | 93 |
| 19 | 1 Flat. | E. F. Snyder | Bloom City, Wis. | 41 | 25 | 15 | 9 | 90 |
| 20 | 1 Daisy. | H. C. F. Wilkowski | Mishicott, Wis. | 43 | 27 | 12 | 8 | 90 |
| 21 | 1 Flat. | P. H. Kasper | Welcome, Wis | 43½ | 29 | 15 | 9 | 96½ |
| 22 | 1 Daisy. | August Brandt | Forestville, Wis. | 42 | 26 | 12 | 8 | 88 |
| 23 | 1 Flat. | C. L. Strasburg | Loyd, Wis | 42 | 26 | 15 | 9 | 93 |
| 24 | 1 Daisy. | W. O. Stanton | Oostburg, Wis | 44 | 25 | 13 | 10 | 92 |
| 25 | 1 Flat. | E. G. Schwinkel | Avoca, Wis. | 40 | 27 | 12 | 10 | 89 |
| 26 | 1 Flat. | J. R. Biddulph | Tiskilwa, Ill. | Com | plime | ntary | Sco | re. |
| 27 | 1 Flat. | P. E. Cranston | Sabin, Wis | 43½ | 28½ | 13 | 9 | 94 |
| 28 | 1 Flat. | Sam Grimm | Fremont, Wis | 40 | 27 | 15 | 9 | 91 |
| 29 | 1 Daisy. | A. C. Koopman, Jr. | Pt. Wa'h'gt'n, Wis | 43 | 25 | 12 | 10 | 90 |
| 30 | 1 Flat. | Geo. W. Frazier | Appleton, Wis | 42 | 27½ | 15 | 9 | 93½ |
| 31 | 1 Daisy. | F. A. Flynn | Barahoo, Wis | 40 | 25 | 15 | 9 | 89 |
| 32 | 1 Daisy. | Math Meyer | New Holst'n, Wis | 41 | 26 | 13 | 9 | 89 |
| 33 | 1 Flat. | T. A Ubbelohde | Glenbeulah, Wis | 41 | 26 | 13 | 8 | 88 |
| 34 | 1 Flat. | Matthew De Haan | Lineville, Iowa | 43½ | 27 | 14 | 10 | 94½ |
| 35 | 1 Daisy. | Emil Falk | Waldo, Wis | 43½ | 27 | 14 | 10 | 94½ |
| 36 | 4 Y. A. | John Grootemont | Brillion, Wis. | 43 | 29½ | 14 | 8 | 94½ |
| 37 | 2 L. H. | H. A. Kalk | Plymouth, Wis. | 43½ | 27 | 14 | 9 | 93½ |
| 38 | 1 Daisy. | Fred Schiffler | Standard, Wis | 43½ | 28 | 13 | 10 | 94½ |
| 39 | 1 Daisy. | John McClusky | Linden, Wis | 43½ | 28 | 13½ | 10 | 95 |
| 40 | 2 L. H. | H. L. Mueller | Sheb'g'n F'ls, Wis | 40 | 26 | 15 | 10 | 91 |
| 41 | 1 Flat. | H. L Noyes | Muscoda, W s | 43½ | 28 | 15 | 8 | 94½ |
| 42 | 1 Flat. | H. J. Noyes | Muscoda, Wis | 43 | 28 | 13½ | 8 | 92½ |
| 43 | 1 Daisy. | C. A. Bremmer | Plain, Wis. | 41 | 25 | 14 | 10 | 90 |
| 44 | 1 Flat. | Julius Berg | Sturgeon Bay, Wis | 43½ | 28 | 13 | 10 | 94½ |
| 45 | 2 Twins. | U. L. Johnson | Fairwater, Wis | 43½ | 27 | 14½ | 8 | 93 |
| 46 | 1 Daisy. | J. H. Osborne | Fennimore, Wis. | 43½ | 28 | 14 | 8 | 93½ |
| 47 | 1 Daisy. | John Hoeppner | Marion, Wis. | 42 | 27 | 14 | 9 | 92 |
| 48 | 1 Flat. | Pat Wallace | Hortonville, Wis. | 43 | 27 | 14 | 8 | 92 |
| 49 | 1 Flat. | W. L. Parkin | Mantoville, Mi | 43 | 26 | 12 | 8 | 89 |
| 50 | 1 Daisy. | H. E. Baumann | Merrill, Wis. | 43 | 27 | 13 | 10 | 93 |
| 51 | 1 Flat. | A. J. Roycraft | Chi'wa Falls, Wis | 42½ | 29 | 15 | 10 | 96½ |
| 52 | 1 Daisy. | A. T. Bruhn | Spring Green, Wis | 43 | 27 | 14 | 10 | 94 |
| 53 | 1 Daisy. | M. J. Mahlik | Pilsen, Wis | 40 | 25 | 13 | 8 | 86 |
| 54 | 1 Sage. | J R Biddulph | Tiskilwa, Ill. | 45 | 27 | 15 | 5 | 92 |
| 55 | 1 Flat. | Wm. Engelland | Mishicott, Wis | 43 | 26 | 14 | 8 | 91 |
| 56 | 1 Flat. | A. E. Hamm | Kohlsville, Wis. | 42 | 24 | 12 | 9 | 87 |
| 57 | 1 Flat | G J. Sszen | Belgium, Wis | 41 | 26 | 13 | 8 | 88 |

*Swiss Cheese.*

| No. | Style of Cheese. | Name of Exhibitor. | Post Office. (Wisconsin.) | Flavor. | Appearance on trier holes. | Texture. | Salt. | Style. | Total. |
|---|---|---|---|---|---|---|---|---|---|
| | | | | 35 | 30 | 20 | 10 | 5 | 100 |
| 1 | 2 Block... | Henry Elmer..... | Belleville ..... | 31 | 25 | 17 | 8½ | 5 | 86½ |
| 2 | 2 Block... | Alfred Wuergler. | New Glarus..... | 31 | 28 | 19 | 9 | 5 | 92 |
| 3 | 2 Block... | Caspar Zwicky | Belleville ..... | 32 | 28 | 18 | 9 | 5 | 92 |
| 4 | 1 Block... | Ernest Regez, Jr. | Blanchardville. | 31 | 23 | 17 | 8 | 5 | 84 |
| 5 | 1 Block... | Ernest Regez, Sr. | Blanchardville. | 32 | 28 | 18 | 9¼ | 4 | 92½ |
| 6 | 1 Drum.. | Gottfried Vogel.. | Mt. Horeb ..... | 34 | 26 | 18 | 9½ | 5 | 93 |
| 7 | 1 Drum... | Otto Vogel. ..... | Mt. Horeb ..... | 32 | 28 | 18 | 9 | 5 | 92 |
| 8 | 1 Drum... | Jos. Ackerman... | Monroe ..... | 31 | 29 | 19 | 9½ | 4 | 95½ |
| 9 | 1 Drum... | Alfred Mueller .. | Monroe ..... | 32½ | 28½ | 17 | 10 | 5 | 93 |
| 10 | 1 Drum... | J. H. Elmer & Son ..... | Monroe ..... | 33 | 27 | 18 | 9½ | 5 | 92½ |
| 11 | 1 Drum... | Ernest Regez, Sr. | Blanchardville | 32 | 28½ | 18 | 9½ | 5 | 93 |
| 12 | 1 Drum... | Herman Schoepfer ..... | Hollandale .... | 30 | 23 | 15 | 8⅞ | 4½ | 80½ |
| 13 | 1 Drum... | Halver Buholzer. | Browntown ... | 32 | 28 | 18 | 10 | 4¾ | 92¼ |
| 14 | 1 Drum... | Alfred Urben.... | Blue Mounds.. | 31 | 24 | 15 | 8½ | 5 | 83½ |
| 15 | 1 Drum... | Ernest Regez, Jr. | Blanchardville. | 32 | 24 | 18 | 9 | 5 | 88 |
| 16 | 1 Drum... | John Wehinger.. | Woodford..... | 32 | 30 | 18 | 9 | 5 | 94 |
| 17 | 1 Drum... | John Regez..... | Monroe ..... | 31 | 22 | 15 | 9 | 5 | 82 |
| 18 | 1 Drum... | Rudolph Urben.. | Ridgeway..... | 32 | 29 | 18 | 9½ | 5 | 93½ |
| 19 | 1 Block... | Jacob Regez. .... | Monroe ..... | 31 | 26½ | 18 | 9 | 5 | 89½ |
| 20 | 1 Drum... | Mike Thoni..... | Hollandale .... | 32 | 24 | 17 | 9 | 5 | 87 |
| 21 | 1 Drum... | Ulrich Fuhrer... | Hollandale .... | 32½ | 27½ | 18 | 9 | 5 | 92 |
| 22 | 1 Block... | John Regez..... | Monroe ..... | 32 | 23 | 19 | 10 | 5 | 89 |
| 23 | 1 Drum... | Jacob Marty..... | Blanchardville. | 32 | 28 | 18 | 9 | 5 | 92 |

*Brick Cheese.*

| No. | Style of cheese. | Name of Exhibitor. | Post Office. | Flavor. | Texture. | Color. | Salt. | Style. | Total. |
|---|---|---|---|---|---|---|---|---|---|
| | | | | 40 | 40 | 10 | 5 | 5 | 100 |
| 1 | Brick..... | David Baumgartner | Barneveld, Wis. | 34 | 34 | 9 | 4½ | 5 | 86½ |
| 2 | Brick..... | Ernest Regez, Jr. | Blanchardville, Wis. | 39 | 39 | 10 | 5 | 5 | 98 |
| 3 | Brick..... | Ernest Regez, Sr. | Blanchardville, Wis. | 38 | 37 | 10 | 5 | 5 | 95 |
| 4 | Brick..... | W. C. Ganschow. | Bonduel, Wis.. | 36 | 35 | 9 | 4½ | 25 | 89½ |
| 5 | Brick..... | C. F. Brinkmann | Coon Valley, Wis. | 36 | 34 | 10 | 5 | 5 | 90 |
| 6 | Brick..... | Geo. F. Eichel... | Brandon, Wis | 35 | 35 | 9 | 4½ | 4½ | 88 |
| 7 | Brick .... | Gottfried Vogel.. | Mt. Horeb, Wis. | 36 | 37 | 9½ | 5 | 5 | 92½ |
| 8 | Brick..... | Jacob Regez. | Monroe. Wis,.. | 37 | 36 | 9½ | 5 | 5 | 92½ |
| 9 | Brick..... | John Regez .... | Monroe, Wis.. | 37 | 37 | 9½ | 5 | 5 | 93½ |
| 10 | Brick..... | Carl Schmitt.... | Oconomowoc, Wis. | 36 | 36 | 9 | 4½ | 5 | 90½ |
| 11 | Brick..... | Christ Wenger... | Horicon, Wis. | 34 | 34 | 9 | 4½ | 5 | 86½ |
| 12 | Brick..... | Mike Thoni .... | Hollandale, Wis | 36 | 35 | 9 | 4½ | 4 | 88½ |
| 13 | Cream... | Christ Kohli. .. | Mayville, Wis.. | 38 | 37 | 9½ | 5 | 5 | 94½ |
| 14 | Brick..... | Casper Anderegg | La Crosse, Wis. | 38 | 38½ | 9½ | 5 | 5 | 96 |
| 15 | Brick..... | Middle Ridge Cheese Co | Bangor, Wis ... | 37½ | 39 | 10 | 5 | 4½ | 96 |
| 16 | Brick..... | Jake Karlen..... | Monroe, Wis.. | 39 | 39 | 10 | 5 | 5 | 98 |
| 17 | Brick..... | Fred Sette.. ..... | Iron Ridge, Wis. | 33 | 33 | 9 | 4½ | 5 | 84½ |
| 18 | Brick..... | Jacob Begez..... | Monroe, Wis.., | 35 | 36 | 9½ | 4 | 5 | 89½ |
| 19 | Brick..... | Wm. Wenger.... | Brodhead, Wis | 39 | 39 | 10 | 5 | 5 | 98 |

CHEESE EXHIBIT AT 1907 MEETING.

*Limburger Cheese.*

| No. | Style of Cheese. | Name of Exhibitor. | Post Office. | Flavor. | Texture. | Color. | Salt. | Style. | Total. |
|---|---|---|---|---|---|---|---|---|---|
| | | | | 40 | 40 | 10 | 5 | 5 | 100 |
| 1 | Limb'rger | Jacob Elmer..... | Browntown, Wis. | 36 | 37 | 9 | 5 | 5 | 92 |
| 2 | Limb'rger | Ernest Regez, Jr. | Blanchardville, Wis. | 39 | 39 | 10 | 5 | 5 | 98 |
| 3 | Limb'rger | Fred Blazer ..... | Hollandale, Wis | 38 | 38 | 10 | 5 | 5 | 96 |
| 4 | Limb'rger | Ernest Regez, Sr. | Blanchardville, Wis. | 38 | 37 | 10 | 5 | 5 | 95 |
| 5 | Limb'rger | Chris Beller..... | Belleville, Wis. | 36 | 35 | 10 | 5 | 5 | 91 |
| 6 | Limb'rger | Jacob Senn..... | Belleville, Wis. | 37 | 37 | 10 | 5 | 5 | 94 |
| 7 | Limb'rger | Jacob Regez..... | Warren, Ill..... | 36 | 35 | 9½ | 5 | 5 | 90½ |
| 8 | Limb'rger | J.H. Elmer & Son | Monroe, Wis.... | 33 | 35 | 10 | 5 | 5 | 88 |
| 9 | Limb'rger | Henry Elmer..... | Belleville, Wis | 37 | 37 | 9½ | 5 | 4½ | 93 |
| 10 | Limb'rger | John Regez..... | Monroe, Wis.... | 37 | 37 | 9½ | 5 | 5 | 93½ |
| 11 | Limb'rger | Jacob Regez..... | Monroe, Wis.... | 38 | 37½ | 10 | 5 | 5 | 95½ |
| 12 | Limb'rger | John Altman..... | Mineral Point, Wis. | 38 | 36 | 10 | 5 | 5 | 94 |
| 13 | Limb'rger | Jacob Karlen.... | Monroe, Wis | 37 | 38 | 9½ | 5 | 5 | 94½ |

*Otis Kidd*, Sabin, Wisconsin, won first premium, gold medal, on American cheese.

*Wm. Winder*, Richland Center, Wisconsin, won second premium, silver medal, on American sheese.

*Theodore Schafer*, Viola, Wisconsin, won third premium, bronze medal, on American cheese.

*Joseph Ackerman*, Monroe, Wisconsin, won first premium, gold medal, on Swiss cheese.

*John Wehinger*, Woodford, Wisconsin, won second premium, silver medal, on Swiss cheese.

*Rudolph Urbin*, Ridgeway, Wisconsin, won third premium, bronze medal, on Swiss cheese.

*Ernest Regez Jr.*, Blanchardville, Wisconsin, won first premium, gold medal, on Brick cheese.

*Ernest Regez*, Blanchardville, Wisconsin, won second premium, silver medal. on Brick cheese.

*John Regez*, Monroe, Wisconsin, won third premium, bronze medal, on Brick cheese.

*Ernest Regez Jr.*, Blanchardville, Wisconsin won first premium, gold medal, on Limburger cheese.

*Fred Blaser*, Hollendale, Wisconsin, won second premium, silver medal, on Limburger cheese.

*Jacob Regez*, Monroe, Wisconsin, won third premium, bronze medal, on Limburger cheese.

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,

Judges:
Robert Johnston, Woodstock, Ontario, Canada.
D. S. Crosby, Chicago, Illinois.
Geo. Ehrat, Chicago, Illinois.

Superintendent:
J. W. Cross, Mauston, Wisconsin.

Dairy Critics:
J. D. Cannon, New London, Wisconsin.
Fred Marty, Monroe, Wisconsin.

## ROLL OF HONOR.

Names and addresses of Exhibitors awarded association diplomas of merit for the year 1907.

| Name. | Address. | State. |
|---|---|---|
| Ackerman, Joseph | Monroe | Wisconsin. |
| Anderegg, Caspar | La Crosse | Wisconsin. |
| Altman, John | Mineral Point | Wisconsin. |
| Beeman, Chas | Viola | Wisconsin. |
| Breemmer, C. A | Plain | Wisconsin. |
| Berg, Julius | Sturgeon Bay | Wisconsin. |
| Baumann, H. E | Merrill | Wisconsin. |
| Bruhn, A. T | Spring Green | Wisconsin. |
| Biddulph, J. R | Tiskilwa | Illinois. |
| Buholzer, Haver | Browntown | Wisconsin. |
| Brinkmann, C. F | Coon Valley | Wisconsin. |
| Blaser, Fred | Hollendale | Wisconsin. |
| Beller, Christ | Belleville | Wisconsin. |
| Cranston, P. E | Sabin | Wisconsin. |
| De Haan, Matthew | Lineville | Iowa. |
| Engelland, Wm | Mishicott | Wisconsin. |
| Elmer & Son, J. H | Monroe | Wisconsin. |
| Elmer, Jacob | Browntown | Wisconsin. |
| Elmer, Henry | Belleville | Wisconsin. |
| Fischer, John | Boaz | Wisconsin. |
| Frazer, G. W | Appleton | Wisconsin. |
| Falk, Emil | Waldo | Wisconsin. |
| Fuhrer, Ulrich | Hollandale | Wisconsin. |
| Grimm, Sam | Fremont | Wisconsin. |
| Grootemont, John | Brillion | Wisconsln. |
| Greunke, O. F | Clintonville | Wisconsin. |
| Hoeppner, John | Marion | Wisconsin. |
| Johnson, N. L | Fairwater | Wisconsin. |
| Kidd, Otis | Sabin | Wisconsin. |
| Kraak, Christ | Muscoda | Wisconsin. |
| Kasper, P. H | Welcome | Wisconsin. |
| Karlen, Jacob | Monroe | Wisconsin. |
| Koopman, A. C | Port Washington | Wisconsin. |
| Kalk, H. A | Plymouth | Wisconsin. |
| Kohli, Christ | Mayville | Wisconsin. |
| Karlen, Jake | Monroe | Wisconsin. |
| Lord, James | Twin Bluffs | Wisconsin. |
| Lord, John | Sandusky | Wisconsin. |
| Lepley, Fred | West Lima | Wisconsin. |
| Murray, Robert | Yuba | Wisconsin. |
| McCluskey, John | Linden | Wisconsin. |
| Mueller, H. L | Sheboygan Falls | Wisconsin. |
| Mueller, Alfred | Monroe | Wisconsin. |
| Marty, Jacob | Blanchardville | Wisconsin. |
| Middle Ridge Cheese Co | Bangor | Wisconsin. |
| Noyes, H. L | Muscoda | Wisconsin. |
| Noyes, H. J | Muscoda | Wisconsin. |
| Osborne, J. H | Fennimore | Wisconsin. |

## ROLL OF HONOR—Continued.

Name and address of Exhibitors awarded association diplomas of merit for the year 1907.

| Name. | Address. | State. |
|---|---|---|
| Priebe, Henry | Loganville | Wisconsin. |
| Roycraft, A. J | Chippewa Falls | Wisconsin. |
| Regez, Ernest, Sr | Blanchardville | Wisconsin. |
| Regez, Ernest, Jr | Blanchardville | Wisconsin. |
| Regez, Jacob | Monroe | Wisconsin. |
| Regez, John | Monroe | Wisconsin. |
| Regez, Jacob | Warren | Illinois. |
| Senn, Jacob | Bellville | Wisconsin. |
| Schmitt, Carl | Oconomowoc | Wisconsin. |
| Schiffler, Fred | Standard | Wisconsin. |
| Schanf, Albert | Ithaca | Wisconsin. |
| Schaefer, Leo | Viola | Wisconsin. |
| Snyder, E. F | Bloom City | Wisconsin. |
| Strasburg, C. L | Loyd | Wisconsin. |
| Stanton, W. O | Oostburg | Wisconsin. |
| Urben, Rudolph | Ridgeway | Wisconsin. |
| Vogel, Gottfried | Mt. Horeb | Wisconsin. |
| Vogel, Otto | Mt. Horeb | Wisconsin. |
| Winder, Wm | Richland Center | Wisconsin. |
| Wilkowski, H. C. F | Mishicott | Wisconsin. |
| Wallace, Pat | Hortonville | Wisconsin. |
| Wuergler, Alfred | New Glarus | Wisconsin. |
| Wehinger, John | Woodford | Wisconsin. |
| Wenger, William | Brodhead | Wissonsin. |
| Zwicky, Casper | Belleville | Wisconsin. |

Judges:

Robert Johnston, Woodstock, Canada.

D. S. Crosby, Chicago, Ill.

Geo. Ehrat, Chicago, Ill.

President:

E. L. Aderhold, Neenah, Wis.

Secretary:

U. S. Baer, Madison, Wis.

## WINNERS OF PREMIUM FUND.

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

| Name. | Address. | State. |
|---|---|---|
| Ackermann, Joseph | Monroe | Wisconsin. |
| Altman, John | Mineral Point | Wisconsin. |
| Beeman, Chas | Viola | Wisconsin. |
| Berge, Julius | Sturgeon Bay | Wisconsin. |
| Bauman, H. E. | Naugart | Wisconsin. |
| Bruhn, A. F. | Spring Green | Wisconsin. |
| Biddulph, J. R. | Providence | Illinois. |
| Buholyer, Haver | Woodford | Wisconsin. |
| Blazer, Fred | Hollandale | Wisconsin. |
| Cranston, P. E. | Soldiers Grove | Wisconsin. |
| DeHaan, Matthew | Lineville | Iowa. |
| Elmer & Son, J. H | Monroe | Wisconsin. |
| Elmer, Jacob | Browntown | Wisconsin. |
| Elmer, Henry | Belleville | Wisconsin. |
| Falk, Emil | Waldo | Wisconsin. |
| Fuhrer, Ulrich | Hollandale | Wisconsin. |
| Frazer, G. W. | Appleton | Wisconsin. |
| Greunke, O. F. | Clintonville | Wisconsin. |
| Grootemont, John | Brillion | Wisconsin. |
| Hoeppner, John | Marion | Wisconsin. |
| Johnson, U. L. | Fairwater | Wisconsin. |
| Kidd, Otis | Sabin | Wisconsin. |
| Kraak, Christ | Muscoda | Wisconsin. |
| Kasper, P. H. | Welcome | Wisconsin. |
| Kalk, H. A. | Plymouth | Wisconsin. |
| Kohli, Christ | Mayville | Wisconsin. |
| Lord, James | Neptune | Wisconsin. |
| Lord, John | Sandusky | Wisconsin. |
| Lepley, Fred | West Lima | Wisconsin. |
| Murray, Robert | Yuba | Wisconsin. |
| McCluskey, J. M. | Linden | Wisconsin. |
| Muller, Alfred | Monroe | Wisconsin. |
| Noyes, H. L. | Muscoda | Wisconsin. |
| Noyes, H. J | Muscoda | Wisconsin. |
| Osborne, J. H | Boscobel | Wisconsin. |
| Priebe, Henry | Loganville | Wisconsin. |
| Roycraft, A. G. | Chippewa Falls | Wisconsin. |
| Regez, Ernest, Jr. | Blanchardville | Wisconsin. |
| Regez, Ernest, Sr. | Blanchardville | Wisconsin. |
| Regez, Jacob | Monroe | Wisconsin. |
| Regez, John | Monroe | Wisconsin. |
| Schauf, Albert | Ithaca | Wisconsin. |
| Schaefer, Theo. | Viola | Wisconsin. |
| Strasburg, C. L | Loyd | Wisconsin. |
| Stanton, W. O. | Oostburg | Wisconsin. |
| Schiffler, Fred. | Dodgeville | Wisconsin. |
| Senn, Jacob | Belleville | Wisconsin. |
| Urben, Rudolf | Ridgeway | Wisconsin. |

WINNERS OF PREMIUM FUND.—Continued.

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

| Name. | Address. | State. |
|---|---|---|
| Vogel, Gottfried | Mt. Horeb | Wisconsin. |
| Vogel, Otto | Mt. Horeb | Wisconsin. |
| Winder, Wm | Richland Center | Wisconsin. |
| Wallace, Pat | Hortonville | Wisconsin. |
| Wuergler, Alfred | Belleville | Wisconsin. |
| Wehinger, John | Woodford | Wisconsin. |
| Zwicky, Casper | Belleville | Wisconsin. |

*Signed:*

U. S. Baer, *Secretary.*
Fred Marty, *Treasurer.*

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The President: One of the rules of the association, I believe, provides that a prize winner or one who wins a medal in a contest of this kind, is obliged to be present at the convention in order to be awarded the medal. If he is not present, as I understand it, his cheese does not enter into competition for the medal. On account of an accident to the brother of the winner of the first medal in the American cheese class, the gentleman is prevented from being present and it seems to me that under those circumstances the man that made this highest scoring cheese should not be deprived of that glory. I think it is the duty of the convention to suspend the rules under the circumstances and declare him the winner of the medal.

On motion made and seconded, the rules of the association were suspended and Mr. Otis Kidd was declared winner of the gold medal in the American cheese class and the same was awarded to him.

NOTICE.

A purse of $15.00 will be divided among the members of the Muscoda Dairy Board of Trade exhibiting cheese at the Fifteenth Annual Meeting of the Wisconsin Cheese Makers' Association. The awards are to be made as follows:

$7.50 to the member securing the highest score on American Cheese.

$5.00 to the member securing the 2nd highest score on American Cheese.

$2.50 to the member securing the 3rd highest score on American Cheese.

1st premium won by H. J. Noyes, Muscoda, Wis.
2nd premium won by Luther Noyes, Muscoda, Wis.
3rd premium won by E. G. Schwingel, Avoca, Wis.

The Muscoda Dairy Board of Trade.

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The President: The next on the program is the reading of the scores of those participating in the Wisconsin Monthly Educational Contest by Mr. J. G. Moore, the man who has had a great deal to do with that contest.

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## WISCONSIN MONTHLY EDUCATIONAL SCORING CONTEST.

J. G. Moore, Madison, Wisconsin.

Secretary Wisconsin Buttermakers' Association.

*Mr. President, Ladies and Gentlemen.*

Before I proceed to read the scores I want to inflict myself upon your good nature for a few minutes in telling you something of the steps that have led up to this point in the scoring contest. I do not claim to be the originator of the idea or the man who first proposed a Wisconsin scoring contest, not at all; and in this connection, because, as has been said, I have had a great deal to do with the working of the Wisconsin scoring con-

test, the personal pronoun I may be necessarily somewhat prominent, I wish to place myself in the proper position before you and to that end I would like to tell a story which may illustrate my position more than any words I could tell you. I am somewhat in the same position as an old friend of mine, a Grand Army man in the Civil war. His father was in the same company with him. By some of the accidents of fortune, he had been promoted to be a corporal or some petty officer. He was in charge of a squad of men, among whom was his father. They were in the enemy's country and were crossing the river; they had their arms with them but some of them were engaged in rowing the boat across and, instead of keeping a sharp lookout for the enemy, they were acting as though they were with their friends. As they were approaching the other shore a young rebel stepped out and levelled his gun, saying, "Lay down your arms." In telling this incident my friend said, "And without the least braggadocio on my part, I was the last to lay down my arms." That is the way with me, I do not do it in that kind of a spirit.

In the year 1904, as president of the Wisconsin Buttermakers' Association, I suggested the idea of a contest in the president's annual message. I appointed a committee of six men at that convention to see what could be done to get a scoring contest for Wisconsin, but nothing was done. Some of us agitated the subject with Hon. J. Q. Emery, our Dairy and Food Commissioner, and the result was we got out a circular letter which we sent to all the creameries and cheese factories in Wisconsin, so far as we knew them. To that letter we received about a half dozen replies from as many buttermakers and as many cheesemakers, so for the time being the plan fell flat. At your convention two years ago I presented a paper on the scoring contest for Wisconsin and still nothing was done. At the buttermakers' convention held at Madison last year on being asked for a showing of hands at least seventy-five men held up their hands to the inquiry as to whether they would engage in a contest. A conference was called by the Dairy and Food Commissioner of the officers of this association, of the Wisconsin Dairymen's Association, of the Wisconsin Buttermakers' Association and representatives of the Agricultural College. These gentlemen met in the office of the Dairy and Food Commissioner and talked the matter over. Previous to this, at the expense of the two associations, the Buttermakers and

the Chesemakers', we sent out a return paid postal card asking again whether the buttermakers and cheesemakers would enter the contest. A sufficient number of replies at this time to warrant us going on with the contest, something like 100 cheesemakers and over 200 buttermakers replying.

At that conference the Wisconsin Agricultural College offered the use of its cold storage rooms and kindly offered also, the services of a man to take care of the exhibits and look after them as they came in, also to see them shipped out again. The plan contemplated that we would have to hire a stenographer to take care of the books, who would devote her entire time to the work. Looking after the same devolved upon a member of the Dairy and Food Commission, and I was selected to do it. Commissioner Emery agreed to furnish some of the judges the dairy school furnished one for the butter and Mr. Michels, your vice-president, tendered his services throughout the season as one of the butter judges. It was requested that the butter and cheese be sent to Madison each month, express charges prepaid.

We received the highest number of entries in the butter division in the contest, about one hundred and forty odd; about eighty was the highest number of cheese entries, it seems to me, at any one time, and the number of entries each month were as follows:

There were 27 cheesemakers who sent cheese once; some of those sent the first month; 17 for two months; 10 cheesemakers for three months; 10 for four months; 8 for five months; 9 for six months; 6 for seven months; 11 for eight months and 14 for nine months. Unfortunately, the very first month when we sent our butter and cheese to market for some reason, which I have never had explained to me the money to pay for this butter and cheese was slow in coming back to us, and the call for the second contest was out before we received the money, and I think that had something to do with quite a number of buttermakers and cheesemakers refusing to send any more until they were paid for the first lot. Possibly they were right in their suspicions of us not sending the money.

I have here a list of quite a number of buttermakers and cheesemakers who have not called for their checks, amounting to $71.05. The scoring contest was an experiment and like all experiments it could hardly be expected to turn out and work smoothly the very first time. We had enormous difficulties to contend with, not the least of which was the suspicious bearing

of the butter and cheese makers towards those carrying on the contest. We received many letters from the boys each month asking why they did not get their pay. As soon as we received the remittance from the parties to whom we sold the butter and cheese, the money was distributed as fast as the stenographer could get the pay roll fixed up. The money was deposited in the bank in the name of a treasurer. It was decided to have Professor Farrington act as treasurer but, owing to sickness, he was unable to be present in Madison during the summer, so the duty devolved on Mr. Binkendorf, his assistant. Some of the butter and cheese makers were rather indignant that we could not get as good a price for their exhibits as they could get directly at the factory. It is hardly to be expected that we could get a first class price for a miscellaneous lot of butter or cheese after being plugged up by three judges. At the conference it was decided that we should use three judges for the different monthly scorings. In using three judges these men worked together, but so far as their criticism and the numerical score which they gave to the exhibit, they worked separately, each man giving you his individual opinion.

These score cards were made out in duplicate and after the scoring was over Mr. Baer, for the cheesemakers, and I for the buttermakers looked over the entry blank which you were asked to fill out and send in, and in the light of the judging and the score of the judges we tried to send you a letter which would be helpful in some way to make a better article. This took a great deal of time. In fact it would usually take Mr. Baer a day or two to dictate those letters. As for myself, having almost double the entries of butter it would take almost twice as long. This took up nearly a week a month each time we devoted to this contest, which the contestants did not have to pay for. The items which constituted the expense account each month was the stenographer's salary, printing bill, and some miscellaneous items. The office where the work was done was furnished by Commissioner Emery and the typewriter was furnished by the state, through Commissioner Emery's influence, and in a great many ways many practical services were rendered to the members in this contest that they did not have to pay for. I would like to say, too, that we were very fortunate in getting the services of a competent stenographer who could be trusted to continue the work without supervision on our part. Regarding the printing bill and stamp account, when we started out

with this contest we had no money, so Mr. Baer and myself advanced the money to pay for these expenses as the bills came due, and the stenographer has furnished the stamps each month out of her own pocket and has been out a good deal of money right along each month.

We were fortunate in having some good friends to the cheesemakers who presented these beautiful presents before you for the winners of the first, scond and third places. We have also had some other premiums and I have no doubt there is a great deal of interest among you as to who will get these prizes. We decided to publish the scores after the first month and it seems to me this helped to hold up interest, and the newspapers published the scores, so in every way the contest had the help of those interested in the business.

As regards the continuation of the contest, at the instance of our Dairy and Food Commissioner, Hon. J. Q. Emery, a conference was called at the Agricultural College between the commission and the agricultural college authorities to supply ways and means for carrying on another contest. It was decided at that time that the Agricultural College, with the help of the Dairy and Food Commission, would carry on the contest next year, if satisfactory to you, without any expense to the members other than paying the express charges on their butter and cheese to Madison, the Agricultural College furnishing a cold storage room and a man necessary to take care of the work, and in this case a man would be selected to devote his entire time to taking charge of this contest. It seems to me, with the number of creameries and cheese factories in this state, that under this plan we ought to have a very large exhibit of butter and cheese. That this thing has been educational there can be no doubt. A young man on the train this morning coming from Madison told me that this year he had been getting $600 and his house rent, and he now has an offer of $1,000 a year and his house rent, and he lays it all to the advantages he got from this contest. It seems to me with these advantages no cheesemaker should be backward, especially with the opportunities offered this year. Following are the scores:

## WISCONSIN MONTHLY CHEESE SCORING CONTEST.

*List of participants for one month.*

| Name. | Post Office. | Score. |
|---|---|---|
| O. W. Becker | Lynn, Wis. | 94.17 |
| Gustav Drage | Bonduel, Wis. | 93.50 |
| M. G. Douma | Cleveland, Wis | 93.50 |
| Harry Eide | Granton, Wis. | 95.08 |
| George M. French | Darlington, Wis | 91.16 |
| P. C. Hannawell | Livingston, Wis. | 92.00 |
| H. J. Haskins | Muscoda, Wis. | 95.00 |
| Thomas H. Jordan | Barton, Wis. | 86.83 |
| Herman Kallies | Mosburg, Wis. | 87.00 |
| George H. Kust | Kewaunee, Wis. | 97.16 |
| Peter Mrotek | Kewaunee, Wis. | 94.50 |
| Charles Powell | Sandusky, Wis. | 93.67 |
| B. W. Randell | Richland Center, Wis. | 89.25 |
| Max E Radloff | Hustisford, Wis | 93.50 |
| J. Stemper | Leopolis, Wis. | 88.00 |
| Otto F. Sampe | New Holstein, Wis. | 92.33 |
| L. H. Sawyer | Loyd, Wis. | 92.25 |
| Nic. J. Schanen | Lake Church, Wis. | 92.83 |
| Saylesville Factory, J. J. Reid, Manager | Oconomowoc, Wis. | 94.83 |
| J. A. Stettler | Richland, Center, Wis. | 90.00 |
| Asa N. Sheldon | Oostburg, Wis. | 96.33 |
| Henry Trommer | Avoca, Wis | 96.33 |
| Floyd J. Tisdale | Muscoda, Wis. | 92.16 |
| Otto W. Wollner | Hartford, Wis | 80.33 |
| R. Fred Gotter | Granton, Wis. | 94.67 |
| Brown Street Factory, J. J. Reid, Manager | Oconomowoc, Wis. | 96.00 |

*List of participants for two months.*

| Name. | Post Office. | Score. |
|---|---|---|
| Ernest Boll | Sheboygan, Wis | 95.75 |
| J. W. Cross | Mauston, Wis. | 95.37 |
| Otto C. Duebner | Mauston, Wis | 94.66 |
| John Fischer | Boaz, Wis. | 89.91 |
| Charles Gartman | Sheboygan, Wis | 93.49 |
| F. H. Joseph | La Farge, Wis | 92.85 |
| J. R. Kennedy | Muscoda, Wis. | 91.16 |
| Gottlieb Muehleisen | Alma, Wis | 93.50 |
| H. W. Priebe | Kewaunee, Wis | 92.50 |
| N. E. Possley | New Holstein, Wis. | 87.41 |
| Van W. Pipal | Blue River, Wis. | 95.83 |
| W. M. Sohnoeide | Chilton, Wis. | 95.50 |
| J. J. Stocker | Dale, Wis | 95.62 |
| Fred N. Thompson | Richland Center, Wis. | 94.41 |
| W. A. Tess | Mishicott, Wis | 95.70 |
| George H. Eichel | Brandon, Wis | 91.94 |
| W. B. Constantine | Lone Rock, Wis. | 93.85 |

*List of participants for three months.*

| Name. | Post Office. | Score. |
|---|---|---|
| Albert Koopman | Port Washington, Wis | 90.77 |
| A. G. Laabs | Medford, Wis | 94.72 |
| Wallace Madding | Boaz, Wis | 93 25 |
| A. R. Radtke | Split Rock, Wis | 95.94 |
| L. L. Rudersdorf | Platteville, Wis | 87.02 |
| Charles A. Storzer | Bushman, Wis | 93.44 |
| August Westphal | Neosha | 96.91 |
| J. J. Reid | Oconomowoc, Wis | 93.66 |
| William Winder | Richland Center, Wis | 95.44 |
| O. E. Muehlberg | Fredonia, Wis | 95.52 |

*List of participants for four months.*

| Name. | Post Office | Score. |
|---|---|---|
| W. B. Hatch | Fond du Lac, Wis | 92.33 |
| Louis Hasse | Oak Grove, Wis | 95.25 |
| Fred Hadler | Chilton, Wis | 95.10 |
| Anton Henseler | Marshfield, Wis | 93.75 |
| Albert Kolpack | Regina, Wis | 91.12 |
| Robert Neumann | Two Rivers, Wis | 96.77 |
| E. Siggelkow | Cleveland, Wis | 94.85 |
| Albert J. Schauff | Ithica, Wis | 94.25 |
| Charles J. McCormick | Plover, Wis | 93.33 |
| A. N. Finstad | Carnot, Wis | 93.96 |

*List of participants for five months.*

| Name. | Post Office. | Score. |
|---|---|---|
| J. A. Ennison | Eldorado, Wis | 96.40 |
| Wm. Edwards | Chilton, Wis | 95.94 |
| A. F. Pasch | Green Bay, Wis | 94.26 |
| W. L. Walsh | Lone Rock, Wis | 93.05 |
| P. W. Knudson | Cazenovia, Wis | 95.29 |
| Math. Meyer | New Holstein, Wis | 94.39 |
| Owen Failey | Black Creek, Wis | 92.20 |
| Chris. Schmal, Jr | Elkhart Lake, Wis | 91.48 |

*List of participants for six months.*

| Name. | Post Office. | Score. |
|---|---|---|
| George H. Bushman | Abbotsford, Wis | 91.18 |
| C. W. Beeman | Viola, Wis | 95.99 |
| Wm. Engelland | Mishcott, Wis | 93.15 |
| John Hoeppner | Marion, Wis | 93.19 |
| O. A. Kielsmeier | Manitowoc, Wis | 95.59 |
| George W. Kreul | Spring Green, Wis | 91.35 |
| John Lord | Sandusky, Wis | 93.63 |
| Fred Seefelt | Humbird, Wis | 94.94 |
| Ed. Kalmerton | Fredonia, Wis | 95.66 |

*List of participants for seven months.*

| Name. | Post Office. | Score. |
|---|---|---|
| Julius Berg | Sturgeon Bay, Wis | 92.21 |
| H. E. Baumann | Merrill, Wis | 92.93 |
| Emil Falk | New Holstein, Wis | 95.97 |
| Leo J. Geimer | Mishicott, Wis | 95.51 |
| M. J. Mahlik | Pilson, Wis | 90.90 |
| Gottfried Vogel | Mt. Horeb, Wis | 94.09 |

*List of participants for eight months.*

| Name. | Post Office. | Score. |
|---|---|---|
| Casper Anderegg | La Crosse, Wis | 93.15 |
| Fred Blaser | Hollandale, Wis | 97.25 |
| August Brandt | Algoma, Wis | 94.22 |
| A. T. Bruhn | Spring Green, Wis | 95.28 |
| P. E. Cranston | Soldiers Grove, Wis | 96.94 |
| F. A. Flynn | Baraboo, Wis | 93.94 |
| George W. Frazer | Appleton, Wis | 95.35 |
| P. H. Kasper | Welcome, Wis | 98.02 |
| A. J. Roycraft | Chippewa Falls Wis | 94.22 |
| F. P. Schwingel | Avoca, Wis | 93.95 |
| Jacob Theisen | Fredonia, Wis | 93.56 |

*List of participants for nine months.*

| Name. | Post Office. | Score. |
|---|---|---|
| Charles F. Brinkman | Coon Valley, Wis. | 94.10 |
| C. A. Bremmer | Plain, Wis. | 94.86 |
| O. F. Greunke | Clintonville, Wis. | 97.43 |
| U. L. Johnson | Fairwater, Wis | 91.57 |
| H. A. Kalk | Plymouth, Wis. | 97.25 |
| Chris. Kraack | Avoca, Wis. | 94.95 |
| H. L. Mueller | Sheboygan Falls, Wis. | 95.37 |
| G. M. Matznick | Kiel, Wis. | 92.79 |
| W. O. Stanton | Oostberg, Wis. | 96.26 |
| E. G. Schwingel | Avoca, Wis | 93.56 |
| Fred Schiffler, | Standard, Wis. | 95.71 |
| T. A. Ubbelohde | Glenbuelah, Wis. | 93.74 |
| Patrick Wallace | Hortonville, Wis. | 93.32 |
| Hugo C. F. Wilkowski | Zander, Wis | 92.94 |

The President: The next on the program is the awarding of special prizes, medals, diplomas and pro rata premium fund by Hon. J. Q. Emery, State Dairy and Food Commissioner.

## AWARDING OF SPECIAL PRIZES, MEDALS, DIPLOMAS AND PREMIUM FUND.

Hon. J. Q. Emery, Madison, Wis.

Dairy and Food Commissioner.

That great Athenian orator, Pericles, when called upon in accordance with the custom of the ancient city of Athens to pronounce an oration on the merits and achievements of the Athenian soldiers who had fallen in defense of their country, began that renowned oration by deprecating the custom, which demanded a speech on such an occasion, claiming that those who had acted nobly should only be honored by noble acts, and that their glory should not be risked on the oratory of one man.

Though the special prizes, medals, diplomas, pro rata premiums awarded are each an act that speaks with an eloquence all its own, the management has seen fit to invite me to accompany these awards with some remarks that the occasion may suggest as appropriate.

Contests have been common in all countries and in all ages. There have been contests of war and contests of peace; contests for gain and contests for honor; contests for amusement and contests for education; contests innumerable and of innumerable kinds. In some of the famous Olympic contests the winner received as his reward a wreath from the sacred olive tree and was publicly proclaimed victor, an object of ambition with the noblest and wealthiest of the Greeks. The victor became a marked man in his state; he was considered to have conferred upon himself and his family everlasting glory. Ovations and many substantial honors were bestowed on him. His praises were sung by eminent poets, and often his statue was erected in the sacred grove of Jupiter at Olympia.

These Olympic games so appealed to the imagination of St. Paul that in his first letter to the Corinthians, he likened the struggles of Christians to them in his famous exhortotion "Let us lay aside every weight and the sin that doth so easily beset us and let us run with patience the race that is set before us."

I am quite sure that this exhortation must have recurred many times to the cheese makers, who have engaged for the past nine months in the Wisconsin Educational Scoring Contest. Again and again have you been deeply conscious of many weights and besetting sins in the cheese making business that were to be set aside and the great and long continued patience required to run this nine months' race that was set before you if victory were to crown your efforts. These weights and besetting sins that were to be laid aside were by no means simply those that were personal to the maker. They were those that were common to the cheese-making business. This contest has been the means of setting forth in bold relief to the contestants the weights and besetting cheese-making aims that must be laid aside. It has emphasized in each contestant's mind the fact that in this branch of business the cheese-maker cannot live to himself alone—that, using another of St. Paul's figures, the cheese-making body is not one member, but many—and that in that body, the eye cannot say unto the hands, I have no need of thee; nor again, the head to the feet, I have no need of you, but

the members should have the same care one for another; and whether one member suffers, all members suffer with it, or if one member be honored, all members rejoice with it.

You winners have brought honor upon yourselves, and you and all those associated with you in this contest, those who have planned it and those who have managed it, those makers who have participated in the contest, and the patrons who have furnished excellent milk for manufacture into cheese, the donors of these prizes and medals, the dairy and daily press who have aided and encouraged the undertaking and given wide publicity to the scorings have unitedly contributed to honor the Wisconsin cheese-making industry. The report of the scorings in the contest has called wide spread attention to the great variety and high quality of Wisconsin cheese. It is an open secret, that the better grades of Wisconsin cheese have been put into cold storage in large cities and resold to dealers and consumers under another name, thus robbing Wisconsin of her rightful heritage. It is an open secret that the better grades of Wisconsin chedder cheese have been sold on the British market commanding the highest market prices without its being known to be a Wisconsin product.

It is an open secret that the better grades of the Swiss type of cheese manufactured in Wisconsin have been bought at our factories, held in curing rooms or cold storage elsewhere for six to eight months and then returned and sold to Wisconsin dealers and consumers as the best grade of imported cheese.

Educational Scoring Contests, as this has been conducted, tend not only to improve the skill of the individual makers, but to bring the high quality of Wisconsin cheese into fair and just recognition.

Some of you victors recognize, I am sure, that you have won by a hair's breadth. You have had competitors that have been worthy of your best efforts. Again permit me to refer to that famous oration of Pericles. Speaking in the loftiest terms of the merits of the Athenian soldiers, he declared that it was no disgrace to be beaten by such men. And when I recall the excellence of the products you have contributed to this contest as indicated by the figures reporting the scores, I here declare that to you who have not been winners, it is without dishonor not to have won against such superb competitors.

The President: There are some special premiums offered by the J. B. Ford Co., of Wyandotte, Mich. Mr. Baer will explain what these premiums are awarded for.

Mr. Baer: To those who have been at any time during the past season in the monthly scoring contest, the J. B. Ford Company offer a gold watch for first premium, a carving set for second premium, and a silver bird set for third premium to the first, second and third highest scores in this contest, the 9th monthly scoring contest, who have used Wyandotte Daryman's Cleaner and Cleanser.

Commissioner Emery: The person receiving this first award gold watch, is William Winder, of Richland Center, Wis. His score is 98 points for American cheese.

The second winner is Anton Hensler of Marshfield, Wis., whose score is 97.

The winner of the third premium is P. H. Kasper of Welcome, Wis., whose score is 96½.

The medals offered by the Association in the American class; The winner of the first, gold medal, has a score of 99 points, Otis Kidd, of Sabin, Wis. This I think we should leave in the hands of the secretary of the association to be by him transmitted to the winner, Mr. Kidd.

Mr. Baer: There are four gold, four silver and four bronze medals given by the Association for first, second and third premium, in each of the four different cheese classes. We formerly had these medals made up in the form of a badge, but these are made up in a design so they can be worn as a watch chain fob instead of the old style medal.

Commissioner Emery: The second, silver medal, with a score of 98 points is Wm. Winder of Richland Center, Wis. The third, bronze medal, has a score of 97 points and the winner is Theodore Schaefer, of Viola, Wis.

Here are awards for Swiss Cheese. First with a score of 95 was won by Jos. Ackerman of Monroe, Wis., a gold medal; the second score is 94 points and was won by John Wehinger of Woodford, Wis., a silver medal. The third winner, with a score of 93½ points is Rudolph Urbin, Ridgeway, Wis., bronze medal.

Limburger cheese awards are: First, score 98, Ernest Regez, Jr., Blanchardville, Wis., gold medal; second, score 96, Fred Blaser, Hollendale, Wis., silver medal; third, 95½, Jacob Regez Monroe, Wis., bronze medal.

Brick cheese. First, score 98, Ernest Regez, Jr., Blanchardville Wis.; second, score 95, Ernest Regez, Blanchardville, Wis; third, John Regez, Monroe, Wis., score 93½. Gold, silver and bronze medals respectively.

Mr. William Winder wins the gold medal for highest scoring cheese awarded by the A. F. Averbeck & Co., Jewelers of Madison, Wis.

## Hon. S. A. Cook's Special Premiums.

*Nine Months' Scoring Contest.*—The highest prize, which is the $35.00 chair, goes to Mr. P. H. Kasper of Welcome, Wis., who received an average score of 98.02; the second prize, $25.00 chair, goes to Mr. O. F. Gruenke, of Clintonville, Wis., average score 97.43; the third prize, $15.00 chair, is a tie and goes to Mr. H. A. Kalk of Plymouth, Wis., and Mr. Fred Blaser of Hollandale. Wis., each of whom received an average score of 97.25. I do not know how to award this.

Secretary Baer: I would suggest, as a way of getting over this difficulty, that this Association buy another chair like the one offered to the winner of the third place. I offer this as a motion.

Motion seconded and unanimously adopted.

Commissioner Emery: Gentlemen, this has certainly been a very interesting occasion. It indicates progress, it indicates that you members of this Cheese Makers' Association are living up in a large measure to the objects that are set forth in your constitution for its organization and for which it is maintained. You set before you a career of progress, of improvement, of education, of bettering conditions from year to year, and this scoring contest and the character of the cheese and work that is done indicates, according to the best judgment which I have endeavored to get from experts here present, that this year's meeting marks a step forward in the cheese making industry, and we ought to appreciate the support of such a man as Mr. Cook. I remember one morning in the office of the Dairy and Food Commission, I believe a day or two after the announcement had been made that there was to be an educational scoring contest, tinga ling went our telephone and someone called for Mr. Baer. I heard Mr. Baer talking with Mr. Cook over the phone. Mr. Baer came back with his face wreathed in smiles

and said that Mr. Cook was down at the other end of the phone with his hand in his pocket ready to hand out almost any amount of money for prizes for this contest. I think Mr. Baer had to fix the limit to keep Mr. Cook from doing more than he did. When this great industry has men back of it that are seeking to promote it we ought to take it as a matter of encouragement, and what I would like to see next year is a larger hall; I think we ought to understand that when on the first day of the meeting fifty men cannot get seats in this room, the Association has grown to such proportions that it calls for a larger place in which to meet, a larger hall, a larger gathering. Gentlemen, we have grown beyond the capacity of this room and must seek larger quarters. These four walls are hampering the growth of this institution. Instead of three or four or five hundred, there ought to be 1,650 cheese makers here every year. Think of the program that is before you. You men that are in this work are now better prepared to receive instructions from these experts on this program, who will give you information and instructions, than when you were in the dairy school. You have your minds prepared, you are ready to receive these instructions and as these men emminent in this work come here year after year, every cheesemaker in this state ought to be here and ought to be receiving this instruction. They ought to be touching elbows with you men; they ought to be giving us words of cheer and comfort and indications of progress with you.

We rejoice that this is the largest cheesemakers' organization in the world. We believe it is composed of the best cheesemakers in the world, but this ought not to satisfy us. We ought as cheesemakers to be doing something that they used to do with those magnificent horses J. I. C. and Dan Patch. After those horses had beat the world on record, they were put on the track to trot against their own records. You must work to improve your own record. Adopt the motto of the great state of Wisconsin and never forget it: "FORWARD."

(Much applause and college yell by the dairy class.)

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The President: The next is the question "Shall we have another contest." I suppose that means a monthly contest. No one is put down to handle that subject.

## QUESTION. SHALL WE HAVE ANOTHER MONTHLY CONTEST.

DISCUSSION.

Mr. Baer: I think that this question has in part been solved. At the time that it was inserted in the program there had been no conference held with the officers of the University of Wisconsin. That portion of the program was printed prior to that meeting.

The President: We would be glad to have the expression of the convention.

Mr. Moore: It seems to me proper when the cheesemakers are here to have an expression of their desires. I do not know whether I made myself clear before in explaining the plan as outlined at that conference. The President, Dr. Van Hise, of the University of Wisconsin, Dean Henry of the Agricultural College, Doctor Babcock and Professor Farrington were present to represent the college; Prof. Emery of the Dairy and Food Commission, Mr. Baer and myself. The idea of that conference was that this educational feature was of such importance that it should be continued and that some one man should be employed to give his entire time and energy to directing the work. That you want the contest to go on next year I cannot doubt. It seems to me that the chance of occupying the position that these prize winners here before you have today ought to be grasped by everyone of you. I am sure I would like to be a cheesemaker with a chance of getting before you people. I am sure I would be so proud that the only thing I would want would be to hang onto that chair so closely that I could not get up.

Commissioner Emery: It seems to me that this is the time when there should really be an expression on this subject,—shall the Wisconsin scoring contest be continued? Now there have been ways and means provided. We have in the state of Wisconsin the first dairy school that was ever established on this continent. It has been a banner dairy school and in the conference, to which these gentlemen have referred, these men representing the educational thought and carrying with it that desire to promote the dairy interests of the state, recognizing

that this is educational and a legitimate function of the school, is only what you might call as applied to that school the library extension, they are willing to go on with this; but no dairy school, no dairy and food commission, no other commission can carry on with success such an undertaking without the co-operation of the cheesemakers themselves, without a spirit desiring progress, without a determination to improve. I take it that any cheesemaker or any buttermaker in the state of Wisconsin that is not desirous of making progress, of making improvement, who is not a credit to himself and to the cheesemaking, buttermaking and dairy interests of this state ought to be ashamed.

I am going to ask every man in this association this afternoon who is in favor of answering that question, of whether we shall continue the educational scoring contest, in the affirmative to stand. Well this is unanimous. (The audience all stand.)

The President. I think that question is answered definitely. Now we are going to have short statements from the prize winners as to how the cheese was made. We will take first the American cheese. Mr. Kasper, will you briefly tell us how you made your prize winning cheese?

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## SHORT STATEMENTS FROM PRIZE WINNERS.

Mr. P. H. Kasper: I dislike very much to speak before an audience like this. If I were not any better as a cheesemaker than I am as a speaker you would not have to listen to me today.

In regard to making cheese for the contest or for every day, the first thing necessary is clean milk. A cheesemaker should not be afraid to reject dirty milk from his patrons. Most cheesemakers do not seem to know enough to tell the farmers, they usually want to take the blame themselves instead of putting it where it belongs, on the farmers. If a farmer comes to the factory with a can of bad milk it is not the fault of the cheesemaker. If he brings a can of good milk the next day tell him that is just what you want and he will feel good about it and try to continue bringing that kind of milk. Only a few weeks ago one of our state dairy and food inspectors was over to my factory and came around early in the morning, and I put

him out to take in the milk. He stayed there until the milk was nearly all in. While he was taking in the milk I was out and one of my farmers came up to me and said, "Kasper, let me shake hands with you. I want to congratulate you. Your patrons do not have to be ashamed when the inspector comes to inspect our milk." Our farmers are beginning to feel proud of it. We do not accept any dirty or tainted milk. I have only had one day's tainted milk at my factory in two years.

Our milk comes in at pretty nearly the same time every day, works pretty nearly like clockwork. We get the last of our milk in about eight o'clock in the morning; start heating up our vats as soon as we get the milk half in. If it is a warm day we take the rennet test as soon as the milk is in the vat before we start warming it up. If the rennet test shows the milk is ripe we warm it later and warm it less. As soon as we get our milk ripened down to a degree where we think the whey will be ready to run in two and a half to three hours, about three and one half spaces by the Marshall test; we use about three ounces of commercial extract to one thousand pounds of milk and a commercial starter year in and year out. In the morning as soon as we have four or five hundred pounds of milk we add our starter to it. Take in two or three hundred pounds, put it in one vat and put the starter in there; then take in another vat and add our starter there, fill one vat first then fill up the next. We get our milk warmed to 86 and set it with the agitator. It will take about 25 to 30 minutes for the milk to coagulate. It is cut lengthwise with a horizontal curd knife, crosswise with the perpendicular, lengthwise once more with the perpendicular; then the machine is set in motion. When we start up the machine we start washing down the sides of the vat; the agitator will work good if you loosen the curd from the corners and sides when you start it up. Turn on the steam, which takes about ten minutes after the curd is cut up. It takes about thirty or forty minutes to warm the curd to 98 or 100 degrees. As soon as the curd shows one eighth of an inch acid, we start the whey. I always manage to get the whey off as sweet as possible. I never want over one eighth of an inch acid on the curd. The curd lays on the rack about ten minutes; a sweet curd takes longer than when the curd has more acid. A curd with one quarter of an inch of

acid you will have the whey standing on top of the curd before you get through dipping it on the racks. It lays about fifteen minutes, then we tip it back; lays another fifteen or twenty minutes and keep on turning it over that way every ten or fifteen minutes until it is ready to mill. The way it was last summer we generally got through putting it on the racks about ten o'clock and it was usually ready to mill in about two and a half hours. As soon as the curd was sufficiently matted and showed about one to one and a quarter of an inch of acid on the hot iron we pile it in the back end of the vat, let it lay until it gets nice and mellow. We take the hot iron test, it dosen't make any difference how much it will string. So long as it does not have a nice odor I would not salt it. When the curd is ready for salt it feels like silk, and when you cut a piece of curd in two it will show an even color like a well cured cheese. When a curd is not ready to salt and you cut a piece in two it will be uneven in color. If you salt a curd at that stage you will have uneven color. When curd is nice and velvety and ready for salt it is rinsed. The curd is stirred loose, strainer put in the vat and the curd rinsed well with warm water. Use about three or four pails of water. After it is rinsed stir it up until the curd is drained nice and dry, then salt it according to the curd. If your curd is moist use more salt, if dry use a little less. Level your curd over the vat as much as you can; put in half your salt, stir it once; put in the other half, stir it for a couple of times until the salt begins to dissolve; stir it over again and let it lay in the back end of the vat until the salt is dissolved. You can stir the salt in better by adding it in two lots.

Too much salt is lost in the bottom of the vat if you try to stir it all at once. Sometimes cheesemakers will have perhaps three or four good cheese out of a lot and then will have some that will not have enough salt.

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DISCUSSION.

Member. Why do you add water to your curd before salting?

Mr. Kasper: To get the loose, coarse white whey and fat off the curd.

Member: Do you always get cook enough when you heat to 98 or 100?

Mr. Kasper: Yes, most of the time.

Member: In our part of the state we have to go to 104 or 106. It is universal. I think some cook even higher than that.

Mr. Kasper: After you get the curd in the hoops tip them over and start the pressing of them gradually. Do not press too fast at once, press slowly. While the cheese is in the press wash out your vat and every little while tighten them up a little, and by the end of an hour you will have them tightened enough. If you have them too tight at first they will press out at the sides of the followers. After the cheese are in the press an hour or so take them out again and by that time you will have everything cleaned up. Turn your bandages. We use hot water in turning the bandages. We start on the upper end to turn the bandages. Tip up the first one, fit the bandage over and press the cloth down nice and even; put on your liner and put it back. I never had a cheese that had to be put back in the press in the morning. The hottest day last summer I had my curing room up to 68 but most of the time I have kept it down to 63 or 64 and often lower than that.

The President: I will now call on the winner of the second prize, Mr. O. F. Gruenke, to tell us his method.

Mr. Gruenke: Mr. President, I do not believe there is much left for me to say on this subject. I followed the same methods of Mr. Kasper except that I heated the curd a little more, cut it up in about twenty minutes and drew off the whey in two to two and a quarter hours, sometimes in an hour and three quarters from the time of setting.

The President: What is the condition of your milk to start with?

Mr. Gruenke: Good. Every time I got high scores I had good milk, better than usual sometimes.

The President. We will now hear from Winners No. 3. We will first ask Mr. Kalk to give us his methods.

Mr. Kalk: I do not think there is much for me to say because Mr. Kasper covered the ground pretty thoroughly. All I have to add is that I use a commercial starter.

The President: Mr. Gruenke, what kind of starter do you use?

Mr. Gruenke: A commercial starter.

Mr. Kalk: I worked my curd on the same principle as Mr. Kasper.

Member: What per cent of starter do you use?

Mr. Kalk: 40 lbs. of starter for a thousand pounds of milk.

Member: How old would you let your starter get?

Mr. Kalk: Change it every day. The mother starter, I could not tell you how often to change, sometimes I change it every three or four weeks and again every two or three days. I do not think that makes much difference as long as you keep it clean and take good care of it.

Member: How high do you heat your curd?

Mr. Kalk. It depends on the condition of the curd.

Mr. Marty: I should like to ask if this gentleman does not agree with Mr. Kasper that he puts a great deal of weight on inspecting the milk to get good cheese?

Mr. Kalk: I do the same as he, if the milk does not suit me I send it back. They can do what they want with it then. I do not want it.

Mr. Moore: How close is your nearest competitor?

Mr. Kalk: About a mile, but that does not make any difference

The President: I inspected milk at this man's factory during the fall and was talking with his patrons, and they told me that he was the first man they ever had there that was as strict as he ought to be, and they thought a good deal of him for it.

Mr. Michels: I think Mr. Kasper gave us the key to the situation when he said that by praising the patrons when they brought in good milk it gave you a chance to reject it when it was not good. The trouble with the men at the intake is that so long as the milk is fairly good they take it in without saying anything and wait until it is almost rotten before they dare say anything, and in that way get into trouble with their patrons. I know that Mr. Kasper by being strict about his milk has gained patrons from year to year.

Mr. Marty: The policy a great many apply to the inspection of the milk at the intake is to inspect for a few patrons. I think it is a bad mistake for a cheesemaker at the intake to inspect the milk of some patrons, of whom he is suspicious, but I say inspect all the milk that comes in to show there is no partiality, get a chance to criticise all the milk and you will have a better standing with your patrons.

Mr. Kasper: I want to say that some cheesemakers are kicking all the time. Like some farmers, they are what we call chronic kickers. Farmers do not like to hear you kick all the time. If their milk is good praise it and take it in; if their milk is bad tell them about it and let them take it home. Some cheesemakers if they cannot "kick" about milk, "kick" about something else. That is a poor way to do. That starts the patrons "kicking", and the first thing you know they are all "kicking".

The President: I want to tell you another thing about handling patrons don't do much arguing with them but have a good understanding wih them in the proper way. If you cannot convince them do not argue with them. If you get a man in the habit of arguing he wants to argue all the time. Simply reject the milk, and let him do the "kicking."

We have drawn three important facts from these three men, —that they use clean milk and that they use a commercial starter. That is an important thing. Over one half of the cheesemakers do not use nearly as good starter as they ought to use. Are there any more questions you desire to ask these men? We are going to call on Mr. Blaser now.

Mr.Blaser: First I need clean milk. I take milk in twice a day between six and seven in the evening, between seven and eight in the morning. I heat the milk to about 92 degrees F. and set it at that temperature, using Hansen's commercial extract. It takes about thirty minutes to coagulate the milk. I then cut the curd lengthwise and across; then turn it and cut it again crosswise; then I commence to stir with the rake about fifteen minutes, turn the steam on and heat it up to about 98 degrees F After that I stir it about twenty-five or thirty minutes. Then it is dipped out in the molds and the next morning I cut it into blocks and salt it. I salt it three times once a day. After that I put it on the shelves and turn it every other day. That is about all I have to say.

The President: Any questions? He started with clean milk the same as the rest did. That is a very important point.

Mr. Gruenke: How does he take care of the cheese on the shelf?

Mr. Blaser: After it is put on the shelf it has to be rubbed by hand in order to get a smooth surface.

Mr. Schaller: How do you know when Limburger has salt enough?

Mr. Blaser: A man learns that by experience. If it is undersalted it is going to dry up quickly; if you have enough salt it will dry slowly and in right time.

Mr. Gruenke: You did not say how often you wash your cheese?

Mr. Blaser: It has to be kept in a certain moisture not too greasy and not too dry. It has to be rubbed every day in summer; a little later every other day will do; when it becomes nearly ripened twice a week will do, but in hot weather it has to be rubbed every other day.

Mr. Marty: Referring to the question of not salting it sufficently, this is a very important matter pertaining to the making of Limburger cheese. It requires considerable experience before you can know just exactly the amount of salt to put in Limburger cheese. I want to ask Mr. Blaser whether it is a true indication of Limburger cheese, while in the early stage of the curing process, that where a cheese has not sufficient salt the rind of the cheese will be over tender, subject to breaking if handled, that is in washing it? Furthermore, a pinkish color will appear on that cheese if it has not sufficent salt, while on the other hand if too much salt is applied the cheese will remain hard and have a crusty feeling. It will remain this way for about a week and a half to two weeks when it will begin to expel an excess amount of moisture. Very little can be done to cheese which has received too much salt. However, considerable can be done to cheese that has not received enough salt, and I say it would be better to not apply too much salt to start in with, to be on the safe side. I would like to ask Mr. Blaser if this is not true as to the salting of Limburger cheese, he being an expert Limburger cheesemaker.

Mr. Blaser I think I would prefer to have a little too small an amount of salt than too much; then if you find your cheese has not quite enough salt when on the shelves you can sprinkle a little over it in order to get it right.

Member: Why has Limburger cheese such a peculiar odor?

Mr. Blaser Well that is natural to the cheese.

Mr. Marty: I should like to say a few words in regard to this odor in Limburger cheese. I want to say that to begin with in making Limburger cheese you must have the cleanest milk possible which must not contain over .12% of acidity, it must be made up immediately when drawn from the cows. It should be reasonable for any cheesemaker

to know why such odors are contained in the Limburger cheese. Limburger cheese is manufactured with an excessive amount of moisture which in the curing process is expelled from that cheese, consequently it is nothing but a lactic ferment which causes the odor of Limburger cheese, not causing any harm to the cheese in the least.

The President: I think that, inasmuch as this same subject of Limburger cheese making comes on again in the morning and it is getting late in the afternoon, that we will close this subject. Tomorrow morning at 9 o'clock the convention will be convened again. All try and be here at 9 o'clock. We will now stand adjourned until 9 o'clock tomorrow morning.

## THURSDAY MORNING SESSION.

Meeting called to order at 9 A. M. by the President.

The President: We will hear from Mr. Zumkehr, of Monroe, Wis., on Limburger Cheesemaking.

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## LIMBURGER CHEESEMAKING.

PETER ZUMKEHR, Monroe, Wisconsin.

Traveling Cheese Instructor for Southern Wisconsin. Cheesemakers' Association.

*Mr. President, Ladies and Gentlemen*:

The subject assigned to me by our worthy Secretary is the "Manufacture of Limburger Cheese".

Limburger cheese was first made in Belgium. It was introduced into this country about the same time as the Swiss cheese was; it may be better known to some of you by its odor than by its name. Limburger cheese is largely made in sections where there is lots of low land pasture. I will now try to explain to you in a few short words how this cheese is made. The milk is received in most factories twice a day. The milk is heated up to about 94 or 96° Fahrenheit; enough rennet is added to curdle the milk in about 20 minutes. The curd is cut in the same way the Cheddar cheesemakers cut their curd. After a few minutes it is stirred up and should be stirred then for about 20 or 25 minutes.

A good many cheesemakers are making a great mistake by not working the curd long enough before applying the heat.

I claim that a much better 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 cheesemaker tries to firm the curd by applying too much heat quickly. Heat should be applied slowly; it should take about 15 to 20 minutes to heat the

curd up to 98 or 100° Fahrenheit. If the curd is heated up too fast, only the outside of the cubes will be cooked and the inside will remain uncooked. After it is firm enough the whey is drawn off and the curd is dipped from the vat into molds, which are from 30 to 36 inches long and 6 inches wide. The cheese is then put in the cellar and put on a draining table or what some makers call press table.

Although the cheese never receives any pressure it is turned on this table two or three times and after 24 hours is cut into blocks about 6 inches square and then the salt is applied to it. The cheese is salted in the salt table generally three 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 has 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 are put on shelves and set on their edges; they are rubbed and turned every other day until ripe enough to pack. When the cheese is getting ripe the color changes from white to a reddish yellow. The temperature of the curing room should not go above 65° Fahrenheit except in the room where the salt and draining tables are kept. The cheese is packed into parchment paper and then into tinfoil and then it is put in boxes and is ready for shipment.

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DISCUSSION.

The President: The subject of Limburger cheesemaking has been well introduced here and is now ready for discussion. Let's have it lively.

Mr. Luchsinger: Mr. Zumkehr laid some stress on the advantage through stirring of the curd before applying heat. Will he explain what advantage there is in that, that is what effect does it have on the cheese?

Mr. Zumkehr: In regard to this I would like to say that anybody who is a cheesemaker will know what effect it has on cheese if the steam is turned on too quick, although I am sorry to say it is done in too many cases. As I said in my paper, if the steam is turned on too quickly only the outside of the cubes are cooked up and If you break one of those cubes in two you

can see the outside is cooked too high while the inside remains too cold, and then if a cheesemaker has not the best judgment he will think this curd is firm enough and will draw off the whey, put the curd in the molds and in a day or two will find he has made a mistake because the curd will not continue to get firmer but will go rather low, what some people call low in flavor, and the curd will be weak and soft.

Mr. Luchsinger: What will be the appearance of the cheese that has steam applied too soon and put on shelves before being thoroughly cooked through– What will be the appearance of the cheese when it is on the shelves?

Mr. Zumkehr: Well I do not know that the cheese will vary greatly in appearance from other cheese, except that it will be softer. Some of the whey will remain in the cheese for sometime and perhaps after a week or so on the shelves the whey will commence to run off the cheese, and the result is as the cheese gets older it will be rather sour. We have too much of this sour cheese on the market, not only Limburger, but I have found in my travels there is the same trouble with other cheese. Most cheesemakers think if they hurry up the process of making they get done a little quicker, but they ought to know that the quality of the cheese is greatly injured by doing that.

Mr. Luchsinger: You would not call that first class cheese where the process of making has been hurried as you described?

Mr. Zumkehr: No, sir, I would not.

Mr. Luchsinger: In order to make first class Limburger cheese you should thoroughly stir the curd before applying the heat so as to separate the whey more thoroughly from the curd. Is that it?

Mr. Zumkehr: Yes sir. As far as my experience has gone I find if you want to make good, high scoring cheese you should make the cheese and turn on the steam almost at the last. A better bodied cheese can be made in this way than where you heat it up quick and keep stirring after that.

Member: What percent of acidity should one have?

Mr. Zumkehr: In regard to this point, I no not know as I am just able to state. It is claimed that you can use milk that has as high as .25% acidity, but in order to make good Limburger I do not think I would use milk with more than .15%. That is one thing about it, the texture of the cheese is pasty and even if the milk contains some acidity

it does not make as much difference; but if you want to get high scoring cheese take sweet milk every time, the sweeter the better.

Mr. Luchsinger: Is it not a fact, Mr. Zumkehr, that this cheese is made best if made from milk delivered as soon as possible after milking, and is it not a fact that the milk is set to thicken with the animal heat still in it?

Mr. Zumkehr: Yes sir.

Member: Some cheesemakers use home made rennet and some commercial rennet, both get good results and in some cases the man that uses a home made rennet if he used a commercial rennet would get a soft cheese.

Mr. Zumkehr: Of course the acidity has a great deal to do with the cheese. The more acidity the milk has the firmer the cheese will get. A good many makers are making a mistake by using home made rennet. As long as the rennet is pure I don't care whether it is home made or commercial rennet extract. Reports will show that some makers have won prizes on cheese made from commercial rennet extract, while others have made just as high-scoring cheese with home made rennet, so as long as the rennet is pure I do not believe there is much difference.

The President: Is it not a fact that to the home made rennet they are adding acid in many cases?

Mr. Zumkehr: Of course this rennet is a good deal like the American cheesemaker adding a starter. This is what I would call a starter because the whey is taken from one day and the rennet is added to it, and it is left standing for a day or two under a high temperature, but I do not think I would keep rennet at above 70 degrees F. That develops acid and it is a sort of a starter.

Mr. Luchsinger: There has been a good deal said about the odor of Limburger cheese. Will Mr. Zumkehr tell us how that odor is developed and what causes it?

Mr Zumkehr: A good many people think the odor in Limburger cheese is due to the curing of cheese, that it is put in a dirty place to cure, but that is not so. If I am not mistaken, this point was discussed yesterday. It is largely due to the fact that the way this cheese is made there is a great deal of moisture incorporated in it. The cheese is packed while young in parchment paper, then in the tin foil so as to be air tight,

The cheese gets ripe this way and the moisture, which expels day after day while the cheese is ripening remains on the cheese and that is what produces this odor.

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The President: We will now take up the next subject, brick cheese making by Mr. Gottlieb Marty, of Madison, Wis., Instructor in Foreign Cheesemaking at the Wisconsin Dairy School.

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## BRICK CHEESE MAKING.

GOTTLIEB MARTY, Madison, Wis.

The subject on which I have been requested to prepare a paper by our Secretary, Mr. Baer, is the manufacture of brick cheese, using a starter in the process.

We know that Wisconsin leads any state in the union in making cheese, both American and foreign, but there is still room for improvement in the quality of the average cheese made in this state. One of the most important changes in the methods employed is the introduction of the use of a good starter, for the quality of the cheese depends greatly upon the kind of starter used. Every up-to-date cheese maker knows that there is no other one factor which influences the quality of the product to a greater extent than the use of a good commercial starter, and it is today a recognized fact that a good starter will control to a great extent any abnormal fermentation in the cheese. I will not go into the details of manufacturing of brick cheese nor confine myself to the preparation and propagation of starters and startolene, but rather will state the results which we obtained at the Dairy School in Madison when we used a starter.

The first of December, 1905, we began making cheese. The milk we selected at the receiving room had an acidity of .16 to .18 of one per cent; the curd was cut fine and cooked at 110 degrees. An hour or more elapsed from the time of cutting to dipping. The results obtained from that month's cheese made without starter were not uniform. After the cheese was cured, we had some which graded No. 1, some which graded No. 2 and some No. 3, although we did not have any that is termed

"blowed cheese." That means where all the gassy fermentations went on while the cheese was still in the molds, leaving an unshaped cheese after salting and curing.

In regard to the cheese which graded No. 1, I would say that the conditions of the milk were just right to get a good cheese without the use of the starter. The cheese that graded No. 2 appeared well the first two weeks until abnormal fermentation set in, huffing the cheese at certain places, which in most cases were near the rind. In the third grade or the worst cheese, the fermentations set in earlier keeping on continually until the cheese was cracked through the center, giving off a bad gassy odor.

Commencing the first of January and continuing to the end of the Winter Course, we used a one per cent starter and no abnormal fermentations whatever occurred during the process of manufacture. The result was very satisfactory for the whole month's make of cheese was very uniform. Encouraged by the results obtained, we made cheese with starter in March and April with the same success. To illustrate, I will briefly mention the two most important experiments made. On the 17th of March a certain amount of milk was taken, well mixed and divided into two equal parts: to one vat we added one per cent starter, while none was added to the other. Both vats were set at the same temperature. The cook was the same in both cases, but the time required different. It took 45 minutes to firm the curd in the vat having the starter and one hour where no starter was used. The body and texture was better in the cheese made from milk with the starter and the curing went on faster. At the first scoring contest the cheese made from milk where starter had been used scored three points higher than from the milk where no starter had been added.

The other experiment was made from the same patron's milk three days in succession. The milk had the same acidity and richness each day. As nearly as possible the same cook was given each lot. On the first day, the cheese was made from milk without a starter; the time from cutting to dipping was one hour and five minutes; on the second day, one per cent starter was used. The time from cutting to dipping was 55 minutes. On the third day we used two per cent starter; on this day the curd was firmed in 45 minutes, twenty minutes sooner than the first day. The score received at the second

contest was 93 points for the first day's make; 94½ for the second day's make and 98 points for the cheese made the last day.

From the foregoing we can see what a good starter will do when used in connection with brick cheese making. Every cheese maker, no matter whether he makes American or Brick cheese, will turn out a more uniform product when a good starter is used. He must, however, understand the use of an acidity test and the preparation of starters for if he does not understand these fundamental points, he will get himself into all kinds of trouble when he commences to try to use a starter in making brick cheese.

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DISCUSSION.

The President: I would like to ask Mr. Marty if he would recommend the use of starter in Limburger cheese making?

Mr. Marty: I would if the milk was sweet enough to only contain .1 of 1% of acidity, but in the case of milk having more than that I would not.

Mr. Glover: Do I understand that the milk making brick cheese in which starter was used cured quicker?

Mr. Marty: Yes sir.

Mr. Glover: Have you ever tried using starter when the milk was gassy, and noted its effect?

Mr. Marty: Of course you always get the best milk on the intake so I just add the starter, and the milk generally has from .16 to .18% acidity. I heat the milk up and add the starter just before setting. I add the starter to overcome the undesirable ferments in the milk. The cheese comes quicker if I add the starter.

Mr. Baer: Then you would advocate the use of starter in brick cheese making if you knew the milk contained gas?

Mr. Marty: Yes I would.

Mr. Glover: Wouldn't it be a nice experiment if you made it a point to get some gassy milk and note the starter's effect? Sometimes you can reach from the perfect to the imperfect, or from the imperfect to the perfect. New conditions come in.

Mr. Marty: Generally as soon as we apply the steam and we get the temperature to a certain point the cheese commences

to get spongey, so a number of cheesemakers in this case commence to warm the cheese curd higher. I know in some cases they warm curd to 130 degrees.

The President: Mr. August Westphal has had a good deal of experience using starter with gassy milk in brick cheese making. Please tell the cheesemakers what you think of it, Mr. Westphal.

Mr. Westphal: Brick cheese should be made with a starter. Mr. Aderhold did some work for me years ago when we had a lot of trouble and he did well without starter, but at the same time it is hard to make a moist cheese,—it gets a little dry. Of late years I have made it with home made rennet and I have had good results. Of course the starter is the main thing in making brick cheese, especially when you have gassy milk.

The President: The starter you had there was a pretty big starter. You had a lot of trouble with gas and you were trying to overcome that. It did help you in that respect but, of course, where you had to use a big starter you could not make the best quality of cheese.

Mr. Parkin, Minnesota: I would like to ask the gentleman if in using starter in this brick cheese it does not develop a somewhat cheddar cheese flavor?

Mr. Marty: Yes it would if the milk is too ripe. If the milk contains .20 of 1% of acid if you add a starter you will get a cheddar flavor in brick cheese, but if the milk is only about .10 or 14-100% acidity you will not get that flavor, but I would add the starter just before setting.

Mr. Fred Marty: I would like to ask Mr. Marty if it is not true that by using a starter in such cases where abnormal fermentations are often present during the hot summer months where it is a sweet curd cheese, if we do use a starter under those conditions, even if we should produce a sort of cheddar flavor in the brick cheese would it not be better than to have a tough or corky body as in dry cheese, which is caused from abnormal conditions? I would like to ask Mr. Marty if he would recommend that a starter be used during such periods when abnormal conditions are hard to control by any other means than using a starter?

Mr. Marty: I guess it will not hurt the cheese. Last summer we had more Swiss texture in our brick cheese than brick texture. Brick is what we call a soft cheese, so I would rather

have a cheddar flavor in brick cheese and soft cheese than the contrary.

Member: Mr. Marty said in his paper that in his experimental work he divided the milk in the vats, in one part put a starter and in the other did not. I wish to ask Mr. Marty whether he used the same amount of extract and the same kind of extract in both vats?

Mr. Marty: Yes, I used four ounces of commercial rennet extract to a thousand pounds in each vat. In one vat I used a starter so the milk would coagulate in twenty minutes, in the other thirty minutes.

Mr. Harkin: What percent. of acidity did your whey have when you took it off?

Mr. Marty: In the vat in which I used starter we had .12%, in the other we had .10%. I cooked the curd to 112 in one vat. In the vat where I used no starter I heated the curd to 118. You would get the same texture but would get a smaller yield where you heat the curd so high.

The President: Do you think it necessary for brick cheesemakers to have the acidmeter in the factory?

Mr. Marty: Yes, that is the main thing, that is the thing to go by. The first thing necessary for a man when he starts to make brick cheese is to have an acidmeter so as to know how much acidity the milk has.

Mr. Schaller: What kind of starter do you recommend?

Mr. Marty: I use Ericsson's and Hansen's and all kinds, anything so long as it is of good flavor.

The President: Do you believe in using pasteurized milk for your starter or would you use raw milk?

Mr. Marty: I sterilize the milk.

Mr. Luchsinger: The cheesemakers of Dodge county, Wisconsin, have the reputation of making the best brick cheese, and I would like to hear from one or two of those cheesemakers to find out how in practice they find it has compared with the methods described by Mr. Marty in his practice.

Mr. Gunn: I want to ask Mr. Marty how much acidity he has or wants in the milk before adding the rennet.

Mr. Marty: I generally take what the milk has. Sometimes it is only fourteen, sometimes sixteen, sometimes eighteen, I will not take any that has over .2% for brick cheese. I would like to have, if I could get a good starter milk with .13 or .14%, which is generally the case where we get the milk twice

a day. I know two years ago I made Swiss cheese and I took acidity tests for two months right along from my home made rennet and from the milk, and it varied from .11 to .19%, but the most of it was from .13 to .14%. Some days I got only .11% and some days as high as .19%.

Mr. Glover: Then you like to have milk containing .13 to .14% acidity and add 1% starter?

Mr. Marty: No, I would just warm the milk up and add the starter, and then you can tell by the acidity the milk has, how soon to draw your whey. If your milk had .18% and you add 1% starter, you should draw the whey in thirty-five to forty minutes; in the other case, where your milk had .15% or .14% you will have to wait about an hour.

Mr. Parkin: Would you advocate ripening your milk to a certain point before setting for brick cheese?

Mr. Marty: I would add 1% of starter even if milk has .16%.

Mr. Fred Marty: I would like to ask Mr. Marty in reference to making the acid tests, where in the Swiss cheese factories where he found the milk varied from .11% to .19% acidity, if he did not find a marked difference in the handling of the curd for manufacturing Swiss cheese, and whether it would not also be a good plan to have an acidity test in the Swiss cheese factories as an indicator to the cheesemaker as to the ripeness of the milk before using his home made rennet?

The President: We are on brick cheese making and I will not let him answer that question now. You brothers can settle your arguments at home.

Mr. Luchsinger: I have not had any reply to my question as to whether that practice is universal among brick cheese makers in Dodge county.

The President: I will give them a chance to reply.

Mr. Baer: How about it, Mr. Westphal?

Mr. Westphal: Gentlemen, we have not been using any starter so far but are beginning to use home made rennet. Of course by using a starter in brick cheese you will lose a little of the original flavor and get some of the cheddar flavor. In our section they are using the home made rennet more and more of late years.

Mr. Luchsinger: Then you have not been using a starter?

Mr. Westphal: We have not.

The President: If you are going to use a starter, why not use the best starter you can make?

Mr. Westphal: Well, Mr. Chairman, our makers down there have not the right hang of it.

The President: That's it, preach that to them.

Mr. Westphal: We have not studied it and that is where we are falling down on it.

The President: I want to find out the sentiment of the brick cheese makers as to the best starter to use. The home made rennet is a starter; Mr. Marty says it will contain all the way from .35% to 1% acidity. You cannot make a starter any sourer than that from milk. If you are going to use a starter in some form, which form is the better to use it in? I think that is an imprtant question for you brick cheesemakers to consider.

Mr. Gunn: I would like to ask Mr. Marty about where the starter comes in our rennet?

Mr. Marty: You mean the home made rennet? The home made rennet is made from whey and calves' stomachs. The whey is generally from twelve to twenty-four hours old before we add it to the milk.

The President: Any more questions? This has been a good discussion.

Mr. Parkin: I would like to ask a question of some of your best judges in scoring brick cheese, in reference to this cheese that has this cheddar flavor and the cheese that is made without any starter, which cheese would receive the preference? We find a difference in scoring the cheese and it is up to me to know what to do, and I would like to find out.

Mr. Marty: Of course brick cheese is clean, sweet curd cheese and if it has too much cheddar flavor I would prefer a cheese that has not so much of that flavor; but if you have a tainted milk I would rather have that cheddar flavor than a blowy or overworked cheese.

Mr. Parkin: Then in scoring cheese you would give preference to brick flavor that has had no starter?

Mr. Marty: Yes, I would.

Mr. Westphal: I would like to ask, in using a commercial starter in brick cheesemaking, at what time to get that starter into the sweet milk in order not to get too firm a curd? That is the hardest point to overcome in using commercial starter, not to get too firm a curd.

Mr. Marty: I have had no experience in summer cheese-making; we always made our cheese in the winter, but I think if I got a good starter and the milk contained only .11% to .12%, I would add the starter but ripen the milk up to 16% before setting in.

The President: I think we will close this discussion. The Secretary has some announcements to make.

Secy. Baer: Yesterday the cheese room was closed the greater part of the day for a number of reasons. One was the awarding of the prizes and the scores were not made public until the latter part of yesterday afternoon, that is the complete reports. Another was that cheese was coming in yesterday morning and the judges were still at work on some of them; still another reason was that after the judges had completed their work it was necessary to clean up the room, put the ribbons on the cheese, get a photographer and have pictures taken. But during the rest of the week the cheese room will be open at 10:30 A. M. and closed at 1; it will be open afternoons at 4 P. M. until 6:30 P. M.

The joint agent of the Western Passenger Association is here with us; we have something over three hundred certificates he is working on and they are coming in right along. He will be prepared this afternoon to hand out the greater number of the certificates that were handed in yesterday.

The Muscoda Board of Trade has offered $15 in cash to the first, second and third prize winners who sells cheese on the Muscoda Board of Trade. A. F. Averbeck Jewelry Co,, of Madison, who manufactured the medals awarded yesterday, has sent this little medal properly engraved to the winner of the sweepstake cheese. Mr. Otis Kidd, of Sabin, having a score of 99 points gets this medal.

The President: I want to call your attention to one point. You know we have a great movement for stable sanitation in this state, also of stable and factory sanitation, on account of the laws on inspection. A great many cement floors will be constructed in the future every year. A great many cement floors have been constructed in a very poor way, that are unsatisfactory, very unsatisfactory. Too many people rely on their local masons to furnish the skill and knowledge to do the work, and their knowledge is very inefficient in a great many cases. The Allen Portland Cement Co. of New York, have gotten out a very fine circular on cement, what it is, how to mix the mor-

tar for farm purposes, and how to use it. It is all illustrated, shows photographs and diagrams, dimentions, etc., and describes fully how any kind of work may be done. I wrote to them and they sent me four hundred of these catalogues free of charge. They are here and I want everybody to get one and make the best use you can of it in your community. If you need more and will write to the cement company they will be glad to furnish them to you free of charge.

The last annual report of the Cheese Makers' Association was mailed, as near as we had it, to every cheesemaker in the state. There are a number of reports here if any of you did not get a copy.

We will now take up the next subject, which is that of Swiss Cheesemaking. You saw yesterday, when they threw the pictures of your officers on the canvass, that the best looking one was Mr. Marty and he is going to tell us now how to make Swiss cheese.

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## SWISS CHEESE MAKING.

FRED MARTY, Monroe, Wis.

State Cheese Factory, Dairy and Food Inspector.

Swiss cheese making is the subject assigned to me.

This article is not prepared to describe in detail the process of manufacturing Swiss cheese, but merely to introduce the subject. It is also my purpose to make some general remarks, which I observed in the field of inspection. 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.

It is the purpose of the convention to discuss the methods of producing clean, wholesome milk also applying same to the process of manufacturing cheese. While many good points are observed by those present, we still remain handicapped to a certain extent, through the absence of the milk producer, who remains ignorant of the dairy gospel. Take home with you

the knowledge obtained at this meeting; employ it in your practice, learn to teach your patrons in a kindly, mannerly way how to produce clean wholesome milk. Call their attention to the necessity of clean wholesome milk for the manufacture of cheese; practice to inspect the milk at the intake each day; inspect every patron's milk, not alone that of a few. Let us determine to abandon such existing conditions as the cheese makers guaranteeing the cheese, protecting the producer from all possible losses, encouraging and leading him to recklessness. Many a maker I have seen working hard over the kettle trying to overcome some gassy fermentation due to gross negligence caused by some careless patron, who figured if any damage was done to the cheese, the same would be redeemed and adjusted from the wages of the cheese maker. At the same time the maker would neglect, or did not have the heart, to inspect the milk at the intake, saying nothing of refusing or rejecting a can of milk, which he knew was beyond his control.

The losses in this State caused by the so-called yeast fermentation are yearly becoming greater, and are largely due to our system of the distribution of the whey, and the cold process of manufacturing whey butter. Since a separate vessel or barrel is kept for each patron to assure his just share of whey, which in many cheese factories number from 20 to 25 barrels, making it hardly possible for an operator to keep and maintain them in a clean and sanitary condition, a law should be enacted providing for this particular point, compelling the operator to put in a large tank in place of the many barrels.

If any trouble should arise in the distribution of whey, a check pump could be used which can be had at a very reasonable price. The difference in the price of a check pump would readily be regained by the improved condition of the whey for feeding purposes, and gains made by overcoming any abnormal fermentation.

It has always occured to me that much confidence was given to a cheesemaker as to the equal distribution of whey, when as a practical cheesemaker I used to walk along a row of 20 to 25 whey barrels and would find that the man delivering 50 pounds of milk would have just as large a barrel as the man delivering 400 pounds of milk. It would be here where that scale in the eye would double its measure in looking at the whey from 50 pounds of milk in a barrel holding 400 pounds.

The sharp competition between cheese dealers may bring

about discouraging conditions in our part of the state. Excessive demands for cheese, and increasing numbers of local cheese dealers have made competition so sharp between dealers that they have drifted from the original way of buying cheese, and, today they will offer a certain price per pound for cheese by the lot, including grades 1, 2, and 3. They also contract for so much a pound for all the cheese made during a period of from two to three months, generally for the months of Oct., Nov. and Dec. This system of buying cheese, I honestly believe has brought about a poor class of cheesemakers and consequently a poor quality of cheese.

Farmers pay less attention and care to cleanliness of both milk and utensils, and the qualifications of the cheesemakers are given but little thought or consideration—everything goes.

Cheese above all things should be bought according to quality; it should be graded as number 1, 2, 3 and paid for as such; this would induce the farmers and makers to manufacture a more uniform and better quality of cheese. Under our present system the cheese is marketed for the immediate dollar in sight and as a consequence we jeopardize the future welfare of the industry.

In order to maintain the reputation of our Swiss cheese, it should be well cured and developed before being placed upon the market for consumption. Better curing cellars should be provided for. In order to control the fermentation process of a Swiss cheese, three curing cellars should be provided, one room for the salt brine tanks and young salt cheese. A second fermentation room with controlling heat temperature, third a storage room of somewhat natural, lower temperature; this would be greatly appreciated by the skillful Swiss cheesemaker, whereas in the present construction of a Swiss cheese factory of only one room, or perhaps two, for curing purposes, the cheese are at the mercy of the variable temperatures, for under ordinary conditions the fermentation of a Swiss cheese varies greatly and can only be controlled when placed under different temperatures.

In conclusion let me state that when I look out over the body of men represented here as cheesemakers from their various respective districts, it appears strange to me why we do not hear more from you; it is here where resolutions can be formed, adopted and backed by all the members of the association. You should feel free to fully express your thoughts and wants and

exchange your opinions as you would were you visiting your neighbor cheesemaker.

Let us guard against much evils that are very often caused by close business competition, which not only threatens to endanger the position of the cheesemaker, but also the reputation of our cheese industry at large.

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DISCUSSION.

The President: This subject is now open for discussion.

Mr. Johnston, Canada: What plan would you adopt for grading quality of Swiss cheese?

Mr. Marty: The standard I should adopt would be to go back to the original plan when a cheese buyer would go out to a factory and plug every cheese. A number I cheese he would buy as number 1 and pay for it accordingly, a number 2 cheese he would buy as number 2 and pay for it as number 2, number 3 likewise. This would show the maker that there is a possibility of making different grades of cheese. Now a buyer in our section will go out and look over a lot of cheese; he will look the worst ones over and will look at the better ones, think they are worth about so much and will buy them by the lump. The cheesemaker will go out and say he did not make one pound of number 2 cheese all summer; the farmer will say, "you did not have one pound of number 2 milk," so what is the use of preaching better cheese when at the same time one third to one half of the cheese is number 2 grade. Somebody is paying for it; if it is not the parties selling this cheese it is the consuming public and it will come back to us some day.

The President: The farmer has to pay for all these mistakes in the end.

Mr. Johnston: In that case he would be at the mercy and integrity of the buyers grading the cheese. Is it not possible for your makers to know their own quality?

Mr. Marty: Of course it is. There are only a few makers so limited in experience as not to know the quality of their cheese. Some corporations have brought out that any man that knew how to add rennet to milk could make cheese and consequently the good maker, especially in our section of the state, is bound to leave the field; he cannot afford to compete with

the new makers who are coming in. They cannot compete with such men, but those are the men that are influenced by the buyers as to the grading of their cheese. But such men as Mr. Schaller and some of the other old standbys who are still operating in our factories, there is no buyer on earth that could tell those men that this cheese is number 1 and this is number 2 unless they knew that to be the right grade for the cheese.

Mr. Luchsinger: Is it possible for even the most experienced buyer to determine strictly which is number 1 cheese unless he does plug the cheese?

Mr. Marty: That is a very good point. It is not possible. The most skilful maker cannot judge Swiss cheese by the sound. The indications of the sound may be that it is a number 1 quality, and he may be badly mistaken in that way. No buyer can tell what a cheese is unless he does plug it and under the system I would advocate all cheese would be plugged the same as in any contest. As a rule a committee is present when cheese is bought, and in the earlier days it was the custom for one or two farmers to be present when the buyer was there to buy the cheese, to see that everything was done right and just

Mr. Corneliuson: I would like to ask Mr. Marty what in his opinion ought to be done in order to bring about this condition of selling the cheese according to quality?

Mr. Marty: In answering that question I would like to have you cheese makers listen to this. I think it is up to the buyers to bring about that condition, the maker cannot do it. I have seen factories where the makers would much prefer to have a cheese graded, but the buyers would only buy lump. They see a chance of making a few dollars by depressing the price on the average for all, and bought the cheese by this custom.

The President: If the buyer is making more money by this present custom I think you are mistaken when you say it is up to him to change it. The farmers are paying for all these mistakes and it is up to them to furnish the remedy. As long as the buyer is making more money under the present system it certainly is not up to him to change it.

Mr. Marty: I think under the present conditions that no buyer has any margin better than one quarter of a cent a pound.

The President: You said some were doing better under this system.

Mr. Marty: Under certain conditions he will try to influence the man representing the company, but as a rule I do not see their way out of it any better than grading and paying for what they buy and let the people know what they are manufacturing.

The President: They do not have to do that until you compel them to do it. The farmers who furnish this milk and pay for all those mistakes, no matter who makes them, if they say those cheese shall be graded and demand it, it can be done.

Mr. Marty: If anybody is here that can suggest a better plan to bring about a change in the practice of buying cheese, I would be glad to hear from him.

Mr. Corneliuson: Is it not a fact that at the present time cheese is bought and paid for really at a lower grade, that is an average low grade is put on the cheese, and the cheese dealer grades the cheese high and in that way makes some money?

Mr. Luchsinger: It is a fact that a great deal of Swiss cheese is bought as Mr. Marty says in lump, the buyer depends on his own judgment, judging from the appearance of the cheese on the shelves and what he knows of Swiss cheese, and of course afterwards when he disposes of the cheese he grades it. He plugs it and packs number 1 in one package, number 2 in another and number 3 in another, there is no such things as lumping off Swiss cheese after it has got into the hands of the man that buys it from the factories. The man who receives it in the city will know whether it is number 1, number 2, or number 3 and he does not buy it by lump; when he asks for number 1 cheese that is the cheese he wants, or else gets a reduction in price when he makes returns for it. I would ask Mr. Marty to explain to this meeting what points must the trier show to constitute a number 1 Swiss cheese?

Mr. Marty: As to a number 1 cheese for the general commercial market, of course there is a large variation as to the appearance of the trier, but talking of the cheese which is supposed to be a Swiss cheese the texture should be like wax, it should not stick to the finger; on a trier it should number about two or three holes; they should be large, well developed, smooth and glossy. There is a difference in the appearance of holes, some are closed up by abnormal fermentation, they are not smooth. These in number 1 Swiss cheese should be like a pearl, deep, and the color of the meat of the cheese should appear white. It is hard to describe what the flavor should be,

I know it when I smell and taste it but I have no name for it.

Mr. Parkin: How about the size of those holes, and the shape of them?

Mr. Marty: You know there is a difference there. In Imported Swiss cheese they say the larger the better but it is quite hard for me to describe what size they should be. They should be about the size of a five cent piece or a good sized hazel nut.

Mr. Zumkehr: I would like to ask Mr. Marty what steps he would take to reject dirty milk in cheese factories?

The President: That is a good question.

Mr. Marty: Mr. Chairman, I think I will give you some of the methods that I used to employ when I was making cheese. When I had a patron delivering milk which it was not possible to use in the manufacture of Swiss cheese, I would say to him, "Jim (John, or whatever his name was) when you get your whey loaded come in. I want to say a few words to you," and I would talk to him in a good kind way. Now remember our conditions, our milk is immediately drawn from the cows and if there is any trouble we must apply a test, not only by smelling, by which some of you are able to detect milk that has gone too far—I would say to the patron in a good kind way, "There is something wrong with your milk, look at the test. Look over your cows". I want to tell you, gentlemen, that a farmer knows his herds of cows just as well as a father or mother does their children. They know them better than you if you were to go out and inspect their cows, he knows which cow's milk he will take to the house and he knows which cow he is going to dispose of. He knows that better than you do. But if you ask him in a good kind way he will do the best he can for you. Don't tell the next patron what you told that man, keep it to yourself, but treat the next patron in the same way and you will get along all right with them. You will never have to reject any more milk, but make your patrons understand that you are watching the milk which is delivered to you. Inspect your milk every day.

Mr. Zumkehr: I would like to ask Mr. Marty how many cheesemakers are there, where they make either foreign or cheddar cheese, that will do as Mr. Marty has suggested?

Mr. Marty: As to what the men in the Northern or Eastern parts of the state are doing I am not prepared to say, but in our section of the state I am sorry to say that the milk inspection is not carried in as it should be, even applying the tests

to the milk is not carried on as it should be. If there is anything wrong with the milk as a rule there is trouble, one man and one patron is going to catch it. A good many troubles are caused by not handling the patrons right. You should be sure to know what you are talking about before you say anything to the patrons about the condition of their milk, be sure of the statemen you make in regard to the condition of the milk. If you cannot detect poor milk by common inspection apply your tests, but be sure before you make any statement whatever.

Mr. Zumkehr: I would like to say that I have found in a good many places where the cheesemaker has tried to reject any dirty milk (it is not clear to me what method he employed doing this) he got into trouble with his patrons and they went to the next factory where sure enough the cheesemaker was waiting for them with open arms.—"Come here with your milk the next time; if the other fellow cannot use it I can." In cases like this it is pretty hard for the cheesemaker to refuse to take in dirty milk. There ought to be something done by the cheesemakers to co-operate together and avoid such things as this.

The President: Where a farmer is bull-headed about it, will not do anything about it, insists on sending unclean milk to the factory, leaves one factory and goes to another, I think the cheesemaker should notify the inspector for his territory; tell him the circumstances, tell him the truth about the matter. Sometimes the matter is exaggerated a good deal; tell the truth about it, tell who the man is, where he is going to. Let the inspector give that farmer and that other cheesemaker a little special attention. If that is the kind of stuff that other cheesemaker is taking in he ought to be looked after; if that farmer intends to violate the food laws he ought to be looked after.

Mr. Ubbelohde: Our inspector last spring, when going through our section of the country, made the statement that if a man did not better his milk and went to the neighboring factory that he, the inspector, would look after him and in time he would come to terms. As the President said, the remedy is very easy and we find our milk is pretty well taken care of. This inspection has helped us wonderfully.

Mr. Dassow: If a farmer delivers his milk to another fac-

tory, is it not a fact that he delivers clean milk to that factory, for a time at least?

The President: The milk would be improved. You cannot help but lose a patron once in a while but that is not saying that your business is injured any by it. There are a great many factory men in the state who have preached a good deal to the farmers and they are all, with the exception of one or two, bringing decent milk and they let those one or two fellows do as they like, but they would be a good deal better off without those one or two patrons. That is nothing serious. In time this begins to build up the business. The man who is looking after his milk supply the closest to see that it is clean and pure is put on a good foundation, it puts the factory on a good foundation, it puts it on a basis where it will build up steadily and in a healthy way. In the course of a number of years that man is better off not to accept poor milk, even if he loses a few patrons, and the other fellow will be getting it in the neck. A reaction will set in in favor of the factory where only good stuff is accepted. Don't be to much afraid of losing one or two patrons under those circumstances.

Mr. Zumkehr: I want to mention one thing that I found last summer. One of our Swiss cheesemakers (I think he is in the room) lost one of his patrons, who went to an American factory. The American maker took in the milk and made a test of it. The next morning the patron asked how his milk was and he said "All right". He said "I made a curd test of it, and the curd test is just full of holes, just what they want in Swiss cheese."

Member: In the case of bad milk, too much stress can be laid on the part of the farmers .I think all factory men who wish to improve the condition of things should work on this and not blame the farmer all the time. The fault lies with the factory for accepting this poor milk .I think what Mr. Zumkehr referred to happened in my own factory. I know I had that experience. I wish Mr. Marty or some of those people from the experiment station would explain to the cheesemakers what the curd test really is in a Swiss cheese so they will not tell us what we need in a Swiss cheese.

Mr. Marty: I have an idea that the results to be obtained in a curd test, indicating a good curd or a bad curd, remain practically the same for all kinds of cheese. Actual conditions are going to show up in the curd test; some are very slow, some

require considerable time, but when the curd shows up gassy it is no more fit for Swiss cheese than for the American cheese, although a little less for the Swiss cheese because the Swiss cheesemakers have no possible way to overcome any actual conditions in the process of making Swiss cheese while the American cheesemakers have to a certain extent.

Mr. Dassow: How long would you keep a curd test warm before abnormal conditions would show up? We had a case where in twelve hours no fermentation showed up; six hours later it showed up.

The President: That was yeast fermentation. If you are troubled with yeast you had better keep the fermentation up twenty-four hours.

Mr. Zumkehr: Some of the members have referred to the fact that the Dairy and Food Commission should take hold of those bad conditions that happen in factories. I would like to have Mr. Marty tell this audience how many calls he has ahead of him in the summer time, to give the people here an idea of how much work we have to do in our inspection in the country.

The President: Can you take care of the calls as fast as they come in?

Mr. Marty: No Sir.

The President: That is the trouble, the inspectors have a great deal of territory to cover. They have about five times as much work as they can do during the hot weather anyway. It takes a long time to get around.

Mr. Johnston: I may say that I have listened with a great deal of interest to this question as brought up by the boys here regarding the taking in of bad milk and rejecting it and the patrons taking it to the neighboring factories. We went over all this ground and we remedied it to a certain extent by dividing our territory into districts, getting our boys together once a year holding what we call district meetings among the cheesemakers to discuss all matters along these lines pertaining to the manufacture of cheese, the quality of milk, rejection of milk, etc., and we found when they got together that their neighbors were not as bad as they thought, he was a pretty good sort, better than they thought he was, and they came to an understanding that any milk that was rejected for bad quality would not be taken in by any of the neighboring factories, and I assure you this has worked out very beneficially to the trade. We had a case this season where one of our makers rejected a can of

milk that was poor inquality. It was taken to another factory and the maker there took it in. The man that rejected the milk sent word to the chief inspector, and he wrote him asking the reason, and the reply was he was sorry and would not do it again.

If the makers would get together in their own district and talk things over, get acquainted with one another, they could remedy the conditions to a great extent.

Mr. Marty: In answer to the remarks of Mr. Zumkehr I would like to say that perhaps there were many here that were disappointed at my not appearing at their factories at the time they wished me to be there. I would like to tell you something of the size of the district which I have supervision over. It includes six counties, one county alone having as many as 211 cheese factories. This will give you an idea why it is impossible for me to pay attention to all the calls, and in a great many cases where my presence was absolutely necessary at certain times it was impossible for me to be there.

Mr. Moore: In reference to this, I want to call the attentoin of the makers to this one county of Dane alone. In Dane county we have seventy creameries and seventy-one or two cheese factories.. That would be more than Mr. Marty could take care of alone, without saying anything about the other five counties.

Mr. Ubbelohde: I had a little experience with bad milk three years ago, some of our neighbors may have had some of the same kind. One of our patrons had nice clean milk, but one morning there was something wrong with it. I said "look your cows over", and I went up to his farm that evening. His cows looked well, and he said he knew very well there was nothing wrong with them. The next morning the same thing happened, the milk appeared in perfect condition but when we made the curd test it was not good. I took some bottles up there and had him put some milk in them from each cow, and the next day found the poor milk came from one cow. He kept the milk from that cow home after that and he found the cow was sick, in about two weeks she died. It was at least four or five days before he knew the cow was sick. I think it is quite often the case that the trouble comes from one cow and the only way to find out is to go to the barn.

The President: We have had a very interesting discussion along this line of Swiss, Limburger and brick cheesemaking

and as long as you can keep it up lively I am inclined to give you all the time necessary to discuss it.

Member: A year ago we had a little trouble. We have given the farmers a hard rub here but I believe in a good many cases it is the cheesemakers' fault. I thought I kept my whey tank fairly clean, did everything that was necessary, and still fermentation kept on. The curd looked all right and the cheese looked all right when I put it in the press, but about the second or third day pin holes began to show up. In a week they were badly huffed. They had a sweet taste, something like a second grade Swiss cheese. I did not know what the trouble came from. I tried the curd test on the best milk we got, and perhaps the sweetest and nicest milk showed up the worst. I got a bulletin from the experiment station on yeast fermentation and I decided the trouble was in the whey tank and although I kept it good and clean I was sure it was there, so I boiled the whey and after I had boiled it for a week the fermentation stopped. Therefore it seems to me if we clean up everything around home and boil the whey it would be a good thing.

Mr. Marty: I think that is a very good point and, furthermore I would like to say that perhaps it would be a good thing to have a few farmers here with us and let them hear some of the things against our own methods. Regarding yeast fermentation, I would say that perhaps some day there will be more light on this subject. There has been a bulletin published on a similar case. The trouble was thought to be in the whey tank, in patrons' utensils, etc., different causes were given. When the season was very nearly closed and enormous loss had been caused by the poor cheese, it was finally discovered that all the trouble was due to something altogether different. I was able to get definate information on this point recently. The trouble was finally located. In addition to the main room there was a cistern with a windmill overhead and the reservoir was filled continuously. At the bottom of the cistern was a pipe running into the making room and whenever water was needed the faucet was turned open and the water was used for all purposes. Two-thirds of the water used for the home made rennet was taken out of that cistern. The cheesemaker used one third whey and two thirds water. It finally came to the manager's mind that he should look into that cistern and he found there was a sediment settled there with worms, rats,

toads and everything else that had been accumulating there, and every time the cistern water was pumped out everything was stirred up again. The water was used for making cheese and the cheese went wrong immediately.

Member: I believe one source of contamination of milk as delivered at cheese factories is due to the fact that impure whey is taken home in the same can in which the new milk is delivered to the cheese factory, and is left in those cans to sour. Quite often those cans are not properly washed and in some cases possibly not washed at all. I think this is one great source of contamination to the milk, and one great remedy would be to have all the whey that went to the consumers pasteurized, thereby sterilizing the whey and if whey is delivered in the cans at 170 to 190 degrees it will sterilize the cans and help to keep them pure, and also considerably to make a first-class delivery of milk at the cheese factory.

Mr. Hendy: Mr. Marty, I heard you say that you have bigger returns on high land than on low land and the difference in feed would probably do that. Reports from the experiment stations say you cannot feed butter fat into milk, and I don't know how that will turn out. I always thought the richer the milk the more cheese in it.

Mr. Marty: Mr. Tony is another Swiss cheesemaker and I would like to ask him if he would not prefer to be up on the hills for Swiss cheese? Which would you prefer, high lands or low lands?

Mr. Tony: Well, I would take the Swiss mountains.

Mr. Hendy: A large part of Wisconsin is hilly and there are a great many ravines, some that are very large and wide. What will we do with these if we have all our pastures on the hills and cannot grow crops on the hillside?

Mr. Marty: There are considerable low lands which will in a short time be as well adapted to pasture land as any hills we have. At the present time we successfully operate Limburger and Brick cheese factories on the low lands, so as a rule we put Swiss cheese factories on the high lands.

The President: I think we will have to close this discussion now but we are not going to give up the Swiss people yet. You know a number of them are good singers and I think in the president's annual address a year ago they were especially invited to attend this meeting, join us and bring their singers with them. They did bring some, but next year I want all the

Swiss people to turn out and I want a chorus of two dozen singers here in the hall. I am now going to call on Messrs. Strueben and Alder for a song.

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Swiss songs by Messrs. Strueben and Alder were thoroughly enjoyed by the audience and they were obliged to respond to an encore.

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The President: The next subject to be taken up is an address on Cheddar cheesemaking by Mr. Robert Johnston of Ontario, Canada.

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## CHEDDAR CHEESE MAKING.

ROBERT JOHNSTON, Woodstock, Ontario, Canada.

With The A. F. Mac Laren Imperial Cheese Company.

*Mr. President and Members of the Wisconsin Cheese Makers' Association:*

I am sure it is a pleasure for me to be wih you at this your annual convention. I may say that I do not feel myself a stranger by any means, for this is the third convention I have attended in this hall, but I would suggest to you, Mr. President that you secure a larger hall for your meetings as I see from year to year that your attendance is materially increasing, and that must show the interest that the cheesemakers and dairymen of this state take in the proceedings of this convention. We know in our own country, in our conventions of this kind that we get the best men in the trade to come to our conventions. The men that do not come there, the men that we do not see are the men that are always having something wrong with their cheese; they do not want instructions, they could not take in instuctions if it was given to them.

My address on Cheddar cheesemaking is just a short paper taken from my own practical experience, as I operated a Cheddar cheese factory for twenty-two years; one of the largest in

Canada at that time, and the last three or four years I have had a good deal of experience in going from one factory to another. For over ten years I was director of our Dairymen's Association, and in that way came in contact with the great bulk of our cheesemakers. I used to know every cheesemaker that attended our convention at sight at that time,—I used to have Mr. Marty's place, to sit at the door and take the money.

I may say in regard to your cheese exhibit that it is a credit to the state of Wisconsin. The first, second and third prize cheese could be put on the table in any exhibition and would score very high. Your first prize cheese is as find a cheese as I ever put the trier into, and I have put a trier into a good many thousand. While we judges are not infallible, I can tell you that Mr. Crosby and myself were very careful in going over the results of the scores. When I used to exhibit cheese I used to get low scores sometimes, but I always took my medicine and tried to make better cheese. You will find, if you trace back the cheese that has scored low, that it is due to conditions that are under the control of the maker in nine cases out of ten; therefore it behooves the maker to see that the cheese he sends to this convention is pretty nearly right for he comes in contact with a lot of good men and it is not because he makes a cheese and thinks it right himself that he will get a prize.

The Cheddar process of making cheese is the one that the great bulk of the American and Canadian cheese are made under. It is called the Cheddar process because the dairymen of the Cheddar Valley of Sumersetshire, England, made cheese by this process and we have adopted it because it ensures a uniform article. The most important feature in this system of making cheese is the early removal of the whey and the development of the lactic acid in the curd, which gives you control of acid development and makes you master of the situation.

Now what are the main features to be observed in the manufacture of finest Cheddar cheese.

1. The first is a pure milk supply.
2. The necessary utensils for manufacture.
3. A maker that thoroughly understands his business.
4. A curing room where the temperature can be controlled.

To make a cheese that will grade finest. You must have

your milk in first class condition. All milk that will not grade No. 1 should be returned.

Having your vat of No. 1 milk it should be heated to a temperature of 86 degrees. It is now that the cheese maker demonstrates whether he is master of his business. He should now test his milk to ascertain the development of acid He can determine this either by the acidemeter or rennet test. By the acidemeter he can tell exactly the degree of acid development. By the rennet test he can be reasonably sure.

He is now in a position to know when to add rennet so that the curd will have plenty of time to cook.

Setting of the milk enough rennet should be added to ensure thorough coagulation in from twenty to thirty minutes according to the season of the year. Twenty in spring and early summer and thirty minutes the balance of the season.

Cutting the Curd: The curd is ready for cutting when it splits before the finger. I favor cutting before the curd is too firm as I think that there is waste if the curd gets hard. In my last few years of making cheese I always cut first with the horizontal knife once, perpendicular twice or three times according to the condition of my milk at the time of setting. After cutting, the curd should be stirred gently by the hands ten minutes, if a rake is used, if agitators five minutes is sufficient. Heat should not be applied under 15 minutes, if your whey shows by the acidemeter that you have the right amount of acid you can take plenty of time to cook your curd which should not take less than 40 minutes. Fast cooking is hard on the average and should not be resorted to except in the case of a fast working curd. The curd should be stirred for 15 minutes after steam has been turned off and often enough after to keep the curd thoroughly broken up until the curd is dipped. This process should take from 2½ to 3 hours from the time of adding rennet, until your curd is ready for dipping and at this stage should not show over 17-100 of 1 per cent acid on acidemeter or when using the hot iron test should spin about ⅛ to ¼ of fine silky threads. If your curd shows that the acid is developing fast be sure and remove a portion of the whey as soon as heated as this gives you control of your vat. Thorough attention is necessary at this stage of the process and I advise you where you do not use drainers or racks in your vat to remove the whey at the earliest stage of acid development.

After the removal of the whey the curd should be stirred

until thoroughly dry before it is allowed to mat. There is an idea among a great many makers that if they stir curds dry it is hard on the average. This is the poorest kind of rot. In my experience curds that were not thoroughly stirred always showed a poor average. If you want to produce finest cheese you must stir your curd dry. It will give you a finer texture, more meat and finer flavor, which points are essential in fine cheese. If the process is strictly carried out up to this point, your cheese is practically made.

Matting the Curd: After the stirring process has been completed the curd should be allowed to mat. As soon as thoroughly matted it should be cut in strips from 4 to 6 inches wide if working in vat. If in drainers 8 inches.. This is to liberate the moisture. It should be turned often enough that no whey will collect on the curd.

Tests should be made from time to time either by acidemeter or hot iron to determine the development of acid. I have found that when the acidemeter shows 75-100 of 1 per cent. your curd is ready for milling. After milling the curd should be stirred thoroughly and you can expose it to the air if the surroundings are pure and sweet and if the temperature is not too low. Your curd at this stage should begin to have a silky mellow feel and when the acidemeter shows you 1 per cent. to 1 and 2-10 you can safely salt. I do not advise hooping your curd at too high a temperature not over 80 degrees if possible, but never let it get below 60 degrees. Cheese should be bandaged after pressing 1 hour and I will here add a word of caution. Do not put to much pressure on curd at start, but press gradually until about 15 minutes before dressing the cheese, when full pressure can be put on. The cheese should remain 24 hours in press, if possible. After removal from press they should be carefully examined as to finish and if any defect is apparent it should be attended to and the cheese pressed until your cheese each and every one are neat and stylish. We find that the best temperature for curing cheese is between 55 and 60 degrees.

I have only outlined the process of Cheddar cheese making under circumstances where you have all the conditions under control and it should be the aim of the patrons to supply the milk in first class condition. The other conditions are in the hands of the cheese maker and factory owner.

DISCUSSION.

The President: This subject is now open for discussion.

Mr. Glover: Mr. Johnston, this process of cheesemaking that you describe is evidently for a very firm, meaty cheese, one that would sell for export, is it not?

Mr. Johnston: I think that the first prize cheese that scored 99 points can be made on this process, in fact I am sure it can. Whether you call that an export cheese or home trade cheese I do not know. In regard to the firmness of your curd, you must have a curd cooked if you are going to get results. We make cheese that will go on the counter and cut in ten days that will show as much quality as any cheese in your exhibition room down stairs.

Mr. Glover: I learned when a very young man to make cheese from a Canadian maker and your description is very similar to the teachings I had and practiced in the factory. When I made that kind of cheese for local consumption in the United States, in competition with Wisconsin or Minnesota, I had more or less difficulty in selling so firm a cheese, and for some of the best cheese I ever made in my life I could only find an outlet through Bridgeman & Russell, a Duluth and a St. Paul firm who exported those cheese. After that I modified my system of cheesemaking, developing less acid, cooking a little less and piled a little higher, all of which had a tendency to make what is known as a weak bodied cheese which is not appreciated by the Canadians and did not appeal to me, but it sold. It appealed to the consumer. The question I want to bring up before this convention is should we appeal to the consumers of this country or make what we call an ideal cheese to us cheesemakers? That is the point I want to bring out for discussion.

Mr. Johnston: For your information, let me say that for the first time in the history of the trade we as Canadians exported Wisconsin cheese this summer. My first export was 500 boxes of Twins made for your market. My customer told me they were very satisfactory goods, suited his trade. I went through that 500 boxes of Twins before I shipped them and found they compared favorably with the Twins we made in our own country for local trade.

Mr. Glover: There is plenty of cheese down stairs fit for export, but the great rank and file of our consumers, in my lim-

ited experience of ten years in cheesemaking and judging of cheese, demand a soft cheese and a few Swiss holes in cheddar cheese were not objectionable. Moreover, the people of America are learning to like Limburger, Swiss and brick cheese because it is mild in flavor. The point is to hold on to the people that are eating the cheddar cheese and not lose them. If they want mild flavored cheese we want to follow that. Am I wrong?

Mr. Johnston: I only know this, that the state of Wisconsin has the reputation of making the finest cheese of any state in the Union. I know that I go to New York to buy cheese and I was telling my friends here this morning that I went through seventeen cars of cheese there at one time and got only two boxes of cheese that I would call cheese. We sell a thousand boxes of Wisconsin cheese to three hundred boxes of New York. I may add that I was in New York last spring and met Mr. Richardson, and I told Mr. Richardson and another cheese dealer there, both of whom had some information as to my sentiments expressed last year and did not like it, but I told them it was the truth and they had to admit it was so.

Mr. Carswell: Is it not a fact that the Wisconsin cheesemakers know pretty nearly what the public wants if the Wisconsin cheese sells the best in the market? You say you sell one thousand boxes of Wisconsin cheese to three hundred of New York, is that not an indiction that Wisconsin is making the right kind of cheese for the market and making it about as you suggest?

Mr. Johnston: Yes, as far as my experience goes. I am only one dealer. We used to get cheese in New York but this year we did not get a box of large cheese out of New York. I got ten thousand boxes of your cheese out of Wisconsin and they were as fine a lot of cheese as I ever handled in any state. I exported 550 boxes of large Cheddars last year from one of your points here and they sold for 67 shillings. The parties would not buy the cheese, I had to consign them. It was a reliable house that handled them for me and they returned me 67 shillings; the very finest Canadian cheese was only bringing 68 shillings at that time. They reported to me the quality was best and they had no idea I could get such good cheese in the United States.

Mr. Carswell: Just one question further in regard to what Mr. Glover said about soft cheese. We know a good many peo-

ple in the United States are looking for soft cheese but is not that softness caused more by the moisture being left in the cheese and is there not a great deal of danger in doing that in regard to keeping quality? Mr. Glover is asking for soft cheese, but with your experience don't you find those soft cheese are dangerous to handle on account of excess moisture?

Mr. Johnston: In that case I would want to know where I would place them when I bought them. We are not always able to tell that. We cannot store a soft cheese, cheese that contains excessive moisture; if you do the quality is deteriorating all the time.

Mr. Glover: Understand, I am not advocating a soft cheese; I am getting at the kind of cheese the people want here. Moreover, I do not agree that soft cheese contains any more moisture than firm cheese. You can make soft cheese and have it dry. I do not advocate the granular process, I want the cheese firm and I like to see it close; but there is a difference between that meaty texture that Canadian people want (and I learned it, understand,) and some of the people want in this country. I was just getting at the point as to which was the better method to pursue, because I have heard this, some of the boys said they made a different cheese for this contest than they do for the people who eat cheese in the south and Wisconsin. We want a contest here to be representative of the kind of cheese the people want in this state so they can work for that perfection. How much truth there is in this I do not know. It is misleading to some of the judges, it is misleading to some of the boys that come here.

The President: Since we are making a large amount of the smaller varieties like Daisies, Young Americas and Long Horns especially the last few years since prices have been high and the demand very good, the buyers a part of the time have not been as particular in their inspection as they used to be years ago when we were making a firmer cheese and the larger varieties of cheese, and a good many factory men have been injecting just as much whey in the curd as they dare leave in the cheese, making it as soft as they dare make it and sometimes a little too soft. Some of them have an outlet for that kind of cheese, they get a little bigger yield, and they know when they come here where it will be plugged they have to make it firmer and make a little better cheese all around in order to get the score they like to get; but as far as moisture in the

cheese is concerned, the cheesemakers will put in all they dare. It is not necessary to urge them much on that point. Their markets determine how much moisture they dare leave in the cheese.

Mr. Johnston: They did it in New York state and ruined their business I might say, for Mr. Glover's information, that the last six or seven years we have changed our ideas wonderfully in regard to cheese. We do not want a firm cheese at any price. The English want a cheese that will show plenty of body, lots of meat, that will break down like butter in your fingers, and it is a good cheese for any body to have. But as regards the judging of cheese here, Mr. Crosby and I judged the cheese. Mr. Crosby, who is one of your cheese dealers, told me he handled more cheese than any man in the state this year. We were never out more than one half point.

The President We have only a few minutes more.

Mr. Larson. The speaker said all milk should grade No. 1. What means or way have you to determine the grade of that milk at the weight can?

Mr. Johnson: In writing my paper I had to take the standpoint of No. 1 milk. What we call No. 1 milk is milk that will make No. 1 cheese. That is not giving you much information but it is a difficult thing to determine by our own process of finding out what No. 1 milk is; but the milk that comes in sweet and clean, shows no bad flavors, will grade No. 1 milk I know the conditions we work under are different every day. We cannot get all No. 1 milk. If we get half of our quantity No. 1 milk, we get some off grades that is not bad enough to send home and we have to take it in, but in our country, as I stated before, we have improved the condition of the milk wonderfully by getting the boys together. Those meetings got the boys together, they became acquainted with one another, got to talking over conditions of the milk and the kind of milk they wanted to make fine cheese, and they came to the conclusion that they were pretty nearly all of the same opinion that the man that sent bad milk no one wanted. I have had some of my best patrons send me bad milk and did not know it.

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The President: We will have to close this subject. It is now the noon hour and I want to make some announcements.

This afternoon we will open the session at two o'clock with some singing by these two gentlemen again if they will be kind enough to be present and favor us, and they are going to have some competition. There is a lady who is one of the greatest Swiss warblers in the country to be here and do some warbling in competition with these two gentlemen.

Tomorrow afternoon Professor Doane, of the Department of Agriculture, Washington, will speak on the Pure Food Law, and I am sure you all will be interested in hearing him..

We will now stand adjourned until 2 o'clock this afternoon

## THURSDAY AFTERNOON SESSION.

The meeting was called to order at 2 o'clock by the President and opened with a song by the "Swiss Yodel Singers," Messrs. Strueben and Alder.

The President: The first subject on the program this afternoon is "How to Produce Clean Milk." I do not believe there is anybody better able to handle the subject than Mr. Glover, of Fort Atkinson. He is a dairyman, a cheesemaker, an insructor and an inspector and a writer, has been in close touch with everything that makes for cleanliness and purity in milk and dairy products. I take pleasure in introducing Mr. A. J. Glover, who will now address you.

## HOW TO PRODUCE CLEAN MILK.

A. J. Glover, Fort Atkinson, Wis.

Associate Editor Hoard's Dairyman.

In this brief paper, it is not my object to define, in detail, the factors necessary to produce good milk or to convey the impression that the cheesemaker should try to have his patrons follow rules that are necessary to produce certified milk, but it is my purpose to impress upon you the importance of having your patrons employ clean methods in their production of milk; the importance of using clean milking utensils; the importance of thoroughly cooling the milk immediately after it is drawn; to have the udders and flanks of cows free from dirt when they are being milked; the importance of proper feeding and a clean and well ventilated stable. These are the salient points in the production of high grade milk.

This is an old subject. It was discussed long before there

was a dairy organization of any kind, in this or any other country. If good milk was not necessary for the making of the best dairy products, it would long since have ceased to be so often discussed. Cheesemaking is a simple art, when milk has been properly produced and properly kept, but it is often extremely annoying and puzzling when but a single patron is ignorant or indifferent to the laws that govern the production of good milk.

In the past few years there has been a wonderful awakening among the manufacturers of dairy products and dairy authorities, on the necessity of informing the patrons how to produce the right kind of milk. We can come here and discuss this subject very intelligently and return to our homes, perhaps, with a keener realization that if better cheeses are to be made, the farmers must be taught better methods of dairying. But what does it amount to, unless the cheesemaker realizes that he is, to a large extent, responsible for the kind of material that comes to his factory and that it is his duty to help his patrons understand the factors that govern the production of wholesome dairy products.

It is not enough for the patron to know simply the handling and cooling of milk; he should understand how to care for and feed his cows. Of course, it is important that persons should be clean in their milking operations; the udder and flanks of the cows free from filth; the milking utensils clean and the milker have clean hands and clean clothes. The milk should be thoroughly cooled, immediately after it is drawn, and kept cool until delivered to the factory. Cleanliness and cooling are two of the fundamental things in the production of good milk. This part of milk production is well understood by you, but I am of the opinion that you do not half realize how poorly and how vaguely your patrons understand what is meant by cleanliness and thorough cooling. These terms are relative. They do not carry the same meaning to every person, for what is cleanliness to one, is often filth to another and the proper temperature to which milk should be brought may seem utterly absurd to the patron, because he does not understand what is meant by thorough cooling. These terms must be defined by you to your patrons, and if you cannot make them understand from your receiving room door, you must make arrangements to visit their farms. I am not unmindful of the fact that most

of you, during the summer months have more work now than you ought to do, but extra help should be provided, of necescary, in order to give the cheesemaker same time among his patrons. It will pay to do it. The most widely known buttermaker in Minnesota, Mr. Samuel Haugdahl, made it a point to visit his patrons and show them what was meant by the word cleanliness and what it was to cool the milk properly. The result was he became the champion buttermaker of America by winning the first prize at the Paris Exposition. There is no use for me to define these terms here, for you all understand them better than you practice or teach them and the men that should be taught their meaning are not here..

It is my purpose to get you to be more active in getting knowledge to your patrons. It is well to meet, annually, to discuss questions of this character, but. what is needed at all times is action and eternal vigilance. The dairy and food commission is doing much to create a sentiment for better milk, but their force is too small to cover the whole field. thoroughly, and it rests with the cheesemaker to educate the farmers that come to his factory.

Besides cleanliness and the proper care of milk, there comes another very important subject in the production of good cheese and that is, the proper feeding and housing of the cows. We too little realize the import of this part of milk production. While it may seem a little foreign to my subject, yet it is of vital importance to it.

Mr. H. B. Gurler. who produced certified milk for Chicago babies and invalids for a number of years. has informed me that he could so feed his cows that every baby using his milk would be sick.

I happened to be at his place one day when he had received a number of letters, stating that his milk had a peculiar odor and that the babies had noticed the change. We visited the farm and found that the cows had turned from a short pasture into one containing a luxuriant growth of grass, and as a result the cows were physiced and the milk had a strong grass flavor. I have seen cows so fed that their milk was unfit to feed to babies; and you have all experienced the difficulty of making good cheese in the early spring before the cows were turned to grass. The old expression is: Between hay and grass, it is difficult to make good cheese.

It is my opinion that if cows are properly fed good cheese

can be made the year around, and there is no more necessity for closing our cheese factories in the winter, than there is to close them in June. Animals fed on timothy hay and corn stover, or permitted to run to a straw stack will soon put the body in such condition that it will not produce milk fit for cheese and making it unfit for human food. But give the cow silage, alfalfa hay and some meal and she will produce far better milk than when she is grazing in a pasture containing more or less weeds and the grass shortened by drought. When cows are permitted to drink stagnant water, gassy curds are often the result, which shows that the cow's feed has much to do with not only her physical condition but also the kind of milk that she produces. Your secretary, Mr. Baer, when connected with the Wisconsin Experiment Station, discovered that rape proved very injurious to milk, if improperly fed, and was at best, a dangerous feed to give to milk cows, and green clover, improperly fed, gave the milk a rather disagreeable odor.

Not only is the subject of feeding of high importance in the production of good milk, but stable construction and ventilation have no small part in this work. Fresh air must be given to the herd, if the cows are to be kept healthy, for without strong and vigorous bodies, it is not possible to produce wholesome milk. I would have the cheesemaker become an educator in his community, for he is in a position to do more for his patrons, and the production of good cheese, than any individual interested in the development of the cheese industry. The cheesemaker should not be satisfied with himself until he has a firm understanding of the factors that govern the health of the dairy cow. He should not limit himself to the principles and practices of cheesemaking, but he should reach out for a broader understanding of the fundamental things that govern his profession.

The cow is the foundation of our dairy industry and the patron controls, to a large extent, the quality of our cheese. The skillful cheesemaker can make better cheese than a person who has never given serious study to his profession, but there is no maker under the canopy of heaven that can make good cheese from poor milk. Good milk is essential to the development and progress of our cheese industry and its production rests in the hands of the cheesemakers of Wisconsin.

Therefore be ready to define what is meant to be clean; show the patron how to take a brush or damp cloth to wipe the udder

and flanks of the cow before starting to milk and if the animal has befouled herself washing the udder becomes imperative; show him how to wash and scald his milking utensils and especially warn him about the importance of a clean strainer; teach him how to cool his milk properly and help him arrange his tanks so that it may be done quickly and well; show him how to ventilate his stable so that his cows will be provided with pure air; tell him how to feed his cows properly and inform him of the importance of giving them pure water, for, all these factors have a direct bearing on the production of good cheese and they are the only things that will prevent or will make Wisconsin the greatest and best cheese producing state in the Union.

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DISCUSSION.

The President: Mr. Glover knows a great deal more than he has told you. Just keep right at him and you will see he understands his business. He has worked with farmers in their dairies and in their stables; he has worked in factories; he has had the same troubles that some of us cheesemakers have had.

Mr. Hendy: Two or three of my cheesemaker friends are here. I reminded them of this association and told them they ought to come to it. I would like to know something on the subject of how to produce clean milk. I would like to bring some facts away with me to take home to our patrons.

Mr. Glover: The cow's udders and flanks should be brushed or wiped off with a damp cloth; the milker should have clean hands, should milk into a clean pail, strain his milk into a clean strainer, into a clean can, then remove it to a tank of cold water and stir it occasionally until it reaches the temperature of the water or thereabouts. That is in brief. Does that answer your question fully enough? About the stable conditions,—there are stalls coming into the market by which cows can be tied and kept almost free from lying in their own dirt. A great many will put their cows in stanchions on which the platform is six inches or perhaps a foot too wide, and the droppings of the cow fall on the platform; when the cows lies down she gets in this and makes a very nasty mess and she is wiped

off in the morning with a little straw. With a little forethought you can have stanchions so arranged that the stanchions can be adjusted or lined up to the gutter. It would take a platform of from 3½ to 5 feet for the cow to stand. With some of the modern stanchions you can line the cow up to the gutter, and with the Bidwell stall or Brown stall you can also line the cow up to the gutter by moving forward or backward the gate in front of her so it tends to have all the droppings fall into the gutter. Here is a circular showing the James stanchion (shows circular). By a little adjustment you can push the cow backwards or have her come forward so the tops of her toes just rest on the platform. We have the model stall for our herd. Some people like them, many do not. In the model stall the cows step high and lie down in the bed prepared for them. Other men have put in the stall and taken it out. The principle should be to get a stall that will permit the cow to lie out of her filth and keep clean. In our herd, for instance, I do not think there is a cow in the herd that has had a soiled udder this winter, and this James stanchion will do practically the same thing. That helps wonderfully, and with the brush it is only an instant's work to rub her off and remove all this loose matreial, but if you try to get the farmers to wash off the udders and go to that bother they will say it is too much work, and I believe it is necessary for the production of good milk.

Mr. Hendy: In regard to cooling the milk, my man takes it from the cow stable outside and empties it into a can and in half an hour it is at the factory.

Mr. Glover: That is where it goes twice a day and you do not need to cool it. That brings a different condition. Of course I was talking about delivering every twenty-four hours.

Mr. Anderson: I understand Mr. Glover has claimed that the reason why it was hard to make good cheese in the winter was on account of the feed.

Mr. Glover: I think that is one of the important reasons why we do not make as good cheese in winter because we do not feed our cows as they ought to be fed.

Mr. Anderson: Don't you think other reasons have more influence than that? I would mention two especially; one is that we have lots of stripper milk in winter, and you know you cannot make good cheese or butter out of it.

Mr. Glover: It is not necessary to have any more stripper milk in winter than in summer, but suppose your cows come

in in October and run all winter? I know factories that run all winter and make good cheese.

Mr. Anderson: Another reason is we have to keep milk two or three days to get enough to pay for the hauling, and that is against good cheese.

Mr. Glover: Suppose enough of your patrons turned to winter dairying and produced enough milk to run every day. Don't you see the dairymen ought to make more milk in the winter than in the summer because it gives better results and they have more time to do it?

In the summer they have most of the work to do in the fields, and in the winter they have little or nothing to do in the fields. It would eqnalize matters, it seems to me.

The President: What bearing, if any, has good ensilage as part of the ration in the winter feed?

Mr. Glover: Ensilage is the best succulent food and dairy cows enjoy it. It tends to keep their digestive organs in good condition, it keeps them loose. You feed a cow timothy hay, corn stover and corn and, as a rule, you will find them in an unhealthy condition; but you add ensilage with a little oil meal and you will bring about an entirely different condition. Roots and turnips may also be fed but when you come to roots and turnips you get into a dangerous sort of feed for the manufacture of milk. Ensilage will not affect them that way. I think you can feed mangles but everyone knows if you do not feed mangles and roots properly you get a strong flavor in the milk.

Mr. Parkin. In feeding ensilage, did you ever have experience in making cheese from milk that had an ensilage flavor?

Mr. Glover: No if properly fed. If you get ensilage into the milk and have it strewn in the alleys you may get an ensilage flavor, but as a rule I think ensilage milk is nicer tasting than that made from dry forage. Our best milk in this country being produced from ensilage.

Member: I want to know the difference the gentleman mentions between ensilage and roots. If you feed roots after milking, as you ought to do, I do not think they can do any harm.

Mr. Glover: If you feed them in small quantities immediately after milking, but I think it is generally understood that roots are rather dangerous feed to give unless a man is very careful as to how he feeds them.

Mr. C. L. Hill, President Wis. Dairymen's Ass'n: There is in many communities a prejudice against silos and feeding of

ensilage. I want to ask Mr. Glover if he thinks properly made silage (and I would not for a minute have you think it is hard work to make proper ensilage), is not good feed, and is there any reason to think Wisconsin farmers and dairymen should not all have silos? The prejudice has in some sections of the state arisen from the fact that the Gale Borden Co. do not allow their patrons to feed silage, and I want to ask Mr. Glover if he thinks there should be any such objection in the minds of the people.

Mr. Glover: I do not believe the dairymen can afford to be without a silo. Good silage is easily made. It comes nearer to being the natural grass than anything we can feed to our cows in the winter. We cannot permit it to be strewn around the alley and become rotten and have portions fall into our milk can, and then produce high grade milk; but if we feed it to our cows and sweep up the alleys it becomes one of the best foods for the dairy cow that I know of, and alfalfa hay and corn silage forms the basis of a balanced ration.

The President: Mr. Hill is very prominent as a breeder of Guernsey cattle, prominent all over the United States. He lives at Rosendale, near Fond du Lac, Wisconsin, and he has been a feeder of ensilage for quite a while. I want to ask Mr. Hill's opinion as to the effect of ensilage on winter milk as compared with all dry feed,—that is feed that has part of the ration of silage or a ration without any silage?

Mr. Hill: I have had a silo since 1888 and I have said repeatedly, and say it here again, that if I could not have silage for dairy cows I would go out of the dairy business. I do not think any other way you can produce milk as cheaply; I do not think you can with any moderate amount of cost produce as good milk in winter or summer as with silage, and I do not believe there is any reason for the objection that seems to hold in some people's minds against ensilage. Just as good sweet milk is made from ensilage fed cows as those not fed on ensilage. There is no reason for that prejudice whatever, and I think the Wisconsin Cheese Makers' Association cannot do better work than preach to the farmers this lesson all the time, to make more milk in the winter and make it from ensilage. As to flavor, I have for years shipped cream to Milwaukee and it is possible to produce milk that will not have any flavor if the ensilage is fed just after milking always and the stable well cleaned, but I do not think a little ensilage flavor if

milk is at all objectionable and I do not try to eliminate it from the cream I send here to this city. I think if the people knew it was ensilage flavor they might not like it, but they don't know what it is and think it is nicer than it is. I do not think there is any reason for a prejudice against ensilage and more of it should be fed on the Wisconsin farms.

The President: I am glad to have Mr. Hill here to make this statement and wish you cheesemakers would talk to your patrons about it when you go home.

Mr. Luchsinger: Is any of your milk produced for the manufacture of cheese, Mr. Hill?

Mr. Hill: No sir, not now, but it was a few years ago and there was no objection whatever.

The President: South of you there is a cheese factory where Mr. Gillett takes his milk and he feeds ensilage.

Mr. Dassow: One winter one of my patrons fed his cows nearly all ensilage there was no hay. He furnished half of the entire milk of the factory and I made better cheese from it than I have made since that on dry feed milk.

Mr. Luchsinger: I understand in Switzerland they make cheese all winter in some sections. It is called winter cheese, and does not come up in quality to the summer cheese. I think it is somewhat whiter in color than the summer cheese. I do not think they know anything about silage there. The fact is they cannot raise any corn, have not the land or climate suitable for corn, but they have a greater variety of grasses than we have and in that way the cows get a greater variety of food.

In our own sections where Swiss cheese is made there are no silos to amount to anything. One or two people built silos some years ago but they discontinued them, especially those people who furnish milk to the milk condensing factories. That is one of the rules of the condensaries that they will not have any milk that is produced from cows fed on ensilage. I made it my business to interview the inspector of one of the factories and asked him if it was only a theory that they prohibited the use of ensilage to the cows that provided milk for their factory, but he said it was based on an experience of many years. He said that they could not produce an article of condensed milk that was merchantable and would pass muster with their customers when ensilage milk was used, therefore they made it an absolute rule that their patrons should not use ensilage to furnish milk to their factory. They will allow them to feed

all the grain they want to, especially the by-products of the flour mills, bran, shorts and middlings and what we call "second grade flour." Anything is allowed to be fed that is sweet and clean and has no particular flavor. They object to ensilage on that account and say the flavor is objectionable. I do not think it is fed to any great extent by those who furnish milk to cheese factories, therefore I am not prepared to say whether it has any injurious effect on milk for Swiss, Limburger or Brick cheese.

The President: At the close of this session this afternoon we will have our business meeting and would like to have as many stay as possible. We will have reports of committees. election of officers, etc. We will now have a song by Mrs. Krumpfer, from Winnebago county.

Mrs. Krumpfer sang a Swiss Yodel song which was much enjoyed and heartily encored.

The President: The next subject on the program will be handled by Professor Hastings, of Madison.

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## SOME REASONS WHY TUBERCULOSIS IN CATTLE IS IMPORTANT TO THE CHEESEMAKER.

Professor E. G. Hastings, Madison, Wisconsin.

Asst. Bacteriologist, Agricultural Experiment Station.

Tuberculosis is one of the few diseases common to both animals and man. It is caused by an organism that in one way or another gains entrance into the body of the animal and there establishes itself, grows, and produces certain changes, certain products, just as the lactic acid bacteria grow in milk, cream, and cheese and produce certain products and certain changes.

Most of the diseases caused by bacteria are rapid in their growth. If you are exposed to diphtheria today, within a week or ten days you will know whether you acquired the disease. In a very few days more you will know whether the attack of diphtheria is to be mild or virulent, and in a short time the crisis has come and you are on the road to recovery or heaven. But this is not true of tuberculosis, you may acquire the disease this year and it may be a half dozen years hence ere you

are aware that you have it, and it may be another half dozen years before you can overcome it or be overcome by it. It is this slow progress of the disease, both in man and animals, that make it so difficult for the ordinary man to appreciate its importance. Yet it is by far the most important of all diseases of the temperate zone. As many of you know, it is responsible for one-seventh of all the deaths of human beings that occur in this country and Europe. In Wisconsin in 1900, 2,175 deaths were caused by this disease, or over ten per cent of all deaths reported. In 1902, 2,142 deaths were due to tuberculosis. This means that over 2,000 young men and women between the ages of fifteen and thirty-five are victims to this plague each year in our state. This means a fearful monetary loss to the state, if such things can be expressed in cents and dollars. Smallpox, diphtheria, typhoid fever, those diseases we most dread are far behind in the amount of suffering and death.

At the present time there is being constructed a State Sanitorium for the treatment of consumptives, to which the various counties can send their people who are so unfortunate as to be attack by this disease, and who have not the means to enable them to go to some private sanitorium. The state does this because it realizes that it is a burden that cannot be borne by the individual alone.

This same disease, tuberculosis, is responsible for a large part of the losses connected with our dairy cattle, losses due to decreased individual production, to death of animals. We have no way of measuring the loss in the case of cattle, but it must be enormous each year.

Bovine tuberculosis, like human tuberculosis is world wide. It is found wherever the improved breeds of cattle have been carried, except in the island of Jersey. The native cattle of a number of counties are free from it, but where the improved breeds have gone, they have carried with them this disease.

Some of the northern European counties are seriously afflicted. In Saxony, 31% of the cattle killed in the slaughter houses were tuberculosis. In Berlin 25 per cent; in Zittan 41 per cent; in Sweden 30 per cent. Early in the nineties, 40 to 50 per cent of the milch cows of Denmark were tuberculosis.

In some of our eastern states the conditions are not much better. But how about Wisconsin? Have we any tuberculosis? From the various tests that have been made, including

tests on some 10,000 cattle we are safe in saying that from 8 to 10 per cent. of the milch-cows of the State have this disease. Please do not assume that if you happen to own fifty cows that five of them have it. Not every herd is diseased, in fact probably not over one half of the herds of the state contain any tuberculosis animals whatever. In Denmark where 50 per cent. of the cattle were diseased, 22 per cent. of the herds were healthy. It is found in all parts of the State, from Lake Michigan to the Mississippi, from Superior on the north to the Illinois line, not evenly distributed over the State, but here and there nests, hot beds of the disease. Certain localities bear the same relation to bovine tuberculosis, as do certain tenement houses in Milwaukee to the disease in this city (31 cases from three buildings on Clinton Street were sent to county hospital between 1893 and 1903.) And so it is in the State with bovine tuberculosis. In eastern Dane county 30 per cent. of the cows belonging to the patrons of two creameries were found to be tuberculosis. We shall have occasion to return to this.

Tuberculosis is a peculiar disease in that it is not necessarily limited to any special part of the body. Any organ or part may be affected. Muscles, bones, brain, spinal cord skin, joints, tongue, intestines, reproductive organs, spleen liver, kidney, heart, lungs, and various glands, especially the lymph glands in all parts of the body, and the mammary gland. I have no time to describe the nature of the disease as illustrated by post-mortem examinations.

From our standpoint the disease may be divided into two types—open and closed. The latter, the closed type, refers to the occurrence of the disease in the liver, spleen, kidneys, etc. In the open type, organs which have an exterior opening are affected, as the lungs, the udder, the intestines and the reproductive organs. In this case the organisms may be discharged from the body through the material coughed up from the lungs. in the manure, and in the milk, or the young may be affected at birth when the reproductive organs are diseased.

These two types are important, because an animal with the closed type of the disease is not able to communicate it to other animals, while with the open type as tuberculosis of the lungs the organisms are constantly given off, and thus opportunity for the spread of the disease is afforded. The organisms are discharged into the manger, onto the floor, with the material

that is raised from the lungs, or the material is swallowed and passes out of the body with the manure.

As soon as any animal begins to give off the disease producing organisms from her body she becomes a constant source of danger to the remainder of the herd, for from her other animals will acquire the disease. The harmless type, the closed type, may and frequently does, develop into the open or dangerous type. Thus any tuberculosis animal is a menace to the remainder of the herd.

Suppose a diseased animal is brought to a healthy herd, how rapidly may the disease spread to others? This is a very difficult question to answer, for it will depend upon so many factors. We have a record of a herd of 49 animals, known to be healthy, into which a diseased animal was brought, and from which animal in less than one year 12 other animals acquired the disease, and of course, the disease would spread more rapidly as the number of diseased animals increased.

One of the conditions that favor the rapid spread of the disease in a herd is lack of pure air, poor ventilation of stables. Put a large number of cows in a basement stable, keep them there twenty-three hours per day, with no air, and little light, and you cannot expect the animals to have bodily vigor enough to ward off the disease. In southwestern Wisconsin we found a herd of 72 animals in a basement stable lighted with only five small windows, three 8 x 10 panes in each, and two of these windows boarded up. No ventilation, manure knee deep, and a stench to drive one from the barn. Seventy-two animals in this stable and 69 of them tuberculous. This condition of affairs brought about by a number of animals in an advanced stage of the disease, coupled with the unsanitary conditions. The disease may spread until a large part, or even all of the herd is affected. In Pennsylvania a herd was found in which 166 animals out of 174 were tuberculosis; two smaller herds in which every animal was diseased. In Wisconsin very similar conditions have been discovered. In 16 herds belonging to the State Experiment Stations, percentages from 15 to 100 were found. New Mexico with 15 per cent; Ohio 46 per cent; Massachussetts 78 per cent; Wisconsin 86 per cent; Main 100 per cent, and even in Queen Victoria's herd at Windson Castle, 36 out of 40, or 90 per cent were affected. Thus it is evident that under the best of conditions the disease once introduced will spread.

If the herd is healthy, how may the disease be introduced? In some way the organisms causing the disease must be brought into the herd, for without them you cannot have the disease, no matter how unsanitary conditions may prevail. The most common way in which the disease is introduced into a herd is by the purchasing of an affected animal. The more animals are purchased the more sure is the disease to be introduced. Buy twenty cows from twenty Wisconsin herds and you are almost certain to get one or more animals that have tuberculosis. Hence in those districts where large numbers of animals are bought and sold in an effort to keep an even production of milk throughout the year, namely in the districts where milk is produced for city trade, we find a large percentage of diseased animals. So in large numbers of pure bred herds, because here there is often a constant buying and selling increasing greatly the chance of introduction of the disease. We have found an excellent example of how the disease may be spread by sales of affected cattle. In October 1903, an auction sale was held near Portage. Fifty-four animals were sold, these went into 13 herds. See what happened. Of the 54 animals sold, 33 were diseased, and through these 33 animals the disease was introduced into 12 herds which previously had been perfectly free from this scourge.

Some may say that people have no business to buy cattle that do not appear healthy. That's the trouble. A cow in the beginning stages of tuberculosis may appear perfectly healthy. No one, no matter how experienced, can tell by a physical examination whether a cow is affected or not. Such a diseased animal becomes a menace to the herd. She may be the cause of hundreds of dollars of loss. Often the animal that introduces the disease is a pure bred animal purchased in order to improve the herd. Two years ago at the Farmers' Course, there was a young man who had purchased but a few months before a pure bred animal with the intention of gradually changing his herd of common stock to one of high grades and pure bred cattle. At the College he learned how to apply the tuberculin test. After returning home he tested his herd and found the recently purchased animal to be the only tuberculosis one he possessed. A diseased animal as the very foundation of his herd. It was most fortunate that he made the test at that time and was able to save himself from loss.

The disease is most frequently introduced into herd in this

manner, through the purchase of an affected animal, and from her it spreads to the other members of the herd. There is, however, one other way in which the disease may be brought into a herd.

About 8 per cent. of the cattle that have tuberculosis have tuberculosis udders. Thus out of every 150 diseased cattle there is one that has the udder involved. In the milk of such an animal are to be found tubercle bacilli in greater or less abundance. Such milk fed to calves or hogs is almost certain to produce the disease. Young animals and especially hogs are very easily infected in this way. It is by the use of infected milk and by running after tuberculosis cattle in feeding lots that the hogs become diseased. Among hogs the disease is on the increase. In 1905, the percentage of hogs condemned at the packing houses was eight times as great as in 1901. To our creameries is sent the milk of many herds. No farmer carries home his own, but the mixed milk of many patrons. His herd may be healthy, but not so those of his neighbors. Thus if he is using the mixed skim milk as calf feed, he is quite certain to find sooner or later, that his herd is no longer free from this dreadful disease, that his young animals are infected.

During the past winter a large number of herds were tested in eastern Dane county. Practically all the cows whose milk was sent to the creameries of Oak Park and Medina were tested. Over 30 per cent. were diseased. A study of the herds revealed the fact that in a number of cases the disease had been introduced through the medium of the mixed skim milk. Among these diseased cows were, undoubtedly, some whose milk contain large numbers of tubercle organisms. Their milk would be carried to all the farms and the calves and hogs fed therewith. The disease had spread just as an abnormal fermentation in milk may spread from one patron's milk to another.

One might think that the milk containing the tubercle organisms would be so diluted by the milk of healthy cows that it would no longer be harmful. It has been shown that the milk drawn from tuberculous udders may produce disease even when diluted 1,000,000. That means that the milk could be mixed with that of thousands of other animals and still be dangerous.

Of course, the remedy here is clear. Heat the skim milk be-

fore it is returned to the farms, pastuerize it. Denmark compels this by law, as a means of stopping the spread of the disease. Some of our states have similiar laws; Iowa for instance. In many localities the farmers are demanding it to safe guard themselves. In the case of the creameries mentioned in Dane county, the farmers insisted on the pastuerization of all skim milk. Of course, with the rapid introduction of the hand separator the problem becomes less important, since here the farmer feeds only his own milk.

In whey there is not so much danger, for most of the bacteria that were present in the milk go with the curd, rather than with the whey.

It is easy to guard against the introduction by way of mixed creamery skim milk, but when it comes to the purchasing of cattle, what shall be done, if no one can tell whether the animal is diseased or not by physical examination. Yet most farmers must buy cattle now and then.

In 1890 great excitement reigned in Berlin, Germany, for it had been announced that a cure had been found for consumption. The much heralded cure did not prove a success, but it proved to be of great value in detecting the disease in cattle. This substance, tuberculin, is nothing more than a glycerine extract of the tubercle organisms. The germ is grown in the laboratory, the culture is boiled to kill all the organisms, and to concentrate it, then is filtered through porcelain; hence is perfectly free from living and dead tubercle bacilli, and cannot produce the disease. It is a poison, but in the amounts used it has no injurious effect.

If a two-thirds of a teaspoonful of this be injected beneath the skin of a cow, one can easily tell whether she has tuberculosis or not. The tuberculin test is applied as follows. A number of temperature readings are taken on each animal to determine the normal temperature inasmuch as the temperature of the cow is not so constant as that of man, but varies from hour to hour and in different animals. Three or four of these temperatures are taken. In the evening the tuberculin is introduced beneath the skin, and eight to ten hours after the temperature readings are begun again and continued for eight to ten hours. If the animal is healthy the temperatures the second day will be like those of the first, but if the animal has the disease a more or less pronounced fever will be noted on the second day; a fever that lasts but a few hours. By a study

of the temperature readings it is easy to determine the condition of the animal. This in barest outline is the tuberculin test.

As I have said a tuberculous cow may or may not be a present scource of danger. It all depends upon the type of the disease. But even if not a scource of danger at present she is likely to become so at any time. A tuberculous cow in a herd is like a defective flue in a building. It may not cause any trouble for months, but some day the building will burn because of it.

By the use of this test the farmer can determine the condition of his herd. If it is free from the disease he can keep it so by testing every animal he purchases. The test itself, as you have seen, is a very simple process. So simple that any one can apply it. Each year our Short Course students are taught the use of the test. The farmers who attend the Farmers' Course are given demonstrations in its use, and by correspondence and personal instruction many more are taught its use.

I have here a test made by a young man who gained all his information through reading and a half hour's instruction. A better test could not be made. During the past year some 4,000 tests have been made by farmers, and they have been very satisfactory. We have recognized that the only way in which this disease can be held in check is by placing the tuberculin test in the hands of the farmers, so that every animal purchased can be tested. If the farmer must employ a veterinarian to apply the test it will not be made. If he can do it himself it is likely to be done.

The state gives him all possible aid in furnishing tuberculin free of charge, helps him in procuring suitable instruments at reasonable prices, in interpreting the temperature readings and in disposing of the diseased animals so that he shall suffer the smallest possible loss.

The farmers of Wisconsin are certain to suffer greater loss through tuberculosis in the next ten years, than through fire. Every one insures his property against fire. Why should he not insure his cattle against this disease, when it can be done so easily and at so little expense? The necessary instruments need not cost $5.00 and will last for years.

Many men hesitate in applying the test because they fear some reacting animals may be found and their disposal will

cause some loss. Undoubtedly it will, but their retention in the herd will cause more, for the longer they are kept in the herd the farther the disease will spread, the greater the loss will be. Some men cannot see the dollar a year away for the cent today.

The tuberculosis question, both in the case of human beings and cattle, has been brought to a business basis. The state has come to recognize that it cannot afford to allow people to die by the thousands, in the prime of life, when they can be saved. We cannot afford to allow the disease to spread unchecked in our herds. Wherever the question is bought to the attention of the farmers, and they are made to realize its importance, our work is practically done, for they will apply the test and weed out their herds voluntarily The Agricultural press in the past has never given the tuberculin test any support, and only very recently has it come to realize its importance and to begin the work that should have been done a half dozen years ago.

You represent eight to ten thousand farmers. More farmers than the College of Agriculture can reach directly in the next half dozen years. We want you to carry to your patrons information concerning this subject, concerning the tuberculin test and how they can keep their herds free from this disease, and save themselves from loss.

Possibly many of you are asking of what importance is all this to the cheesemaker. Tuberculosis is of importance to the cheesemaker as it is of importance to every citizen in the state, but it is of further importance to you because it is one of the factors that will determine the success or failure of your patrons, and your success is so intimately connected with that of your patron's that every question that is of importance to them concerning the hundred and one farm operations is of importance to you.

Each year about 25 per cent. of the cheesemakers of the state come to this meeting, and they should carry back something not only for themselves in their own work, but something to their patrons, 75 per cent. of which it is impossible to reach in any other way. Carry to them information not only concerning how they should produce and handle the milk on the farm, so that you can have good cheese but information concerning the rational feeding of their cattle, the sensible handling of the manure and the maintainance of the fertility of their farms.

DISCUSSION.

The President: We have a very few minutes for discussion of this important subject.

Mr. Moore: I know there will be an effort made this winter to ask the legislature for a compulsory law in regard to the pasteurisation of skim milk in creameries. The proposition in my mind is how shall we get away from the danger in cheese factories? There is the problem before us. I would like to know if anyone has a remedy for that. Those two factories that Prof. Hastings has told you about,—at one factory they lost two hundred and fifty cows. That made quite a reduction in the amount of milk coming to that factory. At the other factory, two and a half miles south, they lost two hundred and twenty-five cows. The last time I was over there to see the buttermaker I saw a cow staked across the road from the factory. I knew that farmer had been keeping twenty-five cows, and I asked the buttermaker what had become of them. He said he had lost every cow and bought that for his own family use. It is up to us now, as the legislature is in session, to do something.

Member: We are talking about this from the standpoint of the cow. Has it been proved that the disease can be taken by a person eating cheese made from milk from a diseased cow?

Mr. Hastings: I do not suppose there is any particular danger because by the time the cheese is cured all the organisms which may have been contained in it have died. Tubercular organisms are not very persistent in cheese as far as we know at the present time. There is not apt to be as much bacteria in whey as in skim milk because nearly all the bacteria in whey goes with the curd. I suppose that anywhere from 80 to 90 or 95% of the bacteria that are in the milk from which you make your cheese goes with the curd instead of with the whey, so you take out all the organisms that may be there and carry them over to the cheese. By the time the cheese is ripened and ready for market practically all those organisims will have died.

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The President: We will have to close this discussion. Mrs. Krumpfer will favor us with another song.

Solo by Mrs. Krumpfer.

The Secretary: Mr. Marty has been paying out the pro rata premium fund and wishes to close up the premium pay roll at the earliest possible moment.

The President: The next on the program is an address by Honorable H. R. Wright of Des Moines, State Food and Dairy Commissioner for Iowa. I have the pleasure of introducing Mr. Wright.

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## ADDRESS.

Hon. H. R. Wright, Des Moines, Iowa.

*Mr. President and Members of the Wisconsin Cheesemakers Association:*

It is very kind of you to greet me so cordially especially in view of what I have to say to begin with. When your secretary invited me to come and make an address at this convention I immediately answered and said I knew nothing about the cheese business, that it was utterly impossible for me to say anything that would be of particular benefit to the cheesemakers. However, he insisted on my coming. When I got up here and found this was the largest association of the kind in the world my courage further petered out; when I read that Wisconsin manufactured nearly all the cheese that is made I had less courage then before. Then I remembered that out of the forty-five states in the Union Iowa is sixth on the list in cheese making. We make $350,000 worth of cheese in the state of Iowa, so we do not brag about it. The fact of the matter is that our people have been so busy making butter in enormous quantities that we have not gone into cheese making. We have creameries so big out there that they run twelve or fourteen saw mills with the buttermilk that comes from the churns. (Laughter.)

While I did not come up here to boast about the creameries of the state of Iowa, it occurred to me that there are some things which are true in regard to the dairy business as a whole which it would not be improper to repeat here. I wish you to understand that I am not saying these things because I think they are new; I am saying them because they are both old and true and pertain in regard to the dairy business as a whole.

You have undoubtedly noticed that every dairy section you know anything about is a fertile country. That is not a coincident, it is a cause and effect in most cases. We boast of the fertility of the soil in our country but the fact of the matter is there are sections in Iowa, and I have no doubt it is true in regard to Wisconsin and other states, portions of the state where dairying is practiced are often more fertile, more productive than other portions of the state no matter what fertility Nature endowed that part of the state to begin with. The fact of the matter is that the dairyman, no matter what product he makes from his milk, returns more to his soil than he takes from it. The fact is the thing he takes from it is less in amount of fertility removed from the farm than if he sells his product in any other form. If perchance Nature has endowed a dairy country with enormous fertility the dairy business not only preserves that fertility but increases it and makes it actually a more fertile soil as the years go on and the practice of dairying continues. There is an important thing for the section of the country as an agricultural proposition.

Then you notice that every section of the country devoted to dairying has a very large number of well to do people in it on the farms practicing dairying. You will notice that particularly out in our state for the reason that we have about one half of our state where dairying is practiced, and another half of the state where they work the thing on a little different basis, where there is little or no dairying at all and we are therefore able to compare the two parts of our state, and I say to you that in the parts of the state of Iowa, where I am familiar and I have no doubt it is true here, where dairying is practiced the number of well to do farmers is much greater than is the number of well to do farmers in any other portion of the state. It occurs me there must be some reason for this, and in looking for it, it seems to me that the real reason is that the dairy business is more profitable business than any other lines of agriculture. It has occurred to you, no doubt, that the dairy cow is the most economical consumer and producer of the products raised on the farm, the most economical producer of food products of her kind. A dairy cow will take feed and make twenty-five to thirty pounds of milk; a beef steer will take the same amount of feed and produce two or three pounds of beef, and I believe that compared in food value for consumption six or eight pounds of milk is equal to the two or three pounds of beef the steer has

made, that her product on the same amount of feed will sell for more money than the beef produced by the steer. The same thing is true in a less degree with other animals on the farm. I say the dairy section has well to do people in it for the reason that the cow is the most economical consumer and producer in the one case where the farmer has to sell and his animals are simply the market; and in the production end of it, the value of the product he produces for human food.

There is still another reason why there are well to do farmers in large numbers in dairy sections, and that is the dairy business tends to an equal distribution of wealth. The dairy business tends to a more equal distribution of the wealth of a community. I do not know how it is up here, but in our country we start out from some town like Manchester, near where my friend Shilling has a farm. The first farmer has a big house, red barn, wind mill, and that sort of thing; the next farm is just like that so far as evidences of prosperity are concerned, the next is almost the same. You might ride all day before you find one where paint is not on the house and they have a small barn. The wealth of that community has been evenly distributed. In other parts of our state, where perhaps they boast of their wealth, you ride along a while and find small buildings, there are few evidences of prosperity in that commnnity. The first thing you know you come to a fine big farm, with a great big house, large barn, and there is a fellow who has been a successful speculator on the things the forty or fifty farmers in his neighborhood produced the last twenty-five years. He is feeding cattle, perhaps, or something else. His neighbors have not been in the dairy business and by reason of his superior ability he has been able to amass for himself the accumulations of the rest of the farmers surrounding him for ten or fifteen miles. He is rich, the other fellow is not. In the dairy sections the money comes in in small amounts, comes in every week or two weeks or every month. The farmer that practices dairying has that money in small amounts and in such a way it cannot get away from him easily. Nobody can control the output, there are fewer elements of speculation in any view of the business; there are fewer possibilities of loss to the dairyman than there are to the man who produces beef, pork, or whatever the other farm products are, and for that reason the wealth that is produced, the value that comes from the soil, the value that is produced by the skill of the dairyman is more

evenly distributed in that community than elsewhere, and that is a mighty good thing for most of us who do not have this superior business ability to successfully manager speculation in feeding cattle or some other kind of stock. Dairy business tends to distribution of wealth, to general distribution of wealth in the community where it is practiced and as a matter of political economy it is a business which makes for the best interest for the greatest number, and hence for the best interests of the nation at large.

Then there is another reason why the dairy business tends to well to do farmers and general distribution of that which is produced, and that is in a very large sense the dairy products, whether they be butter or cheese, give a net profit to the man that produces them as compared to the fellow who runs his farm in exactly the same way but does not milk his cows or produce butter and cheese. Suppose you had a farm on one side of the road and I on the other; we did things exactly alike and with equal ability except that you milk your cows and I do not milk mine. It is an even thing on a quarter section farm that you will have $500 to $1,000 more than I have. You will have as many hogs, as many bushels of grain as I have and no more but you will have $500 to $1,000 more from the creamery than I will have.

The dairy profit is a net profit to a man. That is the reason why a dairy section is well to do; that is the reason why poor dairymen, where dairying is practiced even in a half-hearted sort of way, are better off than the people who do not practice dairying. You know we have heard there is a possibility of dairying being overdone. Nothing in present prices of butter indicates anything of the kind, but it was not so long ago that a lot of fellows in our country thought because butter was low in price and profits so meager it did not pay to keep up the business. If you will look over the prices of dairy products of all kinds for the last ten or twenty or more years you will discover that the price of butter and the price of cheese varies less than the prices of hogs or cattle or corn, or any product which the farmer has to sell in any shape. You look that up. I tell you that the price of dairy products is pretty nearly uniform as compared with other products. The farmer does not sell his butter on the first day of December or the first day of June; he has butter to sell the year through. The price at which he sells butter and cheese is the average price for the year, and the aver-

age price of dairy products is pretty nearly the same from one year to another, the average yearly price of those products is almost uniform; that is to say, the fellow that makes cheese or butter knows in an approximate way at least what he will get for his product when it is made and ready to sell, because he argues that he will get in the future that which he has received in the past and the history of the past shows that will be true.

There is another reason why the dairy business is not likely to be overdone, why the price of dairy products is not likely to be lower, and that is this,—the number of people to be fed increases much more rapidly than the number of people to feed them. The proportion of city people, who produce nothing in the way of food products of any kind, is continually increasing at an enormous rate; the number of people who live on farms and produce things to eat is constantly decreasing and adding materially to the city population. There is nothing in the situation anywhere that does not point to continued prosperity for the dairymen, that does not point to continued prosperity for the manufacturer of dairy products, that does not point to increased demand and at least present prices with possibly higher prices as the years go by in this product, which practically everybody in this country consumes three times a day.

It occurs to me to say that the dairy business is a mighty good business to stay in whether you are in the capacity of a producer of milk, a maker of cheese or a maker of butter. Just one thing that is wrong in the business, just one element that is against continued success in business, and that is a thing that has been touched on here already I suppose, a thing that has been touched on in every convention, and that is the poor quality of the stuff produced. Down in New York city a few weeks ago I went up on the butter board; there were a half dozen men there trying to find some good butter but nobody had any to sell No doubt the same situation obtains in regard to cheese. At that time there were at least forty men who had second and third grade butter to get rid of and nobody wanted to buy it. No doubt that is true in regard to the cheese business also, and it occurs to me that the man who proposes to continue in the cheesemaking or buttermaking profession is liable to sell his product at a good price, if he makes the quality and kind of goods the people are looking for. He will be able to get a remunerative price for high class goods but if he continues to do,

as too many do now, make a product which is low class and which is not in demand, it is not at all sure that he will be able to sell at a good price or that his business will continue to be profitable. But, assuming that you are here to make your business better and succeed in doing so, you and every other creameryman, cheesemaker and dairymen in general will assist in making products better than they are, the dairy business, in every phase of it from the standpoint of the producer or maker, is sure and certain to be the most successful business one can engage in in connection with agriculture.

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DISCUSSION.

The President: Mr. Wright has come a long way to be with us and has been in very close touch with the dairy business, and I would like to have you ask him some questions. We have a few minutes for discussion. We will have another short talk and then our business session. Does anyone want to put any questions to Mr. Wright?

Member. How many cheese factories have you in Iowa?

Mr. Wright: Fifty so called, about four or five worthy of the name; the others are only neighborhood affairs and the cheese finds a local market. The fact of the matter is we do not make any cheese in Iowa that is worth talking about. I stated that Iowa was sixth on the list. The fact is that two or three states make all the cheese of the country, and Wisconsin is at the head. We never made any cheese in our state for years worth while bragging about

I may say, while we are talking about our state, that we have a statute which is now six months in operation, requiring pasteurization of skim milk at the creamery. We have a good many creameries where the product comes in in the form of cream and hence is not pasteurized as there is no skim milk from it, and we have enormous quantities of buttermilk which goes back to the farmers and doubtless carry the germs of tuberculosis, and we are trying to find some way to teach us just how to fix that.

Mr. Zumkehr: I would like to ask if there is any foreign or Swiss cheese made there?

Mr. Wright: There are two factories that make foreign

cheese, one makes Swiss cheese, but they both simply supply a local demand.

Mr. Zumkehr: Are they having good success?

Mr. Wright: I am not expert in regard to the quality. I know the factory continues, only in a small way. It is an extremely small affair their product perhaps amounts to six or seven thousand dollars a year.

Mr. Luchsinger: If Mr. Wright has found it to be true in the state of Iowa, a state where the soil is so fertile, that the dairy business preserves the fertility and brings it back, it is much more true in the state of Wisconsin, which naturally has not so fertile a soil as the state of Iowa, that is in the greater portion is not so well adapted in general to farming as the state of Iowa. I can tell Mr. Wright that in our dairy section of Wisconsin, and I presume that is the case elsewhere, we naturally had a hilly soil a hilly country, liable with heavy rain to have the best soil washed down in the valleys; and had it not been for the cheese industry, to a great extent, square mile after square mile of that country would have been very nearly worthless on acount of the soil washing away with very heavy rains, and we have found out that since the introduction of the cheese business our soils have not only been kept in place but have been enriched year after year, until sixty years after the settlement of that portion of the country it produces better crops of corn and better crops of oats than it did when the soil was virgin soil. Had we not begun making cheese the country would be next to worthless. It has caused its people to accumulate a great deal of wealth, not only in a few instances, but as Mr. Wright says, generally, it has caused wealth to be distributed evenly. Almost every farmer that is engaged in the dairy business is prosperous and in time becomes wealthy; his buildings, surroundings and everything indicates prosperity; he banks, which is generally a sure indication of financial condition of the country. Forty years ago, before the time of cheese factories when little cheese was made, there were just two banks in Green county having an agregate capital of $75,000 deposits, with perhaps $150,000 to $200,000 capital. At the present time there are thirteen or fourteen banks in that one county. In the city of Monroe, alone, there are three banks whose aggregate capital is somewhere in the neighborhood of two million dollars. They have between them a million and a half dollars deposited in one city. The banks in the surrounding country,

in the villages, where they do not do as large a business, yet do a very prosperous business and indicate success and prosperity and financial success of the people who have engaged in the dairy business.

Previous to the time of engaging so extensively in the dairy business we were engaged in general farming. We tried to raise wheat, tried to raise corn, and the consequence was that our young men were forced to migrate, leave the state, and a great many of them have settled in Iowa, Minnesota, and the Dakotas and have become prosperous farmers there. At the present time no such conditions exist; very few young men migrate and if it costs $100 to $150 an acre for the land to settle them on, their fathers and relatives see that they remain in the dairy business. Land has advanced in some instances four to five times the value it was before we entered into the dairy business and what is true in a small extent in Iowa is true in a much larger extent in the state of Wisconsin.

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The President: I think it is time now to take up the next subject, The National Dairy Show and its Relation to the Cheesemakers of Wisconsin, by Mr. E. Sudendorf, of Clinton, Ill., secretary for many years of the National Buttermakers' Association.

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## THE NATIONAL DAIRY SHOW AND ITS RELATION TO THE WISCONSIN CHEESEMAKERS.

E. Sudendorf, Clinton, Ill.

Secretary, International Dairy Show Association.

Mr. President, Ladies and Gentlemen: Of course those that know me know that I cannot make a speech, neither can I tell a story, so I may not interest you very much and I certainly will not take more than a few minutes of your time.

The dairy show is very little understood among the cheese makers or the buttermakers, and a great many others think the dairy show would apply to anything but cows. That is wrong.

A successful dairy show must be composed of not cows alone but of all the products that are made and furnished by the cow, directly or indirectly, in order to be successful. You are all depending on the dairyman, the same as the dairyman is depending on you for success, and it is just as important for the cheesemaking industry to be thoroughly represented at such a show as it is for the man that breeds the cattle.

At the show in Chicago last year we had in the neighborhood of one hundred cows. They were all thoroughbred cows. Breeders came there at great expense, some brought their herds away from Canada. One man brought a herd of Ayrshires from the eastern part of New York, paying a big rate of freight both ways and the expense of two men to come there with the cattle, and we had a letter from him the other day saying he would not stay away from the next show if he had to pay double freight, because he got so much business from that show in selling fine cattle. It is the same with your cheese. You are selling cheese every day and shipping it to New York. It is coming back to Chicago and being sold for New York cheese. People do not know much about Wisconsin cheese. Go to a grocery store and you will find there a great big sign "New York Cheese." It is as important for you to come there and make a good exhibit and show people what you have as it is for anybody engaged in the business.

We passed through the gates in Chicago approximately fifty thousand city people, not counting people from outside the city at all. There were about fifty thousand city people at the first show that saw these cows, admired the cattle and the various exhibits that were there. The poorest exhibit of all was the cheese exhibit. That was due probably to the fact that there were no special efforts made in the early stages of the work, and of course no means was available at that time for premiums. Unfortunately when the cheese did come it was placed in an undesirable position, next to a chimney.

The National Dairy Show Association is now being organized into an international association; the officers are giving more thought to cheese as well as to butter, cows and milk. They will be prepared to give you the very best kind of space and they will also appropriate a liberal amount of money for cheese to be scored, as well as having a large exhibit of cheese.

I want to tell you that with this great organization, the greatest of the kind in the world, if you get together and put up a

good large exhibit, something that will attract attention, you will be well repaid for your efforts. If you will appoint a live committee to get up a good exhibit there, you can get back more than it costs you to make it. There is no doubt that a good exhibit, a large exhibit of cheese that takes the first prize (and there is no reason why Wisconsin should not take it) can be sold to some of those department stores for more than the market price, the same as we sell the butter for more than the market price. There is no doubt about that, and the premium you win, if you get the first prize, ought to pay your expenses; and even if it costs you some money it is just as important to go to a city like that to a big show and let the people there know what you make and get them to call for Wisconsin cheese, as it is for a milk man or butter man to do it. Those large butter companies that make butter in Chicago, make large exhibits and give away samples, spread butter on crackers and hand them out to visitors, and they get people to call for their brand of butter. You can go there and get the people to call for Wisconsin cheese just as well as for a certain brand of butter and certain brands of milk There will be other exhibits of cheese. I am satisfied New York will make an effort and I would like to see you people do the same.

I have nothing further to say except that our association extends to your association a cordial invitation not only to make a good exhibit but to assist us in getting up a good educational program there. We will furnish you a hall in which to meet and I am certain that no cheeseman will go home from that show dissatisfied. If there are questions I can answer, Mr. President, I will be pleased to do so.

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The President: I think you heard about the proposed show at Milwaukee?

Mr. Sudendorf: I do not think at the present time Milwaukee is prepared for such a show but they are talking of building a large auditorium and Mr. Watrous told me they would probably provide for a cattle exhibition. A dairy show is nothing without a cattle exhibition.

The President: Would you suggest that this association appoint a committee?

Mr. Sudendorf: That is merely a suggestion, to appoint a good working committee.

The President: If there are no objections, your president will appoint such a committee, which will consist of Mr. M. Michels, Mr. J. G. Moore, and Mr. U. S. Baer as a committee to look after making a cheese exhibit at the National Show, and I will appoint Mr. Baer chairman of that committee. Is there any other action you wish to take with reference to this National Dairy show? If not, we will proceed to the business part of our convention, the reading of the reports of the committees. Is the committee on resolutions ready to report?

Mr Michels: As chairman of that committee I wish to say that we are not quite ready to report but will be the first thing in the morning.

The President: We will proceed then with the election of officers. The election of officers will begin with the president's office. Nominations are in order for president.

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## ELECTION OF OFFICERS.

Mr. Glover: Mr. President and Cheese Makers: I know of no organization in any state that has been more successful than the Cheese Makers' Association of Wisconsin; I know of no asociation that has made greater growth in so short a time, has been any more energetic in development of the cheese industry than this association. It indicates to you and to me that this organization has been under the guidance of capable and energetic men. I think that all of us have a deep appreciation of the work and services that the officers have rendered to the cheese industry of Wisconsin, and it is with no little regret that I am informed that Mr. E. L. Aderhold will no longer accept the presidency of this association; but fortunately we have among us a man who has served as vice president of this association for several years, who is a capable and energetic cheesemaker, and I am sure will make a good executive of this association.

I have the pleasure, Mr. President, and gentlemen, to present to you the name of Mr. M. Michels and I wish to nominate him for president of this association.

Nomination seconded. There being no other nominations, a motion was made and seconded and unamiously adopted, declaring Mr. Michels elected by acclamation as president of the Wisconsin Cheese Makers' Association.

Mr. Michels being called upon said, "This is almost more than I can bear. I thank you, however, for the honor bestowed upon me and I promise I will do all I possibly can for the best interests of the association while in the office to which you have just elected me. I thank you.

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The President: The next office is that of vice president.

Mr. Moore: Mr. President, I move that we suspend the rules and have our election by acclamation.

Motion seconded and carried.

The President: Nominations for vice president are in order.

Mr. Zumkehr: I nominate Mr. Aderhold for vice president.

Mr. Aderhold: No, I will accept no office. Get in one of your Swiss people.

Member: I nominate Mr. Fred Marty, our treasurer.

Member: I place the name of Mr. Fred Carswell in nomination.

Mr. Schwingle: You have made a motion, which has been carried, that we elect our officers by acclamation. Now it is necessary to take a vote on these candidates by ballot.

Mr. Ward: I move that in case there is more than one nomination the election shall proceed by ballot.

Motion seconded and carried.

Mr. Schwingle and Mr. Larson were oppointed tellers and reported the vote as follows:

Total number of votes cast 83, of these Mr. Fred Marty received 43, Mr. Carswell 38 and two were blanks. Therefore, Mr. Marty having received the majority of the votes, was declared elected vice president of the association for the ensuing year.

Mr. Marty: Fellow members, I am sure that I am not

able to give you a speech but I thank you for the honor you have given me. It reminds me a good deal of the story of Pat and Mike where they were working on some high building. Mike fell down and when he struck the ground he turned over and seemed to be in misery. Pat looked down and said, "Mike, are you dead?" Mike said "No, but I'm spachless." I thank you.

The President: Next we will proceed for nominations for treasurer.

Mr. Fred Carswell's name was offered in nomination for treasurer, and nomination duly seconded.

Mr. Larson: There being no other nominations, I move that we suspend the rules and elect Mr. Carswell treasurer of this association by acclamation.

Motion seconded and carried, and Mr. Carswell was duly declared elected treasurer of the Wisconsin Cheese Makers' Association.

The President: The next office to fill is that of secretary.

Mr. Luchsinger: There is only one man that we know of to fill that office and that is Mr. Baer, therefore I place his name in nomination.

Nominations seconded by many, and on motion, duly seconded, the rules were ordered suspended and the vice president cast the vote of the convention for Mr. Baer as secretary, and he was declared elected to that office.

The President: Now we will have an election of directors. I am informed that we have to elect a director in place of Mr. Karlin.

Mr. Luchsinger: I move that Mr. Jake Karlen be elected as director in place of Mr. Fred Karlen.

Motion seconded and carried, and Mr. Jake Karlen was declared elected as a member of the board of directors of the Wisconsin Cheese Makers' Association.

The President: Tomorrow we will have some of our strongest men left over to speak. We have a man from Canada, we have Professor Farrington, and Professor Turneaure from Madison, we have a man here from the Pacific coast, from Seattle, the state traveling dairy inspector of the state of Washington, Professor C. A. Doane, Dairy Expert of the U. S. Department of Agriculture, besides some other lights that will make it as interesting as possible.

We will now stand adjourned until 9 o'clock tomorrow morning.

## FRIDAY MORNING SESSION.

Meeting called to order at 9 o'clock by President Aderhold and the convention was opened by singing by Messrs. Alder and Streuben, the "Swiss Warblers."

The President: The first topic on our program this morning is the subject "The Up To Date Cheesemaker," by Mr. Robert Johnston, of Ontario. Mr. Johnston is one of the foremost cheesemakers of Ontario and I am sure that what he has to say on this subject will be worth taking home by all of us. I have the pleasure of introducing Mr. Johnston.

## THE UP TO DATE CHEESEMAKER.

ROBERT JOHNSTON, Woodstock, Ontario, Canada.

With the A. F. MacLaren Imperial Cheese Company.

Mr. President and Gentlemen: The paper I have prepared on this subject is a very short one, because when I received your program I saw that the papers were all supposed to be short. It is one of vital importance, however, to each and every individual that is in the cheese business in this state. I see before me the faces of young men that will be and now are the cheese and butter makers of your state, and they carry a great responsibility on their shoulders to see that this important industry is carried forward and perfected each and every year. I think my paper per will perhaps give a few suggestions, which if they carry them out will be beneficial to them. The trouble we find with the boys in our country is that they often get good instructions but fail to carry them out afterwards. Our dairy school gives a thorough training to our boys and if they live up to that

training they get there, with the experience that they have in our cheese factories, they ought to make good operators.

The state of Wisconsin, occupying as she does the leading position as the producers of the largest quantity of the finest cheese of any state in the Union, it behooves her to see that the men that have charge of this important industry are men that will be satisfied with nothing short of perfection. I do not know of any other industry where there is so much depending on the skill of the manufacturer where we find so many unskilled workmen. A boy starts in to learn the business and works one or two years at the longest. He then engages to operate a factory posing as a skilled workman, and eight times out of ten he does not know the first principles of making cheese. But competition is keen and the factory owner is always looking for a cheap man and he gets him only to find out that he has engaged a dear man, by the time he has paid for the losses on his poorly manufactured cheese.

The men that should be in charge of your factories should be men of brains, education and industry. I will try to outline what I consider an up-to date cheesemaker. He should be a man of education, the better to enable him to solve the different problems which confront him in his daily work, as the cheesemaker who does not use his brains as well as his hands will never make a successful man.

He should understand the making of cheese from A to Z. He should have served at least three years' aprenticeship under a first class maker. He should have taken the dairy course in one of your first class dairy schools and practiced every day the principles taught at the school of thoroughness in all the details of his work. He should make himself an expert judge of milk and have backbone enough to refuse milk that will not make finest cheese. He should make a study of all the conditions that would in any way affect the milk supply in the district in which he is located.

He should be cleanly in his habits as well as in his person, be neat and tidy in appearance, of good address, courteous in manner; have plenty of tact, a judge of men. He should be conversant with all the different breeds of dairy cattle, and able to talk intelligently on all subjects pertaining to dairying. He should be able to act quickly; promptness often saves a batch of cheese from becoming culls. He should be a man of sterling integrity that will command the respect of

each of his patrons; should be able to judge cheese so that he will know if there is anything wrong with the output of his factory. He should keep a daily record of the working of every vat of milk, so that he can trace any flavors or defects in the milk and be able to detect their effect on the cheese. He should keep the surroundings of his factory neat and tidy, so that it will be one of the beauty spots of the locality, so that his patrons will feel that a man that makes fine cheese and keeps his factory and surroundings in such condition is the man to operate their factory. Also that he is a good man to advise and talk over matters pertaining to their business, and a man that fills the requirements laid down here will command his own price for manufacturing.

In conclusion would say that every manufacturer of cheese should endeavor to make a finer article of cheese than his neighbor, and at the same time if he is a better man to help his brother cheesemaker with his advice, so that he will be able to place a finer article on the market. For in my experience it is not the finest cheese that rules the market, but the poorer grades that the buyer secured at a reduced price and is able to sell in many cases at a better profit to himself. The cheesemaker that has not the ambition to stand at the head of his profession is not nor ever will be an up-to-date cheesemaker.

I might add I have had experience as a cheesemaker and a cheese buyer, and in your local trade, which you cater to here, only the better grades of cheese made get the market price and therefore it behooves the cheesemakers of this state to make nothing but a fine article so as to get the highest price. When you put a poor article on the market it goes into consumption and if a buyer can buy that cheese for one cent less he can get a half cent profit while with high priced goods he would not get over a quarter cent, so the inferior article is put on the market and takes the place of the finest cheese.

I will say also, in conclusion, I will be leaving today and I have spent a very enjoyable time with you, Mr. President, and I am glad to see such a large audience. I will go home to our boys and tell them what you are doing in this great state of Wisconsin and the great interest taken in the convention by the boys of the state. I can say truthfully that you boys take more interest in your convention than our boys do when it comes to the last day, for generally they do not wait

for that and at the last session we have a small audience, but up to that time we usually have a very full house.

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DISCUSSION.

The President: This question is open for discussion.

Mr. Kasper: I would like to ask you, Mr. Johnston, how much acid you run in the whey in your curd with the hot iron test–

Mr. Johnston: From one eighth to a quarter of an inch with the hot iron test, but it depends on the man that is drawing the curd from the iron a good deal on what he calls ⅛ or ¼. Some men take a bit of curd and spin it out ⅛ or ¼, and another man that same curd and spin it out ½, so there is no regular point to go by. A man wants to know he gets his curd out of the whey in time. When I first started to make cheese, a good many years ago, we used to get a good deal of acid, from one half to three quarters of an inch. Even up to late years the boys thought they could not get along without getting lots of acid in the curd. In one district where we used to get the poorest cheese made in Canada, when we put inspectors on the road they said he had all kinds of trouble and claimed he could not make cheese in that district without lots of acid in the whey. After three years they found they could, and now we get as fine cheese from that district as anywhere, but it is an exploded idea that you cannot make fine cheese unles you get lots of acid. I find if you cook the curd thoroughly (that is the main thing, cooking the curd you can get along with very little acid in the whey.

Mr. Zumkehr: I would like to ask what is the difference in wages between an up to date, first class cheesemaker and an ordinary one in Canada.

Mr. Johnston: The difference in our country is from nothing up to $1500.00. Our best cheesemakers get $1500 over there. Of course we operate large factories, where 40,000 lbs. of milk a day are taken in. Then I have seen our poorest cheesemakers come from a factory in the fall worse off than nothing. We have to be responsible for our goods over there, when a man takes a factory he is responsible for everything. We have no mercy on him either, both the cheese buyers and

inspectors put him out of business if he does not understand his business; but our average wages for our boys that know the business have increased a good deal. Our boys while learning get from $30 to $40 a month. Those are second hands and they are pretty hard to get; you offer good wages and they come to this country, and I do not blame them. You are getting some of our best makers here. One of our best makers, a young man, came over and got a fair salary. I asked him if he was sorry he had left and he said, "No, I am making more money here than I would at home." It is hard for a man over there to climb up; he has to have a national reputation to get into one of our large factories over there, but when they do get in they do not "kick" about the price.

Mr. Schwingel: I want to ask Mr. Johnston if he uses an acidmeter and what per cent of acidity he develops in the milk before setting?

Mr. Johnston: The acidmeter is used and they do in some cases run as high as .2 of 1% but in that case the fellow gets into trouble; but from .16 to .19% is the amount of acidity they use when they set their milk. It does not increase very much at the time of drawing the whey.

Prof. Farrington: Who makes the standard alkali solution?

Mr. Johnston: We do not allow anybody to make our alkali solution. One druggist in each district supplies that district with solution, and we all know it is right.

Prof. Farrington: I think one cheesemaker came over and told us any cheesemaker could make it.

Mr. Luchsinger: Is there any difference in the price of American and Canadian cheese in the English market, and if so, how much?

Mr. Johnston: There is. In quoting American cheese we have to quote it lower. I sent a consignment of 550 boxes there last year. I could not get a price on them and knew they were fancy cheese. They sold for 67 shillings while the finest Canadian cheese was not bringing over 68 shillings. I shipped 3500 boxes of cheese out of this state this year to the old country and they are very satisfactory. The trouble is when your prices went up your freight rates are so high I could not handle them. I shipped 500 boxes of Twins to Belfast and Dublin and they no sooner arrived than they sold at a handsome profit, but your freight rates are a quarter of a

cent a pound and one quarter of a cent is generally our profit.

Mr. Kasper: Do you use the same temperature for setting the milk throughout the year? We use the same temperature all the time for setting.

Mr. Johnston: No, I did not say we did. 86 is the regular temperature during the hot weather. In the fall it is 88 and 90 sometimes, depending on the makers' judgment. A man has to use a good deal of judgment in making cheese. He is working under different conditions every day. Each locality has its different conditions and you cannot put down any hard and fast rules for making cheese. A man that works by rule is out of business before long, but we never cook our curd over 102.

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The President: Are there any more questions on this subject. Prof. Turneaure is here and is anxious to get away on an early train, so we will put him on at this time. Prof. Turneaure of Madison, will address you on Sewage Disposal.

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## SEWAGE DISPOSAL.

PROFESSOR F. E. TURNEAURE Madison, Wis.

Dean of College of Mechanics and Engineering.

*Mr. President and Gentlemen of the Wisconsin Cheese Makers' Association.*

I am not very much of a cheesemaker but have had a little to do with the disposal of sewage as it relates to cities and towns and the problem is not so greatly different in the case of cheese factories and butter factories, so perhaps I can say a little that may be of assistance to you.

A good many have doubtless found that after a factory has been in operation some years the waste waters are apt to cause trouble unless the factory is located near a stream of considerable size and the waste can be thoroughly dissolved and run off with the waters in the spring. The subject of proper dis-

posal of those wastes is simply a question of how to allow decomposition to take place without causing nuisance; decomposition of the organic matter, the slight amount of fat, casin, etc., that run off in the waste water must go on in some way and the problem is to allow that decomposition to take place so that no nuisance will be caused, bad odors, and the like. Various ways in which decomposition can go on may be illustrated in this way. You know that if you should run this waste water over a large field of ground, especially if that field be sandy, distribute that thinly over that ground and allow the ground to become dry between periods of distribution, that water would be taken care of without causing any nuisance whatever. On the other hand, if that waste water he run into a pool or over a small piece of ground, and that ground be kept soaked with that so that after a while the water would not disappear, then you would have trouble. In both cases decomposition goes on, in one case without a nuisance, in the other case it causes a great nuisance.

The subject of sewage disposal has been, of course, a very important problem with cities for a good many years. About fifty years ago the only method which was at all feasible was to dispose of city sewage in much the same way that I spoke of a moment ago, by running over a large area of ground, a sandy soil being preferred. That is the method used by Berlin and Paris, to run their waste water over a large area and get rid of it without causing nuisance. In the last fifteen years a more economical method has been devised whereby sewage can be got rid of without causing nuisance, and that is by the use of what is called the septic tank. The septic tank is in substance a water tight box, somewhat longer than wide, and five to eight feet deep. Sewage runs in at one end and out at the other and the outlet is arranged near the top so the box is always full up to the level of the outlet. The box is made of such size that the sewage will remain in there for some hours. It takes several hours for it to go through. A city having a quantity of sewage equal to 100,000 gallons, we will say, per day may use a box or tank of about that size, and it will take on the average twenty-four hours for any great part of sewage to get through the box. Actually it will not go through uniformly, some will go through quicker and some slower. In passing through there the solid matters in the sewage settle largely to the bottom. Some of the matter rises to

the top and this makes a thick scum. The outlet is so arranged that that scum cannot float off; that is retained there as well as the material that settles to the bottom. Now it has been discovered accidently that when a box is arranged that way, so as to hold the matter that rises or settles for a considerable length of time, that matter is decomposed without causing any odors. We find the decomposition is different than that which takes place when the water is distributed over a large area of soil, but it goes on without causing any nuisance if the box is covered tightly. That decomposition is carried on by the aid of a certain class of bacteria, and the other decomposition is carried on by the aid of another class of bacteria, but that we are not concerned with as long as it goes on without giving trouble.

The water that passes out of that box goes off fairly clear, I am now thinking more of city sewage than factory waste. It is not very pure but is much purer than it was when it went in. Some cases it is pure enough so it does not require any further treatment, that depends on circumstances, illustrating that by the illustration of a creamery. Suppose you are located on a small brook, perhaps the brook is too small to take care of the waste water without some sort of preliminary treatment. If you run that waste water in a brook long enough, especially in the summer when the brook is inclined to dry up, you will have pools around the brook from which there will be a bad odor. If the waste water be run through one of these septic tanks it is possible that that tank alone, without any further treatment, will result in a sufficiently pure water so that can be run into a stream without causing any trouble. If you have no stream at all, it will probably not be a sufficiently pure waste so that you will get no odors without some further treatment. Now what is that further treatment?

After this waste water passes through the tank and is cleared up to this extent, the very best method to handle that as found by cities in a number of years' experience, is to run that through two or three feet of sand. So that applying it to a cheese factory, we would expect the water from this septic tank to be of such a character that it is preferable to run it through a foot or two of sand. That sand must be arranged in the form of a little sand filter bed. We call them filter beds and to operate them properly it is necessary to ridge up the earth so the water will not pass out of the sides, fill it up with

the sand to the depth of a foot or a foot and a half, and arrange the pipes leading from the septic tanks so the waste water will be distributed over this sand reasonably well. It ought to be run on the sand in four or five places. Then at the bottom of this sand ought to be laid some ordinary farm tile drains, so as to permit this water as it goes through the sand to cool readily and pass off through some drain tile. When such a plan is operated satisfactorily, the water which passes through that sand and out the drain will be very clear and will not cause any trouble. Cities have found that tanks of that sort when in good operation will repurify the sewage so not more than 2% of the organic matter originally present will be found in the water as it passes out from under the sand filter beds.

While experience that cities have had has been sufficient to give us pretty full information as to what the proportions of such plants should be, we have no information as yet, as much as we need it, in the case of the creamery and cheese factory waste water. That waste water is somewhat different in character from ordinary city sewage. At the University of Wisconsin the dairy department has built an experimental sewage disposal plant of that sort, a tank made to co-operate with some filter beds, through which waste water from the tank is run. Our experience so far has not been entirely satisfactory but we think we did not get the tank large enough for the waste water we have. A city finds tank holding about one day's flow is large enough. We probably will find that in the case of the cheese factory the tank needs to be larger than that, holding perhaps three or four or five days sewage. That is not a very large tank and does not involve any large expense, but it seems to me it needs to be larger than in the case of caring for city sewage. Creamery waste is rather difficult to contend with, owing to the fats it contains. This tank, then, should probably be of size sufficient to hold three or four days discharge of waste water. The amount of waste water can be closely estimated by knowing how much water you pump, and all that water probably eventually finds its way into your waste pipe. In a building of this kind it should be built of a length probably three or four times its breadth. It should be built in the ground so the pipes run into it from the factory, and it should be covered. There is a little odor from the tank but if it is covered we have never found a case where it gives any trouble in the case of city disposal. That tank may be built of wood,

or brick or concrete. At the far end of the tank the outlet should be arranged so as to take the water from under the surface or something put in to prevent the scum from running out. Then from the tank the waste water can be taken care of by running it on a small prepared area of sand, and this area of sand ought to be of such size as to let the amount of liquid running on it not to exceed,—in the case of city disposal we give a million gallons but of course in the case of a creamery it will be much smaller,—say about twenty-five gallons per square foot per day.

There are many details about the sand filter bed that are pretty difficult to explain in a talk of this sort, but the construction is very simple. It can be done by any ordinary builder or mason, or even without the help of a mason, and with the right proportions such a plant should give a result as I have indicated, practically clear liquid which will not cause a nuisance.

I will be glad to answer any questions on the subject as well as I can.

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DISCUSSION.

Mr. Luchsinger: Will not the filter beds in time, after doing considerable work, become saturated with this filth and in that case what is done to cleanse or renew them?

Prof. Turneaure: That is apt to happen if too small a tank is used. Experience of at least twenty-five years in some cities shows that where the tank is the proper size and is operated properly these sand filter beds do not become clogged. They should be operated in rotation properly, although not necessarily, so as to permit one part to dry out a little while the other part is operating. Using one bed one or two days, then another one or part of the same bed for two more days, allowing the first to dry out; but, as I say, if the tank is not large enough or operating satisfactorily the beds do become clogged. The clogging of the beds while it does stop the operation for the time being does not require construction of the whole thing again. A clogged bed needs to be dried out thoroughly and then the surface sand scraped off for the depth of

one inch. After drying out thoroughly a good deal of the material that clogs the bed becomes decomposed and will be purified, so that by scraping off one inch of sand the beds will be practically as good as new. There is the difficulty and it is a difficulty that has to be carefully watched in the operation of large plants.

The President: I would like to ask the Professor a question. With our creameries and cheese factories I do not believe the filter beds are going to be used to any considerable extent, but they would rather use the septic tank, simply the tank and nothing else. What size tank would you recommend for a creamery or cheese factory?

Prof. Turneaure: I can only give that in terms that I am familiar with. I would say that a tank at least three times the daily water consumption, perhaps sometimes four or five times the daily water consumption of the factory, should be put in. Whether they will get satisfactory results without a filter bed is of course something that can only be determined by experience. It is a perfectly safe proposition to try it without a filter bed, but it is not certain that it will give sufficently good results without some filter bed. That depends entirely on circumstances and is not a thing that can be laid down by hard and fast rule.

Mr. Marty: Is there not a possibility where the sub soil consists of clay that the filter beds will not work successfully?

Prof. Turneaure: If the filter beds are laid with under drains, and these drains lead out into some ditch or stream, it makes no difference what the sub soil is. My idea of the filfilter bed is something made of sand; whether the soil is naturally sandy or otherwise, sand should be used for the filter bed.

Mr. Corneiluson: Would it be desirable to divide the tank into several sections so the water would pass from one section to another before going out?

Prof. Turneaure: Probably some benefit might be had by dividing the tank in two sections, putting in a partition say one quarter of the distance from the first end of the tank and dividing the tank into two parts, one quarter and three quarters. I think no more than that would be desirable. In city disposal no divisions at all are usually put in. The tank is made one single tank, but I am inclined to think in this case one division would be desirable.

The President: Any more questions? This is a very important subject.

Mr. Marty: I would like to ask if there is any bad odor from the tank where the pipes are?

Prof. Turneaure: The tank gives off some odor. If the tank is working properly that odor is entirely different in character from the odor we get from a stagnant pile. It may be offensive to some people but it is not like the odor I mentioned and can be prevented by covering the tank. The tank should be covered. If you have a perfectly clear opening from there up to the factory you may get a little of that odor in the factory but that can be prevented by putting a trap in your waste pipe that leads into the factory, or by an arrangement in the tank itself where the drain pipe runs into the tank. If that pipe is turned down six inches it runs on the surface so that the liquid has to run down into the tank a little ways, then come up again, and that will prevent this gas from going back into the pipe. That can be entirely avoided.

Member: How far should the filter beds be away from the factory?

Prof. Turneaure: That is not material. Probably it is a little safer proposition to get it away a couple of hundred feet than to put it within twenty-five feet.

Mr. Marty: Is it not the case that the creameries and cheese factories are often so limited in space that it would not be possible to extend them more than ten or fifteen feet from the building? And, furthermore, would it not be up hill all around the buildings? A good many cheese factories are located in that way.

Prof. Turneaure: I think no trouble will ever come from the septic tank itself if it is quite close to the building and is well covered. The whole plant can be covered; it is not expensive even to cover the filter beds. All factories have to dispose of waste water in some way. If you can use only a tank, this tank can be built in the ground right in the line of that drain and requires no more fall than the drain itself, because as you will remember the tank remains full of sewage and the sewage runs out at one end at the same level it runs in at the other and so no more fall is required for the tank than for the drain. If you put in the filter beds, however, you may require some fall. You cannot put in a filter without having a fall of two or three feet at least, while four or five feet would be bet-

ter. If you need a filter and have those conditions the only way to improve is to elevate your waste water, but not so with the tank alone.

Mr. Dassow: Is there any trouble with frost, with freezing up?

Prof. Turneaure: If the tank is put down so the level of the water is two or three feet below the level of the ground and the tank is covered, with perhaps a little straw thrown on in the winter time, there will be no freezing. The filter beds in cities are usually operated without any covering at all. For such a climate as this it would probably be desirable to cover these filter beds in the winter time. A few boards with some straw thrown over them would keep them from freezing. However, as I say, your filter beds can be operated without any covering at all but they require closer attention than is desired in a case like this.

Mr. Dassow: Will the tank ever have to be cleaned out?

Prof. Turneaure: The material that remains in there is partially decomposed and consumed. It is not eaten up by bacteria but the bacteria act on it so that it is decomposed, the result being liquid material which passes off in liquid. Some gaseous material and some solid material remains but it is a comparatively small quantity and if the tank is large enough so the action is what it ought to be and while it is in good practice, the tank will need to be cleaned out once in two or three years. In some cities these tanks have been in operation four or five years without any clogging whatever. In case of smaller tanks they have to be cleaned once in six months but the cleaning is not an expensive operation, requires some sort of cheap pump to pump out the material in the bottom.

Mr. Zumkehr: I would like to ask if a factory could allow the sewage to run into streams of running water?

Prof. Turneaure: I suppose the factory would be in practically the same position as the city in that respect. No city is allowed to pollute a stream in this state, it can be enjoined from polluting a stream. At the same time many streams are so large in comparison with the amount of sewage run into them that there is no pollution of the streams, no one objects and the city goes on and uses the stream for its sewage disposal. In the case of a factory, probably a small stream would take care of the waste water causing no nuisance whatever or

any pollution. If a factory is running its waste water into a stream and some one objects, if he can prove that you are polluting that stream so as to do damage, you can be stopped from using it.

Mr. Marty: This is a very interesting point and is something that requires considerable attention. A great many times I find where people would be in position to put in a fairly good drainage with sufficient fall but coming in contact with running water, and some individual living near that factory objects to having that drainage reach the creek. I say it would be much wiser to have the drains from the cheese factory directly connected with running water and do less harm than it would where the water lodges along the top surface, becomes contaminated and stagnant and keeps pushing it into the creek day after day. I think it injures the water a good deal more than if the sewage was directly connected with the creek. I would like to ask the Professor's opinion on this.

Prof. Turneaure: It depends so much on the size of the stream that it is hard to answer that question. It should not require a very large stream to take care of the waste from a factory without causing any nuisance whatever. We estimate in the case of cities if a stream has an amount of water in it equalling about one hundred times the amount of sewage run into it that it is not likely to cause any nuisance. A brook with one hundred times as much water as the waste in your factory is not a very large stream and possibly it might take more than that of factory waste, but I think not. The material itself that is run into a stream is not dangerous in any sense, the waste from a creamery or a cheese factory as long as it is fresh.

The President: Any more questions on this subject? This is an important point. A great many factories have had trouble with their sewage and with odors around their places.

Member: How would it be when you have a case where the farmer lives by a stream and you have no other way of draining out and the tank fills up? It would be pretty hard to get rid of it.

Prof. Turneaure: Of course in locating new creameries and cheese factories the subject of disposal of the waste ought to be one of the things to be considered in selecting a location. If you have a creamery or cheese factory located so you have no ground on which to build a tank and no place to run the

water from the tank I don't see what you can do about it unless you relocate the factory or carry off your waste water in tanks. It has to go somewhere and the less damage it does the better. It will do less damage if run through a tank than it will if it is not. Where to put it after it goes through a tank is no more difficult a problem than where to put it when it does not go through a tank. It is a question of getting a right of way into some ditch or some stream.

Mr. Luchsinger: In running the drain through very poor soil are we not liable to contaminate the water supply of the factory?

Prof. Turneaure: That would depend entirely on local conditions. The chances are that you would. If you are getting your water from a shallow well or have neighbors close by that are getting water from a shallow well in the same gravel bed into which you run your waste it would not be a good thing to do; but if the waste water has to run over a long distance in the ground to reach your well either horizontally or vertically, if the soil is not to coarse, simply sand, the danger is exceedingly small.

The President: Are there any more questions? Let us get all we can out of this while the professor is with us, for it is an important subject and the septic tank is something that a good many factory men will have to consider so as to get a better method of sewage disposal than they have. Many factories are located where they can not get connection with a stream of any kind, and we ought to find out as much as we can about this matter. Are there any more questions? If not we will close the subject and call on Secretary Baer who has a letter to read.

Secy. Baer reads letter from the Citizens' Business League.

MILWAUKEE, JAN. 11, 1907.

*Secretary's Office*

Wisconsin Cheese Makers' Association, In Annual Convention.

GENTLEMEN:—The Citizens' Business League begs to congratulate you upon your splendid convention for this season of 1907 and also renews with much pleasure invitations of former years to you to again meet in Milwaukee for your next annual session.

We are confident that your experience in meeting in Milwaukee has been profitable to your association from all standpoints

and we assure you that you will always find the same hearty greeting awaiting you whenever you assemble in Milwaukee and we shall be glad to do all we can to make your stay here a very satisfactory one.

Wishing you continued prosperity, we remain,

Yours very truly,

CITIZENS' BUSINESS LEAGUE.

R. B. WATROUS,

*Secretary.*

The President: Some years ago a young man grew up in the state of Iowa and lived there for sometime, and was a very good church member. He always attended church regularly but he never could remember anything about the sermon or the text. One Sunday morning his mother would not allow him to go to church unless he promised faithfully to remember the text word for word and repeat it to her. He did promise and when he came back she said, "What was the text"? He said, "You need not be afraid, you will get your bedclothes all right." He meant "Be not afraid, your comforter will come." That young man grew up later to be the president of the Iowa Dairyman's Association, was the president for five years. I suppose it was because he was such a good church member all the time that he was elected. He is now president of the National Dairy Union and associate editor of Chicago Dairy Produce. We have him here and I am going to call on Mr. S. B. Shilling to talk to the boys for a few minutes.

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## ADDRESS.

S. B. SHILLING, Chicago.

President National Dairy Union.

Mr. Chairman and Cheesemakers: I never was so tempted to go back on a man in my life as I am on your president. I have been sitting here with no cold chills running down my back for I believed that I was not going to be called on to say anything. Your president spoke to

me a while ago about it and I told him if he ran out of material and wanted to call on me I might say something, but knowing the character of your meeting and the interest that has been taken in it I thought I was perfectly safe.

I want to congratulate you upon the success of your meeting. I want to say to you that I never in my life attended a meeting where the interest and enthusiasm of its members meant so much to a state as does your interest and enthusiasm mean to Wisconsin and the cheese industry. I tell you it bodes good for the state and it is no wonder you have made progress, it is no wonder today that the Wisconsin cheesemakers have a national reputation, it is simply the energy, intelligence and persistence that you boys are throwing into it that is doing it, and I want to urge you to keep right on in this.

While I was sitting here a few minutes ago listening to the address of the cheesemaker from Ontario, I could not help but think that the whole discussion was one of the best things I ever heard in my life. It applies to buttermakers the same as it does to cheesemakers. It covers the ground completely and if you will take home just the ideas that he conveyed to you and apply them you are bound to go farther than you have in the past in making the reputation of the state of Wisconsin. I am glad to have an opportunity for a few minutes to stand before you and congratulate you on this and urge you to greater exertions of possible in your line of work.

Now just one word in regard to the National Dairy Union and I am through. I believe it is not necessary for me to tell you what the organization has done, what it is doing today. While you are not directly interested in the work of the organization you are indirectly interested for the reason that every pound of milk that is manufactured into cheese does not go into the manufacture of butter and consequently it takes that much away from the competition in that trade. You know that we have a law, you know what that law has done. The work of the organization this winter has been in enforcing the law. After we had secured the law we were obliged to follow it through the courts and prove that it was a good law and is filling the purpose for which it was passed.

As I said before, while you are not directly interested we want your moral support and I want to say that we have had some financial support from you, for which we thank you. During last week we received two letters from Washington,

I am not here to tell you what they mean, I do not know what they mean. One was from Senator Proctor and came unsolicited, it says, "the indications are that we may be compelled to answer a whole lot of questions before the present session of congress adjourns, and we want to be posted." This only came last week and I don't know what it means. Senator McCleary, of Minnnesota, wrote and said, "Do not allow the dairymen of the country to go asleep because we may need them yet. This may be brought about by the present high prices of butter." You know today we are receiving the highest prices we have had for years, probably averaging from five to eight cents higher than a year ago. It has stimulated the manufacture of oleomargarine and given the manufacturers this cue that they are using to create public sentiment against the laws, but we have no definite knowledge as to whether they are going to ask for a repeal or modification of the law. However we are fully prepared to cope with them providing such a thing comes up. I thank you.

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The President: The chairman of the resolution committee is ready to report.

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## REPORT OF COMMITTEE ON RESOLUTIONS.

MATTHEW MICHELS, Chairman.

*Whereas* the fifteenth annual convention of the Wisconsin Cheese Makers' Association has been eminently successful in attaining the business, purpose and objects of its organization and that we believe that the efforts of our officers and the various gentlemen who have contributed of their time and experience to our store of knowledge has contributed to this end.

*Therefore, be it resolved,* that our thanks are due and hereby tendered to them.

*Whereas,* this association has been holding its meetings in Milwaukee for a number of years with great profit to the members individually and to the association as such, and

*Whereas,* at each recurring meeting our reception has, if possible, been growing more cordial,

*Therefore, be it resolved,* that our thanks are due the Citizens' Business League and its secretary, Mr. R. B. Watrous, and to all the other interests of the city which have united in making our stay so pleasant.

*Resolved,* that our thanks are due Mr. U. S. Baer, F. E. Carswell, E. L. Aderhold, J. B. McCready and J. W. Moore for their services as judges during the nine months' educational scoring contests and especially to Mr. Baer for the criticism on the exhibits as revealed by the entry blanks and the numerical and descriptive scores.

*Whereas,* the dairy and food commission has, under the able direction of Hon. J. Q. Emery, grown greatly under his administration, not only in numbers, but in the quality of the service rendered the cheese industry.

*And whereas,* the number of cheese factories in Wisconsin is the greatest of any state and constantly growing.

*Therefore, be it resolved,* that this association tender its thanks to the Commissioner, Mr. Emery;

*And be it further resolved,* that it is the sense if this association that the commission should be still further strengthened by the addition to the force of inspectors, a sufficient number more to properly take care of the growing demands which are constantly being made upon it.

*Whereas,* largely through the assistance given by Hon. J. Q. Emery, our dairy and food commission and the Agricultural college, it was possible to carry on a monthly scoring contest the past nine months, and

*Whereas,* the results of the scoring contest have been highly satisfactory, not only in an educational way but through creating a spirit of friendly rivalry among the makers, that it is hereby

*Resolved,* that the Wisconsin Cheese Makers' Association do hereby most earnestly desire that the monthly scorings be continued, and

*Be it further resolved,* that we have heard with great satisfaction, that the Agricultural College, in co-operation with the Dairy and Food Commission, has signified its intention of carrying the educational scoring contests on in the future on a larger scale than has heretofore been possible.

*Therefore, be it resolved,* that the Legislature is hereby respectfully petitioned to give such financial aid to the Agricul-

tural College as is necessary to the carrwing out of this important project.

*Resolved*, that the thanks of this association are due to the Dairy and Food Commissioner, Hon. J. Q. Emery, for his counsel and advice in everything that pertains to the advancement of our industry; and for allowing Messrs. U. S. Baer and J. G. Moore of his department to do so much work in connection with the educational scoring contest.

*Whereas*, the educational scoring contest that has been pulled off this last season has been of great value to the cheese makers of the state, and

*Whereas*, the holding of the contest would have been practically impossible had it not been for the aid rendered so generously by Dean W. A. Henry of the Agricultural College of the University of Wisconsin in allowing the use of the cold storage facilities of the dairy school and the services of Prof. E. H. Farrington. Mr. G. H. Benkendorf, who has acted as treasurer, and G. Marty, who has worked so faithfully in taking care of the exhibits as they arrived and in keeping the books of the entries.

*Therefore, be it resolved*. that the thanks of the association are due and are hereby tendered to Dean W. A. Henry and his associates for the aid rendered.

*Resolved*, that we appreciate the continuous efforts of Secretary J. G. Moore, of the cheese and butter scoring contest and hereby tender our thanks for his valuable service in promoting the same.

*Whereas*, the Wisconsin educational scoring contest which has just closed has been in every way a benefit to the cheese industry and recognizing the fact that through the liberality of certain friends of the industry, interest has been kept up to a greater degree than would otherwise have been the case,

*Therefore, be it resolved*, that the generous attitude of our friend, Hon. S. A. Cook, of Neenah, Wis., in presenting to the winners in the educational contest the handsome leather covered chairs, has shown a spirit of friendly interest in us that is especially gratifying and we hereby tender him our heartfelt thanks.

*Whereas*, that as our officers, the past year, have shown a commendable interest in the affairs of the association,

*Be it hereby resolved*, that our thanks are due them for their untiring efforts to promote the cheese industry of the state.

*Resolved*, that this association hereby tenders its thanks to the J. B. Ford Company of Wyandotte, Mich., for the handsome presents tendered the participants of the scoring contest.

*Resolved*, that we thank the F. A. Averbeck & Co. of Madison, Wis., for the beautiful watch charm donated the association.

*Whereas*, we believe that in order that the dairy industry of the state should be fostered and encouraged by every possible means,

*And, whereas*, a movement is being agitated for the holding of a state dairy show in Milwaukee in 1907-08,

*Therefore, be it resolved*, that this movement appeals to us as a decided step in advance,

*Therefore, be it resolved*, that this said movement has the hearty endorsement of this, the Wisconsin Cheese Makers' Association.

*Whereas*, this is the age in which it is absolutely necessary to the success of any movement that it should be given the utmost publicity.

*And whereas*, the papers of the city of Milwaukee and the state at large have done all in their power to give this meeting publicity,

*Therefore, be it resolved*, that our thanks are due these papers and are hereby tendered with a deep sense of our obligation,

*Whereas*, the prizes which are offered by this association are intend to encourage the makers to use their utmost endeavors,

*And, whereas*, a number of buyers have cheese entered for which medals have been awarded and said buyers have had the prizes awarded to them.

*Therefore, be it resolved*, that it is the sense of this association that the prizes should only be awarded the bona fide makkers and the names of such makers be furnished with each entry.

*Whereas*, an exposition will be held in Seattle, Washington, in the year 1909, and

*Whereas*, we are reliably informed that a large and growing demand for dairy products, of which Wisconsin is the leading producer, exists,

*Therefore, be it resolved*, that it is the sense of the Wisconsin Cheese Makers' association that Wisconsin should be sui-

tably represented at that exposition, and that the Legislature should appropriate a sufficient sum for an appropriate building to exhibit and represent in a fitting way the resources of our great state.

*Whereas,* the Wisconsin Buttermakers' association has, since its organization six years ago, adopted the plan of having the buttermakers 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 fund 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.

*Resolved,* that this association desires to place itself on record as being opposed to the system of free seed distribution as now conducted by the federal government. We believe in the work of exploiting foreign countries for such seeds and plants as can profitably be introduced into this country; the same to be distributed through the agricultural colleges and experiment stations by the department of agriculture, and be it further

*Resolved,* that as $242,000 annually appropriated by Congress for free seeds and the $250,00 which it costs the government to distribute them through the postoffice department would be more than would be necessary for the above named work. The balance should be apportioned among the agricultural schools and experiment stations.

*Resolved,* that the members of this association note with satisfaction the increased attention given to dairying by the national department of agriculture. Furthermore, we believe that the great dairy interests of the nation are of sufficient importance to be represented by a bureau of the agricultural department; therefore we respectfully urge Congress to raise the rank of the dairy division to that of a bureau.

*Whereas,* many managers of cheese factories and cheesemakers have made a practice of accepting unclean, tainted and inferior milk, and

*Whereas,* said contemptible practice is extremely demoraliz-

ing to both the milk patrons and factory operators and harmful to the cheese industry in general, and

*Whereas*, the character of the milk that is offered at a factory on any day is a true indiction of the character of the milk that has been commonly accepted.

*Therefore, be it resolved*, that we petition the management of our dairy school at Madison to grant no certificate of graduation to cheesemakers or buttermakers unless the raw material offered at their respective factories is comparatvely clean and superior in quality,

*Be it further resolved*, that the secretary of this association is hereby instructed to forward a copy of this resolution to the management of said dairy school.

*Whereas*, God in His all wise providence has seen fit to remove from among us a man who had labored long and accomplished much for the dairy industry of the state and nation,

*Therefore, be it resolved*, that in the death of Hon. H. C. Adams of Madison, Wisconsin, the world at large has lost an eminently useful man, his family a kind and indulgent husband and father, and dairying one of its leading promoters.

*Therefore, be it further resolved*, that we extend to his bereaved widow and family our sincere sympathy and direct that a copy of these resolutions be spread on the records and also sent to the widow.

*Whereas*, an educational cheese and butter scoring contest for Wisconsin has been carried on during the past year with conspicuous success to the great advantage of the cheese and butter making industry of this state, bringing the attention of the country at large, through the extensive publication of the reports, to the high quality of Wisconsin cheese and butter; and

*Whereas*, it is learned that hereafter the Wisconsin Agricultural college, with the co-oporation of the state dairy and food commission, purposes to continue the holding of an educational cheese and butter scoring contest: and

*Whereas*, in the prosecution of this undertaking, a competent man is required to devote his whole time to the same, and

*Whereas*, Mr. Mat. Michels, who is a graduate of the Wisconsin Dary school, has had personal experience as a creamery buttermaker and as a cheesemaker; has owned and operated creameries and cheese factories in this state and is familiar with the selling of the products of the same; has been

associated with the Wisconsin Cheese Makers' association and with the Wisconsin Buttermakers' association as a charter member; has been treasurer and is now president of the Creamery Buttermakers' association; has been treasurer and is now vice president of the Cheese Makers' association; has acted as superintendent of the butter exhibit for the Creamery Buttermakers' association most of the time since its organization; has acted as superintendent of the butter exhibit at the state fair for several years, and has been associated with the judging of cheese and butter at state fairs: has during the past year been one of the judges of butter in the Wisconsin educational scoring contest; is in close and sympathetic touch with the cheesemakers and buttermakers of the state; is pre-eminently fitted by age, experience, energy, natural aptitude and by the foregoing unprecedented qualifications for the above position, therefore;

*Resolved,* that this association most cordially endorses Mr. Mat Michaels as the man to have direct management in the future of the Wisconsin cheese and butter educational scoring contest.

*Resolved,* that we highly appreciate the many beautiful Swiss songs sung by Messrs. Louis Alder, Albert Strueben, and Mrs. Kaempfer which has done so much to make this one of the most attractive and interesting conventions we have ever held, and to each of the singers named we extend our sincere thanks.

*Resolved,* that the attendance at this meeting of the large number of students of our State Dairy School has done its full part in imparting life and spirit into the deliberations of our sessions. They promise to be the progressive and successful cheese and butter makers of the tomorrow of our industry. Their notes of approval and encouragement from their live interest in all that was accomplished merit our best thanks for their generous good will.

*Resolved,* that we, the milk producers of Wisconsin, concede the fact that the power behind the cheese industry of the State of Wisconsin is our young men of today.

*Whereas,* commercial rennet extract as now made contains boracic acid and it is believed to be imposible to manufacture such rennet extract without the use of boracic acid or some similar preservative,

*Be it resolved,* that the Secretary of Agriculture be requested to make no regulations prohibiting the use of boracic acid in

rennet, until the manufacturers of rennet extracts can have the time to make further experiments in the manufacture of said commercial rennet extracts.

*And be it further resolved*, that the Wisconsin Cheese Makers' Association request Secretary of Agriculture, Hon. James Wilson, to make a ruling that commercial rennet extracts as are now being made will not be deemed as conflictng with the requirements of the National Pure Food Laws, and the Secretary of this Association is requested to forward our action to Secretary James Wilson.

Respectfully submitted,
MATTHEW MICHELS, Chairman,
Madison, Wisconsin.
ALEX SCHALLER,
Mt. Horeb, Wisconsin.
FRANK SCHWINGEL,
Avoca, Wisconsin.
*Committee.*

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On motion duly seconded, the resolutions were adopted as read.

Mr. Luchsinger: The resolutions are very comprehensive and include a great many good things, but it occurred to me while they were being read that there are a number of our young dairy students who are going to be dairymen of the state in the near future, that is as cheesemakers and buttermakers. They have by their presence, vim and spirit contributed a great deal towards making this meeting an excellent one. Here are some singers who have done very much towards making the meeting a very interesting and inspiring one, and I think the announcement they were given to be here is largely the reason why so many of our Swiss and German friends are present at this convention, and, therefore, I would add as an amendment to the resolutions that this convention appreciates the efforts of the students of the dairy school and the singers who have been present and entertained us.

Amendment seconded and carried.

Mr. Hendy: I represent the milk producers and I want to offer an additional resolution. I believe that the milk producers here or within the state appreciate the work of this convention and especially that on the part of our young men and would fall in line for this resolution.

Let it be resolved, that we concede the fact that the power back of the cheese industry in our state is the young men of the state.

Resolution seconded and carried.

Mr. Moore: There is one resolution which it seems to me would be wise for the convention to discuss, and that is the one relating to the formation of a fund by the donation of an exhibit for a larger premium fund. It is true that the Wisconsin Buttermakers' Association when it first met had a very small premium fund, and the buttermakers who sent butter to that first convention donated their tub of butter. I think there were 110 of them. A tub of butter will cost a buttermaker somewhere between four and six dollars. Of course there may be an objection in the minds of some on account of the size of cheese. A Swiss cheesemaker, for instance, with his 200 pounds of cheese would hardly be expected to donate the value of that cheese as compared with the fellow who has Long Horns; but a certain number of pounds could be sent and the Swiss cheese or large cheese sold and the price for a certain number of pounds donated. After the first year it will not be so bad as it looks. This year the Wisconsin Buttermakers' Association will have over $1100 in its premium fund, $539 of that being money they contributed themselves last year from the sale of their butter. The entire amount was over $800 but expenses attending the judging, exhibit and express charges, membership fees, etc., cut it down to about $539. I can see nothing that will so add to the interest and bring out a larger number of exhibits than this one particular thing on making a larger premium fund.

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The President: We will now have a song by Messrs. Streuben and Alder.

Song and encore by those gentlemen.

The President: We will now call on Mr. L. W. Hanson of Seattle, Washington, State Traveling Dairy Inspector, who is to speak on Pacific Coast Cheesemaking.

## PACIFIC COAST CHEESEMAKING.

L. W. HANSON, Seattle, Washington.

Deputy State Dairy and Food Commissioner.

Mr. President, Members of the Convention, Ladies and Gentlemen The subject which has been assigned to me by your worthy Secretary, Mr. Baer, is "Cheesemaking on the Pacific Coast."

This subject would no doubt be an interesting one were it not for the fact that but a very limited quantity of cheese is manufactured on the Pacific coast, and under the existing conditions the manufacture of cheese is decreasing. The reason for this can be attributed to several causes. First, the hand separator; second, the condensed milk plants, and third, the supply of fresh milk needed for the cities and towns.

The hand separator is now to be found on most farms. Where the milk was formerly brought to a creamery or cheese factory, the farmers realize that they get more profit from cream as they did from their milk when they used to haul it to the factory.

Next the condensed milk plants are taking as much milk as they may obtain. These condensers are located in some of the best dairy sections of the coast and vicinity.

Third the increasing population in the cities and towns takes more milk from year to year to supply the demand. These two last conditions are more noticeable on the Pacific Slope than in the eastern portion of the country.

In speaking of the Pacific Coast we must include Oregon and California. The climatic conditions in Oregon are identical with Washington, but as one goes farther south say, into California, the climate is hotter and dryer.

The Pacific Coast has ideal conditions for the production of milk and the manufacture of cheese. The climate is such as few states can boast of. The rigor of the eastern winters and the intense heat of the summers are unknown. During the summer months the nights are always cool. A cool breeze from the ocean always comes up in the afternoon, and the air is generally a trifle moist.

Very little trouble is caused from strong flavored weeds and grasses, and this will improve as the farms are put in a better state of cultivation.

The dairy industry of the Pacific Coast is as yet practically in its infancy. As far as climate is concerned no section of the North Ameircan Continent is more eminently adapted to dairying than is the Pacific Coast. In no part of the agricultural sections of the coast are the winters as severe as in Wisconsin, Minnesota, Iowa, New York, and several other states where dairying has for years been the leading feature of agriculture. On the other hand, on no part of the Pacific Coast are the summer seasons so hot as to interfere with the easy control of the milk temperature, for even in the hottest of the low river valleys, abundance of the coldest water from streams flowing down the nearby mountains furnish means of controlling the temperature needed to handle milk, cream and dairy products.

In speaking of the Pacific Coast I cannot speak in more than a general way, as I am not familiar or conversant with the conditions throughout the entire coast country.

There is a prevailing opinion that every one speaks for their own particular section, therefore, I will confine my paper to Washington and its possibilities as a dairy state. That Washington has a great future before it in dairying, I shall try to point out. As I stated before regarding the Pacific Coast I shall also state regarding Washington. This state is as yet practically in its infancy in dairying. Dairying first became recognized in 1894, when the industry had grown to such proportion as to suggest the organization of a state dairymen's association, which was effected in Tacoma that same year. As a result of the first year's work a good dairy law was drafted and placed on the statute book, and an officer appointed to enforce that law. The subsequent development of the industry has been largely influenced by the efficient manner in which that law has been enforced. It has driven filled cheese from the market. It requires all cheese to be sold for what they contain—skimmed or full cream—by having them properly branded. It has made it nearly impossible for olemargerine to masquerade as the fraud it has always insisted in being. It has improved the average quality of the milk sold in the cities and towns throughout the state. By these means it has greatly encouraged the industry.

The state naturally may be divided into a number of sections differing from each other in rainfall, temperature and agricultural products. Divided by its great natural barrier the Cascade Mountains, into western and eastern Washington, we find them arranged (as described by Professor W. J. Spellman) as follows:

"The west side of the state or that region lying immediately west of the Cascade Mountains, for the most part a heavily timbered section, and characterized by a rainfall of from thirty to one hundred inches depending largely upon the direction and distance from the mountain ranges.

As on all parts of the Pacific slope the larger part of the rainfall is confined to the winter months. The summer being comparatively free from rain.

This section will produce wonderful crops of oats, roots and forage of various sorts, also being well adapted to fruit raising. On account of the mild winters and the abundant growth of pasture and meadow and being close to the good market centers of the coast, it makes this a very good dairy region of the state. The area in cultivation as yet is comparatively small, on account of the vast forests which cover much of the agricultural lands, but when these forests have been cleared away, as is rapidly being done by the lumbermen a great change will take place.

The upland prairies of eastern Washington constitutes another district and very important section of the state. The famous Palous and Big Bend countries are included in this section and constitute the great grain growing section.

The present system of farming consists in main of alternate summer fallow and wheat. Summer fallowing gives the farmer a crop only every other year from the same land, but on account of the ground being very retentive of moisture very little plant food is lost by leaching during the winter months. Wheat crops sown in the fall on such lands give far better results than if a crop was taken every year.

When the price of grain is high the farmers of the section under consideration pay very little attention to anything but wheat raising. But when the price of grain is low they begin to turn their attention to other things especially dairying. There are several factories scattered over this section and there will undoubtedly be many more in time to come; for continued cropping with wheat will tend to rob the soil of its fer-

tility. When the farmers realize this, they will turn more to dairying. It will develop into an excellent dairy region. Forage crops of all sorts do well and there is a growing market for dairy products in the eastern section, it being close to the great mining centers of Washington and Idaho.

A third section consists of the low sandy lands of the river bottoms of eastern Washington, such as are found in the Walla Walla, Ellensburg, Yakima and Winatchie valleys. These lands are all in the dryer parts of the state; at least the last two mentioned, and their low altitudes give them warmer summers than are found elsewhere in the state. Where the lands can be irrigated, they form some of the best agricultural lands of the state, being eminently adapted to the growth of alfalfa. This crop is grown on all farms, in fact the farmers will not raise any other crop for forage. Fruit is another of the great crops of these valleys. A number of successful creameries are established in the Walla Walla, Ellensberg and Yakima valleys and there is one in operation at Winatchie."

With an abundance of alfalfa, corn, and with bran easily obtainable at reasonable prices, there is every reason to expect a large increase in dairy farming in the irrigated low lands as time goes on.

The School of Dairying which is located at the State Agricultural College was established about the same time as the Dairymen's Association was organized, and its students are now to be found in many of the factories in the state and in adjoining states.

The school has no doubt been the means of developing the dairy industry to a great extent, and there is no question but that it has been the means of increasing both the quality and quantity of the dairy products manufacture and produced.

A few remarks in regard to the cheese industry of the state. The amount of cheese manufactured is very small, it is hardly worth while mentioning. Washington at one time produced quite a large amount of cheese for so young a state in the dairy industry, but in the past four or five years the manufacture of cheese has greatly decreased, and by all indications it will continue to decrease. On the other hand there is a large increase in the manufacture of butter. The hand separator is the prime cause, for this decrease in the manufacture of cheese and increase in the production of butter. In the mean time we must look to our supply of cheese from those states which produce a great quantity.

It may be of interest to some to know that the Wisconsin cheese has the leading place on the coast markets. The name "Wisconsin" stands as a guarantee of what is a good cheese. To illustrate this, if you were to go into a wholesale or retail cheese store and ask for some good cheese, the dealer would say, if he had it, "I have the Wisconsin," and if you did not know what that word signified, he would at once convince you that Wisconsin was the place where good cheese came from.

The people throughout the west are getting to be cheese eaters, and like a mild, rich, well-made cheese.

The Alaska and the Orient trade are taking a great quantity of cheese and this must be supplied by states where they can manufacture good cheese. And in closing we may perhaps sum up the situation as follows:

Washington and the Pacific Coast, will continue, however, to develop as a dairy section, but not to any great extent as a cheese producing section. The time may, however, come when the sections under consideration becomes more thickly populated that the manufacture of cheese will be taken up on a more extensive basis, and as time goes on our farmers will become educated to the material prosperity of developing an industry which has made many states less favorably situated than ours richer than the bible land which flowed with milk and honey. I thank you.

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DISCUSSION.

The President: We have just a few minutes time for discusion of this subject.

Mr. Marty: I would like to ask Mr. Hanson what is paid for Wisconsin cheese as a rule?

Mr. Hanson: I do not really know the market price at the present time. I think about 17 cents. I have always bought my cheese and have had to pay 20 cents retail, but I think 17 cents is about the wholesale price.

Mr. Marty: What is paid by the condensaries in Washington, and what are some of the leading condensaries?

Mr. Henson: The price per hundred pounds of milk varies but they always aim to keep a few cents ahead of the market price of cheese and butter. They buy milk by the hundred pounds on the 4 per cent. butter fat basis.

Mr. Marty: Do they really pay what it is worth to them or just enough to get it?

Mr Hanson: The condensed milk industry on the Pacific Coast is largely controlled by the Pacific Coast Company. There is a plant being built now at a small place called Chehallis, and it has made arrangements with the railroad companies to attach cars to morning trains and deliver the milk as the trains come along.

Mr. Careswell: Do the condensaries pay as well as cheese factories?

Mr. Hanson: Yes they pay a higher price; they have always been a cent or so higher.

Mr. Marty: While we have only a few condensing milk factories in Wisconsin, still we have some in Green County which have come right into the heart of the cheese industry. It has not only broken up a few cheese factories but is putting out of business cheese factories within a distance of ten miles of the city of Monroe. Taking from what Mr. Hanson said, cheese selling at 17 to 19 cents per pound in Washington, the condensing people send out teams to haul the milk for the patrons they can compete at such rates, but what will it come to in Wisconsin where milk and cheese are not sold at that price? I think we will have a hard competitor in the state of Wisconsin.

Member: Is it not a fact that the Oregon cheese will sell at from one half to one cent above Wisconsin cheese? That has been my experience.

Mr. Hanson: You say it sells above Wisconsin cheese? I do not know that it is that way now. I do not think that statement would hold good under present conditions. I know in the past Tillamook cheese had a very high place but I think you will find conditions a little changed now. I was talking with a man from that section sometime ago and he said the condensaries there are working along the same line and putting a good many cheese factories out of business.

Member: I might say that the Tillamook concern is managed by Wisconsin boys who are graduates of our dairy school, so it is Wisconsin cheese after all.

The President: Is there anything more on this subject? If not we will take up the next subject.

The New National Food Law and Its Relation to the Dairy and Cheese Industry, by Professor C. A. Doane, of the Dairy Division, Washington, D. C.

## ADDRESS.

PROFESSOR C. A. DOANE, Washington, D. C.

Dairy Expert Dairy Division, Agricultural Department.

Mr. President and Members of the Association: There has been a good deal heard about this national pure food law recently. It seems to have created considerable consternation on the part of a good many cheesemen in the country, both the makers of European varieties and also the makers of our own American, or so-called Cheddar cheese. They do not seem to be able to tell exactly where the ax will fall when it does fall. The law has not got into working order exactly. A good many people who have the handling of it have been interested in the whiskey proposition and have not got around to the real food but they are going to get to that before long. It is up to the men who are interested in the subject to find out exactly how it is going to effect them.

There are many things in the laws which I know seem to be peculiar, and some things in it that I have not myself believed in exactly, yet it is going to make better food products in the country and I think its application is going to be made as just in every way as the business interests of the country, with due regard for the consumers' demand.

Now in starting out on the discussion of this I do not want you to consider that anything I shall say is official. No one can give an official opinion or can pass upon a label or any one point in the thing so that it is binding in any way. If I should say that a label you put on a cheese is all right, the Court might decide otherwise; and the same is true with the man who has been most active in this work, who has charge of it, Dr. Wiley. He refuses to give an official opinion in regard to it. He will tell you what he believes to be right, but he says at the same time when a case comes up the Court may upset everything he has said. Yet I think the opinions he gives out are pretty safe things to follow. He is very conservative, but at the same time he is very strict.

Now the first thing in connection with the cheese. You may be interested to know you cannot make Cheddar cheese in this country any more but you can make straight out American

cheese or if you care to you can make a "Cheddar style cheese" but the label on cheese "Cheddar Cheese" will be undoubtedly a violation of the law and will certainly get a person into trouble that makes a practice of shipping cheese from one state to another under that name. Fortunately, we have got so in the habit of shipping cheese without that word Cheddar that I do not think that will create the least trouble. American cheese is good enough for any one and I think that nobody will question that part of it.

On the other hand, the Swiss cheesemakers cannot make Swiss cheese any more. They can make a Swiss type of cheese or I believe after quite a conference with Dr. Wiley and some of the New Y ork dealers he finally acknowledged that to call it "Domestic Swiss Cheese" would be permitted. He did not think it would be right under the law but he said that he was "too foxy an old boy to take such a matter as that up to Court." He knew he would be beat so I do not think there will be any question but the label "Domestic Swiss" will pass muster. The same thing is true of Limburger. That has got to be a well established name. We have been in the habit of saying "Domestic Swiss" so that did not create any confusion, but we cannot say "Limburger cheese." We must say "Domestic Limburger" or "Limburger type." It will create some confusion in the market. There are some people yet who think the greater part of our Limburger cheese comes from Germany, when in fact the cheese itself originated in this country and I understand there is no importation of that variety of cheese in the United States; but a great many think it comes from Germany and that is where the implied fraud in the name comes in. We want to let them know it is made in the United States, that is what the law is for. If you put anything on a label or on a name that makes it evident that you are not trying to perpetrate a fraud, there is no danger of the law being brought against you. Whatever anyone may think is really the proper thing to do, I think, so long as no one is trying to commit a fraud, will not be brought in question.

Brick cheese is frequently under the name of a foreign country. The reason the word Limburger and Swiss is cut out under pure food regulation laws is the fact that Limburger is the name of a foreign province, that is the provice of Limburger in Belgium is the place where the cheese was supposed to have originated and from that country it got its name. Swiss cheese

is named directly for the country from which it comes. Even in that country I don't know whether it is called Swiss but we call it straight out Swiss. Now there is something in regard to Swiss cheese that I would like to talk about to Swiss cheesemakers. It does not interest the American cheesemakers. A good deal of our Swiss cheese goes on the market as imported and sells for 35 cents retail. At the same time the so-called Domestic Swiss sells for 21 and 22 cents retail. Somebody is getting that extra ten cents and I do not imagine it is the makers that are getting it or indirectly the farmers. This cheese that was cut here the other day would never be sold under present conditions as domestic Swiss; it would be sold as imported Swiss and somebody get the money out of it. Now we are anxious to build up a market for Domestic Swiss cheese, that is our only salvation. If all the best Domestic Swiss is sold as imported and all the poorest Domestic Swiss is sold as domestic Swiss, sold on its true name, how long do you imagine it is going to take to build up a reputation for home made goods? Why as an illustration, you might ask the Borden people, about whom you have been talking as having condensing factories in the southern part of the state, to put somebody's else name on the best brand of condensed milk and label the poorest brand with their own name. They would get a reputation in a hurry and go out of the business in a few years. That is about the sort of black-eye the Swiss cheese industry is getting in this country. My idea is to have the Swiss cheese, whether it be good or bad, stamped "Domestic" in some such way that when it gets to the hands of the retailer he will know it is domestic Swiss and finally, after a reputation is built up and you find you can make as good cheese as far as the consumer is concerned in this country as in the old country, you are going to get that extra ten cents a pound that they are getting for our best domestic Swiss cheese at the present time. The same is true of all kinds of cheese, especially those foreign varieties. We want to make a reputation for our own goods, and because of this one thing I believe the pure food law is a good business policy as well as a preventative of fraud to the consumer.

Some advantage arises from this in being able to advertise a kind of business under the name of something that already has a good reputation, but in this case we can build up a reputation of our own and it is a good business policy to do so.

There is one other small thing in regard to the name of cheese that may be of interest. A firm in New York state has copyrighted the name of "Philadelphia cream." That has quite a reputation in eastern markets and the question came up at the conference we held in Dr. Wiley's office with the New York cheesemen whether any other firm could make "Philadelphia Cream Cheese." That is a technical question but it seemed to be the general opinion that it could not be done outside the city of Philadelphia itself. That is a copyrighted name and, strange to say, they can hold it in spite of the fact that not one of the men there that make it has ever been inside the city of Philadelphia. I don't know how they happened to adopt the name but they have it and are going to hold on to it.

Now to come down to things that interest the American cheesemakers a little more. Regarding the composition of cheese,—I have had several letters in regard to that. There is a committee on pure food standards, which has no official relation with the pure food commission, but has been getting the regulations out in regard to this law. They have adopted for full cream cheese a standard of 50% fat in the dry substance, not 50% fat in the cheese but 50% fat or dried substance in the cheese after the moisture has been taken out. It is entirely possible, unless some objection is made on the part of cheese dealers and makers, that this food standard will be incorporated by the pure food committee which has the regulation of this law in their charge and if this is once done any cheese shipped from one state to another which does not have 50% fat in the dry substance will be considered a skim and will not be considered a full cream and unless it is so branded somebody will be liable to get into trouble with it. Under ordinary circumstances all cheese made from unskimmed milk will have 50% fat in the dry substance and yet that is getting up pretty close to the limit. I can hardly see how when you are getting some tainted milk in the factory and losing a pretty fairly heavy percentage of fat in the whey your cheese would have 50% fat in the dry substance, and therefore the man that has got to handle it or ship it out of the state would be liable under the law.

Now you may be sure of one thing, and that is the cheese dealers are going to protect themselves. If there is any danger of them getting into trouble they will ask a guarantee from the factory that their cheese comes up to the food standard, and

when once they receive that guarantee all their liability ceases and the factory's liability begins. I should think the best way by far would be for dealers and makers to get together and see that this standard is not put too high. I am not prepared to state just what that standard should be. Personally, I am afraid 50% is too high and would cause trouble, but I think a standard could be reached so it would be fair to everybody.

On this composition of cheese there is another thing. The pure food law is not going to affect pure food. There is tainted cheese, gassy cheese, and things like that, until it gets to such a stage that it is dangerous for human beings to eat. After the law goes into effect the pure food people will see that the sale of such cheese is restricted and the man who handles cheese of that kind will be fined. There is one thing that is likely to be glad tidings to most of you and is likely to lead to the universal application of the Babcock test in cheese-making,—the standard is going to be put up to the place where you will have to make full cream cheese or take the consequences, and there is not a cheesemaker that does not use the Babcock test that can be sure the farmer is not skimming the milk. When they skim their milk and bring it to the cheese factory and the cheesemaker makes it into cheese he will not have his 50% standard, if that is finally adopted. The only way to be sure of that is to have some test to apply to the milk as it comes in. Of course lots of those things are going to make trouble, but then we are not all sure but it is the sort of trouble that should be made.

Another thing, a cheese which is not branded in any way at all is supposed to be full cream. Now that does not apply to Wisconsin cheesemakers except in on indirect way. There is a good deal of cheese shipped out of New York which is one quarter to one half to three quarters skim. That goes on the market frequently as full cream cheese. The New York people have a law which allows the state brand to be stamped on strictly full cream product. It does not require, however, that a part skim should be so designated, but when the New York skims get on the market without a statement on the package saying they are part skims under the regulations of the law they are considered and sold as a full cream product, and if they are not full cream they want to know the reason why. It leads to one or two things. The New York maker cannot put a cheap cheese on the market and sell it at full prices, or they will

simply brand their boxes and sell that cheese for what it is worth. Sometimes they are pretty finickey about anything of that sort; it does not matter whether one quarter skim is as good as full cream they want a difference of one or two cents. Indirectly that will protect the Wisconsin cheesemakers because it will lead to better prices for the full cream product.

On the color question, only harmful colors will be thrown out and the only harmful color that I know anything about at the present time is the coal tar dyes, which have been pretty general in use in both butter and cheese. The pure food law will cover that undoubtedly. They expect in the near future to get out a statement of what is considered harmful and what are harmless colors. As far as we know at the present time, coal tar dyes will be barred without any question and as far as we know any of the other well known colors will be permitted, that is those in common use in dairy products. Some of those used in candy will not be permitted besides the coal tar dyes. It may be telling secrets out of meeting, but I had an opportunity yesterday afternoon of addressing cheese dealers. A little practice in selling cheese in the United States you know is to make a little extra out of it by marking up the weights on the box. I can tell you factorymen here to mark up all the weight you want inside of the state, and if the dealers are not sharp enough to find you out the law will not touch you because you are selling inside of your own state, but I imagine from what I know of the dealers they do not allow any short weight cheese to get past them; but on the other hand, when the dealer marks up the weight of the cheese and ships it outside the state I can assure you he will get into trouble without any question. There is nothing more explicit in the law than the statement that where the contents of a package are marked that mark must be correct, and it is so easy that there will not be many foolish enough to dodge it, I imagine.

Another thing, it is understood that the state inspectors will be ex officio inspectors under the national law. These state inspectors will collect samples that come from other states, and their word will be taken as well as the word of the regular appointed inspectors from the national government.

And now for the one thing that I think perhaps interests the cheesemakers more than anything else. I have left it for the last, it is the worst or the best as you see fit to call it. That is in regard to the use of rennet. There is no question, of

course, but rennet will be allowed to be used in the manufacture of cheese; we cannot get along without it, so far as we know now. It so happens that in the manufacture of rennet it has been found necessasry to use a preservative so it will not spoil after some of those dealers make it and get it in your hands and cause you loss in that way. The common preservative used at the present time is boric acid, the use of which will be prohibited under the law in food products. Now the question comes in here. Any substance used in the manufacture of a food product, under the regulations of the law, is a food itself. Therefore rennet is a food under the regulations of the law and the use of boric acid in rennet will be, unless some other provisions are made, prohibited. Now I will go into that a little further. Of course we use a small quantity of rennet comparatively in a thousand pounds of milk. Only 1% of rennet means only one part in a million. No one thinks that would be at all detrimental to health, yet there is a principle involved. Nobody thinks the quantity of coal tar dyes used in butter is detrimental to health and yet there is no question but they will be prohibited, and justly so. We known that boric acid is in the rennet and one part in eight millions can be determined as food substance so it can be easily found in the cheese. It does not matter how much is there unless some pretty good evidence is shown to the pure food authorities that it is an absolute necessity and that the prohibition of its use would work a harm on a great industry, This is going to come under the regulations and be prohibited.

Now it is up to the cheesemen to see that these regulations are so made, providing it is finally determmined after a year or two years' experience that rennet cannot be made without boric acid, it is up to the cheesemen to see that regulations are so worded as to permit this small quantity of boric acid in cheese. I am not saying it can be done, but I believe if it is put up to the Secretary of Agriculture in the right way it may be done; but you will probably need a year or two for experiments on the part of the rennet manufacturers.

We have a funny kink in the situation. It is the most peculiar thing I have found under the pure food regulations. The wholesale grocers are demanding of the cheese dealers in your state that they give a guarantee so as to relieve them out of the responsibility when they ship cheese to other states. I believe some cheesemakers have been guarantying their goods,

but I tell you I would hate to. These cheese will go into storage; very likely when the cheese gets out of storage those regulations will be in force and if this clause is in effect there will be a lot of cheese ready to dump into the river. The dealers, on the other hand, require a guarantee from the factories, and that is what you are going to be asked for in some cases. Well you cannot give a guarantee and there is no question about that, and the factory man who attempts to give a guarantee is foolish. You will say you would rather take the consequences of the law than run the chance of not selling your cheese. I will tell you that the dealers have to have your cheese. They are not going to quit business for the time being, they have to have your cheese and if you will not guarantee it they will take it anyway, and you cannot guarantee it and be safe. You, on the other hand, might come back on the manufacturer of the rennet extract and demand a guarantee from them, but there it comes to the point where they cannot give you a guarantee and will not give you a guarantee, and so it is up to the whole crowd to see that these regulations are so worded that they will not affect anybody.

The question is, what are you going to do about it? I do not think there is any reason for being alarmed right away. The regulations undoubtedly will not be given out and be in good working order inside of six months. On the other hand, the cheese you make in the spring will go into storage and not be consumed for a year and even longer. The regulations will be working pretty smoothly by that time. The only thing I can see in regard to that is for everybody to get together and see that these regulations are made in such a way no one will suffer. That is not hard to do. I believe the cheese dealers have got together on the subject and are going to do what they can and very likely they will require some assistance. I cannot speak officially for your dairy and food commission but I think their influence will be for the cheesemakers of Wisconsin. I should think it would be. When the hearings are had before the secretary I will be present and may have something to say and my stand will be for the cheese dealers and manufacturers of rennet extracts for the time being. We will have to experiment and see if something else cannot be used instead of boric acid. The question is to find something else that will not add greatly to the price of rennet.

DISCUSSION.

Mr. Marty: I would like to ask Prof. Doane when the name of Limburger cheese is changed from foreign to domestic if it is going to change the odor?

Mr. Luchsinger: I am glad that Professor Doane has brought this matter before this meeting. It is one of the most important things that cheese dealers and cheese makers are going to have before them this year. I am glad, also, to hear him say that the commission is not at all absolutely decided as to what it means and is open to argument and reason, and liable to be convinced that some of their rulings may have to be changed and I think that we in open discussion by everybody interested may succeed in giving Prof. Doane some ideas that may tend to have him use his influence in regard to changing some of the rulings. This is one thing that occurred to me, in regard to almost the last thing he said, when he advised cheesemakers not to give a guarantee.

Prof. Doane: It is not impossible if you want to give a guarantee. The meaning of guarantee is giving to the cheese dealer from the cheese manufacturer a release from responsibility, and then if there is any question about the purity of the goods the cheesemaker foots the bill.

Mr. Luchsinger: If the dealer is selling goods that he has bought from some relaible cheesemaker the dealer must guarantee. How can he guarantee unless he has a guarantee from the cheesemaker that the goods are pure? He knows nothing about the manufacture.

Prof. Doane: He can guarantee if he wants to.

Mr. Luchsinger: I think it is a proper thing when a man is making good cheese, and knows it is full cream cheese.

Prof. Doane: The question is that the rennet in that cheese contains boric acid, and he knows it is not pure to start out with.

Mr. Luchsinger: We are in hopes that we will get a rennet that has such a small portion of boric acid that we can influence the Commissioner to allow the rennet to be sold, if it is proved to the commission that it cannot be manufactured and kept any other way.

Mr. Moore: Do I understand you to say the test for the detection of boric acid is so delicate as to note the presence of

one part in eight million? That is rather more than our chemist has been informing us of what could be done. While I do not doubt your statement at all, it seems rather extreme

Prof. Doane: I have taken the word of a chemist on that statement, a good chemist.

Mr. Moore: We think we have the best chemist in the country. I think Dr. Fischer, our chemist, gives about one in one hundred thousand.

Prof. Doane: Let me state that it does not make any difference whether you detect it or not. The pure food law takes it for granted that rennet is used in the manufacture of cheese and that rennet contains boric acid, and it is up to the cheesemakers to prove that it is not there. They know they are using the rennet.

Mr. Moore: I think the burden of proof is on the state usually.

The President: If you were an inspector and had to prove some cases in court you would change your mind about this, Prof. Doane.

Mr. Moore: The principle of the law will hold just the same, whether it is national or state, that the burden of proof falls on the state or government, to prove these things.

Leaving that aside, here is another proposition. You say the coal tar colors will be barred. Is it not a fact that there are coal tar colors that are harmless? In that case is it not up to the Secretary of Agriculture, through his chemist, to prove that colors in any individual case are harmless or deliterious to health?

Prof. Doane: I think you will find he will not have to prove it.

Mr. Carswell: You don't think the manufacturer ought to guarantee his product. If there is any guarantee should it not come from the party furnishing the raw material, from the milk producer?

Prof. Doane: That would be impractical because the milk from a number of producers goes into one cheese vat.

The President: How about the rennet itself? Do you think it would be unlawful to ship it from one state to another in the shape of rennet?

Prof. Doane: You have rennet manufacturers in your own state but they would be called on for a guarantee. Regarding this question of guarantying cheese, I think it is right that dealers should get a guarantee from cheesemakers that their pro-

duct is full cream, but when it comes to the use of rennet and consequently of boric acid the cheesemakers cannot guarantee it.

The President: It will require a little time to work out that question.

Mr. Marty: Why should not the manufacturer of rennet be held responsible in place of the buyer or cheesemaker?

Mr. Luchsinger: I would say in regard to what Mr. Moore has said that I was a farmer, a cheese manufacturer and a cheese dealer before I was a lawyer, so I know something of all these things, I am still a farmer. Now we have heard what Prof. Doane has said in relation to naming cheese and I hope that this discussion will bring out some ideas that may differ from what he has advanced, and which may seem to him to be the right position to take. I will read what the regulations are. They say that the use of a geographical name shall not be permitted in connection with a food not manufactured or produced in that place, when such name indicates that the articles manufactured are produced in that place. We have used the term Cheddar for fifty years or more in the United States. Perhaps half the people do not know such a place as Cheddar ever existed. They call it Cheddar without thinking for a moment or intending to say that all this cheese called Cheddar cheese is produced in Cheddar Valley in England. I think this ruling would not apply. Cheddar cheese should be called by that name as it is the most popular name, has been accepted all the time and should remain so, and I think the Commission after looking it over carefully, will rule so. Also the use of a geographical name in connection with a food product will not be deemed misbranding when by reason of long usage it has come to represent a general term and is used to indicate a style or brand. There is no such geographical name as Swiss, Switzerland is the country. No cheese is called Switzerland cheese. It is called Swiss cheese because it is made by Swiss people. I I don't know of any cheesemaker in Wisconsin that makes Swiss cheese unless he is a Swiss, and I think the term "Swiss cheese," when the commission comes to look at this matter, will be allowed to stand. The same thing I would say would apply to Limburger cheese. "The use of a geographical name when by reason of long usage has come to represent a generic term and represents a style or brand which will not be deemed misbranding.

Mr. Moore: Is not the word Cheddar used to indicate a part of the process of making?

Prof. Doane: I think you have no such Cheddar process. There is one thing that has been absolutely decided beyond question and is not debatable before the courts, the cheesemakers, especially of the foreign varieties in New York, have rushed to cover in a hurry on that question. They sent several representatives there in debating that point for a half day and the only concession that was obtained from the Doctor was the use of those names which they had determined on by also using the word domestic.

Mr. Luchsinger: I assume that the commission is composed of reasonable men who will not be first forced by proceeding of the courts to change their minds if they find themselves wrong?

Prof. Doane: You spoke of Swiss cheese as not applying to that. I spoke of the fraud that was perpetrated by dealers and the indirect injury done to the manufacturers of cheese. There is lots of fraud right on the face of it. There can be no question about that.

Mr. Luchsinger: In answer to that I would say that I assume that people who intend to commit fraud of that kind will do it, no matter what the law is.

Prof. Doane: They will be a little more careful when there is a law applying to it.

Mr. Luchsinger: It is almost impossible to brand cheese so the brand cannot be erased. Unless the brand is impressed deeply on the outside rind it can be erased, and the cheese, especially Swiss and Limburger, be sold for imported.

Mr. Everett: The pure food law was no doubt a good act, something that we have worked for, for a great many years. We are glad that we have it. I believe that it will be properly interpreted by Dr. Wiley, Secretary Wilson or any other official who has anything to do with it. If it is not properly interpreted we will see that it is repealed or modified. We made the law and propose to have it interpreted correctly and it will certainly not be construed to the injury of the cheese and butter industries of this great country.

The President: Now, gentlemen, this afternoon we have a very good program on cheesemaking, farm dairying, dairy barn sanitation, etc., there is going to be an address by Professor Farrington, of Madison, so I want you all to be here. We will commence the afternoon session at two o'clock, and will now stand adjourned until that time.

## FRIDAY AFTERNOON SESSION.

Meeting called to order at 2 o'clock and opened with a song by Messrs. Streuben and Alder, which received much applause and they responded with an encore.

The President: The first subject this afternoon is an address by Professor Farrington, of the Wisconsin Dairy School, his subject being Calculating Cheese Factory Dividends.

## CALCULATING CHEESE FACTORY DIVIDENDS.

Prof. E. H. Farrington, Madison, Wisconsin.

In charge of the Wisconsin Dairy School.

Mr. Chairman, Ladies and Gentlemen: Last winter an effort was made to find out, among other things, the amount of work we did in the University and I remember they sent a request that each department should make a statement of the amount of correspondence it does in a year. When we looked up our letter files, we found during the year the dairy department had cancelled nine thousand postage stamps. Now a large proportion of those nine thousand postage stamps were used to answer inquiries from cheesemakers as to how to calculate dividends at their cheese factories. A great many have either forgotten the methods we taught them for calculating dividends at cheese factories, or have lost some of the points and wanted to learn something more in regard to it.

When I came over to Milwaukee yesterday afternoon on the train I met an old gentleman who asked where I was going. I said I was coming to the Cheese Makers' convention and he asked if I was going to make a speech. I said I would try it and he said "I hope the audience will not go to sleep while you are talking. When I used to go to church there were two

things about the preachers' discourse I remembered,—the first few sentences he gave in his address and I generally woke up to hear the conclusion," so I thought that was a pointer to me but I will try to tell everything in a few words in the first few sentences and then you can take a nap and wake up to hear the finish.

The first thing, then, I want you to think about is, is it reasonable and is it a fair deal between the cheese factory operator and the patron furnishing the milk to pay for that milk by the Babcock test, by the test of the milk?

Second, if you can prove that is a reasonable and fair arrangement, does the Babcock test or the test of the per cent of fat in the milk indicate the cheese yield in the milk?

Third, if it does, what is the simplest method of putting that practice into use in a factory?

Now, taking the first question as to whether it is a fair arrangement between the milk patrons and the factory operator to pay for the milk by the Babcock test, I think it is best, perhaps, to compare the difference in the test of the milk received at the factory from the different patrons. For instance, milk that comes from the patrons testing 3% and 4½% fat has a difference of 1½% fat, and the milk that tests 4½% is richer by 50% than that testing 3%. Now is it not fair for the man bringing 4½% milk to be paid more than the man bringing the poorer milk? When the Babcock test was first described it was soon taken up by persons patronizing creameries and they very soon saw the point, that that was the only fair way of paying for milk, was by the Babcock test, and in a few years it was universally adopted. I do not think there is a creamery in the country where they pay for the milk by the hundred but they do pay for it by the test and the patrons demand it. That practice has gradually grown until it has become universal. The cheese factories have been slower in adopting that practice, for some reason or other. Probably you men that operate factories know the argument given by the farmers as to why they do not want milk paid for by the test, but it seems to me that if it is true that milk varies in richness from three to four and a half per cent., that the man bringing the rich milk ought to be paid a different price for his milk per hundred pounds than the one that brings the thinner milk.

If you will admit that this is a fact, the next step I want to take in this discussion is whether the Babcock test is a fair measure of the value of the milk. Now we have made some

cheese at the dairy school in which 100 pounds of skim milk was taken and a certain amount of cheese made from it and milk testing 1 per cent., 2 per cent., 3 per cent., 4 per cent., and 5 per cent. Perhaps all of you have seen those cheese and know that the amount of cheese obtained from 100 pounds of milk varies with the richness of the milk; if it does vary with the richness of the milkg the fat test of the milk is a fair point for determining the cheese value of the milk, it seems to me it certainly ought to be used for paying the patrons for their milk.

As to the method that may be used for putting the test into effect in the factory, I will briefly describe a method I think can be made use of in a simple way. I have here some sheets I wish some of the boys would distribute among the audience and I would like to go over them with you and trace these different steps to illustrate this point. We often have the statement made to us that "This cheese you have here is made by your dairy school instructors," and they assume that we have better facilities than men in the factories throughout the state and although we may make a certain yield of cheese from 100 pounds of milk, the men in the factories out through the state cannot do it. In the first table given on this sheet you will see the yield of cheese from milk varying in richness and cheese made at the Wisconsin Dairy school, and those cheese has been made during different years, first by Mr. Decker, next by Mr. Baer and then by Mr. Noyes, this year by Mr. Moore, and they all arrive at the same conclusion in 100 pounds of milk testing one-tenth of one per cent fat in skim milk yields 5½ pounds of cheese.

I am not familiar with all the different ways, plans or contracts that are more or less in use at cheese factories for paying the patrons for milk. If one should give the matter a little thought however, he could think of a number of different agreements that might be made between the milk producer and the cheese factory owner or manager for buying the milk.

Not many years ago, cheese factory milk was paid for by the hundred pounds and I believe that the so-called "pooling system" by which all patrons are paid the same price per 100 pounds of milk is still in use at some factories. The "pooling system" no longer appeals to the honest farmer who is looking for a square deal. The following figures ought to be sufficient to show the unfairness of paying the same price per 100 pounds for all the milk brought to a cheese factory regardless of its test. These figures were obtained at the Dairy School

by making cheese from milk testing different per cents. fat. A set of these cheese has been made nearly every year for a long time; first by Mr. Decker, then by Mr. Baer, then by Mr. Noyes, Mr. Marty and this year by Mr. Moore. All these men have had years of experience in cheese making and as they all get approximately the same results, the figures certainly are according to the facts.

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. |

Among the many letters I get during the year inquiring for a method of paying for milk at a cheese factory, there are always some that want what they call "practical factory results," intimating that the figures we obtain at the Dairy School may be different than what would be found at a factory. This is a perfectly natural question to ask, especially by persons who are not acquainted with Mr. Baer and others who have made these Dairy School cheese in the past. In order to satisfy this inquiry, we have a lot of figures bearing on this point. These are sent to us every year by Dairy students operating factories throughout the state. They consist of monthly reports from students working for a dairy school certificate.

A summary of 347 of these reports covering a period of four years was made by Doctor Babcock and published in the eleventh report of the Wisconsin Experiment Station. The following is a summary of the results obtained.

*Yield of Cheese from Milk Testing different per cents fat as found from 347 factory reports.*

| No. of Reports. | Test of Milk. | | Cheese Lbs. | 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 |

These figures are taken from the every day factory work of a cheese maker and show conclusively that the yield of cheese increases as the richness of the milk increases. They also show that the yield of cured cheese from normal milk may be very closely calculated by multiplying the pounds of fat in the milk by 2.6. This is a very useful figure for showing the yield of cheese from milk of different tests.

Having now established certain standards from the factory and the dairy school results, which agree fairly with each other, let us see how the milk at a cheese factory can be paid for and give each patron his just dues according to the cheese value of his milk. We will take for an illustration, Patron A delivering 100 pounds of milk testing 3% fat, which will make 9.2 pounds of cheese and Patron B delivering 100 pounds of milk testing 4.5% fat which will make 10.7 pounds of cheese. Now the sum of these two is 200 pounds of milk and 19.9 pounds cheese and if both patrons were paid simply for the pounds of milk sent to the factory they each would receive a dividend calculated by dividing by two the receipts less expenses obtained from the sale of the 19.9 pounds of cheese or about 10 pounds of cheese each. This is about three fourths of a pound more cheese than the 3.0 per cent milk made and nearly three fourths of a pound less cheese than the 4.5% milk makes. Such a division of money is clearly unfair as it is taking some of B's share and giving it to A.

A factory that pays for milk simply by the hundred pounds is making it profitable to water and skim the milk and it discourages all efforts of the farmers to keep cows producing rich milk. Such a system is damaging the dairy interests of the state, and on a par with other "systems" that we read so much about now-a-days in the daily papers.

Another point that should be taken into consideration is the difference in quality of the cheese made from the milk testing 3.0% fat and that testing 4.5% fat.

The richer milk not only makes more cheese per 100 pounds of milk, but the cheese is worth more per pound.

The following market quotations taken from a New York paper of December 20th, 1906, shows the difference in prices of cheese from full cream to skims:

Full cream cheese 14 cents per lb.
Half skim cheese 10 cents per lb.
Part skim cheese 6 cents per lb.
Full skim cheese 3 cents per lb.

These figures are based on the richness of the milk from which the cheese is made, the yield of cheese per 100 pounds of milk has nothing to do with the price obtained for the cheese, hence it will be seen that the richer the milk the better the price per pound of cheese made from it.

I am occasionally asked if 100 pounds of milk testing 6.0% fat will make twice as much cheese as 100 pounds of milk testing 3.0% fat. The answer to this question is briefly that the cheese made from the richer milk is of much better quality and worth a higher price per pound than that made from the thinner milk and this will help to balance any difference in yield.

The influence of the richness of the milk on the quality of the cheese is something that should not be lost sight of in considering the question of paying for milk at a cheese factory by the Babcock test.

Let us now consider a simple, practical method that may be used at a cheese factory for calculating the dividends due the patrons. It is a common custom to pay for the milk at a factory every month. This then may be taken as the period to be covered by each payment. When the date for settling accounts comes around, the person whose duty it is to calculate the dividends needs the following information:

1. The weight and test of each patron's milk for one month.

2. The cost of making the cheese and the running expenses of the factory for this time.

3. The pounds of cheese sold and the money received for it.

With the above data, the calculations may be made in the following way:

First. Subtract the cost of making the cheese and the running expenses of the factory from the money received for the cheese; this gives the amount of money to be divided among the patrons.

Second. Divide this money by the total pounds of butter fat in the milk from which the cheese was made; this will give the price per pound of fat to be paid the patrons.

Third. Multiply the pounds of butter fat in each patron's milk by this price per pound.

An application of this method to actual figures may be illustrated by assuming that three patrons, White, Brown and Green, each delivered 1,000 pounds of milk to a factory in a month and this milk was made into 312 pounds of cheese that sold for $35. The cost of making this cheese and other expenses of the factory was $5 and the average test of each patron's milk was—White, 3.5; Brown, 4.0; Green, 4.5. These tests being the average of tests of composite sample taken of each patron's milk. By multiplying each patron's total milk by his average test, the pounds of butter fat in this milk is obtained.

| | Milk | Test | Fat lbs. |
|---|---|---|---|
| White | 1,000 lbs. | x 3.5 | = 35 |
| Brown | 1,000 lbs. | x 4.0 | = 40 |
| Green | 1,000 lbs. | x 4.5 | = 45 |
| | 3,000 | | 120 |

Now if the cheese sold for $35 and the expenses of making, etc., were $5 there is $30 to be paid these three patrons for their milk. Dividing the $30 by 120, the pounds of fat in the milk from which the cheese was made gives 25 cents, the price per pound of fat to be paid each patron. Multiplying the pounds of fat in each patron's milk by 25 cents gives the money due each man.

| | | | |
|---|---|---|---|
| White—Butter fat in milk | 35 lbs. | x 25c. | = $8.75 |
| Brown—Butter fat in milk | 40 lbs. | x 25c. | = 10.00 |
| Green—Butter fat in milk | 45 lbs. | x 25c. | = 11.25 |

This gives each patron his fair share of the money received for the cheese; it encourages the production of pure, rich milk and by so doing, helps to improve the quality of the cheese made in every factory in the state. Paying for milk at a cheese factory at a uniform price per hundred pounds or by any other system, excepting the one based on the fat test of the milk, encourages skimming and watering the milk and discourages the progressive dairyman which the state of Wisconsin very much needs.

Paying for milk by the Babcock test at a cheese factory has a tendency to stop the watering or the skimming of milk and encourages the production of better milk, two things essential to the permanent elevation of the dairy industry in Wisconsin.

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DISCUSSION.

The President: We would like to hear from some of those present why is it that the patrons of some cheese factories do not want milk paid for by the test?

Mr. Anderson: As you know, this is a disputed question. How shall we pay for milk at the cheese factory? One side claims that we should pay by the yield and that is what I personally am in favor of, pay for the actual yield you get the same as they do in creameries. There they pay by the yield and when you pay by the yield in cheese factories it seems to me to be more just to pay according to the fat in the milk. Now we will admit that we get richer cheese from richer milk, but when we offer our cheese on the board in Sheboygan county (we have two boards there) there is not a cent nor a fraction of a cent difference in all the cheese that is sold. It is all supposed to be of standard quality. Then the farmers tell us when the price of cheese is the same, whether made from 3% milk, 3½% milk or 4% milk, they do not see any reason why it should be bought by the butter fat test because the casein has to be considered.

Mr. Hendy: At our last factory meeting we discussed this point at one of our factories. One patron said "If they are going to pay by the test I will not bring my milk." We knew at once that his milk would not have a good test, perhaps the

lowest. He knew likewise that he would receive a low price or he had a problem on his hands, and he could not see through the problem. If he goes to studying he knows in all probability it will take him several years to raise the standard of his test.

The President: I wish you would tell that man when you go home to just try it for a season and when the season is over figure out how much money he made per cow and compare it with what the other patrons made per cow, those that had higher tests, and I assure you he will find he is making more money per cow than some that had a higher test than he. The farmers must get that foolish notion out of their heads that they must have a high test when they are paid by the test. They have their minds on one thing,—"How much can you get for a hundred pounds of milk?" That does not tell how much money the cow is earning; the real question is how many dollars does the cow earn? That is the question and in order to find that out we have got to know how much butter fat she produces, how many pounds of butter fat she will produce in a year. The test does not tell you that because you have to take the yield of the milk into consideration as well.

Mr. Everett: Is it not a fact that cows that test low in butter fat, as a usual thing, give a larger amount of milk than cows testing high in butter fat, so that a herd of cows owned by one man are liable to make more money even if the milk only tests 3% than a herd giving 3½% and 4% milk, owned by another man? Will not that be the case if the first herd gives more milk?

Prof. Farrington: Certainly, there is no other way of stating that proposition. Of course the more milk you have the more cheese it will make and the richness of the milk would increase the amount of cheese made per pound of fat, but the total amount of cheese would be influenced by the total amount of milk delivered to the factory. I do not know that there is any use to go over this whole thing again, because I think the statements I have already made and the figures given on the sheet will answer the arguments made by this gentleman, and my object in giving those figures out was for the boys in the factory and the men that own the factories to make use of them in arguing with the patrons to show them how by producing more milk and richer milk, they would be increasing the yield of cheese per hundred pounds of milk, and be improving the quality of the cheese made in this state. It puts a premium

on the production of more and better milk, while if you pay by the test of adding two it puts a premium on the water in the milk, and the man that brings the most milk, no matter what his test is, makes the most cheese but of poorer quality.

Mr. Anderson: I do not think the so-called casein system is any premium on poor milk.

Prof. Farrington: Of course it depends on how you calculate the yield. If you, according to your system, add two to the test to get the yield, if you had we will say milk testing 3% and add two to it that would make 5, and you pay that man for five points in your total; if you have milk testing 5% and add two to it you get 7 points. There is a difference of two points. Supposing the man that brought the milk testing 7% fat adds water to it and he has 200 lbs. milk testing 1½% fat, then he adds two points to each, that would be four, that would be 5½% which would bring up his yield of cheese at the expense of the man that brought the rich milk. I do not know as I have made that statement clear but if I had a blackboard I could make the figures and easily show you. If you take 100 lbs. of 3% milk and take it to the factory that shows the yield; if you take that same milk and add 100 lbs. of water to it and add two you have four. You would not be benefiting the 5% farmer in the same way because the two is a larger proportion of the three than of the five, and it would not increase the yield of cheese from the man bringing the rich milk to the same extent that it increased the yield of the milk that tested less.

Member: How would the lactometer enter into this proposition of determining the quality?

Prof. Farrington: I think the first thing is to get all the factories to adopt the fat test simply and if afterwards they can use the lactometer in addition to the Babcock test you can get at the yield more closely than with the Babcock test alone; but it would be considerable work to test all the milk with the lactometer in addition to the Babcock test.

Member: I think you misunderstood me. The gentleman spoke about 100 lbs. of milk testing 5% and 100 lbs. testing 3% and adding 100 pounds of water. You know a man cannot add 100 pounds of water without detection, and that is where I say bring in the lactometer.

Mr. Dassow: Is it not a fact that in the fall of the year when there is a lot of stripper milk and one farmer bringing fresh milk from new cows, that the fresh milk testing less will

increase the yield of cheese over that of strippers?

The President: Yes, but you know six months later the conditions in the two herds are reversed.

Mr. Dassow: Six months later there is a lot of fresh milk and a few stripper cows will not make much difference; but in the fall a little fresh milk is of great benefit and the man supplying it is not getting enough when you pay him by the test.

The President: So far as any injustice is concerned, that will be adjusted six months later when the conditions will be reversed.

Mr. Dassow: I can make a better cheese with a little new milk in the winter than I could without. So in justice the man supplying it is not getting enough.

The President: He will be getting more in twelve months out of his cows than if they freshened in the spring. He is making more profit.

Let's stick a little closer to discussing the justice or injustice of the Babcock test. Professor Farrington did not put down nearly as much on paper as there is in him and you can get a good deal more out of him.

Prof. Farrington. I tried to put down here a few fundamental principles that a man can use for making this argument with his patrons.

Mr. Grimm: I would like to ask Professor Farrington if he can tell me if there is any difference between a Jersey cow and a Holstein in regard to solids. One man who brings milk to my factory says he is losing, says he should get more cheese than the man supplying Jersey milk. I told him I could not explain that to him but if the test was there the cheese should be there. He said the Holstein cow had less fats and more solids and that he was losing and I would like to ask Professor Farrington if that is true?

Prof. Farrington: That is undoubtedly true and that is the statement that is explained in this table number 2. The yield of cheese for 100 pounds of milk testing 3½% fat is 19.2 lbs. If you had a Jersey cow that tests 4.4 the yield of cheese per 100 lbs. is 10.75 lbs. In the last column you will see the yield of cheese is represented per pound of fat in the milk and you get more cheese per pound of fat; you get 2.9 from the thin milk and 2.4 lbs. of cheese from the richer milk, but the cheese

from the richer milk is of better quality and that offsets the increase in yield from milk testing less.

Mr. Grimm: The question is has a Jersey cow more fat in her milk because there is not so much solids?

Prof. Farrington. The solids do not increase in the milk to the same extent the fat increases. There are more solids in Jersey milk besides the fat than there are in Holstein.

Mr. Grimm: He said the Jersey tested so much higher that according to the test there was not so much cheese,—that the Holstein had more cheese value according to the test.

Prof. Farrington: The Holstein milk per hundred pounds will make more cheese per pound of fat than the Jersey; but the cheese from the richer milk is better quality and you can get better cheese.

Mr. Grimm: He said he was losing that way.

Prof. Farrington: He is not losing; he would be benifiting himself, his factory and the dairy interests of the state if he increased the test of his Holstein milk.

Mr. Dassow: Most of the cheese sold on the Sheboygan board sells for the same price no matter whether we have cheese extra Number 1 or cheese that just passes. If we could get more for our good cheese it would be all right but on the Board sometimes the man having the poorest cheese gets the biggest price. We certainly make a good cheese from 3% milk that will sell anywhere on any Board of Trade.

Mr. Anderson: I have asked several gentlemen if they would be willing to make any difference in cheese made from different per cent milk, but they all said they could not do it, that they could not tell the difference. That it is impossible for them to tell the difference between cheese made from 3%, 3.2% or 3.5% milk.

Prof. Farrington: I remember some experiments that were made by Dr. Babcock perhaps ten years ago on the same point. He took some cheese from milk with different per cents of fat to Chicago; the wholesale dealers came in and examined those different cheese and they would not make much difference in price for the cheese made from milk of different degrees of richness, but the largest retail dealers made a difference of from nine to fifteen cents per pound of cheese according to the quality their customers would like. Cheese from thinner milk was valued at about 9c, cheese from richer milk at about 15c. There is this point that you mention on the Board of Trade, Perhaps they do not take into consideration the richness of the

cheese, and if you make a first class article of cheese that brings a top price on the Board of Trade from milk testing 3% fat, I have not the slightest doubt but if you make cheese from 4½% fat your cheese would be sought after and you would get a reputation for making extra quality good cheese, and you would be offered a higher price for it.

Mr. Anderson: Late in the fall we have the highest test in our territory. We have no harder time in the year than just those months to make good cheese. The cheese are liable to get sticky and soft. They are made from milk that tests between 4% and 5%.

Prof. Farrington: The only thing I want to say in conclusion is that there is no doubt whatever from all the evidence that we have obtained both at the experiment station and dairy schools, and reports we have received from our students out through the factories (a number of you are here) that the test is the fair way of paying the patrons for their milk and if you can put it on the basis of a test you will increase not only the yield of cheese per 100 pounds of milk but you will also increase the quality of the cheese from this state, and by paying at a cheese factory for milk by the test you are helping the dairy business of the state and the cheese industry of the state. You are bound to improve the quality of the cheese by encouraging the men that produce the richer milk, and if you do not pay by the test you are encouraging the men that produce the thin milk and you are encouraging putting in water.

The President: I am going to use the chairman's privilege and add a little something on top of that. Professor Farrington referred to the fact that if the test is adopted generally it will gradually increase the richness of the milk. This would be true in those localities where the milk is thinnest and where it needs increasing the richness. These gentlemen from Sheboygan county that took up the discussion are going just as far with the adoption of the test system as their patrons will stand. There is a strong sentiment against it up in Sheboygan county and some other counties where they have been paying by the yield for so many years and have been breeding their cows to give a whole lot of milk. Those are the cows that give the thinnest milk as a rule and that is one reason they do not want to receive payment by the test, because very likely some seasons of the year those cows are producing milk that is unlawful to sell. We set a standard that milk shall not be less than 3%. What will those people do if they keep on breeding as they

have been? There is another element of danger there and I think it is worthy of serious consideration, that they stop breeding for thin milk and begin breeding a little more for richer milk. We have two manufacturers of rennet extract here that would like to say something on the subject. I will call first on Mr. Marschall.

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## REMARKS.

A. J. Marschall, Madison, Wis.

Rennet Manufacturer.

Mr. Chairman, Members of this Association: Prof. Doane came up here from Washington and I think he is trying to scare us a little, at least he does not tell the whole story as far as I can understand it. I saw the Food Commissioner and Chemist at Madison and they all told me, and I also have a letter from Washington to the same effect, that if rennet was manufactured containing 1% boric acid it was lawful and if cheese was made containing 1% boric acid in one million it was lawful and that no one would get into trouble by using this. It is necessary to put in some kind of a preservative, and if we use any preservative we run against a snag according to Prof. Doane. The only other preservative we could use would be alcohol, and perhaps we would run against the liquor law if we used alcohol. If they try to enforce the law strictly to the letter they will have their hands full in Washington. I do not see that there is anything to do at the present time; just wait a little and see what they will do down there. If they come down to such a fine point and have everything else all settled in apple pie order so as to allow them to take up such small matters as this, I think they can go home and say they have done their work well and let us alone.

Prof. Doane said something about cheese color, and although it is out of the question I will say a few words regarding that. He said they used coal tar dyes for coloring. So far as I know there is no coal tar dye used in this country for cheese, being only used for butter so that will not affect you and there is no need of worrying about this boric acid question.

Prof. Farrington: Mr. Marschall I know from your experience as a chemist that you can answer this question. Is it possible to detect the boric acid in the cheese when commercial rennet extract is used for making cheese?

Mr. Marschall: I asked Dr. Fischer of the Food Commission at Madison, and he said "Don't you bother about that, you can never find it, it is mixed up with so many other materials there.

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## REMARKS.

J. Hanson, Little Falls, N. Y.

Rennet Manufacturer.

Mr. President: I want to say that I do not think there is any reason to fear this pure food law will prohibit the use of rennet extract with boric acid in it but I want you to thoroughly understand the situation as it might be if boric acid was prohibited in rennet extract, because it is affecting your interests as well as the manufacturers' of rennet.

Now what will be the consequence if boric acid is prohibited and if it is found in cheese, or even if the cheese is condemned? Mr. Doane said this morning "ready to dump in the river." Somebody has to pay for the cheese. If the manufacturer of rennet extract is guarantying the rennet extract to comply with the pure food law of course he will have to be responsible and pay for the cheese. No honest manufacturer, of course, would guarantee his extract under those conditions, so if boric acid is prohibited in rennet extract there are only two ways out of it. One is to do away with the use of commercial rennet extract and go back several years to the old home made rennet extract, and I do not think any cheesemaker would want to do that; the other way, which I will not discuss, is to give up cheesemaking entirely. Another way would of course be to let the manufacturers of rennet extract do the thing and make an extract without boric acid. Now this is at the present time im-

possible, and for my part I don't think it will be possible to ever do it, but of course I cannot tell. No responsible manufacturer I know would undertake to do it before he had thoroughly investigated the thing and made sure that he could do it, and that would probably take a year or two.

Now that is the situation as I understand it, and I think that the cheesemakers and the cheese dealers ought to help the manufacturers of rennet extracts to make the authorities at Washington fully understand the situation, so that no ruling will be made pertaining to boric acid in rennet extract. Of course it is true that before the ruling is made we may get out of the whole thing by stating on the label that boric acid is in the rennet extract and in the cheese, but as long as the ruling was made prohibiting the use of boric acid that would not do any longer and the cheese would have "to be dumped into the river," and we do not know what confusion and trouble there would be.

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The President: I will call on Mr. Shilling.

Mr. Shilling: I did not intend to say anything, but it seems to me that since you are in the position you are now you should not be lulled into a feeling of security by the idea that they are not going to enforce the law against the use of boric acid. If cheese was the only food product that it entered into, or if butter was the only food product that coal tar dyes entered into, there is no question in the wide world that they would be interfered with because everybody knows that these ingredients are not used in sufficient quantities to do any injury, but both products go into other food. For instance, the department is getting after us on the butter color question, simply from the fact that coal tar colors are used largely in candy. Do you see the position it puts the internal revenue department in enforcing the law? They cannot exclude coal tar colors in candy and allow us to use it in butter. That is the same position you are in in regard to this other matter.

In regard to the use of butter color, we are more fortunate than you in this case. Eight years ago somebody was bright enough to secure the passage of a law by Congress permitting the use of harmless color in butter, and we have that and no one can get around it. There was a ruling came up sometime ago stating that the fat content of butter should be 82½%. I simply tell you this to illustrate what can be done. I will

not discuss as to whether this was right or wrong, but the dairymen immediately sent a committee to Washington to prevail upon the members of this commission not to enforce the law, and what did they get? They came back with this answer only two weeks ago, that the secretary of agriculture said "They cannot start enforcing that law unless I say so, and I will not say so." We are not always going to have Secretary Wilson at the head of the agricultural department, the next secretary may say so. Dr. Wiley says, "I cannot start a suit unless Wilson says so." You want to appoint a committee and provide them with funds to go to Washington when the time comes, go to the secretary of agriculture and lay your case before him. The time will come when they will enforce that to protect food products in another direction and you will want a committee to be there to look after your interests.

The President: Following out the suggestions of Mr. Shilling to appoint a committee to go to Washington and call on those people would say that this is pretty sudden.

Mr. Shilling: I do not regard at the present time that there is any necessity of sending a committee there, but I suggest that you have a committee ready to go there when there is any necessity.

Mr. Moore: I move that as chairman of that committee we have Mr. Aderhold, the other member to be Mr. Baer.

Motion seconded and carried.

The President: We will now hear from Mr. G. C. Hendy of Platteville, giving a report of Two Farm Dairies in Cheesemaking.

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## TWO FARM DAIRIES IN CHEESEMAKING.

MR. G. C. HENDY, Platteville, Wis.

Mr. Chairman and Friends: The word friend indicates a tie and there is certainly a tie existing between us because we have common interests, hence I address you as friends.

Yoy will very soon discover that I am an amateur dairyman and my paper will seem stale and uninteresting to most of you. For many years I followed the mercantile business, but all the

time I longed for fresh air and farm life. My boyhood days were spent on the farm and as I grew older the old love kept coming back.

An opportunity came and I exchanged my mercantile business for two farms, several miles distant, containing four hundred acres. Now the problem was, how to farm successfully. and still live in the city; for country life was distasteful to most of my family.

I followed farming in a general way for a few years by hiring or renting on halves. Butter was made on the farms and sold in the home market. In due time the creameries came and I took them in. The returns from the dairies was larger but still unsatisfactory. Shall I give up the proposition and call it a failure? No! Never! Failure is not my name! That word "failure" carries with it something dreadful. With faith in ones ability to succeed is a good starting point.

Mr. C. E. Estabrook, or "Charley" as he was called when we were school boys together, was sent to the Legislature from the Northern part of the state. He presented a bill for the holding of farm institutes. The bill passed. The Institutes came. I took them in. Agents of agricultural papers were there bulldozing the farmers into subscribing for their papers. I subscribed. Began to read. The scales began to fall from my eyes. The dark cloud of superstition and ignorance gradually arose and later passed off like mist before the sun on a June morning, and the eyes that were in darkness saw a light, a distant light, "And me thought it was the Beacon Light" of a more successful dairyman. I took new courage, feeling assured I was on the right path. I had already bought calves from the best butter cows and occasionally one of the cows. The calves grew to maturity, and five years ago my herd numbered twelve. A neighbor proposed we build a brick and Limburger cheese factory. Some stock was subscribed, but not until a year later was it a success. It took us a year or two to get fairly going and ascertain where we were at. My herd of cows, now 20, was not satisfactory. I wanted a larger flow of milk. I talked with men who had experience in cheesemaking, took more to "reading up" on dairy cows, etc. I thought of the bulldozing newspaper men and wished I could see him and subscribe for a good dairy paper. I began to dislike the word "bulldozing" and substituted the word "promoter." I culled out each year my poorest cows at the end of the milking season and purchased better milkers until at the close of the season of

1905 my herd of 20 yielded me $1,000.00, besides the calves which brought me on an average of four dollars each. The cows averaged 5,240 pounds of milk for the season.

A good neighbor milked 30 cows but fell short a few hundred pounds of having as much milk as I did from 20. I question if he realizes that he is in the ranks of those who favor dual purpose cows. I have reached the fifty dollar mark (and better) the point for which I started—now what? Has the goal been reached? Am I at the top, or am I on the hillside? Where is that pesky newspaper man, the promoter? Wish I could see him. Ah! Ha! He must have thought of me,—he appears in person or by proxy—here are more papers. When he comes again invite him in,—have him stay to dinner, —give him the best you have,—subscribe for his paper, for it will help you to solve many problems,—it will be a light to your pathway to success. I glance over the papers hurriedly. I thought of the past. I took a look into the future. That "Beacon Light" is still far from me but brighter than before. I cannot stand still! I must move onward and upward! Where there is a will there is a way. I may yet, ere I reach three score and ten, find myself on the summit of success. I headed one of my herds last spring with a Holstein of the De Kall family, with good papers and an excellent record. I have set my peg ahead to the seventy-five dollar mark, and ask for time to get there.

My cows are a mixture of short horn, Jersey and Holstein. I used for several years an animal from a dam of excellent milking qualities and sired by a full blood short horn. My herd of 20 cows is at my Farview Dairy, where the milk goes to a brick and Limburger factory. At my Lily Grove Dairy, which is the larger, we make American cheese. On March 1st. 1905, on the Lily Grove Dairy, I started with a new man. I furnished 20 cows and he 10. During the first season we culled out 8 head. On March 1st, 1906, our herd numbered 26, and some of them did not freshen until midsummer. We would have culled out a few the past season but did not as they were bred to De Kall. On March 1st, next we will have 28 cows, 4 heifers, coming three, all of which will probably freshen between March 1st, and May 1st. Thus, you see it may take three years to get fairly under way.

The problem of feed, I take it, is more easily solved in summer dairying than in winter dairying. Only once did I have to feed green corn and fodder and during the months of Sep-

tember and October. I have no silo as yet and am not certain it would be profitable, except in winter dairying. We have two and sometimes three pastures, and change from one to the other. We seldom fail to have good grass for the cows and it is probably because most of my pasture land is on the bottom and seeded to blue grass. One of our cheesemakers, Mr. Dietrich, tells us we should have tame grass pastures, but I am not sure he is right. We can't very well have anything but blue grass on the hill sides. On my Farview Dairy I have full control and the cost of keeping 20 cows is as follows:

| | |
|---|---|
| 250 bushels oats at 28c | $70 00 |
| 200 bushels of corn at 40c | 80 00 |
| 20 tons of hay at $6.00 | 120 00 |
| 8 tons of hay at $8.00 | 64 00 |
| 1 stack of straw | 12 00 |
| Fodder | 8 00 |
| 1,200 lbs. bran | 14 00 |
| Pasture, 6 months $1.00 | 120 00 |
| Total | $488 00 |
| Crs. | |
| By season's milk checks | $1,000 00 |
| By 19 calves at $4.00 | 76 00 |
| Total | $1,076 00 |
| | 488 00 |
| Net profit | $588 00 |
| Net profit per cow | $29 40 |

I have made no estimate of whey fed to the hogs, the grain the hogs got in following the cows or the butter made at both ends of the season. During the season of 1905 the milk yielded was 110,058 pounds or 5,240 pounds per cow. During the season of 1906 the milk yield was 104,609 pounds or 4,957 pounds per cow. The cows were milked about one month longer in 1905 than in 1906. For some reason, the cheese made early in the season and that made late in the season of 1906 did not bring good prices.

### WINTER FEEDING.

I dry the cows during the first part of January and milk them out occasionally later. I discontinue the grain ration as I commence drying them, feed them at night what hay they will clean up, and oats and straw during the day. Should they grow a little thin, and as soon as they are dry, I give each

cow five or six ears of corn daily. At first signs of springing I lessen the corn ration and begin feeding dry oats, one quart daily, and gradually increase to four quarts, and leave out corn almost entirely. Mostly hay, clover and timothy mixed, after this, with straw and a little fodder if I have any for change of feed. After freshening I change grain rations to ground corn and oats, ground oats and barley, (and sometimes all the three mixed), six quarts twice a day, feeding grain rations lightly at first, and tepid water two or three times. I aim to have them in a good flow of milk when they go on grass and in good condition. I feed extra those that are a little thin. I admonish my men to be kind to the cows and gentle. It pays. Each to milk the same cows every time when possible and in the same order, to dust the udder and flank with hand, dry milk, and strip down well.

The 20 cows on Farview Dairy are milked by my hired man and his wife. I pay the wife one dollar per cow per month for the ten she milks. This is in addition to his wages.

In my dairying I labor under the disadvantage of having to build up my business, make needed improvements and live from the proceeds. I commenced by putting up a building of a size to accomodate the number of cows on hand and add to length when necessary.

I put posts in the ground, boarded up sides and ends with matched lumber and shingled the roof. Height of building six feet on one side and ten on the other, above floor. Windows in the ends and openings for fresh air in rear of the cows. I use the common stanchion with board floor three feet wide to feed on. Under the cows is a dirt floor back within a foot of the gutter. There I have a plank ten or twelve inches wide. Next comes the gutter eighteen inches wide with plank bottoms and sides and six inches deep. Back of the gutter is a plank floor two and one-half feet wide to walk on. This I find makes a very good cheap cow stable. The feed is brought in through doors in front of the cows. For turning the cows in and out there is a door in one end and another in the side near the other end.

In my other dairy the floor is all of plank with a drop of three inches only, which I much prefer to a deeper drop. The gutter runs back of drop 18 inches then gradually rises 2½ inches or 3 inches. This keeps the liquid manure within bounds, and by free use of straw to absorb it, it finds its way to the meadow.

At the Farview Dairy we attempted last spring to raise the calves on whey and met with reasonable success. When the calves were dropped they remained with the cows three days, were removed to a separate building and fed fresh milk until the factory started. As the whey was gradually introduced the fresh milk was lessened until the latter was left out entirely. During this time they had access to ground corn and oats and sometimes whole oats. After grass came they were left to run in the pasture and given 4 or 5 quarts of whey and a pint of oats twice a day. Blatchford's Calf meal formed a part of ration after milk was discontinued. At the age of 3½ to 4 months they were turned into a fresh pasture and did well.

I will mention three things I have learned from experience:

Feed very little corn during the last few weeks of pregnancy

Feed no whole oats soon after freshening.

When purchasing a cow that has an old appearance look into her mouth as you would in buying a horse.

I once said to a physician—there are a great many medical graduates and certainly there will not be room for them all. He answered—"Room enough in the upper story." How many of Wisconsin dairymen are in the "upper story?" If we would land there we must drop the dual purpose cow and the steer question and confine all our energies to the straight and narrow path that leads to the goal, and in time the state that now leads all others in cheesemaking will double its present output.

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DISCUSSION.

The President: We have heard a splendid paper on farm dairying. You will notice in this paper that with all the care but very little returns were obtained from the individual cows on the average, I think I heard Mr. Hendy say only $29.40 per head. Have you any questions to ask?

Member: Do you feed oats without being ground?

Mr. Hendy: In my paper I said I fed whole oats a few weeks before freshening, but after freshening I thought it necessary to discontinue. My man suggested that we feed whole oats to save bran. We tried it but as it caused the scours we discontinued it.

Member: At what period of the year do your cows freshen?

Mr. Hendy: I have them freshen every year between the first of March and the first of May, about the middle of March.

The President: What time of year did they freshen when they made $29.40?

Mr. Hendy. About that time.

Member: You do not seem to depend much on milk in the winter time. We make the most out of our winter milk.

Mr. Hendy: I am fixed for summer dairying and not for winter dairying.

Mr. Shilling: What do you mean by saying you are fixed for summer dairying?

Mr. Hendy: If I was going into winter dairying I would have a silo. That would incur some considerable expense and I find in starting there is considerable expense on two dairy farms, so I will try summer dairying until I get a silo when I can go into winter dairying if I choose.

Member: Mr. Hendy said his cows brought a thousand dollars. I have twelve cows that brought in a thousand dollars.

Other member: I have been milking twenty cows, about half of them heifers, and we get over a thousand dollars a year from the heifers and cows.

Mr. Hendy: You perhaps have been in the business longer than I have.

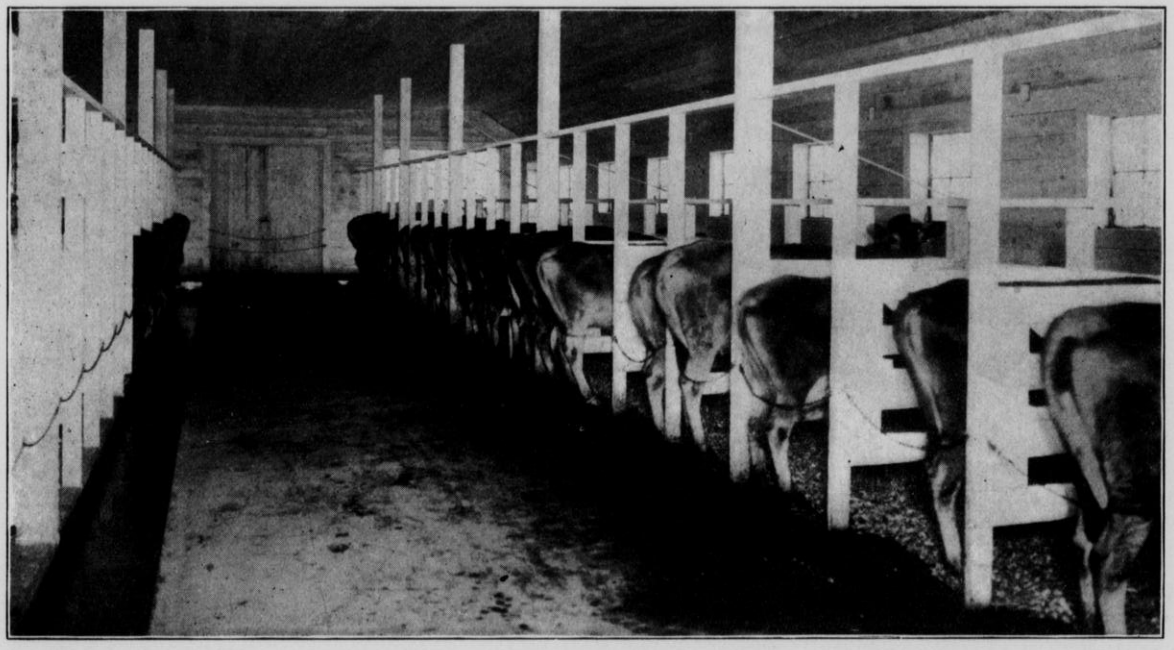
Member: I have been in the business twenty years.

Mr. Alder: I should like to ask the gentleman if he sold his milk straight out at a certain amount per hundred, at a low price, or is it due to the possibility that a poor yield was obtained at the factory? It seeme to me you are putting the blame on the cow for giving a poor yield.

Mr. Hendy. Our factory is run on the co-operative system. We own the stock. No milk is bought except from a few who are not patrons and they were paid 75 cents a hundred the past season.

The Chairman: I understood Mr. Hendy to say his cows came fresh in May. I want to ask how long you could make cheese that summer?

Mr. Hendy: They freshen from the first up to the middle of March and to the first of May and we milked up into January. When we stopped drawing the milk to the factories I began drying the cows. Stopped the grain ration and put them on straw.



WHITE-WASHING COSTS ONLY A SMALL SUM, BUT HOW CLEAN AND SANITARY IT MAKES THE BARN.

The Chairman: That would be only eight months. Is it not possible for a cow to be milked longer than eight months in a year?

Mr. Hendy: They were milked longer than that on the average,, Mr. Chairman, about nine months.

Member: They can be milked ten months in the year if fed for it.

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Mr. Fred Marty takes the Chair.

The Chairman: The next subject will be Dairy Barn Sanitation by Mr. E. L. Aderhold, of Neenah.

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## DAIRY BARN SANITATION.

President E. L. Aderhold, Neenah, Wis.

State Cheese Factory, Dairy and Food Inspector.

It would be an easy matter to demonstrate that the question of stable construction and sanitation has been badly ignored and, in some respects, entirely misunderstood by the masses of milk producers.

In case we were to inspect a promiscuous lot of several dozen stables we might find a few that have fair ventilation, plenty of light, whitewashed walls and ceilings, sanitary floors, an absence of objectionable odors, and where clean cows are kept.

In most stables, however, we would find the ventilation very faulty, not enough light, cobwebs and dust overhead; in some we would find leaky, rotten floors, putrid soil underneath, strong odors and cows plastered with dung.

Milk produced under such conditions does not belong in the same class with milk which comes from clean cows in a sanitary, healthful stable.

The man who works in a tannery becomes so accustomed to the odor connected therewith that he fails to mind it. In a like manner, he who daily works in a filthy stable may not appreciate the odors that prevail there.

The law requires that the stable shall be well lighted, well ventilated, not filthy, and the cows shall not be filthy. A penalty of $25.00 to $100.00 for each offense is provided for a violation of this law. Stable inspection will be in progress hereafter, so it behooves every dairyman to post himself on this question.

In discussing the subject assigned me I have no wish to go into details but merely to touch upon those features which insure to the cow's comfort and cleanliness and which are conducive to healthfulness and productiveness.

## CONTAMINATION OF STABLE AIR.

According to a certain experiment, the weight was kept of the food and water consumed by a steer weighing 1,600 pounds, also the weight of the solid and liquid manure voided and the gain in weight of the animal.

The weight of said voidings, plus the gain in weight, proved to be 49 pounds less in 24 hours than the weight of food and water consumed.

It was given out that this 49 pounds of food and water was discharged mostly from the lungs in the form of moisture and carbonic acid gas, nearly half of it being converted into carbonic acid gas.

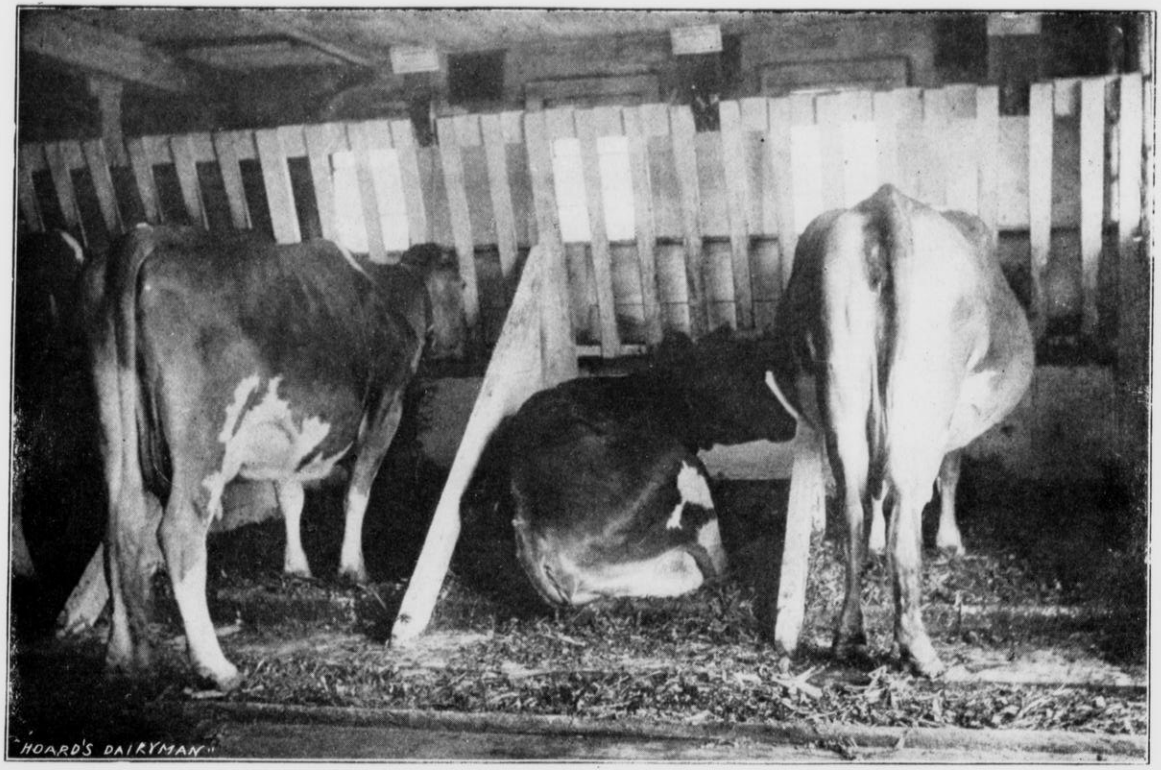
When one animal will discharge so large an amount of impurities we must conclude that with a stable full of live stock the constant discharge of impurities amounts to considerable. To this must be added the odor arising from the dung.

Upon reflection it becomes at once apparent that if the stable air is to be kept comparatively pure it must be kept rapidly changing.

Carbonic acid gas is poisonous, is heavier than air, and settles to the floor. The coldest air also settles. In the upper layer we find the heat, and purer air than at the floor.

## VENTILATION.

The system of ventilation in use in many stables is an opening in the ceiling, with everything else closed during cold weather. That system does not remove the foulest, coldest air; it does not provide good circulation at the floor where the cows breathe and throw their breath; it does remove the best




MEANS OF KEEPING COWS CLEAN. RELATIVE POSITION OF THE COWS WHEN LYING DOWN AND STANDING.

air and the heat, and it demonstrates the ignorance of the masses on stable ventilation.

We should aim to have the air changing as rapidly as possible consistent with a sufficiently high temperature. Cows will not yield milk profitably if they are obliged to suffer from cold.

The "King" system of ventilation removes the lower layer of air but does not permit the warm air to escape. In a well constructed stable this insures a rapid change of air without unduly lowering the temperature.

Outlet flues are built tight, usually of lumber, beginning eight or ten inches from the floor and extending higher than the ridge of the roof to insure a good draft at all times. When made of metal ice is liable to form on the inner walls. One such flue is sufficient for a small or medium-sized stable, while a very large one would probably be better served with two flues some distance apart.

The proper capacity of the outlet flues is determined by the total weight of live stock in the stable, figuring one square foot of cross section inside for each 5,000 pounds of live stock

For instance, if the stock weighs about 20,000 pounds, four square feet would be required, which could be furnished by one flue two feet square, or by two flues 12 by 24 inches each. Each flue should be provided with a damper for regulating the flow of air when a strong wind prevails. The lower layer of air at every part of the stable should have an opportunity to flow along the floor to an outlet flue. These flues may be placed where least in the way. If one happens to be placed close beside a cow she should be protected from draft by a partition several feet high and as long as the cow.

### INLET FLUES.

Fresh air is admitted through the small flues at the walls, which compel the air to travel upward about four feet after which it is discharged at the ceiling where it meets the heat and becomes warmed. This arrangement prevents the warm air from flowing out inasmuch as it will not travel downward against the colder, heavier air outside. These inlet flues are usually four to five inches in diameter and are distributed on two or more sides of the building, say, one every 10 to 15 feet. Where cows are facing away from the walls I think some of

these flues should extend along the ceiling, so that they will discharge the fresh air directly over their heads.

At present I don't know how important the inlet flues are, as I have seen apparently satisfactory results where only the outlet flues were used and I would urge every dairyman to install the latter and follow directions closely.

Heat in a stable represents food, so during the winter we can't afford to waste it. It should be utilized to the fullest extent in warming fresh air. It should not be permitted to flow, leak or be conducted out. That implies a tight ceiling, tight walls, preferably with one or more dead air spaces or some other good insulation.

### LIGHT AND DISINFECTION.

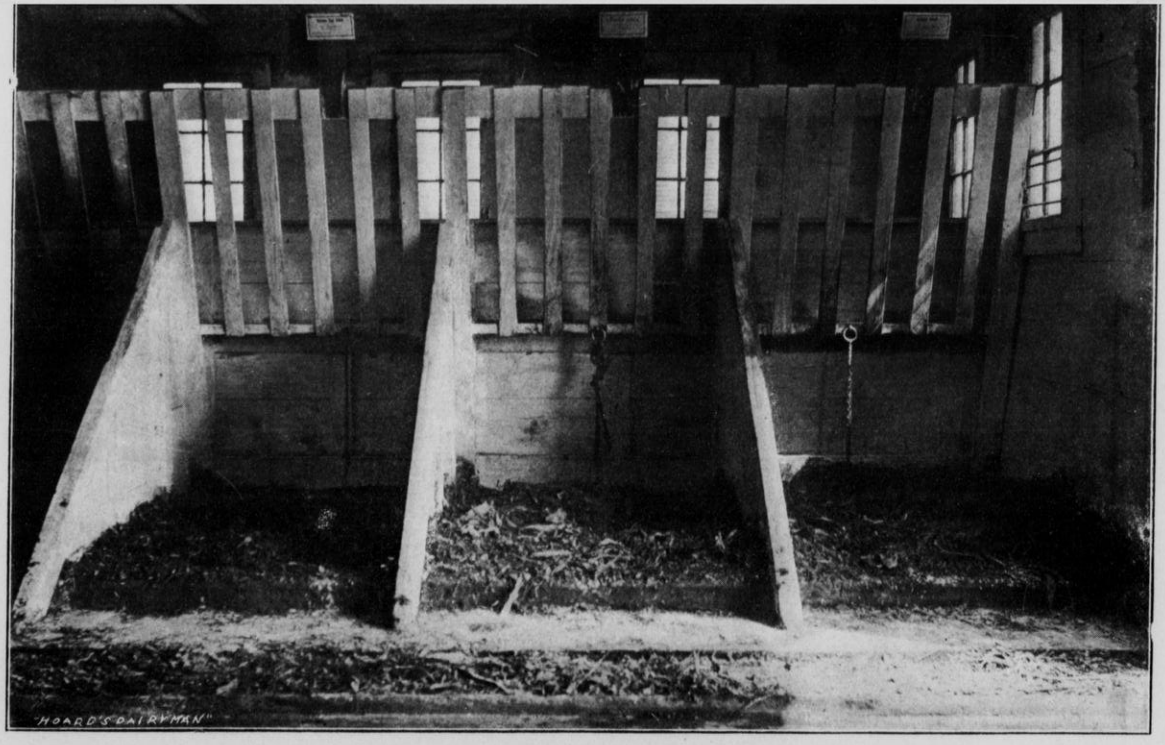
Sunlight doesn't cost anything, so we should not deny it to cows. The amount of window space recommended by the United States Department of Agriculture is six square feet per cow. Windows should be long, placed vertically, most of them preferably on the south and east sides where they are protected from the coldest winds.

Whitewash is a most effective, inexpensive agent of sanitation and should be used about twice a year on ceiling, walls and fixtures. It can best be aplied with a spray pump. A little common salt added to the whitewash renders it less liable to rub off.

The plank floor is now quite expensive, not durable and, as commonly laid, permits liquids to leak through into the soil, which becomes foul and from which gases rise upward into the stable. As a rule, it is a decidedly unsanitary floor. Whenever a new floor is to be laid cement concrete should be unsed by all means. Then there will be no leaking and no decay.

The stall floors may be overlaid with boards or plank. The pitch of the stall floor should not exceed half an inch from manger to gutter. The size of the gutter, according to some of our most progressive dairymen, should be eight inches deep by twenty inches wide. Others maintain that it is not necessary to have it so big. The passage back of the gutter should slope but slightly toward the gutter. It should have a rough surface to prevent slipperiness. The inner surface of the manger should be very smooth to facilitate cleaning.

Common decency, as well as the law, requires that cows be kept clean. It is not expected or necessary that farmers spend




MODEL STALL EMPTY AND AFTER IT HAS BEEN CLEANED — NOTE RING AND ROPE FOR TYING COWS.
ILLUSTRATIONS FURNISHED BY EX-GOV. W. D. HOARD, FT. ATKINSON, WIS.

much time in cleaning them. The sensible thing is to provide stalls wherein cows can not become filthy, and on this point some farmers will be obliged to do some studying otherwise they may get into trouble.

It should be made next to impossible for a cow to soil her bed. This result can be obtained by using such stalls as the "Thorp," "Howie," or the "Model" stall, and several others. The above named stalls, I understand, are not patented. The rigid stanchion should not be used because it is non-adjustable, and punishes the cow. An adjustable swing stanchion is now on the mrket and is considered worthy of attention and, by the way, I would suggest that almost any swing stanchion can be made adjustable by using an eight or ten inch plank flatwise at the bottom and one likewise at the top to fasten the ends of the stanchion on. With such an arrangement the stanchions need not be fastened in a line. They can be fastened long or short, according to the length of the respective cows.

It would seem advisable to have stalls of various lengths, rather than do all the adjusting at the front, especially where the manger is not movable. The mangers or gutters may be made on the bias. Let the stall at one end of the row be four feet long and at the other end of the row five feet long. The cows may thus be placed in stalls that nearly fit them. The fit can be made perfect by a little adjusting of the fasteners. Where stalls are separated by partitions a cow can not step on and injure her neighbor's udder. A box stall should be available at time of freshening.

The sprinkling of land plaster behind cows daily, as practiced by some of the most successful dairymen, tends to hold the ammonia in the manure, thereby preserving fertility and lessening contamination of the stable air.

Where horses and calves are kept in the same building with cows it is an advantage to have them partitioned off.

Where manure is kept in the barnyard, it should, if possible, be piled up some distance away from the stable, so that cows don't need to wade through it.

Having provided sanitary, healthful, comfortable quarters such as every cow owner ought to have, the cows should not be left long outside on winter days. The stable keeps the cows warm provided the cows keep the stable warm. They can't do it if left outside too long.

DISCUSSION.

Mr. Shilling: You spoke of wood floors. What is the matter with cement?

Mr. Aderhold: It would be all right in that case where there is a thick bed. Some dairymen do not have any floor over the cement and seem to get along all right. Others say it is dangerous, that the cows lying down injure their udders on the cement floors, and I think there is something in it.

Mr. Shilling: Have you had any experience in cement barns built of cement blocks?

Mr. Aderhold: I have not but think it would be very good if they had a continuous air space. That is what they are leading up to with cement block buildings. In that case I think they would be very good indeed.

Member: Did you ever see any kind of stall that would keep the cows as clean as the "Bidwell" stall?

Mr. Aderhold: Oh, yes, they have a number of modifications of it but even in the "Bidwell" stall some are careless in making adjustment right and do not keep the cows clean. You have to be particular about those things to get the best results.

Member: I have traveled a good deal in the last ten years and I have never seen a lot of clean cows with any other stall than the "Bidwell."

Mr. Aderhold: I have seen clean cows with stanchions and I have seen very filthy cows with stanchions, the adjustments were not right. It is the dairyman's fault ten times as often as it is the fault of the cow.

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The Chairman: If there are no further questions we will take up the next subject.

# A NEW NUMERICAL SCALE FOR THE JUDGING OF CHEESE.

H. ANDERSON, Sheboygan Falls, Wis.

Our scale of points is made up for the purpose of giving number of points to the different qualities in cheese according to their importance. Therefore we give 45 points out of 100 for flavor and only 15 points to color. In other words the scale is intended to give flavor 3 times as much influence on the total score as the color. So far the scale appears to be all right and theoretically it is, but in its practical application we find that the ideal purpose of the scale is entirely ignored, as a point lost in any one quality regardless of its relative value is one point lost out of 100, thus giving the different qualities equal influence on the total score. This will be made clear by an example. Let us take 4 entries of cheese. They all lose one point but in different qualities.

*Table I.*

| Entry. | Flavor, 45. | Texture, 30. | Color, 15. | Make-up, 10. | Total 100. |
|---|---|---|---|---|---|
| 1 | 44 | 30 | 15 | 10 | 99 |
| 2 | 45 | 29 | 15 | 10 | 99 |
| 3 | 45 | 30 | 14 | 10 | 99 |
| 4 | 45 | 30 | 15 | 9 | 99 |

We see by this that all the 4 entries have a total score of 99.

That a numerical scale of points is worthless under the present system of practice will be seen still more clearly by reversing our scale and applying it to the same four entries as we had before.

*Table II.*

| Entry. | Flavor, 10. | Texture, 15. | Color, 30. | Make-up, 45. | Total 100. |
|---|---|---|---|---|---|
| 1..... | 9 | 15 | 30 | 45 | 99 |
| 2..... .... | 10 | 14 | 30 | 45 | 99 |
| 3..... | 10 | 15 | 29 | 45 | 99 |
| 4..... | 10 | 15 | 30 | 44 | 99 |

Here flavor is given 10 points and make up 45 points and so forth but the 4 entries have all 99 points in total score just the same.

This example shows that to make a numerical scale effective the points in the different qualities have to be reduced to their relative value according to the scale. Thus we give 45 points to flavor and 15 points to color, that is, flavor is considered three times as important as color, consequently one point lost in flavor should count three times as much as one point lost in color. We have to scale the lost points just as well as we scale the qualities.

I will here suppose that the valuation of qualities in American cheese is right and call one point in flavor (the most valuable quality) one whole point, one point in texture 0.67—one point in color 0.33 and one point in make-up 0.225—all according to our present scale and apply this rating of lost points to the very same 4 entries we had before with the following results:

*Table III.*

| Entry. | Flavor, 45 | Texture, 30 | Color, 15 | Make-up, 10 | Total 100 |
|---|---|---|---|---|---|
| 1..... ..... | 44 | 30 | 15 | 10 | 99 |
| 2.... ..... ... | 45 | 29 | 15 | 10 | 99.33 |
| 3 ..... | 45 | 30 | 14 | 10 | 99.67 |
| 4..... ..... | 45 | 30 | 15 | 9 | 99.775 |

We see from this table that the 4 entries that before by the old system all had the same total score now have all different total

scores. In this way we do justice to the scale and to the qualities and entries and the chance of getting several entries in a contest having the same total score are very much lessened. It seems to me that the time has come when such a more up-to-date system ought to be adopted in scoring American, Swiss, brick, and Limburger cheese and also butter.

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DISCUSSION.

The Chairman: You have had a very interesting paper on this subject and it is now open for discussion.

Mr. Schwingel: What scale of points do you think best adapted for American cheese?

Mr. Anderson: I do not find any fault with the scale we have but with the application of the scale. As I showed by my paper, the way the scale is operated now it is no scale at all. It may be 45 points on flavor, it will make no difference whatever.

Member: How would it be to score each feature on the basis of 100,—100 for flavor, 100 for texture, 100 for color and 100 for makeup, and have a perfect cheese score 400? Would that show up right?

Mr. Anderson: That would not make any difference because all the points would be the same anyway; it would be the same as if they got 25 for the four qualities. Whether we have them 25 or 100 it will make no difference, it will be the same proposition. The scale is intended to use this for different qualities, therefore if I get 45 on flavor it would be half the quality because the flavor is the main thing in cheese. When we eat the cheese it is the flavor we appreciate. It is made up more or less nicely and when we eat the cheese we know nothing about it, and so the flavor is the main thing, and the scale I suggest is intended to have about one half the influence in the scoring, but at the present scoring all four entries have the same influence.

As far as I have been able to figure it out, I have not been able to find any better way to improve the scale than to scale the lowest point according to the quality. For instance, one point is 15, that is just one-third of the influence.

Mr. Hansen: At this time I think it would be a good plan to bring up a matter that we have been discussing among ourselves, and that is to form an alumni of dairy students. There are a good many students engaged in the manufacture of cheese and butter throughout the state and when they come to these conventions they ought to be banded together in an organization. In many of the universities and colleges throughout the United States they have all the graduates meet once a year and renew old acquaintance, and I think it would be a good thing if something of the kind could be brought up at the annual convention of the cheesemakers.

The President: That matter can be taken up right after the close of the session, or would you rather have it now? We had better leave that until after the close, and I will now call for a song.

Singing by Messrs. Streuben and Alder.

The President: Those who are desirous of forming a dairy students' alumni association, please remain in the room at the close of the session. Is there anything more to come before the meeting?

I just want to make a few remarks and I will be as brief as I can. I want to say that while I have presided over these conventions now for three successive years, the work has not been very difficult to me. Of course a man has to pay pretty close attention to running things, but with the good program that Mr. Baer has always prepared and with the enthusiasm that the delegates have always shown, it has been a very easy matter to conduct the sesions so that most of those in attendance were satisfied, I believe. I want to thank you all for the good behavior and courtesy you have shown me at all times and I hope you will extend the same courtesies to the present officers. I thank you again.

This convention will stand adjourned *sine die*.