Tenth annual report of the Wisconsin Dairymen's Association : held at Sheboygan, Wis., January 11-13, 1882. Report of the proceedings, annual address of the president, and interesting essays relating ...

Wisconsin Dairymen's Association
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TENTH ANNUAL REPORT

OF THE

WISCONSIN

DAIRYMEN'S ASSOCIATION,

HELD AT

SHEBOYGAN, WIS., JANUARY 11-13, 1882.

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

Compiled by D. W. CURTIS, Secretary.

MADISON, WIS.:
DAVID ATWOOD, STATE PRINTER.
1882.

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OFFICERS, 1882.

PRESIDENT,

C. R. BEACH,

WHITEWATER, WALWORTH COUNTY.

VICE PRESIDENTS,

CHESTER HAZEN, LADOGA, FOND DU LAC COUNTY.,

President Wisconsin Dairymen's Association from 1872-4.

HIRAM SMITH, SHEBOYGAN FALLS, SHEBOYGAN CO.,

President Wisconsin Dairymen's Association from 1875-6.

A. D. DELAND, SHEBOYGAN FALLS, SHEBOYGAN CO.,

President Wisconsin Dairymen's Association, 1877.

H. F. DOUSMAN, WATERVILLE, WAUKESHA CO.,

President Wisconsin Dairymen's Association, 1878.

Z. G. SIMMONS, KENOSHA, KENOSHA CO.,

President Wisconsin Dairymen's Association, 1879.

STEPHEN FAVILL, DELAVAN, WALWORTH CO.,

President Wisconsin Dairymen's Association, 1880.

SECRETARY,

D. W. CURTIS,

FORT ATKINSON, JEFFERSON CO.

TREASURER,

H. K. LOOMIS,

SHEBOYGAN FALLS, SHEBOYGAN CO.

ARTICLES OF ASSOCIATION.

[*Adopted February* 15, 1872.]

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

ART. II. The officers of the association shall consist of a president, secretary and treasurer.

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

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

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

ART. VI. The regular annual meeting of the association shall occur on the second Tuesday of February in each year, at such place as the executive board shall designate.

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

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

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

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

MEMBERS FOR 1882.

B.

Brag, W. C., Lake Mills, Wis.
Burhyte, John T., Fond du Lac, Wis.
Blackstoe, T. M., Sheboygan, Wis.
Barclay, B. F., Elgin, Ill.
Bamford, H. J., Plymouth, Wis.
Bliss, Herbert, Sheboygan, Wis.
Beach, C. R, Whitewater, Wis.
Baker, E. B. & C., Chicago, Ill.
Barber, A. H., Chicago, Ill.
Boyd, John, 199 Lake St., Chicago, Ill.
Billit, Geo., Whitewater, Wis.
Boener, A. B., Cedarburg, Wis.
Brown, S., Jefferson. Wis.
Bultz, Chas., 115 S. Water St., Chi.

C.

Crump, L. C., Lake Mills, Wis.
Conover, S. H., Plymouth, Wis.
Clinton, O. P., Waukesha, Wis.
Cobb, Chas. D., Sheb. Falls, Wis.
Curtis, D. W., Fort Atkinson, Wis.

D.

DeLand, A. D., Sheb. Falls, Wis.
Danfort, J. A., Meeme, Wis.
Davis, W. T., Chicago, Ill.
Decher, John B., Belgium, Wis.
De Schmidt, J., Sheboygan, Wis.
Denison, J. H., Sheboygan Falls, Wis.
Dasson, John, Sheboygan Falls, Wis.
Davis, S. B. & Co., 110 S. Water St., Chicago, Ill.

E.

Eastman, E., Plymouth, Wis
Elwell, Wm., Sheboygan Falls, Wis.
Echle, Mrs. Mary, Port Washington, Wis.

F.

Freeman, O. H., Sherman, N. Y.
Fargo, F. B. & Co., Lake Mills, Wis.
Fasse, Fred., Johnsonville, Wis.
Fink, C. R, Alden, Ill.

G.

Gilman, H., Plymouth, Wis.
Gilbert, D. W., Sheboygan Falls, Wis.

H.

Horner, Wm., Filmore P. O., Wis.
Holden, B., Sheboygan Falls, Wis.
Humphry, H. C., Waldo, Wis.
Holms, G. L., Sheboygan, Wis.
Harmon, N. C., Waldo, Wis.
Hazen, C., Ladoga, Wis.
Hamm, W. A., Oakhill, Wis.
Honey, Wm., Bellview, Iowa.
Hoard, W. D., Fort Atkinson, Wis.
Halron, T. O., Cato, Wis.
Hawthorn Bros., Elgin, Ill.

J.

Johan, P., Port Washington, Wis.

K.

Karstaedt, C. T., Mosel Wis.
Kirkland, W. D., Sheb. Falls, Wis.
Kelley, Mrs. J. H., Short Hand Reporter, 59 Major block, Chicago, Ill.

L.

Lawrence, F., Sheboygan, Wis.
Loomis, H. K., Sheb. Falls, Wis.
Lumbard, J. G., Union Line Chi., Ill.
Loomis, A., Hingham, Wis.
Littlefield, S., Plymouth, Wis.
Lang, Willis, Waupun, Wis.
Lawrence, George, Waukesha, Wis.
Lawrence, Geo., Jr., Waukesha, Wis.
Lawrence, Geo. C., Merchants' Dispatch, Chicago, Ill.

M.

Mather Bros., Sheb. Falls, Wis.
Mehl, John, Milwaukee Wis.
McCutchen, R. F., Whitewater, Wis.
Morley, N. W., Baraboo, Wis.
Morley, Miss Fannie, Baraboo, Wis.

Moulton & Co., F. D., N. Y. city.
Mead, J. H., Sheboygan, Wis.
Merrick, Jerry, Genoa Junct., Wis.
Marvis, R., Howard's Grove, Wis.

N.

Newell, James A., Whitewater, Wis.

O.

Orvis, James, Oakfield, Wis.

P.

Peck, George, Sheb. Falls., Wis.
Parish, J. D., Sheb. Falls, Wis.
Pierce Bros., Sheb. Falls, Wis.
Peacock Bros., Sheb. Falls, Wis.
Pape, C. H., Sheboygan, Wis.
Patrick, H. C.
Peebles, E., Peebles, Wis.
Peck, J. C., Peebles, Wis.

R.

Reich, C., Sheboygan, Wis.
Reik, J. A., Hartford, Wis.
Richards, C. E., Bristol, Wis.
Reineking, T. C., Franklin, Wis.

S.

Springborn, Wm., Sheboygan, Wis.
Slyfield, James, Waldo, Wis.
Smith, Hiram, Sheb. Falls, Wis.
Strong, F. N., Sheb. Falls, Wis.
Strong, Ira, Sheb. Falls, Wis.
Seaman, W. H., Sheboygan, Wis.
Seward, N. W., Lake Mills, Wis.
Shultis, Norman, Waukesha, Wis.
Smith, R. B., Ft. Atkinson, Wis.
Smith, J. A., Cedarsburg, Wis.
Stoddard, E. F., Greenbush, Wis.
Strassburger, August, Franklin, Wis.
Sherman, H. D., Monticello, Iowa.
Skidmore, C. P., Stockbridge, Wis.

T.

Trowbridge, L. H., Winooski, Wis.
Thomas, W. C., Sheb. Falls, Wis.
Thurston, J., R. La Meotte, Iowa.

V.

Vosberg, J. B., Richmond, Ill.
Van Onwerkerk, P., Ovostburg, Wis.

W.

Wisselink, J., Gibsonville, Wis.
Walvord, H., Cedar Grove, Wis.
Wire, T. B., Genoa, Ohio.
Weeden, G. W., Sheb. Falls, Wis.
Wheaton, A. H., Aurorasville, Wis.
Wauser, Wm., Oustburg, Wis.

Z.

Zschetzshe, Thos., Sheb. Falls, Wis.

TENTH ANNUAL MEETING.

Sheboygan, January 11, 12 & 13, 1882.

PROGRAMME.

WEDNESDAY, 9 O'CLOCK A. M.

Entry and Classification of Butter, Cheese, and articles for exhibition.

EVENING SESSION, 7 O'CLOCK P. M.

Organization of Convention.

1. Address of Welcome by Wm. H. Seaman, Esq., Mayor of Sheboygan.
2. Response by Hon. R. D. Torrey, Oshkosh.
2. Opening Address by President Beach.

THURSDAY, 9 O'CLOCK A. M.

4. Appointment of Committees.
5. Report of Secretary and Treasurer.
6. The Advantages of Winter over Summer Dairying, by Geo. Lawrence, Waukesha.
7. What per cent. of Pure Milk is Delivered at the Factory, by O. Z. Olin, Waukesha.
8. Necessity of a Plan in Dairying, by Hon. Hiram Smith, Sheboygan Falls.
9. The Progress and Reputation of Western Butter, by Hon. H. D. Sherman, Monticello, Iowa.
10. The Present and Prospective Dangers of the Dairy Interest, by Hon. A. D. DeLand, Sheboygan Falls.
11. Dairy Experiments at the Experimental Farm, by W. A. Henry, Professor of Agriculture, State University, Madison.
12. The Dignity of Butter Making, from a Woman's Standpoint, by Miss Fannie Morley, Baraboo.
13. Dairying, and its Effects upon the Farm, the Farmer and the Community at Large, by W. D. Hoard, President of the Northwestern Dairymen's Association, Fort Atkinson.
14. Should not our Factories be so Equipped as to make either Butter or Cheese, as the Market Demands, by J. A. Smith, Belgium.

15. The Advantages of Associated Effort among Farmers, by Hon. R. D, Torrey, Secretary of Oshkosh Fair, Oshkosh.
16. What I have Learned in Butter Making, by F. C. Curtis, Rocky Run.
17. My Mistakes as a Dairyman, by Chester Hazen, Brandon.

All the persons whose names appear in the above programme have written that they will attend the Convention.

THURSDAY EVENING.

Dairy Banquet and Sociable.

DAIRY FAIR.

Premiums offered on Wisconsin Butter and Cheese, Dairy Utensils, etc, etc. To be exhibited during the Convention.

CLASS I.

PREMIUMS ON CHEDDAR CHEESE.

The association offers a premium of $50.00, to be divided among exhibitors in proportion to the number of points obtained by each, whose exhibits shall be awarded 44 points or over, on a scale of 50.

One cheese, manufactured at any time, of not less than forty pounds, constitutes an entry.

CLASS II.

S, B. DAVIS & Co., *Commission Merchants, 110 S. Water Street, Chicago, offer the following premiums:*

For the best "Young America" Cheese $5 00
For the best Cheddar Cheese..... .... 5 00

CLASS III.

GEO. S. HART & Co., *Produce Commission Merchants, 38 Pearl Street, New York:*

Offer a Prize Silver Cup, valued at $100, to the manufacturer of the finest quality of full cream made cheese.

Competition for same to include all makers of factory cheese complying with the rules of the association.

Prize to be retained by the winner for one year, then to be returned to the association for renewed competition.

The maker who is awarded the cup on three successive seasons to retain the same permanently.

The prize cup is of sterling silver, satin finish, with gold border and lining. Upon one side of it is engraved the figure of a cow, and upon the reverse side an approprate inscription. This cup is also enclosed in an elegant satin-lined case.

It has been won by A. H. Wheaton, Auroraville; Olin & Clinton, Waukesha; and H. A. Conger & Son, Whitewater.

CLASS IV.

CHAS. BALTZ, *Commission Merchant, 115 S. Water St., Chicago, offers the following premium:*

For the best colored full cream cheese $5 00

CLASS V.

PREMIUMS ON BUTTER.

The association offers a premium of $50 to be divided among exhibitors in proportion to the number of points obtained by each, whose exhibits shall be awarded 44 points or over, on a scale of 50.

CLASS VI.

PRINT BUTTER.

Best specimen or plate of butter made into fancy prints..... $5 00
Second best..... 3 00

CLASS VII.

GRANULATED BUTTER.

For the best sample of granulated butter..... $3 00
Second best..... 2 00
Granulated butter may be exhibited in fruit cans.

CLASS VIII.

BY JOHN BOYD, *Manufacturer of the Cooley Creamer, 199 Lake Street, Chicago.*

For the best tub of butter made at any time by the Cooley process, No. 00 Cooley creamer..... $25 00

CLASS IX.

BY BORDEN, SELLICK & CO., *Chicago, Western Agents for the Improved Howe Scales.*

For the best tub of butter made at any time, an improved Howe scale, capacity ½ oz. to 240 lbs..... $15 00

CLASS X.

BY CHAS. BALTZ, 115 *S. Water St., Chicago.*

For the best tub of butter..... $5 00

CLASS XI.

BY S. B. DAVIS & CO., 115 *S. Water St., Chicago.*

For the best tub of butter..... $5 00

CLASS XII.

BY F. B. FARGO & CO., *Manufacturer of the June Golden Butter Color, Lake Mills, Wis.*

For the best tub of butter colored with June golden butter color, one dozen June golden butter color..... $6 00
For the second best, one-half dozen..... 3 00

CLASS XIII.

BY CORNISH & CURTIS, *Fort Atkinson, Wis.*

For the best tub of butter, a No. 2 rectangular churn..... $7 00

CLASS XIV.

For the handsomest single print of butter, just right for the table, a lever butter worker..... $4 00

CLASS XV.

BY W. D. HOARD, *Editor Jefferson County Union, Fort Atkinson, Wisconsin.*

The *Union* one year to the exhibitor who is awarded the greatest number of points, in a scale of 50, on butter.

The *Union* one year to the exhibitor who is awarded the greatest number of points, in a scale of 50, on cheese.

The *Union* one year to the exhibitor of the handsomest plate of print butter.

CLASS XVI.

CHEESE MAKING.

For the best display of apparatus for making cheese..... $10 00

CLASS XVII.

BUTTER MAKING.

For the best display of butter-making utensils..... $10 00

CLASS XVIII.

CREAM RAISING.

For the best display of apparatus for raising cream $5 00

CLASS XIX.

BUTTER COLOR.

For the best display of butter color..... $3 00

CLASS XX.

BUTTER PACKAGES.

For the best package for shipping packed butter $3 00

CLASS XXI.

For the best package for shipping print butter $5 00

CLASS XXII.

PRESS OR MOULDS.

For the best press or moulds for making print butter $2 00

Cheese, butter and articles for exhibition may be sent by express, *charges prepaid*, to Frank Lawrence, Sheboygan, who will place them on exhibition, and dispose of them, if requested, after the convention is over, and remit the proceeds.

Mark all packages with your own name and address, so that they may be identified.

Butter and cheese and all articles must be on hand so as to be placed on exhibition by 9 A. M. on the 11th, as the committee will make their examination in the afternoon.

RULES GOVERNING THE EXHIBITION.

1. Entrance fee to be fifty cents for each entry.

2. Butter made at any time, and to be in packages of not less than twenty pounds, except in Classes 6 and 7.

3. Butter in *stone jars* not allowed to compete for premiums.

4. No package can compete for more than one premium.

5. Scale of points for judging cheese: Flavor, 15; quality, 15; texture, 10; style, 6; color, 4,— total, 50.

6. Scale of points for judging butter: Flavor, 20; grain, 15; salting, 5; color, 5; style of package, 5,— total, 50.

Manufacturers, dealers and inventors are invited to make an exhibit of dairy goods in which they are interested. A committee will be appointed to examine and report upon the same.

Parties wanting cheese or butter makers for next season, and those wishing situations, will find books for register, that the wants of each may be known

Members paying full fare one way will be returned at reduced fare.

C. R. BEACH, *President, Whitewater.*
O. P. CLINTON, *Treasurer, Waukesha.*
D. W. CURTIS, *Secretary, Fort Atkinson.*

TRANSACTIONS

WITH

ACCOMPANYING PAPERS AND DISCUSSIONS

OF THE

WISCONSIN DAIRYMEN'S ASSOCIATION,

AT THEIR

TENTH ANNUAL CONVENTION,

HELD AT

Sheboygan, January 11, 12 *and* 13, 1882.

The tenth annual convention of the Wisconsin Dairymen's Association convened at the court house in Sheboygan, Wednesday, January 11, at 7:30 P. M, President Beach in the chair.

President Beach introduced Wm. H. Seamans, Esq, mayor of the city of Sheboygan, who extended to the members of the convention the heartiest welcome:

Mr. President and Gentlemen of the Dairymen's Association — It devolves upon me to extend Sheboygan's welcome to you, the assembled dairymen of Wisconsin. This duty would be one of the highest pleasure and satisfaction, could I invoke to its performance words which would even fairly express the warmth of that welcome, and the debt of gratitude we feel that we owe to our dairymen. As I am unable to put this into fair form of speech, you must be pleased to accept the will for the deed. We are glad to have you with us. It is recognized that agriculture stands at the head of the industries of the world, and dairying is the highest attainment of the agriculturist, calling into requisition the utmost of intelli-

gence, skill and integrity. In this line Wisconsin has taken front rank, and we of Sheboygan county are proud of our position in Wisconsin's advance. This development is largely due to the work of your organization. Through your meetings in discussion and interchange of views and plans, and competition in results, you have infused interest and given intelligence and pride to the dairy pursuit. Our county has well profited by these teachings, and has also proved a worthy contributor to your membership and instruction.

This season of your meeting is the one best adapted to your time and purposes. When our city is at its best, in the summer time, you have other and practical work on hand. Could you be with us then, you would find all nature assisting to make your visit pleasant. Grand old Lake Michigan — now so sombre and uninviting in appearance — would then be smiling you a welcome, in accord with us. Leaving the heat and dust of your homes in the interior, you would find here the cool, refreshing air which makes Sheboygan so desirable as a summer resort.

Without these aids, however, if you have the time, we will gladly show you some interesting evidences of enterprise in our people; some tokens that we have not rested simply upon what nature had given to our location. We have here three unrivalled chair factories, whose joint productions are annually 850,000 chairs of varied styles, being nearly five manufactured every minute of working time; tanneries, aggregating in the value of their productions much more than chair factories; furniture manufactories, iron enameling works, foundries, breweries, and many other industrial establishments. Then, too, we have an artesian well, bored to the depth of 1,475 feet, flowing a great volume of water, utilized with pipes and hydrants for purposes of a fire department, and also greatly esteemed for the medicinal properties of the water; if you will taste it you can vouch for its goodness — as a medicine.

I mention these objects of interest, because the Sheboygander is modest, and not given to trumpeting our titles to fame, and you might not otherwise have heard of them.

Permit me again to bid you welcome, and to express the wish of all that you may have pleasure and profit in this meeting, and we bespeak for you a good attendance and earnest, intelligent co-operation from the dairymen of Sheboygan county.

RESPONSE TO ADDRESS OF WELCOME.

By Hon. R. D. TORREY, Milwaukee.

Mr. Mayor:—The pleasant duty devolves upon me of accepting the welcome just given by you to the members of this convention as the chief executive of this beautiful, thriving city, and thank you for the sincerity with which you have extended its hospitalities to the members and friends of the Wisconsin Dairymen's Association on this occasion. The value of the courtesies and welcomes of life depends mainly on the sincerity with which they are extended. Often we find ourselves welcomed by the conventionalities and forms of the world to a cold and cheerless kind of reality, so that we come almost unconsciously to dread to be welcomed, preferring to take our chance in the good old-fashioned way of making ourselves at home. But when, as now, there comes to us courtesy in so marked a degree, and welcome so sincerely extended, it is with more than ordinary pleasure we say that we thank you for your words of greeting and encouragement. The society under whose auspices this convention is held, has for its membership many of the best men of the state, representative men of that better class of farmers who are not content with the achievements and improvements of our yesterday, but who are ever watchful for and desirous to attain to the highest degree of excellence in the dairy branch of farm husbandry. These men represent a class whose product goes very far towards making up the wealth of the nation. They represent a class who by their patient effort, guided by intelligent application, have developed Wisconsin as one of the best dairy states in the Union, and made the song of the dairymaid the popular one of the land, and in doing so have become a terror to manufacturers and dealers in oleomargarine, butterine, and other vile compounds of evil-doers. Through the energy of these men the quality of the product of the Wisconsin dairy has reached that point of excellence that eastern buyers not only want our butter and cheese at fair rates, but want it branded from Wisconsin, and take particular pains to let their trade know that it is from this state, and doubtless much more butter and cheese are sold in the eastern market by eastern men as Wisconsin make than is made in the state, thus succeeding under the well earned laurels of our own Badger State.

Through the energy and fresh impetus given to the dairy interests through the direct influence of this association, Wisconsin leads at the great international dairy fairs of the east and comes back with her exhibits covered with blue ribbons; and it is gratifying to know that amid the many discouragements of other branches of farming, this society has shown clearly that the "milky way" is the way of life, financially at least, to many of our citizens. Conventions of this character are calculated, planned and carried out for the benefit of all. They have for their object the improvement of all who attend them, as well as all who are engaged in this industry. They provoke rivalry and commendable competition in the race after the perfect. They bring out the better thoughts and better methods as aids in attaining such perfection. They are not exclusive, but are for *all*. This is so true that if the secretary of this society finds any one who is so indifferent to his own interests as to absent himself from them, he sends him a volume of the proceedings that he may be convinced of the error of his ways and join the great army of successful dairymen, and *one*, at least, of the thrifty dairymaids of the state. In these conventions Wisconsin leads again, for no other state devotes so much time or thought to such meetings; in fact, it may truthfully be said the Badgers inaugurated them.

The results are seen everywhere in improved stock and farms and more intelligent farming. In increased products and enhanced values, in a greater or less degree, as the thoughts and suggestions gained here are acted upon. Mr. Mayor, not being a member of this society (though of a kindred one), permit me to say you honor yourselves when you welcome these representative men of the great dairy interests of Wisconsin to your city to hold their annual convention; and I will close by saying for them and myself, I thank you for the hearty greeting to the Wisconsin Dairymen's Association, and hope you and many of your citizens will avail themselves of the opportunity and be present at all of its sessions.

OPENING ADDRESS.

By CHARLES R. BEACH, Whitewater, President of the Association.

Members of the Wisconsin Dairymen's Association, Ladies and Gentlemen: — Permit me on this tenth annual meeting of this association to congratulate you upon the favorable circumstances under which we have met, and at the same time to congratulate not only you, but the whole body of Wisconsin dairymen, upon the rapid development and growth of this great industry, its present prosperous condition and the favorable outlook for its permanence and continued prosperity. The most sanguine of those of you who ten years ago met to organize this association could not have anticipated the growth of to-day. To-day, Wisconsin butter and cheese are known and their merits recognized wherever, throughout the world, American products find a market. Ten years ago, the products of the dairy of this state amounted to about twenty four million pounds of butter, consumed mostly at home, and not far from sixteen million pounds of cheese. The products of the current year will not fall much below seventy million pounds of butter and thirty million pounds of cheese; and the quality has improved in a ratio almost if not equal to the increase of the production. Our system of cold storage, our improved methods of transportation by refrigerating cars and ice compartments on steamships, are entirely the growth of the last ten years, so that we are to-day enabled to place our products in almost every market of the world as sweet and as fresh as when sent from the dairy or factory.

Perhaps there is no single branch of industry that has within the past ten years brought so much direct wealth to the state as dairying. But valuable as is the wealth the dairy has produced, the direct and indirect influence which is exerted in stimulating and elevating all the branches of farm industry, together with its tendency to call out and give full play to all the higher intellectual qualities of those engaged in production, are of still greater value.

The success which has thus far attended dairying in Wisconsin may be attributed in part to our favorable location. Our cheap lands and cheap corn have given us an advantage over the dairymen of the older states. But, beyond us, toward the setting sun, vast states with boundless capacity for production will soon be to

us what we are to the older states. Iowa already begins to claim to be the banner state for butter, and beyond is Dakota. And so the dairy business takes root and spreads with a rapidity equal to that of civilization, and we in the future will have to meet this growing competition. We can do so successfully only in two ways; by either so conducting our business that our products will cost us less, or by making a better article that will sell for more.

Which is further necessary for the dairymen of Wisconsin to learn or to do, so that uniform excellence shall be the rule rather than the exception, and at the same time be able to produce our goods at so low a cost as to defy competition and still yield a profit to producers? All true progress in any branch of productive industry is a growth resulting from the skill which comes from long practice, as from the increase of theoretical knowledge is indispensably necessary, but it requires time and practice to make its application perfect. Time will work improvement in our business, and we must not be disappointed over our progress. One of the most serious obstacles in the way of further progress of the dairymen of Wisconsin, is a want of financial knowledge of their business. There is not any class of business men, outside of farmers, from the banker to the keeper of a corner grocery, but have their day-books and their ledgers, their invoices and their balance sheets. To pursue any other course would be to court failure, to insure financial ruin. But how is it with dairymen? What do we know financially of our business? How many of us can tell the amount of his own capital invested? How much in land, how much in cows, how much in teams and tools? How many of us can tell the exact amount of our gross income, and the sources from which it it is derived, or any equally correct statement of money expended, and for what?

To these and a hundred other similar questions that might be asked, the answer would be the same, "I don't know!" It must be obvious to the dullest of us that the same accurate financial knowledge deemed so indispensable to the railroad manager, the manufacturer, and the merchant, must be equally beneficial to the dairyman. Our business is equally as important as theirs. We claim to employ more capital and labor than any other productive industry in the state. And is there any reason why we, as dairymen, may not acquire this knowledge? Is our business so intricate

and complicated that a financial exhibit of it is impossible? It would, no doubt, cost some effort to keep such accounts as I have indicated, but the keeping of them alone would be worth all it cost, simply as an educator, to say nothing of the practical knowledge acquired by it. It would teach us to be more methodical and systematic, our perceptions would be clearer, and we would be able to lay our plans with more precision and with more reasonable assurance of success. It would be more for us than all the agricultural colleges in the country. If any one of you feel that you would make a failure in attempting to keep such accounts, teach your boys book-keeping and let them do it. Take them into your confidence, give them an exact statement of your financial condition, and then with them make out an invoice of capital invested in land, in cows, in teams, in tools, and in feed. Report to them all transactions which in any way relate to your business, and then require of them a periodical statement of what has been done, and what it has cost. By so doing you will be surprised how much can be learned, and how many things can be clearly demonstrated; and you will be still more surprised at the interest the boys will soon learn to take in all the operations of the farm. They will learn to love the business, and come to feel that it is capable of being so conducted as to be something higher than mere drudgery. By such a course you will elevate your business and improve your finances, educate your boys to be business men, and still keep them on the farm.

I sometimes think we treat our boys as though they were only boys until they are twenty-one years old. The present tendency in all branches of business, and in all mechanical operation, is to division and subdivision of labor, and no man may hope to succeed only by putting forth efforts in a single direction, and making a specialty of some particular department. The same rule in a modified sense applies to farming. Too many of us who claim to be dairymen make our dairy work secondary to other farm labor, and attempt as much farming as though we kept no cows, often expecting the men and boys to milk at unseasonable hours, to a loss of profit in the cows, and a loss of love for the business in the boys.

The good dairyman must be a good farmer, but the highest success is attainable by subordinating the other farm work. To improve and elevate dairying it must be made more of a specialty.

By concentrating our energies on the business we may create an interest and enthusiasm that will wake up a whole neighborhood. Some definite standard of excellence should be fixed for future progress. If cows paid $50 per head last year they should be made to pay $60 next. Though new and improved breeds are introduced with apparent success, it is questionable whether the average yields exceed those of ten years ago in dairying. It is questionable whether the building of air-tight barns has not had a tendency to deterioriate the cows. This is worth thinking of. Good cows will pay interest on capital invested; poor cows are like Pharoah's lean kine, eat up all the rest. The matter of food, then, should be carefully considered in the light of science and experience.

One of the most hopeful signs of the times is the readiness learning manifests to be the servant of labor, and the amount of services which she proposes to give will be only measured by our capacity to receive and apply. But financial knowledge and scientific knowledge will not in themselves insure progress in our business unless united with enthusiasm in those who engage in it. The roadway may be perfect, the cars ample, the engine in complete order, but unless you have steam to apply, the train will stand still. Enthusiasm is the impelling power in all progress.

The future outlook of our business is most flattering. All that has been accomplished are but so many promises of our future continued success. New markets are everywhere being devised; new and better methods of manufacturing are being adopted; information relating to all branches of our business is being more generally diffused. Our products are becoming more and more active, of prime necessity their consumption is continually increasing, a higher standard of excellence is being demanded, and the dairymen of the state, in view of these incentives to greater interest in their calling, will doubtless keep abreast of the times.

Hiram Smith in the chair.

Undoubtedly there are many people present who have never heard Mr. Lumbard, of Chicago, sing. We would be glad to have the gentleman favor the audience with a song. Mr. Lumbard sung the Scotch ballad entitled "Are you sleeping, Maggie."

The secretary was instructed to send "greeting" to the American Dairymen's Association in session at Syracuse, New York.

H. J. Bumford moved to adjourn until 9:30 A. M., Thursday.

THURSDAY, January 12.

The association met at 9:30, pursuant to adjournment, President Beach in the chair.

The following dispatch was read by the secretary:

SYRACUSE, N. Y., January 12.

D. W. Curtis, Secretary Wisconsin Dairymen's Association:

The American Dairymen's Association heartily return greeting. Success to the dairymen of the growing west.

T. D. CURTIS *Secretary.*

COMMITTEES.

The president appointed the following committees:

On Resolutions — W. D. Hoard, Fort Atkinson; R. D. Torrey, Oshkosh; Chester Hazen, Ladoga.

On Nomination of Officers — Hiram Smith, Sheboygan Falls; R. F. McCutchen, Whitewater; N. W. Morley, Baraboo.

On Dairy Utensils — A. D. DeLand, Sheboygan Falls; George Lawrence, Jr., Waukesha; B. J. Holden, Plymouth.

On Finance — Wm. Elwell, Sheboygan; George End, Sheboygan; J. De Smith, Sheboygan.

Judges on Butter and Cheese — H. A. Barber, Chicago; H. O. Freeman, Sherman, N. Y.; J. De Smith, Sheboygan.

REPORT OF SECRETARY.

Mr. President:— The expenses of the secretary's office the past year, for stationery, stamps, express on reports, telegrams, etc., has been $50.05.

An itemized bill has been furnished the executive committee.

Respectfully submitted,

D. W. CURTIS.

TREASURER'S REPORT.

Mr. President and Members of the Association:— The following itemized report is made, showing the receipts and disbursements of the money placed in my hands. No bills are paid only on an order from the secretary, which orders I hold as vouchers:

RECEIPTS.

1881		
January 12.	Cash on hand	$67 53
January 12.	Received for entry fees	23 00
January 15.	Received for 150 pounds S. D. A. butter	30 80
January 15.	Received for 1,534 pounds S. D. A cheese	141 60
January 15.	Received for membership fees	160 00
March 18.	Received from state treasurer	100 00
June 25.	Received from state treasurer	100 00
	Total receipts	$622 93

DISBURSEMENTS.

1881		
January 14.	Paid Mrs. Parker (reporter)	$30 00
January 14.	Paid board bill (Willard & Parker)	8 00
January 14.	Paid expenses for Prof. Rockwood	4 50
January 14.	Paid X. A. Willard	75 00
January 14.	Paid D. W. Curtis, office expenses	15 00
January 14.	Paid S. Favill, expenses on executive committee	9 00
January 14.	Paid C. Hazen, expenses on executive committee	10 00
January 14.	Paid A J. W. Pierce, cold storing butter and cheese	16 89
January 14.	Paid express on S. D. A. butter and cheese	9 80
January 14.	Paid express on books, etc	2 40
January 14.	Paid W. D. Hoard, printing	28 50
January 14.	Paid W. S. Rowe, painting flag	3 00
January 14.	Paid for stationery and sundries	1 15
January 14.	Paid for engraving cup	1 00
January 14.	Paid H. M. Youmans, printing	12 00
February 8.	Paid Hiram Smith, expenses on executive committee	9 50
February 8.	Paid D. W. Curtis, expenses on executive committee	10 00
February 8.	Paid O. P. Clinton, expenses on executive committee	4 00
February 8,	Paid H. A. Conger & Sons, premiums	20 92
February 8.	Paid J. B. Duncan, premiums	10 68
February 8.	Paid C. Hazen, premiums	6 71
February 8.	Paid E. P. Ingalls, premiums	6 67
February 8.	Paid Adolph Reim, premiums	6 34
February 8.	Paid F. C. Reiniking, premiums	6 48
February 8.	Paid Fred Fasse, premiums	5 00
February 8.	Paid C. R. Beach, premiums	12 14
February 8.	Paid W. LeFevre, premiums	10 84
February 8.	Paid H. J. Bamford, premiums	6 52
February 8.	Paid S. A. Rockmeir, premiums	6 34
February 8.	Paid John Boyd, premiums	5 00
February 8.	Paid H. K. Loomis, premiums	20 00
February 8.	Paid E. E. Bolles & Co., premiums	3 00
February 8.	Paid W. H. Hammersly, premiums	3 00
February 8.	Paid Geo. Lawrence & Son, premiums	10 68
February 8.	Paid Miss Frankie Tenney, premiums	10 00
February 8.	Paid Olin & Clinton, premiums	12 68
February 8.	Paid Cornish & Curtis, premiums	10 00

February 8. Paid R. Cunnington & Co., premiums	$3 00
May 9. Paid W. D. Hoard, printing	6 00
May 28. Paid Chicago Engraving Co.	33 50
July 11. Paid D. W. Curtis, salary	55 00
July 11. Paid D. W. Curtis, office expenses	15 00
July 11. Paid David Atwood, reading proof	10 00
July 11. Exchange on drafts	35
Total paid out	$555 59
Total receipts	$622 93
Total expenditures	555 59
Cash on hand to balance account	$67 34

Dated January 11, 1882.

Respectfully submitted,

O. P. CLINTON, *Treasurer.*

On motion the report was received and adopted.

Convention adjourned *sine die.*

THE ADVANTAGES OF WINTER OVER SUMMER DAIRYING.

By GEORGE LAWRENCE, Jr., Waukesha.

Mr. President, Ladies and Gentlemen: — We had the pleasure of being present at the national convention held at Cedar Rapids, Iowa, recently.

We were some little surprised to see the amount of energy, perseverance and self-indorsement put forth to push Iowa to the front, not only in quantity, but quality.

The opportunity offered them was of the best, and their success seldom equalled. Wisconsin seemed to be in the past, lost to sight.

Where are all our dairymen? Dead to this great interest? Looks this way when we let Iowa skims have the name of the best cheese in the market.

It is bad enough to let them out on butter, but to play second fiddle on cheese is something more than we can stand. What is the matter? We would answer, our dairymen must awake to the one great interest or we will be traveling in the rear ranks. We wish it distinctly understood that Iowa dairymen run winter dairies. You may talk about best breeds of dairy cattle, best manner of handling them, such as food, how to erect silos, to cure

ensilage, the profit of feeding ground feed, how to erect warm, commodious barns, how milk should be cared for, how butter must be made, and the most scientific manner of making and handling cheese. You may write long articles about ventilation of curing rooms, and a system in everything you do, but to simmer the thing down fine, with all the technicalities, we must first of all have the man; he must first be born and bred a dairyman, educated in this line, be energetic and persevering (as it was with our Iowa friends), especially when our own interests are depending. When this man is the right man we will find everything right; he will have the best head of cattle and know just how to feed them; he will know how to erect warm barns for their comfort, and he will know what profits him best. He is a man of figures, and he knows that winter milk is worth two to one of summer milk.

We advocate winter dairying:

First. It is more advantageous for the cow to come in in the fall than in the spring; the average farmer manages to carry his cows through the winter on hay alone, or as little feed as will possibly do, to bring her on grass in a passable condition in the spring. By this time factories are opened and commenced operations. The spring-milked cow does her best, but the flow of milk is not satisfactory, and as a rule she loses in condition, notwithstanding the extra feed, such as meal, bran, etc., she may be favored with, for grass is relaxing and a great change from dry hay. It is an undisputed fact that it is very difficult to hold the conditions up in early spring, especially while giving milk and poorly wintered. As the season advances, the cow recuperates some as the grass matures, but by this time flies are troublesome, another drawback, and the flow of milk is reduced; so when fall approaches, with dry and parched pastures, such as we often have, the farmer will resort to feeding such as green corn, ground feed, etc., to bring the flow of milk up to its standard once more. Now, we claim this cow is past reclaiming, or, in other words, never can be brought back to her full flow of milk at this season of the year. It matters not how good the food is, if we are feeding dry cows at this time of the year with green corn, after running dry for three months, as they should do, having this time for recuperation on grass, they are as a rule in good condition. Now the change is more gradual as the winter approaches. The cow drops her calf any time from November 1st

to January 1st in good condition and good heart. Now, the extra food she receives will enable her to continue her flow of milk till spring. Beginning on grass, she is in extra good plight, will begin once more to renew or increase her flow of milk, and thus continue until fly time, when she ought to be near dry. Many arguments are advocated that it does not pay to feed cows extra in winter, as the milk will not balance the cost. This cow must be wintered, and the more cheaply it is done, the more dearly will she cheat her owner, and it matters not whether she is dry. The extra food given to fall-milked through the winter pays in many ways. Cows are machines, and just as we run the machine we will be remunerated. You may, for example, look at the herds of cows that are run for winter milk, and the herds that are run for summer milk, and you invariably find the herd that milks through the winter is in the best condition, and they always will be.

Second. It is better for the man. In fall and early winter farmers' work is completed and there is time to devote to the cows. The hurrying of haying and harvesting is past, men and teams are idle. The dairyman that has run his herd of cows through summer is receiving very little income, if any at all. What does he do? Takes a rest and lets expense eat his summer income up. On the other hand, the dairyman that runs a winter dairy has not only paid expenses through summer, but is now realizing an income and a good profit from his investment.

The demand for fresh-made butter is increasing, people's tastes are more fastidious, and we are educated to a higher standard; they are willing to pay any price for choice, fresh-made butter, while streaked, summer-made butter is shaved and a drug in the market. The old accustomed practice of making summer butter and holding for winter use is one of the things of the past. The dairyman must accommodate his mode of operations to the qualified tastes and interest of the consumer. Until this is done the dairy interest of any state will be on the retrograde, non-paying plan. Now, if we milk our cows nine months of the year, when is the best and most profitable time to have them come in? We answer, in the late fall or early winter. Milk can be produced as cheaply and with much more profit realized by milking in the winter months than in the summer months. As we stated before, better for the cows, better for the man, by way of saving time and

labor, better for the man's pocket. Fine flavored butter can be made and as much or more per one hundred pounds of milk. All we want is the man fully up to the advanced stage of dairying, and he will have early cut cow fodder in abundance, and have a silo to cure the same, early cut and well-cured hay, warm, comfortable barns, and he will see how to best fill his pockets.

The expense of winter feed has been materially reduced since silos have come in use. Milch cows can be kept cheaper on ensilage and a little grain than dry cows can generally on their accustomed fare. Experience has demonstrated the fact that cows will do well, their milk be abundant and make excellent butter with the above-named feed, and our expectations in the future are governed by the past. The prices of all dairy products are high through winter months; milk can be more easily handled, and is in fact more easy to protect against cold in winter than heat in summer. After all the butter is taken from the milk a very fair article of cheese can be made, thus utilizing the whole milk. There is a greater safety and more conveniences in marketing this time of the year. Many dairymen know to their sorrow how losses will occur in transportation through the hot months. Thousands of dollars are lost in this one thing alone. Minnesota and Illinois are taking the lead in the dairying of the west, and their example is worth following. Shall we of Wisconsin take a back seat? We certainly will be compelled to if we plod along in the old rut. If it is winter dairying, let us have that; if it is the man, let us have the man; if it is the cow, let us have the cow; whatever it is, let us in Wisconsin have whatever is necessary to promote the best interests of dairying. It is a well authenticated fact that any profitable enterprise that engages the attention of the business community many times are overdone and losses are sustained. Many thought the dairy interests of this country would be overdone, but this is a foregone conclusion at this advanced date in our history. What will be the effect of prices of our dairy products if all should sustain my theory and run a winter dairy? I will answer, prices of dairy products would be more equalized. No ill effect would be produced, and we think would on the whole be advantageous. Consumers would have their educated tastes satisfied by having fresh articles of dairy food the year round for a fair price, and the laborer, mechanic and the poor class could better afford to eat *pure milk butter* than they

can now afford to eat "bull butter," "souine," or any of the conglomerations of fat that are put upon our markets of the day.

The market prices would be reduced in winter and higher in summer, at the same time giving a good, healthy profit to the dairymen the year round, or as long as he runs his dairy, and in no better way can this change be made than to run a winter dairy. It is a well authenticated and understood fact, that evolutions never go back; progression is its watchword, and let it be so in dairying. This interest is a big one, and we must not sit still like a bump on a log, but be up and take advantage of the experience of our predecessors, not only to progress with them, but aim to exceed.

DISCUSSION.

A. D. DeLand — Before Mr. Lawrence leaves the floor I want to say this. It is all very well to say that this method is better than some other method, but what we want is figures; we want to know what he makes by the winter dairy. We know what we make by the summer dairying. We can make by the summer dairying $50 per cow; if he can make in this way $20 more per cow, we want to know how he does it. It is *figures* we want; then we can act understandingly.

Mr. Lawrence — I have demonstrated in my paper, I think, facts that show very plainly without presenting any figures, that summer milk, the way all dairies are run, have got the market in June and July, thus making all their products low. Cheese is worth eight cents in June and July, at twelve and thirteen cents at this time. If you can run the same cow through the winter with probably $10 more expense for a little extra feed, the question arises, which pays the best? Then I claim that the cow coming in in the fall usually continues her flow of milk through, like the summer cow, thus carrying the summer dairy through the winter. Thus you realize two profits from the same cow. I have *got* figures but haven't got any figures to present here.

President Beach — I would like to ask Mr. Lawrence this. You say we can produce milk as cheaply in the winter as the summer. How are you going to do it?

Mr. Lawrence — We can do it with ensilage. I have not tried it,

but I have heard of other people who did. Ensilage and a little feed. I would like to hear from Mr. Smith on that subject. He has figures probably.

Mr. Hiram Smith — I hope Mr. Lawrence will not leave the floor just yet. This is one of the most important questions that will come before this convention, and I know he has struck a mine. I know he is right; his head is level, and he can demonstrate it himself.

Mr. DeLand — Mr. President, I regret exceedingly that we do not have some figures on this matter; figures tell better than words. If it is better to run a winter dairy than a summer dairy, I want to know it, and I want to know *why*.

Mr. Lawrence — I don't think it is necessary to have any figures; the thing is plain on the face of it. I have not any figures with me, but the farmer that has a cow wintered on an ordinary farm, that cow has to be carried through the winter, especially if you are running a summer dairy. Turn right round and milk her through the winter, and feed her a little extra, and you have got a winter cow, and you have got a summer cow, from the same cow. The question arises, which pays best. Whether it is better to get fifty-five or sixty cents per hundred for your milk through the summer, or in the winter to get from $1.40 to $1.60. These are figures that demonstrate that it is more profitable to run a winter dairy than a summer dairy. At the same time the cows have a chance to recuperate through the summer and fall, and they come in in good heart in the winter. I have no more figures but I don't think I need them. We know butter is worth forty cents now and it is worth fifteen cents in June.

Mr. Hiram Smith — Mr. President, I think in Mr. Lawrence's last remarks he gave figures,— fifty-five cents for milk in summer and $1.40 in the winter. Those figures are correct, and just as good as though he had drawn them off from a book and figured them on a piece of paper, held it up before him and then read them. It cannot be disputed nor got around that milk is worth in summer fifty-five and sixty cents. All cheese men know this, who have sold cheese for seven and a half and eight cents, which was all it would bring during the two months when they had the most to sell. Now it is a question of very great importance to the dairymen of this county and of the state, whether they sell while their cows are giving twenty-five pounds of milk a day, selling it for

fifty-five, or, at this time of the year, the cows giving thirty-five pounds of milk a day, you get $1.40. Every man that is making cheese, as we have made cheese for the last few years in Sheboygan county, selling our largest amounts at the lowest prices, the cows coming in nearly all of them in April and May, some in March, and every man that has done so has lost on each cow $20, actual loss, because he did not obtain it by a different mode of dairying. Now, Sheboygan county is not large enough to affect the markets of the world. We shall never have the slightest effect upon the markets of the world, whether we all make full cream cheese or all make butter. We may think we are quite a people, but even the state of Wisconsin could not affect the market, whether it continued to make cheese or stopped it entirely. Now, then, the question for us to decide is, whether winter dairying is worth one-quarter more than the fashion we have pursued, that we inherited from our fathers and our grand fathers and great-grand-fathers, I know not how far back. We made scarcely any change until within a very few years. Now, then, shall we go on and lose $20 on each cow, or change according to the demands of the country? They are demanding fresh made butter in the winter, and as soon as men are educated to eat fifty cent butter and forty cent butter, they will eat it just as readily as they will eat oysters. They will eat it just as readily as a man in Iowa will exchange a bushel of corn for a pound of Vermont sweet corn. You cannot figure up any profit in this exchange, but they will pay for all the butter we will make in Wisconsin.

The markets are poorly supplied with high priced butter. Those that are able to procure it, in such flush times as we have now, will buy all the butter that can be made. Now, figures have been called for, and figures sufficient for the argument have been presented; for it easy to see that when you have a larger amount of milk when it is cheap, there is a loss. Now, cows will give as much milk in the winter as in the summer. There may not be quite so much water mixed with the milk, but in real fats and solids it will analyze as much as it will in summer. It don't matter whether the gross weight is forty-three pounds or forty-five pounds, the fats and the solids are all in there. It actually takes, as any reasonable man knows, more land to summer a cow five months than it does to winter her seven months. It takes one-third

more land to pasture a cow, as we ordinarily do it, than to winter her seven months. It takes a little more labor to winter than to summer, but the profits are amply sufficient to cover all the costs of labor. Now, I have been gradually growing into winter dairying. Last year I had about twelve new milch cows in November. In November my cows averaged $63, I think it was; somewhere about $63 net on the whole fifty-one or fifty-two cows. I only had twelve new milch cows in November, but it taught me very plainly that winter dairying paid a good deal the best. This last year, in September and October, I had an addition of twenty-six or twenty-seven new milch cows. I make my estimates up the first of January. This year they averaged me $70 per cow for the fifty-four. I have added two cows to the farm and kept a strict account of every dollar's worth that has been sold, and all the receipts and the butter that was made, and it was a little over two hundred pounds of butter per cow on the average. Of course, I have cows that will make over three hundred pounds, but the average of the fifty-four cows produced a little over two hundred pounds per cow. If it would be any satisfaction I can read the figures; and I have said so much about it I will read them. Butter sold up to the first day of January, during the year 1881, one party, $2,605.78; to other parties, $1,124.31. Most of this butter was sold to one party, and I have charged myself the amount consumed at home. We have weighed it frequently — ten pounds a week. We have a family of about fourteen. I have charged the average price received for that sold for what was used at home, amounting to $158. I received from the sale of, and made during the early part of 1881, $153; from the sale of calves, $75; sold pigs in excess of the purchase of pigs, $94. I took in milk from ten cows of one of the neighbors, for which I paid $522. I subtract that from the total amount received, $4,678, and it leaves a receipt of $76.84 per cow. Taking out the cost of the tubs, bandage, salt, etc., and $200 paid the workmen, leaves net receipts, $3,487 and some cents, netting the fifty-four cows which I have on my own farm, $73.43 per cow. That is the average of the whole lot; proving conclusively to me that it is $20 better than I ever did in pursuing the old method of farming. I have heard of a few cows that in the old way have reached $50; they were extra good cows and well taken care of. It requires the very best management to get $50 net for a cow, with the prices we have had this last year.

President Beach — If all these cows had been new milch cows in October, would the profit have been greater?

Mr. Smith — Most certainly. I have no doubt it would have been $80. Now, I could make a saving if I could reach anybody to whom I could give $1.35 for milk in September, October, November, December and January. I would not give but fifty cents in June, July and August. Can you find a man that will give any more than fifty cents for milk in June, July and part of August? He runs a great risk if he offers over that for milk in those months. Now, you can see how the thing works. You may consider it looks foolish and useless to change your method of farming. That is a question for each man to decide for himself. I am most thoroughly convinced that winter dairying is a great deal more profitable than summer dairying, even if conducted in the very best possible manner.

President Beach — I hope we shall hear further. There must be many who are engaged in winter dairying. My own experience will corroborate Mr. Smith's statement.

Mr. H. Smith — I wish to say before you take up another paper, that our friends in Sheboygan have been very courteous and made arrangements for a banquet this evening. They are very desirous that no dairyman or factoryman outside of Sheboygan will be left out. If you all become members of this association, you will be entitled to a seat, under some conditions, which you can ascertain. The main thing now is, how are you going to get in? Now, then, every dairyman and farmer that will become a member of this association will get into this banquet. This is one of the best features of this association. I will say, it is because we have had banquets that we have succeeded. It is because we get acquainted. Men will not go fifty or one hundred miles to meet acquaintances, but we will go a long way to meet a jolly friend, and that is the reason our associations are so well attended, and they are growing much larger, like a snowball. It is all on account of the banquet. We meet each other, we gain experiences double the price of what it may cost us. The remarks Mr. Lawrence has made here are amply remunerative to all you, for the cost you have been to. He has told you very plainly what you can do by changing your course. Now, this will be sufficiently remunerative for all your expenses in coming here.

THE PROGRESS AND REPUTATION OF WESTERN BUTTER.

By HON. H. D. SHERMAN, Monticello, Iowa.

Members of the Wisconsin Dairymen's Association, Ladies and Gentlemen:— I have no paper to present to you to-day; in fact I did not expect to be here one half hour before I took the cars to join this meeting. I did not think I could leave, and I must leave town here by the first train that leaves this afternoon. I will occupy your attention but a short time in reviewing, as I have followed to some extent, the history of dairying in the west. Not here, for I cannot speak of your dairying, but in Iowa. I can remember, when only sixty-five miles from New York, when our only way to get there was by stage. I can remember when in Iowa the only butter that we gathered there was from individual dairies, not having the conditions in Iowa for successful dairying; in the earlier stages we gathered our butter from farmers, and selected and graded it as best we could. It was all kinds, as you might say, excepting the very best; of course we did not expect to have that then, but there were different qualities and different methods of handling. The time came in some six or eight years, when some of our eastern people were making very good butter, the best of the butter selected in the months of May and June; we would send it to New York, and although we had some very good butter, butter that compared at that season of the year favorably with the butter made at the east; yet you know, gentlemen and ladies, that we were not able to sell that butter in New York or Philadelphia as western butter and have it bring its relative value. There was existing in the minds of all eastern people a prejudice against western butter. In fact it was known in all of our eastern markets as "western grease," and very much of it was but little better than grease. It has taken a great deal of labor and perseverance on the part of some to break down that feeling in our eastern markets relative to our western butter. The first great step in that direction was in 1876, when by comparing our butter with that at the east, we all know the result was favorable. The medal conferred by the National Association at Philadelphia at one of the exhibitions in June; you all know the medal went to Iowa,

and in October it went to Illinois. In 1878 at the International Fair, our exhibition with eastern butter was favorable to us. I spoke of this last night; that our butter at this season of the year compares more favorably than that of the east, and there is a reason for it, especially in the month of November.

We ought to make as good or better butter than they do east. They cannot afford to feed as we can; consequently we ought to make better butter. But the question has come up, if the whole of the Western States manufacture butter through this dairy belt, are we not going to flood the market? Have we not got to stop dairying and go at some other employment? We say to our people in Iowa, that if the time comes when somebody must stop dairying, it is natural to come to the conclusion that people in the Eastern States must stop first; and why? In Iowa our lands are worth $30 an acre. In New York they are worth $60. In Iowa our hay is worth at this season of the year $10 per ton, which is very high. In New York it is worth $20. In Iowa our corn is worth fifty cents a bushel, and in New York it is worth seventy and eighty cents. Our labor is as cheap in the west as in the east. Our grasses are nutritious; our land will sustain as many cows per acre, it is safe to say, as any land in New York. Then in the west if our land is only worth half as much per acre, our feed costs us but half as much as it does in New York or Vermont. Then unless there is some other condition coming in to qualify, we are prepared to dairy even after Vermont, New York and Pennsylvania are compelled to stop. Then comes in the cost of transportation, the cost of marketing. In Iowa at many points it will not exceed thirty cents a hundred more to place our butter in the market than it would the average producer in the state of New York. I think I am safe in saying that the average in the state of New York will cost as much within thirty cents a hundred as it will cost to transport our produce. I know in some instances our butter goes to New York city and costs us less than it does in the western part of New York state; but I am not taking this basis. I will allow them thirty cents a hundred. Now, then, it seems that this part of the country and from the northern part of Iowa, leaving, perhaps, one or two counties in Iowa, we are in a natural dairy belt; our grasses, our soils, our water, are all sufficient for the manufacture of the products of the dairy. Now, then, what is the system to be

adopted to the most advantage of the producers? is the question we are interested in. What is the method that should be adopted by this new state for the manufacture of dairy products and put it into the market? Here in this locality, in Wisconsin, as a rule, your leading product is cheese. I do not profess to know anything about manufacturing it; whether you should make full cream cheese, or whether you should take off what cream you can and make the balance into butter; that is for you to decide. But the point before us is the progress of butter making in the west.

Some eight or ten years ago we commenced the factory system in Iowa; in three or four counties in the eastern part of the state of Iowa, we introduced the creamery system by having the milk delivered at the factory twice a day during the summer. That method has worked and progressed rapidly in our locality. Eight years ago our farmers were raising wheat, and we had many failures. If it was not one thing it was another that caused failure. Our farmers were feeling depressed; they did not know which way to turn. Butter was from six to ten cents a pound during the summer. We began turning our attention to dairying. Every time they put in a crop of wheat in the fall they were poorer than they were in the spring. What should we do? Our people conceived the idea of going into the dairying business, and with the dairy raising sufficient corn to furnish their cows and pork. Now, in eight years, you take Jones, Lynn and Delaware counties, and some of the adjoining counties, and the farmers are prosperous. We raise corn, very good corn; and as I remarked before, we were successful in persuading our producers to deliver their milk to the factory both night and morning, directly from the cow. We prepared our factories with various devices for setting the milk. Our people will not allow us to have the milk except to take off the crea n. The hog is so much profit to them that they demand of us the return of the skim milk. We are now paying $1.30 for milk for the privilege of taking off the cream, and we have in some cases offered $1.60 for the privilege of having the milk as it comes from the cow. I have two patrons who say, you may make cheese and give me fifty cents extra; but I have other patrons who say, "if you make cheese you cannot have the milk anyway." So you see the prejudice which our people have against giving up the milk. They say we won't patronize a cheese factory; we want the skim milk and buttermilk

to raise our hogs. We are paying $1.30 a hundred for the privilege of taking off the cream, and then returning it. The milk returns to them this season of the year sweet. We hold it thirty odd hours, until there is no more cream comes upon it for butter, and then we return it. The progress in the manufacturing of butter, in its quality, has been very marked in the last eight years, as I have bought many carloads of butter in Iowa at from six to ten cents a pound, and now we are selling at forty cents. During last summer we sold no butter at less than twenty-eight cents a pound. Of course this shows that by establishing the factory system we have succeeded. Our average price to our farmers during the summer for the cream, returning the milk, as we did for the year 1881, was ninety cents and $1.00 per one hundred pounds. Of course we are paying $1.30 now, but in the summer we cannot pay that amount.

To show you the advance in the manufacture of butter in our vicinity, fifty years ago in our town I handled all the butter that came to our town, nights and Saturdays. Last year we handled ten million seven hundred and seventy-five thousand pounds of milk. This shows something of the progress of the factory system in eight years since we commenced manufacturing by the creamery system. It would seem to me very great folly for me to undertake to tell you how we make butter, because I know you all know how to make it a great deal better than we can. As I told you, I invited Mr. Smith to come over from your state, and he has very kindly done so, and I have availed myself of this opportunity of coming to your state to get some points myself. There is another point it may be well to speak of. Supposing that every dairyman in Wisconsin the same as in Iowa is seeking to get the most possible out of his cows. I will say here that my observation is that it requires of the dairyman a careful examination and knowledge of every cow they milk. In other words, the cream test should be in the dairy, used by every dairyman in the land, if he would make the dairy a success. Some of our people say, "It don't make much difference to us whether we deliver to the factory rich milk or poor milk;" but it is not so; it must make a difference. No factory man will run a factory any great length of time at a loss; he cannot do it. Consequently if he gets thin milk he must pay thin prices; if he gets rich milk he can pay a rich price; and here at the beginning it seems to me that all of our dairymen should look well to the

cow, and the quality of milk that the cow will produce. It is a fact that in all our herds more or less we will find cows that will give you five pounds of butter to the one hundred pounds of milk. You turn right around and see perhaps a cow that it will take thirty-five or forty pounds of milk to make a pound of butter. Now can you afford to do so? You say you sell the milk, but you sell at the price of bringing down the whole price of milk delivered there. There is more in this examination of the individual cow for her ability to produce butter than has been credited as a rule in our state. That attention has not been given to it which ought to have been at the very beginning. Select the cow for the butter producing qualities in that cow; and when you find a cow that it takes forty pounds of milk to make one pound of butter, you had better let somebody else have her, or let her go to the butcher.

Mr. Hiram Smith — I wish to say in regard to this whole question Mr. Sherman has talked of, in order to allay the fear of those who are haunted with the ghost of over-production, that Mr. Sherman, in his several factories, has handled about two thousand and two hundred pounds of butter per day, making about a carload in every ten days. Now, this butter, or a large portion of it, goes out of the market; it goes to one party, where your butter will never interfere. He has built up a business there because he knows how to do it. Now, it is for our interest to learn from others.

GERMAN CHEESE.

By JOHN MEHLE, Milwaukee.

Ladies and Gentlemen, Members of the Association:— My manufactory is in Milwaukee. I am manufacturing a kind of German cheese, cheese made out of skim milk, soured loppered; after the cream is taken off you let the milk get thick and then heat it up to about eighty-five degrees and let it get sour. I am buying of different parties in the state at present; have bought of parties here at the present time; Mr. Hiram Smith is one. I have a box of the cheese and also a box of curd in the cheese room, and if any of those present wish to see it, it is there for examination. My object is this: to make it an object to butter makers to make the best profit they can get out of it. People who have tried my plan, have

found that they can realize more than fifty per cent. more out of their skim milk by making it into curd and selling it to me than they ever could realize by fattening hogs or calves. I am now paying three cents a pound for the curds.

The Chairman — Will you tell us how you would have the curd prepared for your use?

It is very simple. After the cream is taken off, generally, you leave the milk in the winter standing in a warm room, of course, until it gets loppered; then you heat it up to about eighty or eighty-five degrees. Some of my shippers put it into a small vat and heat it up, and then press it and send it away in tubs, ship it to Milwaukee.

The Chairman — How much pressure does it need?

It all depends upon your milk. If you have a creamery, you press it in a cream press, but I have other shippers where the press is made a little larger, and it is easier.

The Chairman — How many pounds of curd do you get from skim milk?

We are getting about fourteen pounds out of one hundred pounds.

The Chairman — That gives forty-two cents a hundred pounds?

Yes.

Mr. Hiram Smith — I get about ten pounds. I think he might get fourteen under the old method of making butter, and I will say I have no doubt that Mr. Mehle is correct in his estimate with regard to the value of the curd at three cents a pound, above any use it can be put to upon the farm in hogs or calves.

H. Smith moved that we adjourn until 1:30.

AFTERNOON SESSION, JUNE 12.

The association met at 1:30, pursuant to adjournment.

NECESSITY OF A PLAN IN DAIRYING.

By Hon. HIRAM SMITH, Sheboygan Falls.

Mr. President, Ladies and Gentlemen:— Nearly all of the great achievements, in the past and present generation, that have benefited and blessed mankind, has been the result, culmination and perfection of carefully considered plans. When Stephenson first made his carriage to run on two parallel rails, he had in his mind a well defined plan of a railroad. When Fulton first built a boat that would run against wind and tide, to the wonder of a suspicious and incredulous public, he had a clearly defined plan of steamboats plowing the main. When Morse first began to erect poles and string wires from Washington to Baltimore, he had clearly mapped out in his mind our present telegraph system that is sending and receiving intelligence from every part of the habitable globe. When an architect commences the erection of a building, he has a clear picture and plan in his own mind of the size and shape of every room, the length, width and angle of every board and stick of timber necessary to erect such building. When a superintendent takes charge of a maufacturing establishment, he has an intelligent understanding of how many machines or articles he will make, how many persons he will employ, the sources from which he will get his supplies, and the market he expects to supply. It is equally important that the dairy farmer should have as well defined plans, so as to pursue his business intelligently, as any of the parties named; so as to take advantage of his opportunities and possibilities, that he may receive a just recompense for the capital invested and labor bestowed. Most dairymen are aware of the heavy annual losses sustained in consequence of the manufacture of poor butter and poor cheese, but there is a far greater annual loss sustained by dairymen in the lack of a sufficient number of cows adapted to the size of the farm. One fact should be constantly borne in mind, that it requires the same care, attention and time to

make ten pounds of butter per day as it would to make thirty or forty pounds; that the expense of time and labor is about the same to take the milk of ten cows to a cheese factory as it is to take the milk of twenty-five or thirty cows. Therefore, any man that pretends to be in the dairy business at all and keeps less than twenty-five cows to the one hundred acres, suffers the loss of the net profits per cow of all he falls short of that number. No superintendent of a manufacturing establishment could hold his place that expended the same amount of team and hand work to produce ten articles that would suffice for twenty-five articles. The chief expenses of dairy products consist in the investment for land, team and tools, a slight increase in the cost of the cows, and the cost of the labor of raising fodder. Corn would more than double the receipts and profits of three-quarters of the dairy farms in the state of Wisconsin.

The necessity of a plan in dairy farming mainly consists in the fact that working up to a plan is the only method of making any intelligent permanent improvements. If any part of a plan proves beneficial it can be continued; if any part proves defective it can be discontinued and other measures substituted. And thus, year by year, knowledge can be accumulated which is often more valuable than capital. If a plan should be adopted of keeping twenty-five cows on one hundred acres, and that said cows should average five thousand pounds of milk per cow, the plan being feasible, should not be abandoned with thirty-five or forty acres of pasture. Twenty-five acres of meadow, six to eight acres of fodder corn, and a liberal supply of wheat middling or other ground feed — no danger need be apprehended from drouth or freshets — with a small piece of early fodder corn to draw on whenever short pastures are threatened. Before the calamity actually occurs other feed must be supplemented at whatever cost, because the greatest cost to the dairy farmer is short pastures, and its consequent short supply of milk. Again, working up to a plan will soon convince the intelligent dairyman that winter dairying, almost anywhere in the northwest, will add not less than one quarter to his net profits. Dairymen that allow their cows to go dry three months or more are losing annually, on twenty-five cows, more than their town, county, state and national taxes. If two or more dairymen form plans that differ from each other, and carefully pursue them for a year, and then compare notes, knowledge accumulates more rapidly than any

haphazard way of farming. Such knowledge becomes positive, and all positive knowledge can be communicated and all are benefited. The necessity of a plan is acknowledged and practiced at all experimental stations, and results carefully recorded and compared with other plans. The value of any system of farming can only be determined by comparison with other systems, and both must be pursued from carefully devised plans. Therefore, who ever starts into dairy farming with the best plan he can form, each year adding amendments, is on the only road to success.

There are two classes of dairy farmers; one class pursues his work after the best formed plan he is able to devise, that has been altered and amended, as the experience of years has demonstrated to be advisable. He keeps on an average of one cow to four acres and less. His cows will average five thousand pounds per cow annually, if he takes his milk to a cheese or butter factory. His cows will net about $50 per cow. If he makes butter only, at home, the average will be about the same. If he makes skim cheese and butter, his net receipts will be increased to $60 to $70 per cow, provided he has forty cows and over.

The other class of dairy farmers is much the larger class in this state. They have no definite plan, but keep what cows they happen to have room for, among the colts and sheep usually; about one cow to eight or ten acres of land. Their average yield is about three thousand five hundred pounds of milk annually, and their net receipts not much above $35 per cow. This class of dairy farmers spend more time predicting that the dairy business will soon be overdone than they do in raising fodder corn, forgetting that the short life of a cow, and the great slaughter of them when beef is high, prevents any more increase than the increase of population; and instead of being *dazed* by the fear of over-production, it will soon be a serious question whether we can produce as much as the market demands with even the present boundary of the market; and when the contemplated railroad is completed to Mexico and the one from Texas to Brazil, will then open up a larger market than the one we now supply. Wherever railroads penetrate they always create a demand for high priced butter and cheese. I have spoken of two classes of dairy farmers, the one pursuing a carefully considered plan, the other pursuing the business in a hap-hazard way, with its hap-hazard results. Each dairyman can determine for himself in which one of these classes he is at present located.

DAIRY EXPERIMENTS AT THE EXPERIMENTAL FARM, MADISON, WIS.

By Prof. W. A. HENRY.

Mr. President, Ladies and Gentlemen: — When I appeared before the association last year at Waukesha, the information I there endeavored to impart was of quite a different nature to this I bring to-day. That was gathered from books and was the work of other investigators: what I tell you to-day is of my own investigation.

In the field of experimentation there is such an expanse, the way is so broad, that it does not seem possible, as I look over it, for me to take a step forward in any one direction, without finding myself called equally imperatively to go in some other direction. I can scarcely talk with a dairyman of intelligence, without finding in his conversation something that suggests at least a certain line of experiments. Often the thought arises at such times, "There, that man has spoken of something I should like to experiment on." The same is true when I meet a horticulturist.

My position is in one sense a very favorable one, since I am put in charge of a farm where no one expects any profits to be made, and where a fair amount of money is allowed to be spent in experiments.

It would seem that a college course at an agricultural college would prepare one for such work as mine, yet I find that now I am but at the very threshold of the matter, and I must learn how to experiment first of all.

Anybody may conduct what might be called an experiment, but we want useful experiments. Thus a man might feed a horse on oats simply, and determine how long he would live on that one article of food; yet the results of such work would hardly settle any controversy as to the best and cheapest feed for horses.

Such experiments as we have made on the farm the past season are useful in some way, I hope. I will first speak of the silo. The silo built upon the University farm is thirty feet long, fifteen feet wide and fifteen feet deep. The walls are eighteen inches thick. The silo is made of sandstone laid in strong mortar. There are no openings of any kind in the sides or in the bottom. It stands half under ground and half above. Over this silo is a low frame build-

ing to keep out rain. The sides of this superstructure are about six feet in height. Around the top of the stone walls of the silo, and extending above it for thirty inches, is a curbing of two-inch plank which forms a continuation of the silo proper. By this means the silo can be filled thirty inches higher than the top of the stone part, and yet when the contents settle the whole will be within the stone walls. The floor of the silo was made by mingling cement and small boulders, making a sort of concrete, in fact, with the lower side resting on the soil and the upper made smooth. The walls of the silo were plastered smooth with a good coating of cement.

The building over the silo is arranged with a large door at the gable end, through which a large box can be passed. This box is large enough to hold several hundred pounds of ensilage.

A track and horse hay fork carrier are placed in the peak of the roof, and by means of the carrier the box filled with ensilage can be lifted from the bottom of the silo to the peak, and then run to the outside of the building. The ensilage drops from the box into a spout or funnel, which runs it into a car, by which it is carried to the stock in the stock barn.

The ensilage cutter cost us $81, and the frame building about $110. Including these the cost of the silo was $413. The stone cost $2.50 per cord; cement $2.00 per barrel; the lime twenty-eight cents per bushel, and the masons $3.00 per day. Silos are easily enough built. There is not the least mystery about them. Simply build a cellar that will keep out frost, air and water, and put some kind of a roof over it.

For filling the silo fodder corn was grown. Upon one piece of ground yellow dent corn was planted. The corn was dropped seventy-five grains to the rod in rows thirty inches apart. The yield of this piece, two and twenty-two one-hundredths acres, was forty-four thousand two hundred and twelve pounds, or about twelve tons per acre. This land would have yielded about forty bushels of shelled corn per acre this season and considerably more other seasons.

On the second plat the corn was in hills two feet apart each way, with three stalks in each hill. This was planted with white flint corn. It was the finest plat of growing fodder corn I ever saw. From two and six tenths acres eighty-six thousand five hundred

and seventy pounds of fodder was cut, or about sixteen and a half tons to the acre. A third small plat planted similar to the last, but with a large southern corn, yielded fodder at the rate of forty-two thousand eight hundred pounds to the acre.

These statements are facts, not guesses or estimates. It has been stated that seventy acres of fodder can be grown upon an acre of ground. While this may be true, it is useless to make such statements without results to back them. The "ensilage problem" is not brought any nearer a solution by wild theorists.

The green fodder corn was brought to the silo, and after being weighed was at once put through the ensilage cutter, by which it was reduced to pieces about three-fourths of an inch in length. In the silo this green corn fodder, thus chopped up, was spread, and packed down by tramping. After putting in seventy-five tons of this material, a few tons of green clover, direct from the field, was put in on top, without having been run through the cutter.

Upon this clover two inch planks, ten inches wide, were laid crossways of the silo, fitting them as closely as possible, thus forming a floor over the green fodder and clover. Upon these planks, thirty-six thousand pounds of stone were laid, or one hundred and twelve pounds to the square foot. It took four men and one team half a day to put these stones on. They had been previously gathered and weighed and piled up near the barn.

Putting on these stone weights is a great bugbear to many, but in truth it is the least of the work.

Putting in the green corn fodder is hard work at best. It requires about as many men as it does to run a threshing machine, and any dragging in the work is very annoying as well as expensive.

Those having ensilage cutters to sell, speak of the great ease with which they are run, as though to cut up a ton of stalks in ten minutes, required no power worth mentioning.

Our cutter — the Cycle ensilage cutter, made by the New York Plow Company — cost us about what we paid for it, by the poor quality of the work it did.

Farmers should be very careful to secure good machinery, and when the manufacturers talk about what their machinery will do, let them give a guaranty to back up their assertions. To put our

ensilage into the silo and seal it up cost $1.68 per ton, about twice what it should have done. Yet such is the truth.

When putting in the ensilage the weather was very hot and the cut corn fodder began to heat at once. Many of the visitors predicted a failure. Some said it would set our barn on fire, others that it would rot, and so on. All seemed to forget that with the plank and weights on, the air could not get to it; and if the air were kept away, the material could not heat, no matter what the other conditions were.

As to the feeding value of the ensilage, I can not now tell you. Upon opening the silo in November we found the contents well preserved, and our stock soon learned to like it. Only experiments in feeding will give us the true facts in the case. To those who contemplate building silos, I would say, *wait;* do not hurry. If you are making money in the dairy business now, you can afford to go on as you are. If you are a poor, shiftless farmer, by all means let the silos alone. We are rapidly getting at cheaper methods of building silos, and better ensilage cutters are being made. You can afford to wait until these things have been settled, and then it is time enough to build.

[The remainder of the lecture Prof. Henry devoted to an account of the other experiments on the University farm, and in order to give them complete we copy directly from his "Report to the Board of Regents."—EDITOR.]

FEEDING CORN SMUT.

The contradictory opinions held by farmers in regard to the poisonous qualities of corn smut and the current reports of cattle dying from this cause, led to the experiment of feeding it to two cows selected from the farm herd. Both cows were "natives" and about eight years old. The one which we will designate as the "Red Cow" was farrow and was being fattened for the butcher. The "Black Cow" was giving about five quarts of milk per day. Both animals were in good health, and there had not been a sick animal of any kind on the farm, for a year. They were placed in comfortable quarters and allowed two hours exercise during the middle of the day. Each was fed five pounds of bran morning and night and what meadow hay they wished to eat. In addition to this, the Red cow received at noon each day, a peck of ears of corn chopped in small pieces. The smut used was saved by the men at husking time, and all fed previous to November 18 was carefully and laboriously

cleaned and sieved, in order that so far as possible nothing but pure, clean spores should be fed. On and after the 18th the smut was prepared by simply freeing it from the cornstalks, leaving it often in bunches of considerable size. It was fed dry mixed with the bran, half in the morning and half at night.

The Red cow was a greedy, huge feeder and soon took kindly to her comfortable quarters. The Black was nervous and more uneasy in her partial confinement. They were weighed and temperature taken before being watered in the morning. A part of the time the water which they drank was weighed. The temperature was taken at the vagina with a clinical (self-registering) thermometer.

As the cows were uneasy in the first attempts at taking the temperature, that recorded for the first few days may be slightly lower than it should be, but the last part of the record is accurate, as repeated tests showed.

The following table will show the smut fed, water drank, the bodily temperature and the weight of the animal each day during the experiment:

DATE.	RED COW.				BLACK COW.			
	Ounces of smut fed.	Temperature.	Pounds of water drank.	Weight.	Ounces of smut fed.	Temperature.	Pounds of water drank.	Weight.
Nov. 6	.....	.....	.....	948	.....	.....	.....	706
Nov. 7	.....	.....	.....	950	.....	.....	.....	695
Nov. 8	.....	.....	.....	960	.....	.....	.....	682
Nov. 9	.....	.....	.....	.....	.....	.....	.....	702
Nov. 10	6	.....	.....	1,012	.....	.....	.....	714
Nov. 11	6	101.5	.....	1,002	6	101.5	.....	686
Nov. 12	12	101.8	.....	963	12	101.8	.....	698
Nov. 13	12	101.6	.....	1,020	12	102.0	.....	687
Nov. 14[1]	18	100.0	74	1,006	18	100.2	50	683
Nov. 15	24	101.4	80	1,014	24	102.2	70	701
Nov. 16	24	102.2	47	1,034	24	100.8	66	712
Nov. 17	32	101.2	36	1,040	32	101.8	53	700
Nov. 18	48	102.2	97	1,012	48	102.2	64	692
Nov. 19	48	102.0	46	1,045	32	101.8	51	681
Nov. 20	48	101.8	63	1,042	32	101.6	56	685
Nov. 21	48	102.2	72	1,036	16	102.4	75	710
Nov. 22	64	102.2	26	1,066	32	102.0	48	696
Nov. 23	64	102.2	76	1,020	.....	.....	.....	.....

[1] On the 14th and 16th of November the temperature was taken immediately after the animals had been watered.

On the 16th the Black cow refused to eat all of the bran and smut mixture, leaving about two-thirds of it. For a couple of days again she ate it all, and then grew so indifferent that she would scarcely taste it, and on the twenty-third of the month she was turned out with the rest of the cattle as being smut proof.

The Red cow ate all that was given her and maintained such a hearty appetite and appeared so well that I despaired of finding any limit to her capacity. She was now getting a peck of smut a day and thriving finely. But a change came suddenly. On the morning of the 24th the usual food was placed before her and later it was noticed that she had not eaten it. She did not show signs of pain at that time. At nine o'clock I found her lying down and apparently in pain. The thermometer showed her temperature to be 99.6. She was unable to rise and soon gave evidence of great suffering. Her temperature fell rapidly, and at 11:30 she died. The following are some of the readings of the thermometer at the time:

Time.	*Temperature.*
9.00 A. M.	99.6
9.20 A. M.	98.2
9.48 A. M.	97.2
10.00 A. M.	96.8
10.30 A. M.	95.2
10.45 A. M.	96.4
11.00 A. M.	96.2
11.24 A. M.	95.2
11.30 A. M. (dead)	95.0

I do not think the cow was very sick during the night, as she did not attract special attention at feeding time in the morning. Her symptoms during sickness were as follows: Loss of use of limbs; head thrown forward so as to bring nose on a line with back; hard breathing and groaning; spasmodic contractions of the body; horns and legs cold. the latter stretched out stiffly and hoofs rattling when shivering; some frothing at the mouth, from which also flowed quite a quantity of thin, yellowish fluid. No faeces passed after she lay down, but passages had occurred during the night. The excrement was somewhat watery and a peculiar blackish color. No remedies were administered, as the animal was evidently dying when first noticed as being sick, and I wished to examine the contents of the stomachs as they would appear without medicine being mixed with them. A *post mortem* examination revealed no certain single seat of the trouble, unless it was the small intestine. In the

first and second stomachs the food was so dry that upon squeezing a handful in the clenched hand but half a dozen drops of water could be forced out; but it will be remembered that the cow had not been watered that morning. The third stomach was distended until it had the outline of an ellipse, and measured eleven and fourteen inches at longer and shorter diameters. The contents crowded in between the plates were quite dry, and no pressure of the hand could squeeze any moisture therefrom. The fourth stomach contained a small quantity of dark watery material, not much different but thinner than the excrement. The small intestine was filled in places with a mucous-like substance, unmixed with the natural contents of the intestine. At other places the contents were similar to those in the fourth stomach. In the large intestine the excrement was somewhat softer than natural and of the dark color before mentioned. In some places this intestine was entirely free from either solid or liquid contents. The material in the fourth stomach and intestines showed very imperfect digestion. The lungs appeared all right. In no place except the small intestine could I detect much inflammation, though in this regard from lack of experience I may be in error. It seemed to me that the impaction of the third stomach was a consequence rather than a cause, and would not of itself have produced death so suddenly.

The only other experiment I have learned of on this point is that by Prof. Gamgee, under direction of the Department of Agriculture at Washington.[1]

In this experiment smut fed when wet produced no ill effects, and when fed dry at the rate of thirty-six ounces per day caused the cow to lose flesh. No other ill effects followed. I confess I was completely surprised at the sudden and fatal termination of our experiment. No case could be plainer than this, I think. It is too costly and cruel to be often repeated, but it seems to me to es-

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[1] "Ill Effects of Smut in Feed of Farm Animals," pp. 73–81. *Diseases of Cattle in the United States, Washington*, 1871.

NOTE.— Since writing the above I have examined the contents of the large intestine with a compound microscope, and find the spores very abundant, and exactly in the same condition as when fed as to size, color and general appearance. I should judge that they were not in the least acted upon by the digestive apparatus.

tablish the fact that cows which eat smut in large quantities are liable to die suddenly and without warning.

It is quite evident, too, that smut is not an active poison in moderate quantities. It seems to me the principal danger from this cause lies in turning cattle into stalk fields, where they ofter gorge themselves with dry, indigestible corn fodder and smut. It may be that an unnatural desire is created for this improper food by certain animals in the herd.

Prof. Gamgee recommends for animals sick from this cause some purgative, as a pound of Epsom salts or a pint of linseed oil for a grown animal, and to induce the animal to drink water as soon as possible.

FEEDING SWEET MILK TO PIGS.

The following experiment is one of a series devised for the purpose of ascertaining the value of sweet skim milk, which has become a by-product of considerable importance in the districts where the creamery system of butter making is practiced. While this milk is generally recognized as of considerable value, there is quite a diversity of opinion regarding it. In this initial experiment an attempt was made to find in units of corn meal the value of such milk when each was fed alone. Accordingly two lots of pigs with two in each lot were placed in comfortable pens and allowed all the food they would eat without wasting it; the pigs were good Poland-Chinas, not high bred, all from one litter, and eighty-six days old when experiment began. They had been allowed the run of a small lot up to the time of the experiment. During the experiment each lot was weighed at the same hour of the day each time and before feeding. Lot No. 1 was fed sweet skim milk twice a day, and fresh cut clover was placed in a rack for them, as I feared they might not thrive on milk alone. The skim milk was from the Cooley creamer set with ice. It was analyzed by Mr. Swenson, August 5, with the following result:

Fat, 0.32 per cent. Sugar, 4.39 per cent. Casein, 6.01 per cent.

The following table will show the weights, during the first trial:

LOT NO. 1.— *Pigs fed with skim milk and clover.*

DATE.	Weight of sow.	Weight of barrow.	Total.	Gain.
	lbs.	lbs.	lbs.	lbs.
July 22	63	50	113	.....
August 1	77	65	142	29
August 6	79¾	66¼	146	4
August 11	85	72	157	11
August 16	88½	75	163½	6½
Total gain in twenty-five days				50½

During this time they consumed one thousand one hundred and sixty-eight pounds of skim milk and seventy-seven pounds of green clover. This shows twenty-three and one-tenth pounds of skim milk and one and five-tenth pounds clover required to make one pound of growing pig.

Lot No. 2 was fed on corn meal soaked in water until it soured slightly. The following table shows their gain :

LOT NO. 2.— *Pigs fed with corn meal and clover.*

DATE.	Weight of sow.	Weight of barrow.	Total.	Gain.
	lbs.	lbs.	lbs.	lbs.
July 22	55¾	50	105¾	.....
August 1	62¾	64½	127¼	21½
August 6	67¼	68½	135¾	8½
August 11	71½	71½	143	7¼
August 16	73½	75	148½	5½
Total gain in twenty-five days				42¾

These pigs ate during the twenty-five days one hundred and sixty-nine pounds of corn meal and one hundred and fifty-four pounds of clover; or three and ninety-five one hundredth pounds of meal and three and seven-tenths pounds of green clover were required to make one pound of growing pig. During this trial, this lot seemed quite greedy for the clover.

The first test closed at the end of twenty-five days with results as recorded. The pigs were still kept in the pens and all received corn meal and skim milk for a week, during which the food was

gradually being changed from milk to meal with lot 1, and from meal to milk with lot 2, and on August 23, lot No. 1 began to receive corn meal and clover alone, and lot No. 2 skim milk and clover. During this trial both lots seemed to care but little for clover, and wasted so much of it that we discontinued feeding it. This indifference is perhaps due to the clover being more mature.

The following tables show the results:

LOT NO. 1.— *Pigs fed with corn meal.*

DATE.	Weight of sow.	Weight of barrow.	Total.	Gain.
	lbs.	lbs.	lbs.	lbs.
August 23	91	81½	172½	.....
August 27	104	89	193	20½
September 1	109¼	95½	204¾	11¾
September 6	111½	100½	212	7¼
September 11	117	107¼	224¼	12¼
September 16	121¾	112¼	234	9¾
Total gain in twenty-five days				79

The two pigs ate two hundred and fifty-three pounds of meal, or a gain of one pound of growing pig to four and one-tenth pounds of corn meal fed.

LOT NO. 2.— *Pigs fed on skim milk.*

DATE.	Weight of sow.	Weight of barrow.	Total.	Gain.
	lbs.	lbs.	lbs.	lbs.
August 23	78	75	153	.....
August 27	92½	90½	183	30
September 1	100¼	103	203¼	20¼
September 6	110	106½	216½	13¼
September 11	113¼	111	224¼	7½
September 16	116¾	115¼	232	8
Total gain in twenty-five days				61½

During this time they consumed one thousand two hundred and sixty-four pounds of milk. In this case it took sixteen pounds of milk to make one pound of growing pig. An analysis of the skim milk made September 17, by Mr. Swenson, showed 0.57 per cent. of fat, or over half a pound of butter in one hundred pounds of milk.

If, for the present, we ignore the clover fed and confine our attention to the results as if obtained from corn meal and milk alone, we find that in the first case it required twenty-three and one-tenth pounds of milk for one pound of growing pig, and later only sixteen pounds.

Of the possible cause of this wide difference in results I will speak later. With corn meal it required in one instance three and ninety-five one-hundredths pounds, in the other four and one-tenth pounds.

Roughly, then, from this we may say that four pounds of corn meal equal twenty pounds of sweet skim milk, or one pound of meal equals five pounds of milk where each is fed separately. If, then, corn meal is worth one dollar per hundred, sweet skim milk is worth twenty cents per hundred when each is fed separately and alone.

It will be observed that the results of the first and second experiments with milk vary widely. I think that probably the difference is due to several causes. A pig fed on milk has a fuller form, the digestive apparatus being more distended, and its flesh is not so solid as that of the meal fed pig. This shows in the first weighing of lot No. 2, when changed from meal to milk, the increase being fifty pounds in the first nine days of exclusive milk feed.

Again, by Mr. Swenson's analysis, it will be seen that the skim milk fed at the close of the experiment was nearly as rich again in fat as during the first trial, and this is just the element that skim milk lacks.

As stated in the beginning, this is but a single experiment in what I hope to make a series. Of course the method of feeling here followed is a wasteful one, and not to be recommended under any circumstances. I expect in the next experiment to feed milk and meal combined.

FOOD REQUIRED TO KEEP A PIG ALIVE.

While the preceding experiment was in progress, two other pigs from the same litter were placed in a pen and fed with varying amounts of corn meal, to ascertain how much food was required to keep them alive. Their combined weight was one hundred and ten pounds. At first they were fed six pounds of corn meal per day. As they gained in weight on this, the quantity was reduced

from time to time until it was found that they just held their own weight on three pounds per day — and squealed all the time. Their combined weight was then one hundred and fourteen pounds. It seems then that in this case one and a half pounds of meal were required in summer time to keep a fifty-seven pound pig alive.

As the pigs fed on corn meal in the other experiment ate only a little over three pounds each per day, we see that it was the second pound and a half of meal that brought the increased growth, and that the first pound and a half was required to keep up the bodily functions.

BUTTER TEST OF HOLSTEIN COW "WINNEFRED."

(Property of Experimental Farm.)

The imported Holstein cow "Winnefred," age eight years, calved May 7, 1881. Her highest yield of milk on any one day was fifty-four pounds, May 25. During the test she received ten pounds a day of an equal mixture of ground corn and oats or ground corn and barley, and run with the herd in the farm pasture, which is at no time very good feeding ground, as all the high land is in forest, and the low land grows wild grass.

The test began June 20. On the 28th of June Mr. Swenson analyzed the milk, and found it to contain:

	Per cent.
Solids	11.22
Fat	2.89

Near the close of the experiment, July 2, he again analyzed it, obtaining:

	Per cent.
Solids	11.33
Fat	2.86

The milk was set in the Cooley creamer, with ice, and the temperature carefully watched. The slightly acid cream was churned with the rectangular churn. The weights given are for butter ready for the market, salted one ounce to the pound. On June 28, the skim milk was analyzed, showing 0.68 per cent. of fat. On July 2, it contained 0.77 per cent. of fat. The following shows the amount of milk and butter obtained:

WEIGHT OF MILK.

First Trial.

DATE.	Morning.		Night.	
	lbs.	oz.	lbs.	oz.
June 20	24	2	21	4
June 21	22	9	22	5
June 22	21	6	20	11
June 23	22	4	.....	.....
	90	5	64	4

Total, 154 lbs. 9 oz.
Churned, 3 lbs. 4 oz. butter.

Second Trial.

DATE.	Morning.		Night.	
	lbs.	oz.	lbs.	oz.
June 23	.....	.....	19	4
June 24	22	11	19	.....
June 25	20	14	19	8
June 26	18	.....	19	.....
June 27	19	8	.....	.....
	81	1	76	12

Total, 157 lbs. 13 oz.
Churned, 3 lbs. 12 oz. butter.

Third Trial.

DATE.	Morning.		Night.	
	lbs.	oz.	lbs.	oz.
June 27	.....	.....	18	8
June 28	18	.....	20	11
June 29	18	.....	.....	.....
	36	.....	39	3

Total, 75 lbs. 3 oz.
Churned, 1 lb. 12 oz. butter.

Fourth Trial.

DATE.	Morning.		Night.	
	lbs.	oz.	lbs.	oz.
June 29	.....	.....	19	8
June 30	19	3	20	8
July 1	19	.....	19	2
July 2	18	.....	.....	.....
	56	3	59	2

Total, 115 lbs. 5 oz.

Churned, 2 lbs. 12 oz. butter.

BUTTER TEST OF JERSEY COW, "QUEEN."

(Owned by Gen. Geo. E. Bryant, Madison.)

General Bryant, at my request, allowed his Jersey cow "Queen" to be brought to the farm and tested for butter the same as the Holstein cow had been. This cow was five years old and had calved May 2, 1881.

It must be said in favor of the cow that she had come to the farm only a few days before the test began and was ill at ease all the time here. At this time the pasture was poorer than when the Holstein test was being made, the heat was intense and the flies very troublesome. Any butter maker who looks at the date of the experiment will realize the conditions.

The test was with the Cooley Creamer, as before, and every precaution taken to make it a correct one.

She had, in addition to the pasture, one hundred and twenty-three and one-half pounds of corn meal during the twelve days' trial, or about ten pounds per day.

An analysis of the milk, made August 19, by Mr. Swenson, shows:

Solids	13. 60 per cent.
Ash	0. 72 per cent.
Fat	4.795 per cent.
Casein	3. 80 per cent.
Lactose	4. 30 per cent.

During two preliminary trials, August 9 and 12, Mr. Swenson found the skim milk to contain twelve and eight per cent. fat.

August 19 he analyzed the butter made from the milk and found it to contain:

Water	10.32 per cent.
Fat	82.58 per cent.
Salt	5.78 per cent.
Casein	1.32 per cent.

The following shows the amounts of milk and butter obtained. As with the Holstein the amounts of butter given are as ready for the market, containing one ounce of salt to the pound of butter:

WEIGHT OF MILK.

First Trial.

DATE.	Morning.		Night.	
	lbs.	oz.	lbs.	oz.
August 15	14	6	13	3
August 16	15	1	12	2
August 17	15	0	11	10
	44	7	36	15

Total, 81 lbs. 6 oz.
Butter obtained, 4 lbs. 4½ oz.

Second Trial.

DATE.	Morning.		Night.	
	lbs.	oz.	lbs.	oz.
August 18	13	14	12	6
August 19	13	2	10	13
August 20	13	14	10	14
	40	14	34	1

Total, 74 lbs. 15 oz.
Butter obtained, 3 lbs. 15 oz.

Third Trial.

DATE.	Morning.		Night.	
	lbs.	oz.	lbs.	oz.
August 21	14	13	10	8
August 22	13	3	12	5
August 23	14	5	13	.....
	42	5	35	13

Total, 78 lbs. 2 oz.
Butter obtained, 4 lbs. 2½ oz.

Fourth Trial.

DATE.	Morning.		Night.	
	lbs.	oz.	lbs.	oz.
August 24	12	1	11	5
August 25	11	1	13	3
August 26	12	14	11	4
	36	....	35	12

Total, 71 lbs. 12 oz.
Butter obtained, 3 lbs. 11 oz.

SUMMARY OF THE TWO PRECEDING EXPERIMENTS.

I think the facts brought out in the foregoing butter tests are too interesting to let pass without further notice. Let us then group them in such a way as to see what they teach. First as to yield of milk. In twenty-five milkings the Holstein cow gave five hundred and two pounds fourteen ounces of milk. In twenty-four milkings the Jersey gave three hundred and six pounds and three ounces.

According to Mr. Swenson's analysis, 2.89 per cent. of the Holstein's and 4.79 per cent. of the Jersey's milk was fat. Multiplying the total quantity of milk by these, we find that in the Holstein's milk there were fourteen and one-half pounds of fat, and in the Jersey's fourteen and six-tenths pounds. From the fourteen and one-half pounds of fat in the Holstein's milk, eleven pounds eight ounces of butter were obtained. From the fourteen and six-tenths pounds of fat in the Jersey's milk, sixteen pounds and one ounce of butter were obtained; forty-three and seven-tenths pounds of the Holstein's and nineteen pounds of the Jersey's milk were required to make one pound of butter.

This statement in regard to the amount of butter obtained from the Jersey would seem at first anomalous, since more butter was obtained than there was fat in the milk; but we must remember that butter is only about eighty per cent. fat (in this case about eighty-two as shown by the analysis), the rest being water, salt and casein.

Analysis showed from 0.68 to 0.77 per cent. of the fat of the Holstein's milk left in the skim milk, and only from 0.8 to 0.12 per cent. of the Jersey's left.

It will be seen that not only is the Jersey's milk richer, but the

cream from it rises almost perfectly in the Cooley creamer, while only about three-fourths of the Holstein's cream was saved.

Mr. Hoard — Didn't I understand you that you got more fat than butter?

Mr. Henry — Yes.

Mr. Hoard — Is that lawful?

Mr. Henry — We analyzed this butter, and found it contained —

Mr. Hoard — Did you analyze the buttermilk?

Mr. Henry — There are no reports of it here; did not bring all of our analyses, but I do not think our buttermilk was analyzed in this instance.

Mr. Smith — Would it be your opinion that the cream from the Holstein was richer, more fatty matter, than the Jersey, from what you saw?

Mr. Henry — I should hate to say; it is very difficult to arrive at an opinion.

Mr. Hoard — Did you form any opinion as to the relative value, pound for pound, in cream?

Mr. Henry — We did not get at the value of the cream. We were so careful to get all the cream off that we sometimes put in some of the skim milk. I think the most important thing brought out by this test is this: that a chemist's analysis of the fat of a cow's milk is not, in itself, a test of the amount of butter to be made. The temperature of this was kept as close to forty-five as we could keep it. Of course it would vary a degree or two, but we spared no time, or pains, or ice, or anything else, to be careful. At one time my chemist became suspicious of the young man who was watching the creamer, and he slipped into the room several times when the boy was out to see that the cream was correct. He watched him in a number of ways, and he was unable to detect any errors on the boy's part.

Question — How long did the milk set?

Mr. Henry — From one milking to another. Now, Mr. President, in regard to these experiments, I would say that no doubt they are liable to criticism. I doubt if any one of the experiments has proved important facts, but I do hope that what we have done is a factor in a series of experiments that will be useful. We tried the experiment of feeding corn smut. I do not claim that in all cases where corn smut was fed the result would be the same. We

tried the experiment of feeding sweet skim milk to pigs. I do not claim that those are the conditions always attending the feeding of sweet skim milk that way, only; I have stated what we did. We took a Holstein cow, that we happened to have, and we took a Jersey cow that a neighbor had, and made the experiment as I told you. I do not rely on the chemist to tell me what kind of a cow she was, nor upon the churn, but I rely upon both. What we have found does not prove that Holstein cows are better than Jerseys; because I might pick out one man here who is a quarter of a man, that does not prove that all men are not whole men. But here is a Holstein cow that gives these results, and here is a Jersey that gives those results under the same conditions. Now, upon those factors let us generalize and get what benefit we can.

THE DIGNITY OF BUTTER MAKING, FROM A WOMAN'S STANDPOINT.

By Miss FANNIE MORLEY, Baraboo, Wis.

Dignity, says Webster, is true honor, nobleness or elevation of mind, etc. That labor, physical toil, intellectual exertion, labor which requires hard work for its accomplishment,— that such labor for the attainment of a worthy object is something elevating and dignified, if carried on to success, is a plain American sentiment, the truth of which is verified in the fact that the best and most truly successful men and women of our land have exerted themselves physically as well as mentally and with a decided effect. We have been endowed with the ability to perform both mental and manual work. The two belong together, should not be separated, and when well balanced lead onward to success. Knowledge back of labor, whatever be the real work, is what gives dignity to the work. This knowledge is and must of necessity be obtained in various ways and from various sources. Some is learned by personal observation and experience, and much from the words and written works of others; hence by improving our opportunities we may store away in the memory much useful information.

"Yet, mortal, pause! within thy mind is laid
Wealth gathered long and slowly; thoughts divine
Heap that full treasure house; and thou hast made
The gems of many a spirit's ocean thine."

I think we are apt to apply the word dignity to what is really a false dignity or no dignity at all. Stiffness, pride and self-conceit too often are pronounced dignity; yet how erroneously so called, since they do not partake in the least degree of the true idea. The progressive butter maker will fling to the winds his self-conceit, and be as willing to be taught as to teach, to be criticised as to criticise, doing his own studying and planning, learning useful lessons as surely from failure as from success. Therefore, let us make the most of our butter making, for in so doing we shall make the most of ourselves; and, though lesser lights we may be, strive to illume the pathway to success. We pity the man — yes, but I will say woman — who has grown up without work, without care, without much thought, till by some unforeseen event she is made the unhappy recipient of the burden of toil, care and responsibility, for burden it is to those who are not educated aright. How much better to be trained to think and plan, also to work while young, and what better place for accomplishing this than on the farm, where there is always so much of this to be done, that each member of the household may be required and trusted to do his or her part, each one being held responsible for the appointed work. The farm, especially the dairy farm, is like unto a great school, the owner or proprietor acting the part of teacher, each worker or pupil having his different branches of study and work, all uniting in the general exercises or chores. Take, for instance, the work or study of butter making. We will suppose it to be dignified butter making, requiring thought, skill and work. Notwithstanding the progress recently made in the art, the changes of opinion and practice regarding it, and the prediction that soon butter making will be confined exclusively to factories and creameries, the real work necessitates that close attention to detail and method as to be good discipline for any young lady, or gentleman either, who may have the essential inclination to attempt the work. True, the work may be very easily and successfully accomplished with the proper use of good apparatus; yet it does take time and require more or less thought and attention. Who says that butter making, successfully carried on, is not ennobling, dignified employment? It depends upon the true dignity of the butter maker whether the article manufactured, when placed upon the market, demands a good price or a poor price, provided the milk or cream is all right when placed under

her care. Her personal attention is required in every detail,— the proper curing of the cream, temperature when churned, the coloring,— by the way, a tax upon her artistic taste and skill; the salting; all these and many more little things not on the programme, but ever forcing their way to light and demanding care.

Then, too, there is this point I would like to make and urge upon your practical consideration — the mutual benefit arising from the young lady holding the position of butter maker in your own household. Be she hired girl or daughter, the responsibility given, the trust enjoined, cannot fail to exert good influence over her heart, head and hand. The busy housewife, who has thought that no one else *could* turn out the golden butter like unto she herself, finds upon trial, in many instances, that hers was a mistaken idea, and that now she is entirely free from this work whose discipline she does not need, free to read a little more and rest a little more.

There is wide scope for the exercise of skill in coloring butter. We do not relish butter that is so high colored as to remind us of the fact that we are eating butter color; neither do we enjoy eating butter that is so white as to resemble grease. Though otherwise good, this one item, which by some is considered to be of little importance, is I think of sufficient worth to engage our attention.

Do we not admire the beautiful and artistic coloring of the rose, the rich shading of the pansy, the delicate tints of the anemone as it peeps from the ground so early in the spring? Nature has done her best to clothe her children with beauty, rendering them pleasing to the eye of the beholder; and shall not we obey the spirit of the law which governs her by giving to our butter a fine natural color?

"Nothing was ever beautiful in vain,
Or all in vain was good."

We know that *we*, the butter makers of Wisconsin, have nothing to be ashamed of in the way of reputation certainly; and if the work is not dignified enough for us, let us make it so by putting our highest ambition, talent, skill, planning and thinking into the work of raising the standard of our butter. This cannot be accomplished by spasmodic effort. It requires unceasing vigilance, precision, method. These component factors of success, brought into requisition and harmoniously carried out, will produce the desired result,

and withal lend dignity to our own characters. Let us, therefore, press our way onward and upward, knowing that there is always room *at the top* in every calling, not excepting butter making.

Mr. Hiram Smith — It may not be known to all present that the Miss Morley who has just read this paper did Wisconsin the great honor of taking the first prize at the International Dairy Fair in a class open to the world, made with her own hands, and Wisconsin reaps the honor.

THE INFLUENCE DAIRYING HAS HAD IN WISCONSIN, UPON THE FARM, THE FARMER, AND THE COMMUNITY AT LARGE.

By W. D. HOARD, President of the Northwestern Dairymen's Association, Fort Atkinson, Wisconsin.

Mr. President, Ladies and Gentlemen of the Association:— I think it is Buckle who says, "That those great modifying principles which make up the sum of civilized advancement, all find their source in the common people." It is only another form of that saying attributed to Horace Greeley, "Nations and trees have the same law of growth; the foundations of their progress are below the surface, out of sight."

Thinkers generally agree that that progress which contains the best and most enduring elements must include in a marked degree the simpler as well as the more complex forms of society.

We are all desirous of seeing Wisconsin prosper, and we know that unless the farm and the farmer give exhibition of prosperity, there can be no true material salvation for the community at large.

It follows, then, that we can have no higher purpose or worthier ambition than to inspire sound thought, elevate the standard, enlarge the profit and ennoble the character of Wisconsin agriculture.

The peculiar effect dairying has had in this direction will be the theme of our thought for a few moments.

I have been a somewhat enthusiastic observer and student of agriculture in Wisconsin for over twenty years.

Leaving in 1857 the close, compact and more methodical systems

of eastern farming, to which I had been bred, I was struck with amazement at the wasteful, brainless methods of conducting a farm which I found so generally in vogue here. Here was a glorious country, a wonderfully productive soil, yet the farmers seemed wild with the idea that it would always last. They had a profound contempt for all this fertility. They seemed to farm with an idea that God had made a serious blunder in putting them and the soil together, and the quicker they reduced the land to their level, the better it would be for both.

I never contemplate the wicked, wasteful character of early western farming without a feeling of indignation.

The farms had a loose, unkempt appearance; the farmer himself, and the house where he lived, his wife and children, all partook of the same character.

In answer to my repeated inquiries as to the reason of these things, I was told, "It is because this is a new country, and the people are poor." The answer was about as senseless as the fact.

I could not then, nor can I now, see why a set of men should take a noble, fertile country and proceed to destroy its productive capacity simply because it was new and they were poor. What a blinding effect poverty will have on a man's judgment. There is not a poor man in the land who spends his time in the saloon, his scanty earnings for drink, and steadily day after day with a persistency that amazes you, saps the life and strength of a splendid constitution, but will tell you with a sigh that all this fearful harvest is the result of his being poor.

The same perversity of judgment obtained among our western farmers. Their poverty was cited as an excuse for their folly.

We all claimed at that time that we were good citizens, but the facts show that we were not; for that is anything but good citizenship that destroys the productive capacity of the state.

A peculiar feature of those days was, that there was no pride in the character of farming.

We are preached to every day about the wickedness of pride, but I believe it to be the salt of all true effort everywhere, and when the salt has lost its savor matters are in a bad shape.

As I said before, there was no pride in the conduct of the farm and still less in the character of the home.

The skeleton hand of waste was destroying our life; the average

yield of wheat fell off from 1850 to 1870 full fifty per cent.; great broad, unsightly fields of plowed land blotched the face of autumn the fences had an air of apology for being there; there was a painful look of irresolution about them. There were no barns. In small, uncomfortable houses lodged the farmer and his children, and there was a look everywhere of cheerless, uninviting expansiveness.

The western farmer in those days cared nothing for that well ordered beauty of expression in his surroundings that is always a sure indication of handsome thrift. Dismal as this picture may appear, it is true; but that is not all; the farmer was soon confronted with the ugly fact that he was growing poorer. The unrelenting current of a wasteful method of farming was drifting him, and the entire community with him, to poverty and discouragement As the Frenchman said about his burning house, "Zat ting vas getting no petter very fast."

Added to all this came the habits of extravagance, engendered by the high prices of the war, so that about 1870 there was a general awakening to the fact that we must have more revenue. Both the yield and the price of our products were fast lessening, and between the upper and lower grind of these facts the farmer was being ground to powder. A great many sought relief by migrating still farther west, where they could tackle another virgin soil and continue the same methods. At this juncture, a few of the more thoughtful and representative farmers, uniting with others who had the cause deeply at heart, commenced advocating a change. To better illustrate what I have to say, I will take the single county of Jefferson, as one of the prominent dairy districts of the state, and by it illustrate the character of the change that came wherever dairying has been practiced.

In 1870 the entire property valuation of Jefferson county was $10,511,377, and its population over thirty-five thousand. It was one of the oldest counties in the state, possessed of a fair soil, but, owing to the causes I have cited, agriculture was in a very depressed state.

At this time there was in the county, all told, eleven thousand cows, and the census returns of that year report the product of those cows at nearly one million pounds of butter and about fifty thousand pounds of cheese, with a total value of $75,000. But this

evidently is below the truth. It would be fairer to estimate the productive value of those cows at $25 each, which would give a total return of $275,000. But very little care or thought was at that time bestowed upon the revenue a cow produced. There was great unrest and discouragemeut in the entire community. Now mark the change in ten years. The valuation of the county, on a *gold* basis, is 1880, was $11,699,387. Both these valuations are by the county board of supervisors. This is an increase of $1,188,010. The number of cows, according to a revised estimate of the assessors' reports, amount to twenty thousand, an increase of nearly one thousand a year. The joint value of their prouct in butter and cheese is $900,000, an increase of about three hundred and twenty-five per cent. And here let me add, that the productive capacity of the same farms for all kinds of crops has also greatly increased. Indeed, all things shall be added to them that love the cow. In 1870 there were but six cheese factories in the county, employing seventeen hands and producing $18,000 worth of cheese. In 1880 there were forty-six cheese factories, producing $400,000 worth of cheese. In 1870 the product in butter was, say, one million pounds. In 1880, as near as can be estimated, the product was over two million pounds. Right here stands out a feature which strongly marks the advantages of dairying over all other branches of farming.

Not only have we here an increase in the product of butter and cheese, but also an increase in price. The average price of butter in 1870 was sixteen cents a pound; in 1880, twenty-five cents; and this, too, be it remembered, at a time when everything the farmer had to buy bore a greatly reduced price. The average price of cheese in 1870 was seven cents; in 1880, ten cents. Suppose, gentlemen, we had stood by our old products, would we have had the advantage of an increase in the yield and price both?

The increase in the wealth of the county during that decade has been marked, yet our population has decreased about eight hundred, owing to the drain of our young men to other western states.

The change in the appearance and conduct of our farms has been marvelous.

Where only a few years ago the prospect was bare of those material evidences of wealth we always look for in a prosperous country, they can now be seen on every hand.

Handsome farm houses and pleasant grounds, in place of the cheap concerns of ten years ago; large, commodious barns and sheds, in lieu of the unsightly combination of rude crotches and heaps of straw.

Splendid well-kept meadows and pasture fields where once the brown, gashed, murdered soil turned its pleading wounds in mute reproach to the pitying sun; splendid herds of cows and other neat cattle fill the teeming landscape with beauty, and a solid prospect of enduring reward for labor expended. Hundreds of car loads of live stock of all kinds, where once the whole year would scarcely equal the present transactions of three months.

An increase of seventy to one in the number of farmers who keep a bank account. But this is not all; dairying has proved a great educator and civilizer. It has taken the farmer out of his isolated life and pushed him into the busy channels of trade and commerce. It has made a business man of him. Where ten years ago he had no familiarity with the lines of business outside of his local markets, he may now be found consigning his butter to New York, Boston, Chicago or New Orleans, as he deems best, and his cheese to London. He has been forced to deal, as a principal, with railroads and transportation companies, and the great commercial world. He has been forced to the study of the great underlying economies of business life, plant life and animal life. He has learned to solve the vexed transportation question in the most practical way — a way that Vanderbilt or Jay Gould are powerless to circumvent — and that by condensing the bulk and increasing the values of his products. From this latter question he has learned the valuable lesson that the difference in the cost of transportation to market of a dollar's worth of grain and a dollar's worth of cheese, is as twenty to seven in favor of the dairy dollar, and there are but one hundred cents in each dollar.

But the effect on our community life has been just as marked. It is a principle that holds good everywhere, that all interests depend for their good or ill on the ruling interest. In mining regions, as goes mining interests so goes all other interests; in lumber districts, everything depends on lumbering; so it is in farming districts. Go where you please in the dairy districts of Wisconsin, you will find every commercial and manufacturing interest keenly alive to its prosperity. This ought to teach the dairy farmers the

universal principle, that no man liveth to himself alone; that it is his duty and in his behalf to accept assistance of all classes in the community, no matter if while they are helping to grind his great ax they can manage to sharpen their own little hatchet.

Since the advent of dairying in Jefferson county there has been a marked change for the better in the community life of that county. All trades and professions freely acknowledge their indebtedness to it. Business interests have become stable; the merchant and the artisan can depend on the dairy farmer for the payment of his debts, for he now has a firm, substantial business, and the cow keeps him supplied with a harvest nine months in the year. Our country schools have flourished better, while our village high schools have greatly increased in patronage and effectiveness. There has been a very perceptible increase in the general intelligence of the community. More papers and periodicals are taken and books read than ever before. A spirit of general improvement has taken possession of the people. All this is due primarily to an increase of revenue, a better employment of the time and energies of the laboring classes, the stopping of a wasteful method of agriculture which was sapping the energies of the soil, and, lastly, to a marked increase in the reading, thinking and managing intelligence of the farmers. A much wider understanding of the mutual dependence of all classes of society on each other seems to prevail, and there is a wide-spread interest in maintaining the prosperity of dairying. There is yet altogether too large a class of farmers among us who have no real manly pride in their business. They are cheap men and always will be, whether they farm in Wisconsin or Dakota. You cannot arouse sufficient brain action in them to make them care for being anything else than what they are. But I notice among our young farmers an encouraging degree of interest in the study of agriculture. They are anxious to pick up knowledge wherever they can find it; whether in newspapers, books, in the field or at conventions. It is in this class I have hope for that larger success and development of our agriculture in the future that must needs exist. I have briefly enumerated some of the advantages which have accrued to the *farm*, the *farmer*, and the community at large as the results of dairying. Let our farmers but adhere to the logic of its teachings and they will have no reason to complain for the lack of an opportunity to benefit themselves and all about them.

SHOULD NOT OUR FACTORIES BE SO EQUIPPED AS TO MAKE EITHER BUTTER OR CHEESE, AS THE MARKET DEMANDS?

By J. A. SMITH, Cedarburg, Wis.

Mr. President, Ladies and Gentlemen:— In discussing this topic, I shall hold that it is one of the essential elements of perfect success in dairying, that the producer have the benefit of the best market for his product, and the facilities, either on the farm or in the factory he patronizes, to achieve that end. The relative value of butter and cheese changes very materially during almost every year, so that at times it is better to make full cream cheese — at times better to make all the butter possible, and at other times, especially in the late fall and winter, better to make both products. To give the producer that highest success, it becomes a necessity for the factories to be equipped to turn out either or both products — to change or change back as the supply and demand and prices dictate. This is necessary, that the factory system may be more enduring, and the products of a given neighborhood be more uniform in quality and more valuable to the workers. Otherwise there is a continual undermining of the factory system by the drawing out of the most intelligent and business-like and larger farmers, because they see times when it is a sacrifice to them to patronize a factory that can only make one product. Most of the general farmers, who patronize exclusive cheese factories, think, in the fall, they can make their cows earn them as much making common roll butter as late-made cheese, when all things are considered, and so take the course that necessitates closing the cheese factories just at the time when milk is most valuable to manufacture into both products. These farmers are no more competent to get the best results from their milk in the winter than they are in the summer; but if the factoryman is not prepared to do it, they make a virtue of necessity, and either make cheap butter or dry off their cows. Hence, such equipment is a necessary concomitant of successful winter dairying.

The unitiated may ask, "Why is it necessary to highest success, to make both butter and cheese from the same milk, in connection with winter dairying?" I answer, because two good products can

then be made, and their combined value is more than the value of either alone, even when the single product has added to it the feeding value to animals of that part of the milk that is made into neither butter nor cheese. This is claimed to be true the year round in many localities, and practiced accordingly. So true is this, that it is said no whole-milk cheese factory can be maintained in Illinois, and very few in southern Wisconsin or in Ohio, and they are scarce in Iowa, where butter factories flourish. Whether most of the factorymen in northeastern Wisconsin would find it profitable for themselves and their patrons to make both butter and cheese in the summer, or not, it admits of no reasonable question that, to the extent they operate their factories in the late autumn and winter months, it is more profitable to all concerned to make both products.

Indeed, the factorymen will find that they can only hope to rapidly induce winter dairying by making the two products, and thus encourage, by the better prices paid for milk, the farmers to engage in it heartily. The facts and figures ought to convince men who have a reasonably good comprehension of mathematics. Take November, 1881. Most cheese-makers would find it would be as much as they could do to make eleven pounds of cured cheese from one hundred pounds of milk, and sell the cheese for ten and one-half cents. That would net $1.15½. The same milk would make two and one-half pounds of thirty-cent butter and nine pounds of nine-cent cheese, or a total of, say $1.56, or a gain of forty and three-fourths cents per one hundred pounds of milk.

Perhaps considerable more money could be made to make more butter. Some skim deep and do it. But I am taking a proportion of each, that will make both good products — a product of butter that will be super-excellent, and the cheese really good — good enough for the American voter and his wife; and that is good enough for kings or millionaires. A kind of cheese, too, that will not disgust or dishearten the consumer, as a lover of good cheese. A kind that he will buy more of, and eat bigger slices than he will of full cream summer cheese, that has to have acid enough developed in it to stand the high heat of that season. A kind, too, that has as much butter-fat in it, after it has parted with two and one-half pounds of butter, as the more acid whole-milk contains in dog-days, as it usually comes to the factories. It may be asked, is

there always that margin between whole-milk cheese, and butter and partial skims? Of course not; but usually there *is* that proportion.

Losses of thousands of dollars were suffered by the dairy farmers of Wisconsin, and by the cheese-makers, last fall, because the factories were not equipped to make butter, as well as cheese, and were closed early in consequence of their inability to make good returns for the milk from cheese alone. A partial blight thus fell on the business, instead of encouragement being given at a time when a fairly good cow is capable of earning the most money of any season of the year. Facts right here are in point: I took the milk account of one of my patrons at random, but he is a fair average of those who come the full season. He commenced in April and didn't miss a day — Sunday or week day — and is coming yet. His milk for thirty days from the first day of June, was worth to me $99.95, to make into full cream cheese. His milk from the same cows for the month of November — thirty days — was worth to me $118.64, to make both butter and cheese. He is a fair feeder of coarse fodder and hay, but not an average feeder of either roots or grain. Had he been a liberal feeder of grain, his cows would have done better in the spring and would also have done better in November. In his case one pound of November milk was worth just two pounds of June milk. Had I made more butter and cheaper cheese, November would have made a better showing. But I give the facts as they transpired.

It may be asked in this connection if the ground may be rightfully abandoned that none but full cream cheese should be made, and that farmers and factorymen should unite to urge the crusade, on high moral and sound economic principles. I reply, the assumed morality prated about is a myth, and the alleged sound, economic principles involved, are as delusive as Guiteau's pretended "inspiration." There is neither righteousness in a full cream cheese, nor unrighteousness in a partial skim. Where the fraud comes in — if it come at all — is in selling, anywhere between the factory and the consumer, an article for what it is not. Besides this, there is as much or more variation in the price and quality of cheese that are innocent, as to being purposely skimmed, as there is in price and quality of actual skimmed goods. I have no doubt there is more poor cheese thrown on the market that is made from

so-called whole-milk, and which was not physically skimmed, but really so, through high heat, carelessness, filth and superabundant acid in the curd, than there is poor skim-cheese made, and sold for what it is not. There are millions of pounds of cheese made each year from milk from which no butter is made, that is not worth half as much per pound as even second grade skims.

A prominent reason why, especially in the fall and winter, both products should be made from the same milk, is because, as many believe and teach, and as I think I know, there is a loss in product in making cheese from the whole milk when it is very rich in butter-fat, as it is during those seasons when drawn from cows that have been in milk several months. The whole of the cream in the milk is not then coagulated by the rennet so as to be retained in the cheese. I have read that pure cream will not be coagulated by rennet. Prof. Vœlker, the great dairy chemist of England, made many experiments in cheese-making to test the power of rennet to retain the butter-fat in the cheese. He made five qualities of cheese, from full skim to double cream, and found the result of the double cream was, that while adding cream to whole milk increased the weight of the cheese some, the added cream did not add to the weight of the cheese as much as the cream added would have made butter, had it been churned. I seems the rennet could not seize, so as to retain, the added fat. Where, then, did it appear? There was only one place to look for it,— in the whey. An analysis of the whey, in each case, showed that in proportion to the amount of butter-fat in the milk, there was fat left in the whey, the double cream one showing the most wanton waste. The double cream cheese was sold on its merits in the London market, and brought no more than the whole milk cheese.

Now, if it be true that rennet will not coagulate pure cream, and will not save all of an excess of cream when it is put into the milk, then it follows that there must be a loss to make whole milk cheese whenever the milk is very rich in butter-fat. I believe that kind of loss is experienced to a greater or less per cent. according to the quality of the milk, whenever there is more than four pounds of butter in one hundred pounds of milk. In making cheese of milk that has in it an excess of fat beyond the power of the rennet to retain, who is benefited if it is left in? Nobody. Who is robbed if so much of it is taken out? Nobody. It had better be

gilt-edged butter in a tub, than floating oil in the whey vat. There may be in the estimation of some a high moral principle vindicated by having that butter-fat in the whey tub instead of in a butter tub, but the sentiment is too transcendental for this practical world, at least it is "too thin" when creamery butter is quoted at forty cents in New York.

An additional reason why the factories should be equipped to make both products is, that in far too many localities in which full creams alone are made they are started in the spring so early that a large amount of cheese is hurried off to the market in a half-cured condition in the hope of getting it sold ere the drop in prices comes. Such cheese depress the price of summer-made cheese, and that again depresses the later made. The better way is to make butter and no cheese at all during the early spring months. For doing this, let the farmer have the butter taken out of his milk at the factory and take back the skimmed milk for his calves, either to be raised or fattened. The butter and the calves are worth more than hay cheese, particularly Wisconsin spring cheese; for of late years, before it can be made and well cured, the market is stocked with new cheese made further south where the grass comes earlier. Hence, our cheese goes cheap. It is the time of year when the skimmed milk can be best utilized to start the calves and young pigs, and the butter being salable at once, it is in market before the drop in prices of dairy products takes place. I know those who tried that way last spring who will enlarge upon it the coming spring, for they found that a tithe of the value of the butter invested in meal and stirred into the skimmed milk would as well raise or even fatten a calf, as would the whole milk. Meal of corn or oil-cake is a far cheaper fattener than creamery butter.

Another consideration in the manufacture of the two products from the same milk is, there are butter cows and cheese cows in all large herds, and their owners don't know one from the other, and troops of them will not be developed enough in this generation or the next to discover the facts or remedy the matter. The factoryman is powerless, for the milk is mixed before he sees it. If both products are made from the same milk it becomes a matter of far less moment, for all the butter and cheese there is in the milk will go into one or the other product.

Still another consideration and most important of all: Both products should be made because there is too much real good, palatable, healthful and cheap food for human beings in good sweet milk, after one-quarter, one-half, or even three-quarters of the butter-fat has been taken out, for it to be consigned to comparative waste to make pork in competition with cheap corn. It is because so much of the skim cheese now made by modern methods is palatable, healthy and profitable to eat, that so much of it is consumed. Prof. X. A. Willard estimates we now make 400,000,000 pounds per annum. I doubt not that the vast majority of it is skimmed more or less, for the full cream districts are few and growing less, for the reason that whole milk cheese will not sell for enough in the world's markets to equal what can be obtained for the butter and skims the same milk would make. The reason why it will not is, plainly and plumply, because it is not worth so much money for human food. You can't "fiat" full creams up to par with skims and butter, bewail you ever so much, or carp you ever so much about an alleged fraud that cannot be proven.

In the years past, we have worn the doctrine thread-bare, that the making of full cream cheese only is necessary to induce consumption of cheese. The preacher has not stayed the use of the skimmer, neither has it stopped the consumption of cheese. As there are those who will eat none but fancy creamery butter, so may be there are those who will eat only full cream cheese. Let them indulge their tastes and pay the expense. I make no quarrel with such, but pray for more like them. There is no such acute taste, however, in the most expert to be disgusted by the difference there is between full creams and fair skims as there is between fresh, rosy creamery butter and that which is second grade. With the one, it is a question of the per cent. of the different ingredients that compose cheese. With the other, it must be chaste and faultless as woman or the brand of ignominy is placed upon it. The truth is, cheese is eaten by the masses more for the substantial nourishment there is in it than butter is. A cheese of diminished richness, if not quite so appetizing, is still good and nourishing, the same as the cheaper parts of an animal are good and nourishing, and more satisfactory when the thinness of their purses is considered, to the great crowd that eats to live, than the sirloin and hams. But cheap butter has no such redeeming traits. Of the

cheap cheese, if it were good, one might eat more in weight, as he might drink more milk than cream with impunity. But cheap butter — cheap because it is poor — he spreads awful thin or disuses it altogether.

In the matter of checking consumption, the small company that are influenced to disuse cheese because of its poor quality, would not make a corporal's guard for the army that is disgusted into the disuse of butter because it is unfit for human food. I suggest that a portion of the solicitude be expended upon, and a portion of the curses given to the crowd that wrecks tens of millions in the manufacture of poor butter every year — wrecks more annually than all the cheese made in the United States each year, is worth. All the cheese we make at ten cents would be worth only $40,000,000. All the butter we make at twenty-five cents, is worth $375,000,000. A loss of five cents per pound on this because of poor quality (and we suffer that and more), wipes out the full value of all the cheese, and $35,000,000 besides. If you have tears to shed over the losses realized on dairy products because of their poor quality, shed most of them on the bier laden with "frowsy" butter, and perchance the brine may wash out some of its rancidity. Cheap cheese, when you say the most about it, is neutral or non-appetizing, though it may be quite nutritious. But cheap butter is quite disgusting. Let it not be inferred, however, that modern skim cheese have not been improved as well as made poorer, in butter-fat, in some cases. It is only a few years since we learned how to hold milk sweet by the use of ice. Rapid refrigeration accomplishes the double purpose of getting the cream quickly, and checking the tendency to acidity in the milk. I do not wonder that, by the old system, skim cheese acquired their fragrant reputation; for when the milk was held by the old methods, to get the cream, in warm weather, the milk was at the turning point of destruction, and made poor cheese, not so much because the skimmer was used, as because the milk was well on its way to putrefaction. The acid was more damaging than the skimmer. By the use of modern creamers, we can put the milk out of danger and get the cream in ten hours, and hence have far better material for cheese than under the old system.

It should be remembered that in entering upon the work of making butter the manufacturer is bidding for the patronage of the immensely larger interest; for it may be said, by the way of com-

parison, that the butter market is the ocean, while the cheese market is only an arm of the sea. We sell to England about $12,000,000 worth of cheese per annum and think it a great thing. But England pays about $60,000,000 per annum to other countries, chiefly those on the continent of Europe, for butter. For ourselves, the money value of our butter is nine times that of the cheese; and what is better still, nearly all of it, and especially the best of it, has a home market. If we did not export a pound — and we don't export much — we should hardly know the difference. But we export one-third of the cheese made; and if the exportation should wholly cease many a whole-milk cheese factory would collapse. The market for one-third of our cheese is largely dependent on the fraternal relations sustained with foreign nations, chiefly England. The market for that excess at home, should exportation cease, would be dependent on a change of tastes and habits of our people. That change ought to come and will come. On the other hand, the market for butter is with our own people. We have not to educate them into a love of good butter, but only to manage to have the reasonable, healthy prosperity to enable them to earn the money to buy it with, and the market is sure. So true is this, that while complete non-exportation of cheese would be depressing to exclusive cheese factory interests, it would not greatly affect the great dairy interest; for one-third of the milk now made into cheese could be made into butter without causing more than a ripple in the butter interest. It takes one billion three hundred and thirty-three million of pounds of milk to make one-third of the cheese. That amount of milk would only make about sixty-six million pounds of butter, which would not be a formidable quantity to add to one billion five hundred million. A severe drouth or an extra hard winter will vary the production more than that often. So it will be seen the men who work in the interest of butter have in it the immensely larger market; and hence, notwithstanding the ghost of oleomargarine, it is a safe occupation, if you make *i* "gilt-edg ed."

THE ADVANTAGES OF ASSOCIATED EFFORT AMONG FARMERS.

By Hon. R. D. TORREY, Manager Milwaukee Exposition, Milwaukee.

Mr. President, Ladies and Gentlemen:— I have for years been suffering under a terrible misfortune. I think I may consider myself one of the most unfortunate of men from this fact: for some unknown reason, something beyond my ken, people have become possessed of the idea that I can talk upon almost any subject on almost all occasions, so that I have come to consider myself unfortunate in this regard, as I presume you will think and agree with me after the little I may say upon this subject. I think it was our friend Hoard who, some two years ago at the convention, told us that of all men the farmer had the most gratuitous advice given to him, had the most seeming friends, and profited the least by the advice furnished. It is but justice to myself to state that the secretary of this association, who is one of those who are making this serious mistake regarding myself, notified me to be present on this occasion, and also furnished me with a topic while I was debating what to do, and I found as usual that there is nothing in life so hard as beginning except it be in sinning.

"It is not good for man to be alone," was the divine declaration, and by simply changing the sentence so it shall read, "It is not good for *a* man to be alone," it may be applied forcibly to us all in all the circumstances of life, if, indeed, it may not without the change; for until we may rightfully claim absolute and entire independence — which in the common order of nature never will be — no one can succeed in any of the greater or lesser pursuits of life, be it in the political, commercial or social relations which we are supposed to sustain to all, for there is no association but what has a direct influence, positive and emphatic, on all. Socially, the man who lives by himself and for himself exclusively is so selfish that he is really an object of pity; for he hardly knows, or if knowing, does not appreciate life or any of its blessings; and again, under the same thought, while our home should be our earthly paradise and receive our greatest care and command our first attention, yet to shut ourselves within our homes and neglect or refuse to go beyond its threshold, soon has an influence on all the inmates that is far

from beneficial. In the one case, the man who lives in this selfish manner cuts himself off from the pleasant associations of life; and while *existing* among men, he is actually *living* the life of a hermit, and he soon becomes sour and remorse and sees no good whatever in the great life of sunshine and happiness which others are so abundantly enjoying. So with the family circle; should this same disposition obtain and all its members exclude themselves from the social walks of life, the child will grow up into the same selfish principles, and in turn become the cold, isolated being that his father was. If these thoughts be true — and probably no one will deny that they are — and if the associations of life have so direct an influence on us all, what should we do? It would seem the part of wisdom that, as it is optional with us to choose one of three things, viz.: No association, and come speedily to look upon life as a failure; or bad associations, and as speedily make a failure of life; or good associations, and be filling up the measure of our days with usefulness, not only to ourselves but to all with whom we come in contact — to choose that which will add to our success in all good ways. Look over your own life's history as well as the life history of your friends and acquaintances, and also the lives of all great men and women of the world's history, and can you find failures in any case among the number who have looked upon the life we now live as a grand and glorious reality, given to us by the Creator not to abuse, but to improve upon? I think not. If all is true, if man's influence is so great on his fellowmen taken of mankind in the aggregate, then it is also true of men taken in classes or professions or callings; and no man or class of men can be said to be exclusive even socially who prefer associations with their own class, for, while each class may have its associations even separate and distinct, such will better fit them for the common and universal associations of life.

So the farmer, having within his reach so many opportunities and such a field for usefulness, is warranted in organization and associated effort; socially to place his calling where it belongs, and where poets and politicians sing and speak of it as the noblest of all; to elevate it to a profession, so that he who engages in it shall be hailed by all men as sovereign, and the name of granger be an honorable title. A few of the aids or helps to this may be mentioned; and first there are what may be termed organizations of a

minor nature. The Farmers' Club, through whose influence very many communities have gathered fresh impetus, and where we find written so plainly that he who "runs" may read "thrift" in all surroundings — of this we speak with entire confidence and assurance as one of the best means of improvement. Those clubs should be as frequent as the school houses, or at least as the townships, and they should be thoroughly organized, well sustained, and every appliance brought to bear that will strengthen and firmly establish them. One of these is the public library, in which should be found all works that are found in any library. Is there any good reason why public libraries should be the exclusive property of cities and villages, or are more appropriate there than in the country, or that the latter has less appreciative and intelligent readers than the former? It would seem that associated effort on the part of farmers in this direction could result only in the greatest possible advantage. We should remember that some of our greatest and best men took the first step upward in the log school-houses of the land, their maiden speeches being in debate on, perhaps, some very plain and simple proposition. Such organizations should hold frequent meetings for social as well as intellectual improvement. Discussions of all topics should be the object of all such as have a direct bearing and influence on the farmer and farm life as well as the farmer himself, for he has vital interests in all questions that affect private and public life — he has a right to be heard.

At such meetings there should be the freest discussion, not only by the farmer, but the farmer's wife, his sons and his daughters.

Get the young people interested, and you will have less leaving of the farm by your boys and girls seeking a doubtful success in city and city life. The truthfulness of all these propositions can be verified anywhere, where such organizations exist, in the thrift and intelligence you will see on every hand. But this is only considering the social question. The commercial as well as the political demand attention, for in both has the farmer direct and personal interest, and has a right second to none in these fields. I am aware that when we come to speak of the farmer in connection with public questions, such as the transportation question or the tariff question, we are in danger of the accusation of inviting class organization to antagonize other interests; but it is not within the province of this paper to discuss these questions at all, but only to refer to

them as samples, and to say that if abuses exist in either or other kindred topics, that the farmer has an unqualified and positive right to know all about that abuse, and, knowing, to set about for reform. It is his duty to fully understand these questions, so that in his acts he may not make the mistakes in his organized efforts that have occurred in the last few years. It is not wise or safe to take the assertion of any one on such questions, but as the truth is within the reach of all, he should post himself; and no better method can be planned than through public discussion and public libraries, reading and thought for such purpose.

Is it true that such enormous abuses exist under our present system of tariff as is claimed by the free trade men, or tariff-for-revenue-only men, and that the farmer is most vitally affected, or that the present system is the better for him?

Is it true that the transportation companies make unjust discriminations and charge extortionate rates? Then he is certainly interested; and if true, of which he should be sure, then how can reform be brought about? Certainly not in any other way as well as by associated effort, and with associated effort his success is assured.

Is it true that farmers in congress are so rare that we know not of their presence except on inquiry, and is it also true that greater representation is desirable from this large class?

On such questions it is not wise that any class should organize for the sole purpose of antagonizing other interests; but of all classes the farmer has an undisputed right to draw the "thus far and no farther" line, beyond which no other class could succeed against their united front.

But commercially there are notable proofs of the wisdom of associated efforts in all places where farmers' boards of trade are established, for in such communities you never hear complaint of being the victims of unprincipled commission men or tradesmen. They bring the buyer and the producer together at the door of the latter, which is alike beneficial to both, as it rules out the sharper and allows each party a fair profit, the one for producing, the other for buying and placing on other markets.

I know of no place where such organizations exist among farmers that have proven other than successful, the degree of success depending only on the degrees of interest manifested by its membership.

This paper might be extended longer and many more suggestions and hints thrown out, showing in whole or in part the benefits to be secured to the farming community if all their efforts shall be put forth in harmony with their own profession, and withal under complete and perfect organization and association; but you will, I am sure, supply in your own mind much that might be said, and possibly acting upon all, other and more perfect organization will be effected, and year after year, as in the past, perfecting your action until your profession shall take the God-ordained position it deserves.

WHAT I HAVE LEARNED IN BUTTER MAKING.

By F. C. CURTIS, Rocky Run, Wisconsin.

Mr. President, Ladies and Gentlemen:— It is with considerable reluctance that I accede to the invitation of the managers of this association, to write out "what I have learned in butter making." Not that I am unwilling to tell what I know upon this subject, but for the reason that I have addressed this association so many times upon this subject, or a kindred one, and also addressed so many other societies and assemblies of the same import, that to be instructive, I must necessarily repeat much that I have reiterated on many occasions, all of which has been published, to a great extent.

This, however, is no excuse for tiring in the good cause of improvement; much has already been done by this society in the right direction, but by reference to market reports, and city supplies of butter, we still find a great quantity of inferior and spoiled butter, really unfit for food, rejected and sold for grease.

A large portion of this bad butter is made from milk that was susceptible of having been made into choice butter, with less labor, had it been properly applied, than was laid out upon it to make this inferior article.

The members of this association can doubtless pride themselves as being above these shortcomings, but the fact exists as I have stated, and I consider it our bounden duty to still labor to enlighten the uninformed, however stupid they appear from our standpoint, or slow to adopt the improved and labor saving appliances of late years.

A short time since, I read an extract from an address by the

Hon. G. P. Lord, of Elgin, Ill. (I quote from memory.) He showed the cost of milk from an average lot of cows to be sixteen cents per gallon, which would make the cost of milk for a pound of butter, to be about one-half dollar. I have no fault to find with Mr. Lord's general estimate, but thought his value of hay ($10 per ton) rather high; otherwise his estimate of the value of the feed of his cows was according to my opinion of value; *i. e.*, following his plan of estimating the value of forage for a well kept cow. I have another way of getting at the general cost of good milk, differing widely from Mr. Lord, though I think quite as correct. Three acres of good Wisconsin land, worth say $50 per acre, should be ample to supply the yearly feed of one cow, the interest on which would be, at seven per cent., $10.50 annually; if to this we add $4.50 for bran, we have a cost of $15 for the annual forage of a cow. A good average cow as well fed as this estimate warrants, should produce two hundred pounds of butter, worth twenty-five cents per pound, and the refuse milk should be worth $10 more to raise a calf and feed the pigs, all making $60; this leaves $45 for producing the feed from the land, caring for the cow, making the butter, etc., also returning the droppings of the cow to the soil that produced the feed for the cow. But, says Mr. Lord, the product of your three acres would have sold as I have represented; true, but in this selling-off system we are unable to give any fertilizing return to the soil; in fact, I think it would deplete the land in question at least $10, while by the other system I think we would add that amount to the actual value of the land, and lay the foundation for an increase of cows, and increasing fertility, which is the foundation of good milk, and this we all know is the foundation of good butter.

I have learned in butter making that (1) good milk is required; (2) proper utensils to extract the cream, and a temperature according to the system adopted or utensils used to extract the cream; (3) ripeness of cream for churning; (4) churning; (5) freeing the butter from the milk; (6) salt and salting; (7) working and packing.

1. Doubtless the best article of butter can be made from a given quantity of milk where there is sufficient to make a full package at one churning; when a less quantity is made, considerable care is required to make it one color — a very important feature in choice butter. While this is a fact, it should not discourage those who

are compelled to make it in less quantities. It is not my purpose to say much about the quality of milk, the breed or character of cows; only to remark, generally, that we must take the cows as we have them, and by judicious care and economical feeding we can improve the milk product. In the meantime, let us endeavor to improve the breed of our cows by judicious crossing.

There seems to be a wide difference of opinion or practice as to what constitutes economical feeding and care. Some consider it economy to give a cow shelter in inclement weather, feeding bran and meal freely, and all the good hay and corn fodder the cow can eat, while they use straw for bedding, and furnish all the pure water needed; while others consider it economy to feed a whole straw pile at one winter's feeding, and afford all creation for a shelter; adherents of the latter system, or want of system, can see no profit in the business, while those of the other are eager for more cows and more good feed for them.

There are some other things relative to this matter that it is well to consider. The nature of the cow upon first coming in is to run to milk for the support of her offspring. If she is not supplied with generous feed of a suitable nature, she will certainly fall off in flesh; and the falling off of flesh by a cow giving milk, at any period, will surely cause a falling off in quantity and quality of milk, and this will cause a deterioration in the butter, which can be readily detected by any competent judge; hence the necessity of keeping the cow in a thriving condition while giving milk. Another particular point is convenient access to pure water; this is indispensable in the production of good milk. We hear a great many complaints in cheese making about the unsoundness of milk; this, no doubt, is largely attributable to bad water; at least, bad water will decrease the flow of milk, and surely show itself in the flavor of the butter. I know this from observation, as well as from precept. Last season we found there was something wrong with our milk; at first we attributed it to unclean milking, but finding that all right, I watched the cows and found that upon turning them into the pasture in the morning they drank from a pond of stagnant water, instead of going a little further to good, pure spring water. Upon removing the cows to another pasture the milk was all right again.

Concentrating milk or cream upon the factory system has many

advantages, but there are so many that furnish it who are so careless, if not actually fraudulent, or at least indifferent, that if they can only get it off their hands it is all they care for. This evil of impure milk will be hard to remedy in the factory system. With this view of the case, I shall assume that farmers generally, or at least many of them, will adhere to some plan of making their milk into butter. These are the ones, or some of them, who need instruction, and my remarks will be designed mainly for their advantage.

2. If I were to ask the average dairywoman if she could make good butter, she would curtly answer me, "yes, if I could have good *butter weather*." But the chances are she could not describe what good "*butter weather*" was; or concede that the thermometer could measure the weather reliably. It has taken her half a lifetime to learn the art she possesses, and she cannot conceive it possible that the thermometer can gauge the temperature of cream as accurately as she can with her finger. Extracting the cream from the milk is done in a great variety of ways, mainly, in a small way, by the common tin pan. This system requires a temperature of sixty-two degrees, and a pure atmosphere for thirty-six to forty-eight hours to raise the cream, when it will be ripe for churning, and with this temperature and atmosphere good results can be obtained. But mark you, my friends, where is the farm house that can command this temperature for thirty-six consecutive hours, let alone the whole year; and then the pure atmosphere — cooking and other odors make this an impossibility. Now we have a remedy for all these ills, not only a remedy but the labor is greatly lessened, which will be a great boon to many an overtasked female. The general plan is to set the milk in a tin vessel, while warm from the cow, and place it in water of the proper temperature, closely covered. The query is, what is the proper temperature? I have told you what was proper for the common tin pan, without being covered, but you must remember this is another system. Now it is of the utmost importance that whatever system we adopt for raising cream, that *we command the proper temperature* for that system; and to this end it is of great importance that we know what to do, and also why we do it. Our scientific friends would tell us that "milk is a bad conductor," which means, in our case, that it heats slowly, and anything that heats slowly cools slowly. We find if we

place milk over a hot fire, that it will burn on the outside before the center becomes warm; and in cooling milk we find that the center remains warm longer than the outside, and that this warmth will continue longer or shorter according to the quantity or diameter of the body of milk. In the system I propose to adopt, we cover up the milk as tight as possible. This will tend to retain the heat. Now the point we have got to make is to bring enough cold water to bear upon the amount of milk so shut up to cool it to sixty-two degrees within four hours. If we fail to so cool it, we doubtless would find our uncooled center had begun to decay. Query, why use water for cooling — why not use air? Water is a much better conductor than air, at least we will find it so if we wish to suddenly cool a hot iron, and we find it has a similar effect on milk. The most convenient vessel for the purpose is made of tin, about twenty inches deep and about eight and one-half inches in diameter — a simple tin pail of that dimension; to this add a tight-fitting cover; it does not seem to matter how covered, if it is only closely covered. My plan is to have the flange of the cover wide enough to go into the milk; this necessitates a tube-hole in the center of the cover to let out the air when the cover is put on, which may then be closed. This insures a milk sealing of the vessel.

The Cooley system is a valuable exemplification of this system, the cover of which goes on the outside, and is sealed by the water in which it is entirely covered. Vessels of milk of the character I have described, placed in well water which is forty-nine degrees temperature, and that temperature or colder retained for four hours, and then it might warm up to sixty-two degrees, or not, as would be convenient. This would raise all the cream in twelve hours, though I prefer to let it stand twenty-four hours before skimming. The cream and milk will be sweet, and the cream will be found to make as much or more butter than by the common tin pan. I will give an inventory of my utensils, such as I have used for the last two months, and how I use them, to wit: one kerosene barrel, costing fifty cents, sawed in two between the second and third hoop, making one deep tub and one shallow one — the shallow one used for a cover to the deep one. These are and have been standing near the well, without shelter. Six pails costing $3; three of these are taken to the stable at milking, and the milk is strained into them; when one is full it is covered, which insures protection from odors.

If there is more milk than the three cans will hold, it is taken to the house. The cans are placed in the tub described, and in water as deep as the milk in the cans, covered with the shallow tub, where it remains until we are ready for the next three cans, when they are taken out and are brought to the house and remain twelve hours longer, when they are skimmed with a skimmer that cost twenty cents. Here we have an apparatus that cost $3.70, that is sufficient for making ten pounds of butter per day. Some would likely desire to know if the milk don't freeze standing out in the cold. I answer, no. The warmth of three cans of milk of this capacity will keep out the ice, or nearly so, when the thermometer stands as low as zero; colder weather, if long continued, would necessitate some protection; and if the thermometer stood higher than forty degrees much of the time, ice would be needed if three cans were used; with less cans of milk less warmth would be communicated to the water. This system does not require so steady temperature as the milk pan; the main question is to have cold enough; if you do not, the result will be unsatisfactory; but cold *can be commanded with ice*, which can be had with so little trouble, should be provided for by all that make butter. In explaining this subject and my plans of operation, I find, generally, my hearers first try to discover where I make anything for my trouble in explaining this simple process; many conclude as there is no patent on it, and is so cheap, it can't be worth anything. My friends, this last view of the case is really the greatest impediment to its adoption; but I give you my candid opinion and positive assurance, that it is just as I have described, and is of great value, of much more value than the simple cost would seem to indicate; its capacity can be doubled by skimming every twelve hours.

3. Ripeness of the cream for churning. In common dairy management where the temperature is variable, the cream often remains too long upon the milk, and then again it is skimmed too soon. This engenders curious flavors and curious freaks in churning. This is where bad butter gets its many bad flavors, and the cream is often very stubborn about producing butter at all. Cream requires a certain degree of acidity to produce the desirable aroma of good butter. Acidity produces the much coveted aroma and too much acidity destroys it. The proper degree of acidity is

attained in about thirty-six hours if kept at a temperature of sixty-two degrees, when it is ripe for churning.

4. Churning. There has in the past few years come into use churns that revolve without inside machinery to agitate the cream, depending upon gravitation to produce the necessary agitation, which I consider preferable to any other device. Ordinarily, the cream for churning should be at sixty-two degrees,— in summer a little colder is no objection, and in winter it is well to be a little warmer. I have used the Rectangular churn about eight years and find the butter comes in about twenty minutes. I am aware that there are churns that produce butter sooner than this, but they have a sort of grinding motion that is likely to destroy the grain of the butter, and is much more labor to cleanse and keep sweet. The Rectangular churn produces butter soon enough, is very easily operated, and produces the butter in just the right manner and of the right consistency. When the peculiar "slap dash" of the buttermilk is heard, the butter has formed in granules about the size of wheat kernels and the milk can be drawn off, seemingly without mixing with the butter. Good, pure, cold water can now be freely used to wash out the remaining buttermilk, which can be perfectly done if the churning was stopped at the right time, or before the butter was massed in the churn. If stopped at the right time, the water percolates the whole mass and removes the milk without working, and leaves it in just the right state to receive the salt.

6. Salt and salting. We get advice enough on this subject by interested parties to make us proficient. I have used the Ashton salt a long time and always found it good. I have lately used the Onondaga F. F. salt and also find that good and less in cost. I have seen many others using the common barrel salt profusely to make the butter weigh, that was designed for salting stock and for fertilizing purposes — of course this would spoil any butter. Butter should be salted with good fine dairy salt, sufficient to flavor it to suit the taste of the consumer. I have found that salt often produces different degrees of saltness in the butter, and this was a mystery to me a long time. To illustrate, we will go back to the granulated butter in the churn. We judge there is fifteen pounds of butter in the churn. We will now weigh out one pound of Ashton salt and pour part of it on the butter, and by a half turn of

the churn turn the butter over and pour on the remainder of the salt; then put on the cover and revolve the churn gradually until the butter has massed. If this is properly done, I claim the butter is now ready to work and pack at once. In the foregoing I said Ashton salt. If Onondaga F. F. salt or any other good salt had been used in the same manner, I doubt if any expert could tell the difference any time after the salt was fully dissolved. But if the butter had been massed before the salt was added, it would have to be worked in, which could not be so perfectly done as in the granulated state; consequently the butter should stand from twelve to twenty-four hours and reworked with considerable labor or the butter would be streaked. Upon this plan the salt would be fully dissolved and largely worked out in the brine and the butter would not be salted enough. The Ashton is a coarser salt and perhaps would not be so fully dissolved and remain in the butter. I am satisfied that butter should be salted about one ounce to the pound with good dairy salt, put in the butter while in the granulated state in some way that will incorporate it evenly through the mass of butter, and worked and packed at once. I work butter but little, but pack it solidly in ash tubs and exclude it from air at all times as much as possible. Experts in buying butter desire a moist butter — they like to see the little clear drops of brine on the tryer, which will always be found in butter packed immediately after the salt is put in. Salted and packed in this way the salt remains in the butter, it weighs no less, and is more satisfactory. When reworked in twelve to twenty-four hours, the salt dissolves and is worked out, producing a dry butter which is objectionable, and not salt enough if only one ounce of salt was used to the pound.

President Beach — It is now time to adjourn for the banquet which the good people of Sheboygan have prepared for the members of this association. We are to have singing, toasts and speeches. Mrs. J. L. Moore will read a poem, and when the banquet is over, there will be dancing.

The convention now stands adjourned until to-morrow morning at 9:30 o'clock.

EVENING SESSION — BANQUET.

TOASTS.

GLEE CLUB.

1. THE ANNUAL DAIRY PRODUCTION OF THE STATE — $10,000,000.— A Golden Calf whose Mother is the Wisconsin Cow.— Response by Hon. R. D. Torrey, Oshkosh.

2. THE STATE OF WISCONSIN.— Response by Col. Conrad Krez, Sheboygan.

3. THE FARMER BOYS OF WISCONSIN — Give them a chance for their brains, as well as their hands.— Response by Prof. W. A. Henry, Madison.

SOLO — By J. G. Lumbard, Chicago.

4. THE FARMERS' GIRLS — They rule the Farmers' Boys, who rule the Nation.— Response by L. D. Harvey, Sheboygan.

5. THE "IRISH BULL"— A breed noted in History, and famous in Song and Story.— Response by W. D. Hoard, Fort Atkinson.

6. THE IRISH COW — Vigorously milked and poorly fed.— Response by Hon. Jno. E. Thomas, Sheboygan Falls.

7. THE DAIRY PURSUIT — The Cream of Agriculture.— Response by Hon. H. D. Sherman, Monticello, Iowa.

8. OUR GUESTS — The Wisconsin Dairymen.— Response by Hon. B. Williams, Sheboygan.

SOLO — By J. G. Lumbard, Chicago.

9. THE DAIRYMEN OF WISCONSIN.—

"Some say the cow, with her gentle face,
Is a little too slow for the governor's race."

Response by Hon. Hiram Smith, Sheboygan Falls.

10. SHEBOYGAN'S PRODUCTIONS — Cheese, Chairs and Children.— Response by T. M. Blackstock, Sheboygan.

11. OUR WORTHY HOSTS, THE PEOPLE OF SHEBOYGAN.— Response by President Beach, Whitewater.

POEM.— Mrs. J. L. Moore, Sheboygan.

All will join in singing from "Auld Lang Syne."

Should auld acquaintance be forgot,
And never brought to min'?
Should auld acquaintance be forgot,
And days o' lang syne!

CHORUS:

For auld lang syne, my dear,
For auld lang syne,
We'll take a cup o' kindness yet,
For auld lang syne!

We twa hae run about the braes,
And pu'd the gowans fine;
But we've wander'd mony a weary foot
Sin' auld lang syne.

CHORUS:

THE MUSE AT THE BANQUET.

By Mrs. J. L. MOORE, Sheboygan.

The Muse looked in at the Banquet, and the well filled tables there,
Tempted her Grace to enter and glide to a vacant chair.
Seated, she glanced about her, and around the festive board —
Saw the cream cheese of society — the best it can afford.
Saw first our genial Mayor, with his sweet cream smile aglow —
And Smith, with beard and locks alike, of pure new fallen snow.
There, too, was Mead — not Porter — like the sage cheese in the moon —
And Blackstock, armed for vict'ry, with a big bowl and a spoon.
(The Muse could not tell as she ogled the group,
If 'twere skim milk he gobbled, or rich oyster soup.)
There, too, the guests, distinguished alike for wit and will,
Discoursed of cows and cream'ries and the liquid they distill.
And often as they argued, the Muse quite plainly heard
These words of mystic melody — "Old margin, whey and curd!"
And she knew that while they feasted, their hearts were far away,
With the cows they left behind them, and the mystic curds and whey.
They wondered with anxiety too great for man to utter,
If Betsey Jane had milked the curds, or churned the whey for butter.
They hoped the cheese would all be green — just suitable for Spring —
And that their calves might all be trained their native airs to sing.
So sweet to hear their gentle buzz upon the morning air,
Responding to the mother cow in accents of despair!
Oh! happy is the dairyman, contented with his share
Of curds and whey — aspiring not new dignities to wear.
Content with many premiums, and buttercups in view.
Oh! dairymen, be virtuous, and you'll be happy too!
But if you tire of farming, and the skim milk gets *too thin*,
Come dwell in our sweet city — we will gladly let you in.
Our gallant, gay young mayor, once a modest boy in brown,
Will quickly introduce you to the cream cheese of the town.

He'll show you the artesian, and the liquid it distills
Will save your taking alcohol, or lager beer, or pills.
You can learn to be chair fact'ry men, and get — oh! dreadful rich —
Or tanner men like General Grant; or tend a railroad switch;
Or keep a brewery instead, or what might still be better,
Can run for office if you like — or if you've never met her —
Can meet your fate — for maidens fair stand ready by the dozens,
To marry fancy dairymen, their uncles or their cousins!
So failing cream, or curds and whey, or failing cheese and butter —
Welcome to old Sheboygan! Here the muse begins to flutter —
And she hears a granger whisper in creamy tones close by,
Quite plainly whisper, "Cheese it!" and she does so with a sigh.

The banquet and dance given by the citizens of Sheboygan to the dairymen from abroad, was a most complete success in every particular.

The members of the Wisconsin Dairymen's Association have never attended a better banquet. Turner Hall was handsomely festooned and decorated with numerous flags, ensigns, etc., with the state motto, "Forward," in large letters over the main entrance to the hall from the vestibule. Five tables were set the whole length of the audience room of Turner Hall, and three parallel tables the whole depth of the stage, the scenery appliances of which had been removed for the purpose, about thirty feet, on all of which were laid 450 plates. These were all full at the first sitting, and some fifty more were accommodated at a second setting of the tables upon the stage. All were abundantly supplied.

During the supper Schmidt's orchestra furnished a pleasant accompaniment of music from the gallery.

There was excellent singing from the Glee Club. The club comprised Misses Minnie Bent and Fannie Hanchett, as sopranos, Mesdames J. L. Mallory and T. W. Cole, as contraltos, Miss Mae Bent and Mr. Hugo Dotzauer, as tenors, and Messrs. J. J. Hanchett and J. L. Mallory, as bassos, with Mrs. Dr. Almon Clarke as pianist.

MORNING SESSION, FRIDAY, June 13.

The association met at 9:30, pursuant to adjournment.

President Beach called the convention to order and said the first order of business was the report of the committee on resolutions.

Are the committee ready to report?

REPORT OF THE COMMITTEE ON RESOLUTIONS.

Mr. President: — Your committee on resolutions beg leave to present the following report:

"*Resolved*, That we, to-day, place as high an estimate on the importance of our profession as ever before, and recognize gratefully that the general public regard this association and the dairy interest as among, if not the leading, interests of the times; and we hereby pledge to each other that, in returning to our homes, we will profit by the thoughts and suggestions received here, and endeavor, in all legitimate ways, to elevate and perfect our profession in the year on which we are just entering.

"*Resolved*, That much of the success and pleasure of this convention has been derived from the courtesy, care and kindness of the citizens of Sheboygan, and to them we hereby extend our sincere thanks for the hospitality shown so freely during our entire stay in the city, and especially for the magnificent banquet tendered to the association last evening.

"*Resolved*, That the thanks of this association are hereby expressed to J. G. Lombard, of Chicago, and the Sheboygan Glee Club, for the excellent music furnished for the occasion, which has added so much to our enjoyment.

"*Resolved*, That we recognize the fact that the two great presses of the world are the newspaper press and the cheese press, the former contributing largely to the success of the latter.

"*Resolved*, That our thanks are due to the local papers and to W. C. Thomas, representing the Milwaukee press, and H. B. Humphrey, of the Chicago Times, for their efficient, prompt and correct transmission to their respective papers the proceedings of this convention; as also to the publishers for the space given to the publication of the same.

"*Resolved*, That the thanks of the association are due and are hereby returned to the Chicago & Northwestern, the Chicago, Milwaukee & St. Paul, the Wisconsin Central, and the Milwaukee, Lake Shore & Western railways, for the recognition of the importance of the dairy interest of Wisconsin, in the generous reduction of fares to all in attendance on the convention.

"*Resolved*, That we congratulate ourselves for having such able

and efficient officers, who have, by their discreet management of the business of the association, contributed so much to its success, and to them our thanks are sincerely expressed.

"Respectfully submitted,

"W. D. HOARD,
"R. D. TORREY,
"C. HAZEN,
"Committee."

Resolutions adopted.

NATIONAL BUTTER, CHEESE AND EGG ASSOCIATION.

The following resolution was offered by Hon. Hiram Smith, and was adopted:

"WHEREAS, The governor of our state invited the National Butter, Cheese and Egg Association to meet in Madison in 1882, and the invitation has been accepted by that association; therefore

"*Resolved*, That the president and secretary of our association are authorized and requested to correspond with the authorities at Madison, and with the officers of the Butter, Cheese and Egg Association, for the purpose of determining what action, if any, will be advisable for our association to take in the matter, and report the result to the executive committee."

W. D. Hoard offered the following amendment to the constitution:

"That article 2 of the constitution be amended by striking out the words 'two vice-presidents,' and adding another article: Article 3. The vice-presidents of the association shall consist of all the past presidents." Carried.

REPORT OF COMMITTEE ON NOMINATION OF OFFICERS.

Mr. President: — Your committee on the nomination of officers for the ensuing year would respectfully recommend:

For President — Chas. R. Beach, Whitewater.

For Secretary — D. W. Curtis, Fort Atkinson.

For Treasurer — H. K. Loomis, Sheboygan Falls.

It is only proper to add that O. P. Clinton refuses to serve longer as treasurer.

HIRAM SMITH,
R. F. MCCUTCHEN,
N. W. MORLEY.

MY MISTAKES AS A DAIRYMAN.

By CHESTER HAZEN, Brandon, Wisconsin.

Mr. President, Ladies and Gentlemen:— This topic laid down in the programme for me was one selected by our friend, Mr. Curtis. I don't know whether he thought I was going to get up here and expose all my mistakes as a dairyman or not, and if that was the idea, it is quite a hard task. Our time has been so very pleasantly occupied and filled that I shall be making the greatest mistake by attempting to say anything on this occasion. It is, I think, generally conceded, it is at least by me, that others see our mistakes more readily than we do ourselves. I have had mistakes pointed out by others, friends of the convention and others, that I could hardly see as mistakes myself. I embarked in the dairy business at an early day in Wisconsin, and had considerable to contend with too. We worked hard to elevate the standard of Wisconsin goods in the market, and one of our efforts was in organizing this association, and that, I feel sure, has not been one of the mistakes. The greatest mistake the cheese maker has made has been in trying to work off the scalawag cheese along with the better cheese. It is a mistake of the Wisconsin dairyman not to keep up the reputation of our dairy product. One of the principal objects of the organization of this society was to secure a demand, a reputation for Wisconsin dairy goods. Many of you who are here to-day that were not present at that time, were not running factories, are not aware of the difficulties we had to labor under. At that time it was thought advisable to make the best goods we could, all cream cheese, and we did so. I will speak of a little circumstance in regard to this matter. An instance of what pioneer factorymen here had to contend against: We sold our cheese in Wisconsin and in the western states. New York manufacturers came in and we had to have an outlet for our goods and we shipped our cheese to New York, without any marks or brands on the cheese whatever, to distinguish what state they came from, in order that they might be sold on their own merits. About that time, when in Milwaukee, I called into a cheese house and discovered the proprietor sorting out a pile of cheese. He had turned them out and had a pretty good

looking pile, the best ones he put into one pile and the poor ones in another. I ventured to ask him where those cheese were made. He said, in the south part of the state. He had a stencil there for branding those best ones "New York Factories" and the others "Western." Says I, "Do you put that mark on those cheese there?" He said, "Yes." I said, "You cannot brand my cheese that way, nor will I deal with a party that will do that; we want the reputation of our best cheese ourselves."

This was one of the instances that called up the necessity of organization of such an association as this, so that we might work together in overcoming this state of things, and I have never discovered that we made a mistake in so doing. I thought I had made a mistake when in the meeting yesterday a dairyman, a maker of cheese, comes up to advocate the manufacture of butter and cheese from the same milk. Perhaps it is all well enough; perhaps a little better results are obtained by factories when they make both butter and cheese, but I hope our Wisconsin dairymen won't lose sight of the fact that we have built up a reputation for making full cream cheese. It don't seem just that they should fill their pockets with the products of our reputation, on skim cheese. However, this has only been brought up a short time, this other subject of winter dairying. Some of us may not be prepared to run a winter dairy. Perhaps the market might be overstocked at times at a different season from what it is now. The trouble now with our dairy goods is that the fresh cheese is all put upon the market at one time. If a portion of the dairy interests of the whole country would change, that plan of running winter dairies would work better.

If I have made a mistake, it is more in investing money in enterprises outside of my line of dairying than any other. It seems to me, that if a man makes dairying his business and profession he ought to attend to that business particularly. There are very few successful dairymen but what superintend their business in person. My business in other years has been so that I could not attend to it personally, but only through hired help, and it has not been carried on to that advantage that it ought to be and would have been had I given it my personal attention. There is nothing that requires more careful attention upon the farm than the dairy. I hardly consider it the best course to pursue, for manufacturers and

dairymen to embark in speculation in even their own products. But while I may have made many mistakes that apply to our dairy interest, I never have regarded it a mistake that I assisted some others in organizing the Wisconsin Dairymen's Association. We organized in 1872, and the dairy interest has been on the increase from that time till this. Our meetings have been well attended, with only a few exceptions, increasing in interest and in numbers in attendance every season. Last winter was a very cold, stormy winter, and the attendance was not so good as some seasons before. At the age of ten years the Wisconsin Dairymen's Association appears to have assumed a proportion which enables her to produce a golden calf, or in other words, $10,000,000 for dairy products.

Allowing the calf to be worth $10,000,000 we have faith to believe this cow in the next decade will increase her products to not less than four times that amount.

The progress of the dairy interests of this state are beyond all our expectations of ten years ago. With the present advantages and the facilities that are being put forth, our standard of goods will be elevated. Sheboygan is the dairy county of the state.

Fifteen, sixteen or seventeen years ago I started a cheese factory in Fond du Lac county. I think, fourteen years ago, I manufactured there alone half as much cheese as Sheboygan county produced. Farmers in our county were not willing to keep cows and attend to the dairy business, many of them. We had a set of Yankee farmers there that wanted to cultivate large farms. Since that time Sheboygan has been divided up into smaller farms. The farmers have put cows upon them, and they continued to increase in dairy products, beyond any calculations that might have been made at that time. There is yet plenty of room for an increase of the dairy interests of this state. The demand seems to increase as fast as the supply. If we have to quit the dairy business, it will be after eastern dairymen have quit. Transportation is cheap. We can transport our goods from here to New York city as cheap as they can from the western part of New York state. We have all the advantage of them on cheap lands, the production of corn, and as good a country as they have. There is no reason why we cannot compete with them and make money out of it, when they will have to quit it. If our western dairymen could go back to New York state, they would be somewhat surprised to see how saving they

are of all products, how much labor they put on their grass and land to sustain all the stock they can. They have now about made up their minds that they will have to fall back upon ensilage for fodder. We have no reason to feel discouraged, certainly, and I don't think I shall make any mistakes in pursuing the course I have for years past in the dairy business, doing the best I can with it.

SUGAR FROM SUGAR CANE AT THE EXPERIMENTAL FARM.

By Prof. W. A. HENRY, Madison, Wis.

We have employed a chemist at a salary of $100 to put up machinery that cost us about $1,200. We grew cane of several varieties in all sorts of situations in as many varieties as we could obtain upon the farm, and contrary to the opinion of some of our good friends, have been able to produce sugar. From one-fifth of an acre of land we obtained one hundred and ninety-nine and one-half pounds of the sugar you see there. Very nearly one thousand pounds to the acre. We lost one thousand and seventy-five pounds in doing it; that was two thousand and seventy-five pounds altogether, or in that proportion. There was at the rate of two thousand and seventy-five pounds of cane and sugar on one acre of land. Here is some of the sugar partially refined. Here are three samples of the same sugar in different stages. Besides the one hundred and ninety-nine and one-half pounds of sugar, we obtained from one-fifth of an acre sixteen gallons of syrup of the quality represented here. We not only got one hundred and ninety-nine and one-half pounds of sugar, but sixteen gallons of syrup; and if you taste any sorghum taste about that, I will find for the first time that we have not been able to get rid of the sorghum taste. We do not claim that the color of this suits the sorghum color — our effort is not to produce a light color. New Orleans syrup is not a light color, and people pay $2 a gallon for maple syrup that is as black as your hat. This is a sample of the syrup simply boiled down, from which no sugar has been taken. It seems to me that the dairy business and this sorghum manufacture could be carried on very nicely at the same time.

Mr. Hoard — In the culture of this sugar cane, do you discover

any difference in the amount of sugar the cane will produce in the ripeness of the seed?

Prof. Henry — Entirely from that fact. It is a fact that many sorghum growers do not discover that point with regard to the production of the sorghum from the proper ripeness of the seed. I think it is possible for us all to work in the same direction. The chemist and myself have arranged for the governor of the state a written report of over 200 pages. It relates to the ensilage of fodders and the production of sugar from cane. Whether our report is printed or not depends upon the legislature. We want to have five thousand printed and distributed in the state. The governor is very anxious to have it printed. You will see in his annual message he gives quite an account of our operations. Now, if you will urge upon the members of the legislature, by letter or personally, to see that this report is published, we are going to get it. We wanted $4,000 to help us experiment. The farmers said we should have it, and the legislature gave it to us. In less than a year we have brought about these results, and now they are almost useless unless they get to the right persons. I have had hundreds of letters from manufacturers of syrup in New York, and from the information I have received I estimate the production of syrup at five hundred thousand gallons this year. I wish you to urge upon your members that that report be published. After getting one report printed we can get more.

MIXED FARMING.

By Hon. E. EASTMAN, of Plymouth, Sheboygan County, Wis.

Mr. President, Ladies and Gentlemen:— I noticed in your report for 1881 some remarks, and an account of special farming as against mixed farming, rather courting, if not challenging, for a reply that would compete with the same. I will make a statement of what I have done the last year, by mixed farming, and leave the association to draw their own conclusions. My farm contains three hundred and five acres; one hundred and ninety acres have been plowed and cultivated, thirty-five acres rough pasture land, and eighty acres woods. Stock on the farm consists of four horses, one pair of oxen, twenty-five cows, ten head of young stock, one hun-

dred and forty sheep, and hogs according to the requirements of the farm. It will be well to mention here, that I usually raise and feed out upon the farm every year from two thousand five hundred to three thousand bushels ears of corn, one thousand to one thousand two hundred pusnels of oats, and from sixty to eighty tons of hay.

FARM ACCOUNT.

Receipts for veal, butter, milk and cheese		$1,625
Receipts for wheat		154
Receipts for barley		493
Receipts for hogs		450
Receipts for sheep and wool		369
Receipts for beef and growth on young stock		185
Receipts for wood and lumber		150
Receipts for miscellaneous		214
Total receipts		$3,640
Paid out for hired help	$580	
Paid out for board	200	
Paid out for threshing	70	
Paid out for dairy supplies	60	
Paid out for plaster	18	
Paid out for four tons bran	40	
Paid out for taxes	140	
Paid out for insurance	12	
Paid out for blacksmithing and repairs	60	
Allowed for superintending	600	
Total expenses		1,780
Net receipts		$1,860

Which will be equal to six per cent. on $31,000. I contend that mixed farming is not only more profitable, but better adapted to utilize labor. You can keep the most of your help the year round, and make a saving to them by having constant employment. In winter we take care of the stock first, and the remainder of the time we work in the woods clearing up and cutting decaying timber into wood and saw logs, which is either used upon the farm or sold in the market. It will be well to state here that the most of the milk from the 8th of April to the 28th of November has been worked up in a factory into full cream cheese. The receipts reported from the dairy being $65 per cow, without taking into con-

sideration the product that was converted into pork, which would be at least (when fed in connection with corn) $10 per cow, making an aggregate of $75 per cow, which I think will be full as agreeable if not as profitable as special farming, be the dairy either conducted upon the summer or winter plan. The products have been sold for a medium market price — no fancy prices. What one man can do may be done by another in like circumstances. I do not think it is advisable to recommend to the public a different hobby every year; that is, say full cream cheese this year, butter and skim milk cheese next year, and the next winter dairying. But we should recommend a man to use some of his own brains and select such products to cultivate as in his opinion will be most profitable and best suited to his farm, for if he depends fully upon others to do his brain work, he will surely fail. It is not all science in farming. A man must have some experience in farming in order to make a successful one. The old saying is, "experience is the best school teacher," but sometimes it is expensive, but may be worth all the more. In conclusion, I will state what one of my patrons has done in dairying the past season (he being a mixed farmer, selling considerable barley also). He has milked fifteen cows, and the product in the aggregate brought $939 dollars, besides what was used in the family of five persons, making $62.15 per cow. The product being mostly full cream cheese.

DAIRYING IN THE NORTHWEST.

By Col. T. D. CURTIS, Secretary American Dairymen's Association, Syracuse, New York.

INTRODUCTORY.

To the President and Members of the Convention:— Some one, probably my "nephew," your worthy secretary, has sent me a programme of your convention. Looking it over, I have felt a strong desire to be with you; but, as the American Dairymen's Association, of which I am secretary, will be in convention at the same time in Syracuse, it is impossible for me to be with you. I feel, nevertheless, like contributing my mite toward helping along your convention, which probably does not need my aid, though I venture to send you my humble effort.

WISCONSIN AS A DAIRY STATE.

In traveling over the northwest, last summer, if I had any doubts as to the fitness of this section for dairying, those doubts were all dispelled by the facts presented. But I saw nothing, in all my travels, superior to the state of Wisconsin — at least, to those portions that I saw, including the section in which you are assembled, and all of the southern portion of your state. You have abundance of sweet grasses, plenty of good corn, and where you have not the water, you can readily obtain it by digging or boring. It is not worth while, therefore, to spend any time in discussing the question of fitness or capacity. That is already decided in the affirmative by indubitable facts.

IMPROVED DAIRY STOCK.

To me, the great desideratum appears to be improved dairy stock. You made excellent exhibitions of stock at the fairs last fall, and I saw individual herds of superior excellence. But, in riding through your state, I discovered that this stock, as is the case in my own state, was exceptional. Your dairymen generally are keeping too many poor cows — probably because, at the present time, they can get no better. It is poor policy, however, in my estimation, for a man to keep cows on which there is a loss, or no profit, because he can get no others. To do this, is to carry on dairying for amusement instead of profit. If profit is the aim, every dairyman should be sure of the quality of every cow he keeps, and keep none that does not return a net profit, after all possible outgoes are deducted. He should relentlessly send all unpaying animals to the shambles.

HOW TO GET IMPROVED STOCK.

In my judgment, there are only two reliable ways of securing satisfactory dairy stock. I might say there is only *one* way — that of breeding and rearing them; for nobody can get them if they are not raised — not even my esteemed friend, Hiram Smith. He has a fine dairy herd, which he bought of his foolish neighbors. I say "foolish," because, if they were not, they would not sell him their best cows, at any price. Besides, I know him to be an expert at "*pig euchre*," which everybody is not. My "nephew" can testify to the truthfulness of what I say. I understand this game

derives its name from the initial letters p. i. g. ("perfectly *innocent* game," or "perfectly independent game," whichever you choose), implying that the winner has it all in his own hand, or his own way. But even Mr. Smith could not buy these good cows, if some one did not raise them and then consent to let him derive all the profit from them.

BREEDING DAIRY STOCK.

There are two ways of securing superior dairy stock by breeding. Both require careful selection and good judgment.

The first is by selecting the best pure-blood males that can be got, and using them on your best cows; then selecting the very best of the progeny and breeding from these, continuing always to use none but the very best pure-blood males.

This is not very costly, even though a good round price is paid for the male, since only one animal has to be bought in order to completely transform the herd in a few years. It has been truly, as well as forcibly said, that the male is half of the herd; and he will give you half-blooded grades the second year after his introduction to the herd. If you breed from these half-bloods, using always a full-blood male of the right kind of family and pedigree, you get three-quarter bloods; then eighths, and next sixteenths, which are counted pure bloods. Besides, where the herds are not large, the expense of a pure blood male may be borne by several dairymen in the same neighborhood, thus proportionately reducing the cost to each.

This introduction and use of pure-blood males will soon double the butter and cheese producing capacity of most herds of cows, and increase the profits in a still greater ratio — as not only the quantity will be increased and the quality improved, but all this will come without extra expense for room and keep, the doubling of the production being from the same number of cows that was kept before.

I say nothing about breeds, for the reason that all breeders are sensitive — unnecessarily so, I think,— and I do not want to show any preference for or prejudice against any breed. But I would suggest that great care be taken to select a male, and breed for the special line of dairying in which you are engaged, whether it be butter or cheese. You cannot profitably devote a cheese cow to

butter making, nor a butter cow to cheese making — and I am decidedly opposed to making both butter and cheese out of the same milk, if I have got to eat the cheese.

The second method of securing a superior dairy herd is one rarely practiced in this country, but will become more common in the future. It is by selecting a male and female of as nearly a perfect type as possible, and possessing all the dairy qualities desired, and then breeding in and in until the type and qualities are fixed, and a new breed is established. This is the way in which all the noted English breeds have been established; while the Channel Island breeds (the Jerseys and Guernseys), and the celebrated Dutch-Friesian (miscalled "Holstein") cattle have been established by a practice closely approximating this. I have it on the authority of Lewis F. Allen, author of "American Cattle," that Bakewell, the noted breeder of Long-horns, in all his career did not go out of his own herd for a male, save twice, and then did not go out of the family. Price, the great Hereford breeder, for forty years did not go out of his own herd for a male. The celebrated Calling Brothers, breeders of Short-horns, closely inbred for thirty years, and Robert for thirty-eight years. Bates, the owner of the first Duchess (from whom was descended the celebrated $40,000 cow, sold at New York Mills, a few years ago, by Hon. Samuel Campbell), did not go out of the family for a male during fifty years. Others have followed in the same path, with success, and thus have been originated the Devons, Herefords, Long-horns, Ayrshires, Highlands, Galloways, Alderneys and Dutch-Friesians.

To these I may add the American Holderness, originated from a cow and her bull calf, by twenty-eight years of the closest kind of inbreeding, by Truman A. Cole, of Solsville, N. Y. They are black and white, marked with singular uniformity, and his herd of twenty cows, always including some heifers, have for years averaged three hundred pounds of choice butter per cow, beside a fifty dollar calf. There is profit in such a herd. I would advise an examination of this herd by any of you who may visit central New York. Solsville is only twenty-three miles south of Utica, by rail, on a branch of the former New York and Oswego road, running from Utica to Hamilton, and now in the hands of the Delaware, Lackawana & Western Company.

With this exception, all the breeds in this country are of foreign origin, and not as well adapted to our needs as native breeds should be. I hope to live to see American breeds adapted to New England, to my own state, to the great northwest, to the Kentucky blue grass region, and other sections.

But whoever goes into the origination of new breeds must have a level head on his shoulders, and begin with a proper selection. He must continue to select, so as to breed up and not breed down, otherwise he may produce a deteriorated breed instead of an improved one. But this system of proper selection, so as not to couple weak and undesirable points, is just as necessary in breeding crosses or grades as in breeding pure-bloods. Neglect of this is what has mongrelized and degraded our so-called "native stock," which sprang from the best animals that the pioneer immigrants could find to bring with them. This same neglect is degrading much of the pure-blood stock in the country, the breeders being too mercenary and anxious to breed numbers to sell, instead of trying to make improvement in breeding by judicious selection based on merit. Some of the importers and breeders lack the judgment and skill necessary for successful breeding.

Much of the prejudice against inbreeding — which for manifold reasons is not applicable to mankind — will soon wear away when the facts and principles of breeding are more considered and better understood. The brute creation are without sentiment or moral qualities, and in a natural state inbreed and mongrelize just as it happens. It is the business of man to intelligently couple them so as to develop and perpetuate the most desirable qualities. This has been done in England, and aside from deductions drawn from general principles, the example of Mr. Cole, which I have referred to, shows that it can be successfully done in this country.

MIXED HUSBANDRY.

I wish to strongly commend the system of mixed husbandry into which you are rapidly getting. I would also urge upon you the importance of encouraging all kinds of manufactures and the building up of your home markets. A distant market is always a precarious one, and its precariousness is enhanced by the increase of distance. The risk and cost of reaching it are also great and increased by an increase of distance. With a manufacturing pop-

ulation in your midst, you would have a steady and sure demand for your products, and your returns would be quick and even — two very important considerations.

You all know what it is to depend on a diminishing wheat crop. Like other raw materials, it is bulky, and it costs a great deal to send it to a distant market — especially to a foreign market — which takes but a small per cent., and yet, through that small per cent., fixes the price on all the rest. Wheat, too, is a staple article; and on all staple articles the margin is apt to be small. No portion of the western farmers fare so badly as the wheat growers; and yet we have so-called statesmen in this country who would have us forever furnish bread for England, and take her manufactures in exchange! We can better afford to feed a manufacturing population nearer home, and work up all our raw materials here; leaving the refuse on our soil, as well as putting the profits on manufacturing into our own pockets. When we send none but manufactured goods to distant markets, we shall have reduced transportation to the minimum and done much to solve the great railroad question. Much of the profit of dairying comes from the refuse left on the soil, and the comparatively small bulk and weight of goods that are sent to market. Apply this principle to every branch of industry, and we have done much to achieve industrial, as well as political, independence.

I indorse the language of Senator Morrill: "A diversity of pursuits makes a great nation possible in peace and greater in war. General competence, habits of self-reliance, and higher culture, are thus more surely attained. The improvement in one occupation is contagious and spreads to all others. Philosophy, politics and liberty all go up higher, and the happiness and dignity of mankind are promoted."

BUTTER MAKING.

By JOHN LORENTZEN, Bartlett, Ill.

Mr. President, Ladies and Gentlemen:— It is a very easy matter, if one can swim, to do so with the tide, with the stream. Let one boldly enter the current; without effort he is propelled onward.

Thus we see it illustrated daily in the stream of life. We all plunge in. Those gone before us struck out for down the stream. The great majority who start with us will go the easiest way, and follow those gone before them. But not always is going with the stream, with the crowd, if the easiest and most popular, on that account the safest and best plan to adopt. There may be dangerous places in the easy way — quicksands and whirlpools, that will engulf the pushing throng.

Occasionally we find one who sees danger ahead; he feels that himself and all the rest are drifting in the wrong current. He turns about, faces the current and popular opinion; he warns the easy going multitude. Generally he is derided for doing so. Not only must he make great exertions to breast the waves and current, nay, he must beware lest many a one on the easy road may and will give him a sly ducking, maybe swamp him. If he is the man of the right stamp, will reach the shore or protecting rock in safety, and may have the satisfaction to rescue those who tried to swamp him. I will retain this metaphor of life and its pursuits. We do not all swim in the same stream, in the same river, sea or ocean. We do not all follow the same vocation. May we not say that this convention, members of the great dairy industry, are paddling along the "Milky way" on the banks of which, to be sure, honey flows? But this milky stream is beset with dangers and difficulties that are hard to fathom and have swamped many a fellow voyager. To avoid the shallows on the way, the dairymen of this country have their bright reliable beacons, who continually shed their light for them. "The dairy press," in rain or shine, good times or bad, never flag, their oil never fails. I know with some of these it is hard work to breast the stream, and more's the pity. Are they appreciated and sufficiently encouraged? I fear not. The crowd go floating by and thoughtlessly allow them to struggle on, perhaps to be swamped at last. I have seen these lighthouse keepers, admired their courage and devotion to their cause. Not long ago, met two specimens of this class from the remote East, making their way to the distant West in quest of oil to light their fires for your and my benefit; one of them was old in years, yet young at heart and full of enthusiasm. Are such men swimming against the current without encouragement? It is for you to answer.

May not these yearly conventions and gatherings be likened to

halting places in the course of life's stream — where one and all may give and receive counsel; give expression to ideas (even if they run counter to opinions held by the majority) without fear or favor? I think so; but of late years these conventions have to a great extent been beset with the importunities of designing men, who like the wrecker sets out his false lights to engulf and fleece his unwary victim; like the charlatan, with only aim to bleed your pockets; like the demagogue, who takes your time with false pretense to enable him to appear a champion, a shining light before his grange — under plea of right, do you and yours a grievous wrong. I will instance the cry against oleomargarine. It was started by designing men to further their own selfish ends, and they succeeded too. For the last few years this bugbear has taken, I may say, almost sole possession of these conventions, to the exclusion of other subjects of greater importance to your industry. The cry has been, and perhaps still is, popular; for the demagogue howls it with stentorian lungs. It is swimming with the current — easily done. While you can not supply the demand for butter at forty to forty-five cents per pound, there is no cause for alarm; your legitimate aim should be to increase the product and improve the quality of it. I suggest, take this bugbear with the demagogue; drive the nails home into the coffin, and bury them out of sight. Last month I plainly saw the effects of the course pursued, so indicated. At the Dairy Convention of Illinois, scarce a corporal's guard constituted the asemblage; there was no interest manifest, and why? I asked an old, experienced dairyman, one who, by the way, stands high in his calling — one who loves it. His reply was, that the conventions of late offered nothing new, and the old, threadbare subjects being discussed over and over again, had no charm for the thinking portion of the dairy community. Hence the lack of interest. Was he right?

I will change the subject and come to what I intended to talk about: Butter.

To begin, I will state that I shall swim up stream, against the current, and trust you will neither swamp nor pull me under. I admire originality in thought, and when I find it my interest is at once enlisted. If one will restrain his natural prejudices and not allow bigoted intolerance to warp his judgment, very often one will find valuable ideas in thoughts expressed by others, even if these

thoughts are not carried out in their entirety to a logical conclusion. I have pondered over the theory — nay, accepted fact — as promulgated by our best scientific authority, that the butter globules in milk are a distinct body, a formation of extreme small proportions, yet, notwithstanding their size, fully developed as a whole. They have been seen through the microscope, accurately measured, and the fat found to be enveloped by a distinct covering, a pellicle, membrane or sac, in the same manner as the meat of a nut is inclosed in its shell. The fat itself has been analyzed and found to contain, besides its components as such, a volatile oil or essence from which the fat obtains that delicious flavor, aroma, so well known by all lovers of fine butter. It is shown to be complete in itself, the same as you or I might describe, for instance, an apple: its size and weight, its core with seeds inclosed, its meat or pulp, its rind, its flavor. This scientific fact is thus established, and as a natural consequence the practical worker in the raw material, the dairyman who lacks scientific knowledge and opportunities, perforce accepts these assumed facts. This reasoning compels him to do so. With these assumed scientific facts as a basis we then proceed to obtain these diminutive fruits of the cow (if I may be allowed to use that term) in an aggregate. Obstacles present themselves. We must separate them from the water and casein of the milk. The assumed scientific membrane pellicle must be removed and then be transformed from its microscopic state to a bulk more palpable, such as we can spread upon our daily bread or sell by a single or a thousand pounds. To effect this result in the best possible manner has been the study and aim of the dairymen for generations and ages. To have the result perfect is still a problem, and will continue so while we continue our superstructure upon the basis given.

In the "American Dairyman," — by the way, a beacon that sheds its light for you on the Manhattan island,— I read, some time since, an article by a gentleman who had floated in the millstream of Minnesota and drifted to the river of milk of Illinois; there he stemmed the tide with an original idea. He ingeniously took the ground, that in the art of milling the ancient mode of making flour had been superseded by the new process, which obtains the most valuable portion of the wheat kernel from the bran, that had by the old system been wasted, or nearly so. His idea was, as near as I can recollect, to treat the butter globule on the same principle; in

a similar manner to remove the pellicle or membrane from it — to grind it off. In the same paper I read, and possibly, also, have some of you, an article from a gentleman in far-off Denmark; one who works up the icy milk stream of that northern land. In an able manner he stems the tide with an original idea: thus, in regard to working the gathered butter globule. He likens these to an elastic body, similar to a fine steel spring. If one overstrains the spring, it collapses, breaks. On the same hypothesis, if one overwork, overstrain the elasticity of the butter globule, it breaks; and the result would be a broken mass, a greasy substance, void of grain or texture. If I do not agree with these original ideas, I nevertheless appreciate and applaud them. They have given me food for thought; encouraged me, by showing that I am not alone in my efforts; not alone in going up stream against the current. Close application, investigation and a natural liking for the subject, have prompted me to make numerous and varied experiments with milk and its products — have found by actual demonstration that some things held to be facts are not facts. After discovering one error, it leads one more readily to detect others. It is like a person who can see to some extent with his eyes partly closed; he will distinguish objects more readily when he has them fully open. For years I have paddled up stream, taken the swash of the multitude, been pulled under and nearly drowned several times; still I feel convinced of being right. If I can convince you, or some of you, of errors that are apparent to me, I shall feel gratified and amply repaid. I am sincere and ask no favor other than this: that if you do not agree with me, don't pull me under.

I will begin with our basis, the assumed butter globule, as we obtain it from the cow, and state at once, it has no covering. There is no pellicle or membrane round about it. If there be none it is evident we need not remove it; in fact, we cannot. I will state further, the butter globules have no grain such as the popular acceptance of the term is. In working the gathered butter you do not injure its grain, because there is no grain to hurt. I have rehandled and repacked butter in quantities for years, and the same popular error has annoyed and bothered me often enough.

Lastly, these butter globules have no inherent high flavor, as the term goes, and understood to be that peculiar, grateful aroma which so much enhances the value of the finished product — the

butter aroma, as those of you who are practical butter men will readily understand. I am aware that these are sweeping assertions; because we have religiously held opinions to the contrary, and our ancestors before us, books and treatises without number have been written asserting these opinions as facts. I feel very well that I am facing a strong current, and may possibly raise a breeze if not a gale. You will permit me to give my reasons for the assertions I make. I hold the opinion that the butter fat is ejected as superfluous from the system of the cow; that this fat is derived principally from the tallow of the animal, and, aside from a slight modification in its components from actual tallow or suet, is such neither more or less. This fat comes from the cow in a perfect, complete emulsion with the milk, in such minute particles as to be imperceptible to the naked eye. The proof of these two points to me is, that by manipulation butter can be made direct from the tallow or suet. I have seen a machine that will divide such fat into minute particles (globules without jackets), and distribute them in the milk in precisely the same condition as we find the so-called butter globules with assumed jackets on. When we agitate the cream or milk in the churn we are not wearing off any supposititious membrane from the butter globules. We simply gather the fat particles, contained in the cream, by adhesion, the same way as a boy will roll up a large snowball. To do both effectually the conditions of the temperature must be right. If the snow is frozen hard it will not ball. It is the same with the fat in milk. If the snow is too warm neither will it adhere then; it becomes fluid. The same change takes place with the fat in milk; when heated you cannot make the particles adhere. It is a physical impossibility.

You all know that fat has no affinity for water; neither has it for the casein contained in milk; it easily separates from it under proper conditions of temperature, and by adhesion. This is the view I take of what we accomplish in the act of churning.

If a man tell a lie, he has to invent ever so many more to hold it up, in order to give it the semblance of truth; at the same time it remains a lie, and nothing else. The same if we assume a theory to be a fact; we must keep on devising further theories to bolster up the first; and precisely this is what has been done in regard to the jacketed butter globule. It is a myth, and nothing else.

I now come to "butter fat has no grain." The popular belief is,

that if the butter fat is churned too much the grain of it is injured; if, after churning, it be not obtained in firm granules, the grain is spoiled; and if worked too much before the product is finished, the grain is hurt. However, these assertions are not borne out by facts. The fallacy of the globule theory necessitates further errors. The illusion occurs in this manner: when the particles of butter fat adhere in the churn, they hold also a portion of the casein; this casein, under certain circumstances, coagulates; in this coagulated form it cannot separate from the fat, but will, by working the mass, be incorporated with it, forming, as it were, a paste; and thus give the butter when finished the greasy, salvey appearance. I have often proven this, and so may you, by taking some greasy, salvey butter, as described, and melting it; heating it, if you choose, to nearly the boiling point. The casein will thus be liberated from its connection with the butter fat. You will admit that any grain (if the fat possessed such) would be destroyed by the heating process. Such, however, is not the case. If you will now take the thus treated butter fat and re-churn it, then, when your emulsion is made, promply chill the whole contents of your churn, unbroken pieces of the result will be, when worked, a perfect textured butter. It will then draw clean upon the tryer. I have often done this, and prepared salvey butter for market, enhancing its value.

We now reach my last assertion: "Butter-fat has no aroma." It is well understood that in order to obtain a high flavored butter you must give your cream a certain age. You let it stand long enough to become slightly sour, and then gain your object. Butter made from sweet new milk has none of this aroma, and this fact is proof in itself that the fat does not originally possess it. Fats of all sorts have absorptive properties. The finest aroma obtained by the perfumer's art, attar of roses, is procured by saturating cloths with oil; the rose leaves are spread upon these cloths and the oil absorbs the fragrance of the rose, retaining it with great tenacity. The same with the butter fat; it absorbs the fine aroma which develops after a certain period of time and under controllable circumstances in the serum of the milk, and retains it. My proof of this being a fact is, that I have taken hay butter without flavor, melted and rechurned such with high flavored grass buttermilk, incorporating with the butter the distinct grass flavor.

Professor Segelke, of the Royal Danish Agricultural College,

surmises that this aroma is a product of lactic fermentation in milk; however, I have produced it to perfection in milk that had not been allowed to approach lactic fermentation.

I close with expressing the hope that my remarks will be received with due allowance for their sincerity, prompt, close, common sense observations by practical dairymen, and that they may result in benefiting the dairy industry.

REPORT OF COMMITTEE ON BUTTER AND CHEESE.

Mr. President:— Your committee who were appointed to examine the butter and cheese beg leave to submit the following report:

CLASS I.

PREMIUMS ON CHEDDAR CHEESE.

The association offered a premium of $50, to be divided among exhibitors in proportion to the number of points obtained by each, whose exhibits should be awarded 44 points or over in a scale of 50.

H. Conover, Plymouth	44	points.	$6 90
Holden Bros., Sheboygan Falls	44⅓	"	6 95
H. J. Bamford, Plymouth	45⅓	"	7 10
H. J. Bamford, Town Line	47⅓	"	7 42
E. Eastman, Plymouth	46	"	7 21
Chester Hazen, Ladoga	46	"	7 21
Chester Hazen, Green Lake	46	"	7 21

CLASS II.

S. B. Davis & Co., Commission Merchants, 110 South Water Street, Chicago, offered the following premiums:

For the best "Young America Cheese"		$5 00
For the best Cheddar Cheese		5 00
J. Shumaker, Howard's Grove, Young America	48⅓ points	$5 00
H. Conover, Plymouth, Cheddar Cheese	49⅔ points	5 00

CLASS III.

By Geo. S. Hart & Co., Produce Commission Merchants, 38 Pearl Street, New York.

Offer a prize silver cup, valued at $100, to the manufacturer of the finest quality of full cream made cheese.

Aug. Klessig, Centreville, 49 points. Cheese exhibited by James Mallmann, dealer in butter and cheese, Sheboygan.

NOTE.—This cup must be won three years in succession by one person, to retain the same permanently. It has been won by A. H. Wheaton, Auroraville, Olin & Clinton, Waukesha, W. S. Baker, Cold Spring, and H. A. Conger & Son, Whitewater.

CLASS IV.

Chas. Baltz, Commission Merchant, 115 S. Water St., Chicago, offers the following premium:

For the best colored full cream cheese $5 00

H. J. Bamford, Plymouth..... .... 47⅓ points $5 00

CLASS V.

PREMIUMS ON BUTTER.

The association offers a premium of $50 to be divided among exhibitors in proportion to the number of points obtained by each, whose exhibits shall be awarded 44 points or over, in a scale of 50.

Hiram Smith, Sheboygan Falls.....	45 points.	$8 43
H. Bliss, Sheboygan.....	44 "	8 24
C. H. Puppe, Sheboygan	44 "	8 24
J. Vick, Sheboygan Falls.....	44 "	8 24
Peter Johann, Cedarburgh.....	44 "	8 24
N. W. Morley, Baraboo.....	46 "	8 61

CLASS VI.

PRINT BUTTER.

Best specimen or plate of butter made into fancy prints..... $5 00

Second best 3 00

H. Bliss, Sheboygan..... .... $5 00

Mrs. J. A. Smith, Cedarburg..... 3 00

CLASS VII.

GRANULATED BUTTER.

For the best sample of granulated butter..... $3 00

Second best..... .... 2 00

C. H. Puppe, Sheboygan $3 00

Hiram Smith, Sheboygan Falls..... 2 00

CLASS VIII.

By John Boyd, Manufacturer of the Cooley Creamer, 199 Lake St., Chicago.

For the best tub of butter made at any time, by the Cooley process, No. 00 Cooley Creamer..... $25 00

Hiram Smith, Sheboygan ..... Cooley Creamer

CLASS IX.

By Borden, Sellick & Co., Chicago, Western Agents for the Improved Howe Scales.

For the best tub of butter made at any time, an Improved Howe Scale, capacity ½ oz. to 240 lbs $15 00

Hiram Smith, Sheboygan Falls ..... The Howe Scale

CLASS X.

By Chas. Baltz, 115 S. Water St., Chicago.

For the best tub of butter..... ..... $5 00

H. Waterman, Bartlett, Ill..... $5 00

CLASS XI.

By S. B. Davis & Co., 110 S. Water St, Chicago.

For the best tub of butter..... $5 00
H. Waterman, Bartlett, Ill..... $5 00

CLASS XIII.

By Cornish & Curtis, Fort Atkinson, Wis.

For the best tub of butter, a No. 2 Rectangular Churn..... $7 00
Hiram Smith, Sheboygan Falls..... .....Rectangular Churn

CLASS XIV.

By Cornish & Curtis.

For the handsomest single print of butter, just right for the table, a Lever Butter Worker..... $4 00
Mrs. J. A. Smith, Cedarburg..... .....Lever Butter Worker

CLASS XV.

By W. D. Hoard, Editor Jefferson County Union, Fort Atkinson, Wis.

The UNION one year to the exhibitor who is awarded the greatest number of points, in a scale of 50, on butter.

The UNION one year to the exhibitor who is awarded the greatest number of points, in a scale of 50, on cheese.

The UNION one year to the exhibitor of the handsomest plate of print butter.

ON CHEESE.

A. Conover, Plymouth ..... 49⅔ points

ON BUTTER.

N. W. Morley, Baraboo ..... 46 points

HANDSOMEST PLATE OF BUTTER.

H. Bliss, Sheboygan..... .....

Respectfully submitted,

A. H. BARBER, Chicago,
H. O. FREEMAN, Sherman, N. Y.
J. DESMITH, Sheboygan.

REPORT OF COMMITTEE ON DAIRY GOODS AND MANUFACTURES.

Mr. President, and Members of the Convention:— Your committee appointed to examine the dairy utensils respectfully submit the following report. We were not authorized to decide upon the best apparatus, but for the best display:

CLASS XVI.

CHEESE MAKING.

For the best display of apparatus for making cheese $10 00

For cheese-making apparatus, the model of a circular cheese vat exhibited by the inventor, T. B. Wise, of Geneva, Ohio, is a novel and apparently useful vat in which to make cheese when steam or other power is available. It is a great labor-saving invention.

Mr. Wise donates the premium, ten dollars, to the society.

CLASS XVII.

BUTTER MAKING.

For the best display of butter-making utensils..... $10 00

Cornish & Curtis, Fort Atkinson, Wis., exhibited rectangular and square box churns, lever butter workers, butter trays, ladles, etc. Their goods are too well known to need any notice at our hands. They were awarded the premium, $10.

CLASS XVIII.

CREAM RAISING.

For the best display of apparatus for raising cream..... $5 00

In this class John Boyd, 199 Lake St., Chicago, exhibited the well-known Cooley creamer, the submerged process of raising cream. This process is well and favorably known the world over.

J. A. Smith, of Cedarburg, Wis., state agent for the Cudworth & Aucutt creamery, of Anamosa, Iowa, exhibited two large creamers. This style of creamer, though comparatively new in this section, finds strong friends wherever sold.

Messrs. Harvey & Campbell, Bellvue, Iowa, exhibited one six and one three can creamer, besides several cans for raising cream, on the gathered cream system.

This can has many excellent features about it, and has only to be used to find out its real merits.

As they had the largest display, they were awarded the first premium, $10.

CLASS XIX.

BUTTER COLOR.

For the best display of butter color $3 00

Messrs. F. B. Fargo & Co., Lake Mills, Wis., made a large display of their popular butter color, and were awarded first premium, $3.

CLASS XX.

BUTTER PACKAGES.

For the best package for shipping packed butter..... $3 00

W. D. Kirkland, Sheboygan Falls, Wis., exhibited Welsh tubs, California,

Goshen and half firkins, all of which were manufactured from first-class material, and in a workmanlike manner. The exhibit was in every way creditable to the exhibitor.

CLASS XXI.

MISCELLANEOUS.

W. G. Hyder, Plainwell, Mich., exhibited a patent milking stool and pail holder, which has yet to be tested by the dairy public. It seems practicable and may yet become a "public benefactor." It is worthy of a trial.

Wm. Elwell, Sheboygan, Wis., exhibited samples of land plaster.

This plaster is as well manufactured as any in the market, and dairymen can always be sure of getting fresh ground plaster at his extensive works in Sheboygan — the only works of the kind, we believe, in Wisconsin.

A. D. DELAND, Sheboygan Falls.
B. HOLDEN, Plymouth.
GEORGE LAWRENCE, JR., Waukesha.

President Beach — The convention will now adjourn *sine die.*

Convention reported by Mrs. J. Howard Kelley, 59 Major block, Chicago.

APPENDIX.

DAIRY PRODUCTS OF THE UNITED STATES AS SHOWN BY THE CENSUS OF 1880.

STATES.	Milk, Gallons.[1]	Butter, Pounds.[2]	Cheese, Pounds.[2]
Alabama	267,387	7,997,719	14,091
Arizona	42,618	61,817	18,360
Arkansas	316,858	7,790,013	26,301
California	12,353,178	14,084,405	2,566,658
Colorado	506,706	861,379	10,867
Connecticut	12,289,993	8,198,995	826,195
Dakota	415,119	2,000,955	39,437
Delaware	1,132,434	1,876,275	1,712
District of Columbia	496,789	20,920	.....
Florida	40,967	353,156	2,406
Georgia	374,645	7,424,485	19,151
Idaho	15,627	310,644	20,295
Illinois	45,419,719	53,657,943	1,035,069
Indiana	6,723,840	37,377,797	367,561
Iowa	15,965,612	55,481,958	1,075,988
Kansas	1,360,235	21,671,762	483,987
Kentucky	2,513,209	18,211,904	58,468
Louisiana	256,241	916,089	7,618
Maine	3,720,783	14,103,946	1,167,730
Maryland	4,722,944	7,485,871	17,416
Massachusetts	29,513,190	8,609,821	817,028
Michigan	7,898,273	38,821,890	440,540
Minnesota	1,504,407	19,161,385	523,138
Mississippi	427,492	7,454,657	4,239
Missouri	3,173,017	28,572,124	288,484
Montana	41,165	403,738	55,570
Nebraska	625,783	9,725,198	230,819
Nevada	149,889	335,188	17,420
New Hampshire	5,739,128	7,247,272	807,076
New Jersey	15,472,783	9,513,835	66,518
New Mexico	10,036	44,827	10,501
New York	231,965,533	111,922,423	8,362,590
North Carolina	446,798	7,212,507	57,380
Ohio	46,801,537	67,634,263	2,170,245
Oregon	227,540	2,443,725	153,198
Pennsylvania	36,540,540	79,336,012	1,008,686
Rhode Island	3,831,706	1,007,103	67,171
South Carolina	257,186	3,196,851	16,018
Tennessee	1,006,795	17,886,369	98,740
Texas	1,296,806	13,910,396	58,466
Utah	155,263	1,052,903	126,727
Vermont	6,526,550	25,240,826	1,545,789
Virginia	1,224,469	11,470,923	85,535
Washington	226,703	1,356,103	109,200
West Virginia	750,279	9,309,517	100,300
Wisconsin	25,156,977	33,352,045	2,281,405
Wyoming	75,343	105,643	2,930
Total	529,979,992	777,215,597	27,259,983

[1] Sold or sent to butter and cheese factories in 1879.
[2] Made on farms in 1879.

LIST OF CHEESE FACTORIES AND CREAMERIES IN WISCONSIN.

With their Post Office Address.

COUNTIES AND NAME OF FACTORY OR PROPRIETOR.	P. O. ADDRESS.
BROWN.	
Day & Hein	Greenleaf.
James Bitehie Lawrence	West Depere.
A. Vander Heiden & Co	Wrightstown.
D. Benecke	Fontenoy.
Hein & Shawner	East Wrightstown.
BUFFALO.	
William Fisher	Mondovia.
T. W. Bailey	Gilmanton.
A. Mosher	Gilmanton.
CALUMET.	
C. P. Skidmore	Stockbridge.
M. S. W. Scott	Brant.
O. R. Potter	Potter's Mills.
Writz Cheese Company	Hilbert.
Platt Cheese Company	Hilbert.
CLARK.	
G. & J. Heuntzicher Factory	Greenwood.
COLUMBIA.	
Arlington Cheese Association	Arlington.
Wyocena Cheese Association	Wyocena.
Lodi Cheese Association	Lodi.
West Point Cheese Association	West Poin
Chas. Baker Cheese Association	Portage.
O. B. Prime & Co	Fall River.
Caledonia Cheese Company	Portage.
A. Chapman	Columbus.
Poynette Cheese Factory	Poynette.
H. M. Chapman's Creamery	
J. Whitney	Port Hope.
Randolph Cheese Factory	Randolph.
J. W. Leffingwell Creamery	Columbus.
Priem & Smith Creamery	Columbus.
DANE.	
C. C. Pease	Belleville.
Wm. Fischer	Paoli.
Humphrey & Sherman	Mazomanie.
Black Earth Cheese Factory	Black Earth.
Dane Cheese Factory	Dane.
A. S. Noyes' Cheese Factory	Waunakee.

DANE — continued.

W. J. Donald Cheese Factory	Mount Vernon.
Brooklyn Cheese Factory	Brooklyn.
John Fisher Cheese Factory	Mount Vernon.
John Ole & Co. Cheese Factory	Primrose.
John Arian's Cheese Factory	North Bristol.
A. Chipman's Cheese Factory	Sun Prairie.
Sherman Bros.' Cheese Factory	Windsor.
Olin, Crossfield & Co	Cambridge.
Kittlesen, Torgersen & Co	Utica.
C. M. Prentice	Dane.

DODGE.

Stapleton Cheese Co	Fox Lake.
R. F. Ellis	Beaver Dam.
J. B. Cochrane Cheese Co	Beaver Dam.
F. S. Jacobs	Atwater.
Wm. B. McDonald	Danville.
John Hoffman	Hustisford.
B. Bross	Hustisford.
H. Brue	Hustisford.
Mr. von Grunigen	Hustisford.
M. E. von Grunigen	Hustisford.
A. Graniger	Hustisford.
J. Graniger	Hustisford.
C. Wellow (3 factories)	Hustisford.
J. Seelgidurey	Hustisford.
Mr. Chrunkny	Hustisford.
S. Boss	Watertown.
Jacob Joss	Woodland.
J. Ealing	Woodland.
M. S. Barrett's Factory	Burnett.
S. Hammond	Lowell.
R. D. Calkins	Randolph.

DODGE — continued.

Lebanon Cheese Co	Lebanon.
Lake Emily Cheese Co	Fox Lake.
North Road Cheese Factory	Watertown.

FOND DU LAC.

C. Hazen	Ladoga.
C. Hazen, Brandon Factory	Ladoga.
E. S. Jenkins' Factory	Rosendale.
E. Peebles	Peebles.
D. S. Trelevan	Byron.
Wm. Berry	Peebles.
Fayette Bude	Oakfield.
M. Wookey	Oakfield.
Willis Lang	Waupun.
John Howard	Waupun.
H. C. Williams	Waupun.
Badely's Cheese Co	Waupun.
M. R. Stapleton	Waupun.
R. M. Stevens	Ripon.
J. H. Downing	Waupun.
J. Cronk	Waupun.
B. Bennett	Lamartine.
O. G. Parker	North Byron.
Fountain City, Wm. Berg	Peebles.
Ira Brown	New Cassel.
Bristol & Orvis	Oakfield.
L. F. Beedee	Oakfield.
Simon Arthur	Fond du Lac.
H. G. Parker	Fond du Lac.
J. A. Chitterling	Fond du Lac.
Ira Brown	Campbellsport.
Wm. Williams' Creamery	Ripon.
J. Wookey's Creamery	Oakfield.

LIST OF CHEESE FACTORIES AND CREAMERIES — continued.

COUNTIES AND NAME OF FACTORY OR PROPRIETOR.	P. O. ADDRESS.
GRANT.	
A. E. Morse	Bloomington.
Delos Abrahams	Bloomington.
Morse & Welch Factory	Bloomington.
GREEN.	
American.	
Melvin & Blair	Brooklyn.
F. Lehnherr	Dayton.
W. Green	Dayton.
Cheese Factory	Attica.
J. C. Zimmermann	New Glarus.
Cheese Manufacturing Co	New Glarus.
Cheese Manufacturing Co	Stewart P. O.
Cheese Manufacturing Co	Farmers' Grove.
Cheese Manufacturing Co	Monticello.
W. S. Wescott	Monroe.
G. O. Stearns	Monroe.
W. C Gorham	Monroe.
Jos. Blumer	Monroe.
R. Karlen	Juda.
Jacob Berger	Dayton.
F. Pierce	Monticello.
Jacob Regez	Monroe.
Belleville Cheese Factory	Belleville.
Ward Cheese Factory	New Glarus.
GREEN — continued.	
American.	
Fred Luchsinger	New Glarus.
Postville Cheese Factory	Stuart.
J. J. Tschudy	Monroe.
Nevada Cheese Factory	Sylvester.
Swiss.	
J. Kundert, Sr	Monroe.
J. Kundert, Jr	Monroe.
Dieitrich Freitag	Monticello.
Jost. Voegeli	Monticello.
D. Weiss	Monticello.
John Marty	Monticello.
Jacob Regez (3 factories)	Monre.
Paul Kundert	New Glarus.
B. Hoesly, Sr	New Glarus.
Math. Figy	New Glarus.
Sam. Hoesly	Oneco, Ill.
M. Zumbrunner	Monroe.
Dietrich Stauffacher	Monticello.
Peter Klaesy	New Glarus.
Comr. Wyss	Monticello.
Matt Frigg	New Glarus.
Jac. Vogeli	Jordan Center.
F. Hafner	Monroe.

GREEN — continued.

Swiss.

S. Hosly	Monroe.
D. Tschabold	Monroe.
Henry Buller	Monroe.
Stauffacher & Co	Monroe.

Limburger.

Ott Bros. & Co. (2 factories)	New Glarus.
Stensey Bros	New Glarus.
F. Blumm & Co	New Glarus.
John Boss (3 factories)	Monticello.
Rhyner & Bable	Monticello.
G. Witwer, Jr. (6 factories)	Monroe.
Regez Bros. (6 factories)	Monroe.
Gottlieb Beller (3 factories)	Monroe.
Jacob Bross	Monroe.
Henry Trumphy	Shoey Mills.
Jacob Regez (5 factories)	Monroe.
Poplar Grove Factory	Bem.
Fraetschy & Co	Monroe.
Becker, Wittenkyler & Co	Monticello.
G. Wittioer, Sr	Monticello.
Jac Karlan (7 factories)	Monroe,
John Gicenwoeld	Monroe.
Sauter & Segesseromun (2 factories)	New Glarus.
Hefty & Kwobel (3 factories)	New Glarus.
Chr. Putzer	New Glarus.
Ott & Co	New Glarus.
Eichelkrant & Co	New Glarus.
Spring Valley	New Glarus.
Fred. Bloom & Co	Monticello.
Tate, Lomman & Co	Monticello.
Wenger & Co	Monroe.
Math. Elmer & Co	New Glarus.

GREEN — continued.

Creameries.

Brodhead Creamery Co	Brodhead.
Albany Creamery Co	Albany.

GREEN LAKE.

A. H. Wheaton	Berlin.
C. Hazen	Ladoga.
Grand Prairie Factory	Ladoga.
David Evans	Berlin.

IOWA.

Crowley & Brent (2 creameries)	Mineral Point.
Bloomfield Factory	Mineral Point.

JEFFERSON.

Olin, Crossfield & Co. (5 factories)	Oakland.
Fort Atkinson Factory	Oakland.
Clark & Reynolds	Hebron.
Whitney's Factory	Fort Atkinson.
Wright's Mill Factory	Hebron.
Cold Spring Cheese Co. (6 factories)	Whitewater.
Cold Spring Factory	Whitewater.
Hebron Factory	Whitewater.
Palmyra Factory	Whitewater.
Oak Hill Factory	Oak Hill.
Clover Valley Factory	Clover Valley.
M. N. Seward Cheese Factory	Harvey.
Seward & Skinner	Aztalan.
Riverside Factory	Jefferson.
Faville Grove Factory	Lake Mills.
E. P. Ingalls	Milford.
Wm. Galloway	Whitewater.
Thos. Bussey	Busseyville.

LIST OF CHEESE FACTORIES AND CREAMERIES — continued.

COUNTIES AND NAME OF FACTORY OR PROPRIETOR.	P. O. ADDRESS.
JEFFERSON — continued.	
Union Cheese Factory, Greene, Hutchins & Co	Fort Atkinson.
Z. Wilson	Palmyra.
Concord Cheese Company	Concord.
C. H. Hosington	Fermington.
H. C. Drake	Lake Mills.
Newell Butter & Cheese Factory	Whitewater.
F. O. Crossfield, Burr Oak Creamery	Fort Atkinson.
Milford Road Cheese Factory	Milford.
Merrick's Factory	Whitewater.
F. A. Hoffman, Creamery	Jefferson.
S. G. Westphall Creamery	Fort Atkinson.
H. Merriman, Creamery	Fort Atkinson.
Rock Lake Creamery	Lake Mills.
Star Creamery	Lake Mills.
Krogville Cheese Company	Krogville.
Union Cheese Company	Lake Mills.
Koshkonong Cheese Company	Koshkonong.
Wm. P. Phillips	Lake Mills.
C. S. Cartwright, Sippert	Rome.
H. E. Humphrey	Ixonia Center.
Burr Oak Creamery	Fort Atkinson.
L. B. Root's Creamery	Whitewater.
JUNEAU.	
D. C. Robinson	Mauston.
Wm. Kimball	Union Center.

COUNTIES AND NAME OF FACTORY OR PROPRIETOR.	P. O. ADDRESS.
JUNEAU — continued.	
F. O. Galla	Elroy.
Wm. Hale & Co	Mauston.
Robert Camp	Mauston.
F. O. Galla	Elroy.
John Sharf	Union Center.
Andrew Mills	Elroy.
I. Fl no	Elroy.
Wm. Robinson	Elroy.
J. J. Smith	New Lisbon.
J. J. Smith	Melvina.
J. J. Smith	Burns.
George Curtis & Co	Mauston.
Millards Prairie Factory	Elroy.
D. C. Robinson & Co	Mauston.
North Road Cheese Factory	Watertown.
KENOSHA.	
E. S. Stanard	Woodworth.
South Bristol Cheese Factory	Bristol.
J. M. Kellogg's Factory	Woodworth.
J. M. Wilbur	Wilmot.
O. C. Stonebreaker	Bristol.
J. V. Vosburgh	Richmond, Ill.
L. A. Stevens' Cheese Factory	Salem.
George H. Booth	Salem.
J. M. Kellogg	Woodworth.
Henry G. Blackman	Kenosha.
C. C. Holt	Kenosha.

KENOSHA — continued.	
Simmons & Co	Kenosha.
M. B. Hubburd	Pleasant Prairie.
Eureka Creamery	Salem.
C. Williams	Salem.
O. C. Stonebreaker	Bristol.
LA CROSSE.	
L. R. Bowen	Bangor.
LA FAYETTE.	
Darlington Cheese Co	Darlington.
MANITOWOC.	
Lilloffe & Ecke	Kiel.
A. Ecke	Meemee.
Daniel Kuentz	Newtonberry.
Pierce Bros	Hika.
Nelson Darling	Cato.
MILWAUKEE.	
F. A. Yankee	Northern Junction.
A. Thomas & Son	Good Hope.
MONROE.	
Z. R. Broughter	Glendale.
Cataract Factory	Cataract.
N. W. Creamery	Tomah.
Charles E. Bell	Tomah.
Sparta Factory	Sparta.
Leon Valley	Leon.

MONROE — continued.	
Hunt's Mills	Medina.
W. F. Sulls	Hillsborough.
D. Drewer	Union Center.
OUTAGAMIE.	
Louis Perrott	Granville.
E. M. Gowell	Granville.
H. Brockway	Appleton.
H. M. Armstrong	Fredonia.
Edward Nye	Fredonia.
Hortonville Cheese Factory	Hortonville.
Dale Cheese Factory	Dale.
C. D. Wolcott	Medina.
OZAUKEE.	
Mrs. Mary E. Eckel	Port Washington.
Butter made in the county	.....
RICHLAND.	
G. J. Carswell	Lone Lock.
H. L. Eaton	Lone Rock.
A. Shaunce	Bear Valley.
Geo. Turner	Sextonville.
A. & D. Beckwith (6 factories)	Lone Rock.
Little Bear Valley, No. 1	
Big Hollow, No. 2	
Pine River, No. 3	
Big Bear Valley, No. 4	
Spring Green, No. 5	
Iowa County, No. 6	
J. M. Holmes' Factory	.....
N. L. James	.....

LIST OF CHEESE FACTORIES AND CREAMERIES — continued.

COUNTIES AND NAME OF FACTORY OR PROPRIETOR.	P. O. ADDRESS.
RICHLAND — continued.	
Y. L. McCullow	Sextonville.
—— Sherman	Sextonville.
ROCK.	
Bent, Cheever & Pierce	Clinton.
B. S. Hoxie	Cooksville.
Wm. Zimmerman	Edgerton.
James Clough	Edgerton.
E. Devereux	Evansville.
Clover Dale Factory	Lima Center.
Godfrey's Factory	Lima Center.
SHEBOYGAN.	
H. K. Loomis [1]	Sheboygan Falls.
Mather Bros	Sheboygan Falls.
Holden Bros	Sheboygan Falls.
A. D. DeLand	Sheboygan Falls.
E. C. Peacock	Sheboygan Falls.
John Dassow [1]	Sheboygan Falls.
D. Kuentz	Sheboygan Falls.
Andrew Dye	Sheboygan Falls.
P. H. Peacock	Sheboygan Falls.
Wm. Edler [1]	Sheboygan Falls.
H. Habighorst	Sheboygan.
Carl Reich [2]	Sheboygan.

COUNTIES AND NAME OF FACTORY OR PROPRIETOR.	P. O. ADDRESS.
SHEBOYGAN — continued.	
Wm. Hartmann	Sheboygan.
Wm. Springborn	Sheboygan.
C. F. F. Karstaedt	Sheboygan.
M. Lemmin	Sheboygan.
H. Mahler	Sheboygan.
Geo. W. Weeden	Sheboygan.
Juckem & Co	Sheboygan.
Fred Widder	Sheboygan.
G. Kunze & Co	Sheboygan.
H. Kepler	Mosel.
G. B. Eiche	Mosel.
F. A Streblow	Plymouth.
Fred Suhrke	Plymouth.
Stock Factory, Stalzenberg, Salesman	Plymouth.
E. Eastman	Plymouth.
Wm. Koch	Plymouth.
S. A. Rickmeier	Plymouth.
H. J. Bamford [2]	Plymouth.
P. M. Wolf	Plymouth.
V. Pfeil & Son	Plymouth.
J. A. Smith	Glenbeulah.
Thackray & Dawley	Glenbeulah.
W. B. Barragar & Co	Glenbeulah.
E. Montgomery [2]	Greenbush.
G. C. Mahew	Greenbush.
S. Holensteiner	Rhine.
Jacob Roeder	Rhine.

SHEBOYGAN — continued.

P. Horneck	Rhine.
Peter Meyer	Rhine.
Slyfield & Thompson	Waldo.
H. C. Humphrey	Waldo.
Harmon Factory	Winooski.
F. Joerns	Winooski.
L. H. Trowbridge [2]	Winooski.
Clark & Gates [2]	Winooski.
E. A. Kennedy	Random Lake.
Frank Risse	Silver Creek.
Julius Klessig	Fredonia.
W. M. Danforth [2]	Scott P. O.
Aug. Frohmann	Scott P. O.
Geo. Thackray	Rathbun.
J. Devine	Rathbun.
R. A. Swann	Cascade.
Wolf & Kennedy	Cascade.
Henry Widder	Hingham.
Aug. Stransburger	Ada.
H. Olm	Ada.
C. Groene	Johnsonville.
John Kaestner	Johnsonville.
C. Maurer	Johnsonville.
Fred Fasse	Johnsonville.
F. C. Reineking	Franklin.
A. Rehm	Franklin.
Peter Maurer	Franklin.
J. Schumacher	Howard's Grove.
John Erbstoesser	Howard's Grove.
Julius Ochs	Howard's Grove.
Wm. Siemers	Howard's Grove.
Chas. Bohlmann	Howard's Grove.
F. Lucke	Howard's Grove.

[1] Will make butter and cheese.

SHEBOYGAN — continued.

John Bitter	Howard's Grove.
R. Meves	Howard's Grove.
John Klockow	Edwards P. O.
J. Van Der Wall	Cedar Grove.
H. Walvoord	Cedar Grove.
Chris Walvoord	Cedar Grove.
John H. Schreners	Cedar Grove.
W. M. Stronks	Cedar Grove.
F. Jankow	Oostburg.
H. Te Ronde	Oostburg.
J. Lohnis	Oostburg.
Jos. Palmer [1]	Oostburg.
J. Wisslink	Gibbsville.
Loomis & Laver	Gibbsville.
Wm. Gessert	Sherman Station.
H. Erbstoesser	Sherman Station.
Nic. Graasser	Dacada P. O.

SAUK.

Tuckerville Cheese Co	Logansville.

VERNON.

Wm. F. Sato	Hillsborough.

WAUKESHA.

Olin & Clinton	Waukesha.
T. C. Dousman	Waterville.
B. R. Hinckley	Oconomowoc.
Monterey Factory	Monterey.
Frank Shultis	Waukesha.

[2] Factories owned by one individual.

LIST OF CHEESE FACTORIES AND CREAMERIES — continued.

COUNTIES AND NAME OF FACTORY OR PROPRIETOR.	P. O. ADDRESS.
WAUKESHA — continued.	
Thomas Steele	Genesee.
Richard Milton	Eagle.
Frank Shultis	Mukwonago.
Waterville Factory	Waterville.
Rose Glen Creamery	Waukesha.
Dell Ostrander	Monterey.
M. Rowell	Hartland.
Wauwatcsa Cheese Co	Elm Grove.
WAUSHARA.	
A. H. Wheaton	Auroraville.
R. P. Colt	Poysippi.
WAUPACA.	
Weyauwega Cheese Factory	Weyauwega.
S. A. Oakes	Ogdensburg.
Charles Gibson	Lind.
Wm. Hamilton	Clintonville.
Thomas W. Rhodes	Weyauwega.
Craig & McCord	Royalton.
New London Factory	New London.
WALWORTH.	
Rock Prairie Creamery	Delavan.
Pearson Brothers	Sharon.
WALWORTH — continued.	
S. G. Nichols	Geneva.
S. Lytle, Oak Ridge Creamery	Elkhorn.
D. L. Flack	Elkhorn.
J. G. Flack	Elkhorn.
North Geneva, C. F	Elkhorn.
Chase, Burner & Casswell	Elkhorn.
C. R. Beach	Whitewater.
H. A. Conger & Son	Whitewater.
R. Springsteen	Whitewater.
R. S. Benson	Geneva Junction.
J. M. Weeks[1]	Delavan.
C. B. McCanna	Springfield.
C. B. McCanna	Spring Prairie.
C. B. McCanna	Rochester.
H. & J. D. Godfrey	Whitewater.
Westville Cheese Co	Elkhorn.
Geo. A. Lytle, Oak Ridge Creamery	Elkhorn.
C. F. Keys, C. F	Beloit.
WASHINGTON.	
Jacob Hamm	Kohlsville.
WINNEBAGO.	
John Ryfe	Oshkosh.
Christ. Perrin	Oshkosh.

WINNEBAGO — continued.	
Crist. Boss	Oshkosh.
C. Bellinger	Oshkosh.
Mr. Kettle	Oshkosh.
George Rogers	Oshkosh.
Charles Vedder	Eureka.
F. Stune	Waukau.
D. Grossman	Omro.
S. S. Walter	Eureka.
Bishop's Cheese Factory	Omro.

WINNEBAGO — continued.	
J. G. Picket	Picket's Station.
F. W. Wheeler	Neenah.
Henry Searl's Factory	Picket's Station.
Emery Davis' Factory	Picket's Station.
Clayton's Factory	.....
Floyd & Co.	Eureka.
John Grossman	Winneconne.
Winchester, C. F.	Winchester.
Vineland, C. F.	Vineland.

[1] Butter and cheese.

COST OF ENSILAGE AT BLUE HILL FARM, 1881, MR. J. W. WOLCOTT, BOSTON, PROPRIETOR.

(From Report of Ensilage Congress, New York Plow Co., New York.)

Planting, June 7 to 29, 1881.	Lot 4 acres, rye before corn, 15 cords manure to acre, charge ½ to crop.	Lot 1 33-100a, rye before corn, 7 cords manure to acre, charge ⅓ to crop.	Lot of 233-100a, bet. cabbages, 15 cords manure to acre, charge ¼ to crop.	Lot 2 20-100 acres, green sward not *manured.*	Lot 9 78-100a, rye before corn, 7 cords manure to acre, charge ½ to crop.	Lot 4 60-100a, rye before corn, 10 cords manure to acre, charge ½ to crop.	Lot 5 46-100a, rye before corn, 10 cords manure to acre, charge ½ to crop.	Lot 3 73-100a potatoes in 1880, 10 cords manure to acre, charge ½ to crop.	Total acres, 33 32-100.
Cutting, Aug. 31 to Sept 20.	Yield, 60 tons, average 15 tons.	Yield, 27 tons, average 20 tons.	Yield, 29 1245-2000 tons, average 12 x tons.	Yield. 34 145-2000 tons, average 15 x tons.	Yield. 110 860-2000 tons, average 10 x tons.	Yield, 88 350-2000 tons, average 19 x tons.	Yield, 60 650-2000 tons, average 12 x tons.	Yield, 52 630-2000 tons, average 13 x tons.	Total Yield, 461 188-2000 Tons. Av'r'ge Yield, 13 1727-2000 Tons.
Plowing, $1.50 acre ...	$6 00	$2 00	.....	$5 25	$14 75	$7 00	$15 50	$4 00	
Harrowing, 50c. acre..	2 00	65	.....	2 00	4 75	2 50	5 80	1 25	
Manuring, $2 acre	8 00	2 65	.....	.....	19 00	6 00	7 50	12 00	
Manure, $4 cord	120 00	12 00	$33 45	.....	136 92	92 00	109 00	75 00	
Seed, $1.50 acre.....	6 00	2 00	3 37	3 50	14 75	7 00	5 50	6 00	
Planting, 75c. acre....	3 00	1 00	1 68	1 65	7 35	3 00	5 00	2 75	
Fertilizer, $5 acre.....	20 00	6 75	11 25	12 42	47 50	23 75	23 20	18 00	
Smoothing harrow, two times, 60c acre.....	2 40	90	.....	.....	3 60	2 80	2 40	2 00	
Cultivator, 75c acre...	3 00	.....	1 50	1 50	.....	.....	.....	1 85	
Horse hoe, 75c acre ..	1 80	60	1 85	75	.....	.....	5 00	1 70	
Cost in field.....	172 20	28 55	53 10	27 07	248 62	144 05	178 90	124 55	Total, $977.04.
Cutting up	7 50	3 35	3 75	4 25	12 50	11 25	7 50	7 50	
Drawing in.....	8 40	3 75	4 20	4 75	20 50	22 60	9 75	9 75	
Packing	7 50	3 35	3 75	4 25	12 50	11 25	7 50	10 70	
Cost in silo	195 60	39 00	64 80	40 35	294 12	189 15	203 65	152 50	Total, $1,179.14, not inc. int. on land.

Average cost per ton, in field, $2.11. To put in silo, 44c. In silo, $2.25 per ton. Labor, charged 10c. per hour for each man or horse. Land worth $100 acre.

REPORT OF ALFRED A. REED, ORIENTAL MILLS, R. I., ON FEEDING VALUE OF ENSILAGE.

(Town Report of Ensilage Congress, New York Plow Company, New York)

NAME.	Grass. November 9th. Weight.	Milk from October 2d to November 9th.	Average pounds of milk per day.	Corn ensilage. November 28th. Weight.	Milk from November 10th to November 28th.	Average pounds of milk per day.	Gain or loss of milk.	Gain or loss in weight.	Hay. December 17th. Weight.	Milk from November 29th to December 17th.	Average pounds of milk per day.	Gain or loss of milk.	Gain or loss in weight.	Sorghum. January 9th. Weight.	Milk from December 18th to January 1st.	Average pounds of milk per day.	Gain or loss of milk.	Gain or loss in weight.
	lbs.	lbs.	lbs.	lbs.	lbs.				lbs.	lbs.			lbs.	lbs.	lbs.			
Dinah.....	972½	158	8.31	1,020	158	8.31	Same.	47½ G	1,010	140¾	7.37	.94 L	10 L	1,010	163½	7.07	.30 L	Same.
Holstina ...	1,007½	374½	19.72	1,035	397	21.00	1.28 G	27 G	1,060	344¾	18.10	2.90 L	25 G	1,000	434	18.87	.77 G	60 L
Baby, 2d . .	777	321½	16.9	815	331½	17.42	.52 G	38 G	840	281½	14.79	2.63 L	25 G	757½	341	14.82	.03 G	82½ L
Holstina, 2d.	675	132½	18 15	710	156	17.73	.42 L	35 G	717½	133	16.79	.94 L	7½ G	657½	362	15.73	1.06 L	60 L
Dutch Girl .	997½	223	6.94	1,045	231	8.21	1.27 G	47½ G	1,075	189	7.00	1.21 L	30 G	1,045	142	5.73	1.27 L	30 L
Brown Girl.	653	344	11.73	682½	337½	12.16	.43 G	29½ G	667½	299½	9.94	2.22 L	15 L	652½	241	10.47	.53 G	15 L

SHEBOYGAN COUNTY DAIRY BOARD OF TRADE.

Organized, 1873. *Sale days every Tuesday. Sheboygan Falls, Wisconsin.*

At a mass meeting of dairymen of Sheboygan and adjoining counties, held in the court house in the city of Sheboygan, Friday, March 31, 1882, the Sheboygan Falls Dairy Board of Trade and Plymouth Dairy Board of Trade were merged into one, and a new organization formed under the laws of the state, to be known as the Sheboygan County Dairy Board of Trade, with weekly meetings at Sheboygan Falls.

The officers are:

President — Enos Eastman, Plymouth.

Vice-President — Chester Hazen, Brandon.

Secretary — W. C. Thomas, Sheboygan Falls.

Treasurer — F. A. Streblow, Plymouth.

Directors — S. Hollensteiner, Chairman, Rhine; Carl Reich, Wilson; Hiram Smith, Sheboygan Falls.

The Sheboygan Falls Dairy Board of Trade was established in this village in 1873, with Hon. Hiram Smith as president and Hon. A. D. DeLand as secretary. The first sale day was held on Friday, May 22d of that year, when there were five factories represented, Hiram Smith offering fifty boxes, Seth Conover fifty, Pierce and Strong one hundred, Mather Bros. fifty and A. G. Dye sixty boxes, total, three hundred and ten boxes; one hundred and fifty of which were sold to Davis Bros. of Chicago at eleven and one-half cents. During the first two years of the existence of this board, most of the cheese was shipped to Chicago or New York on consignment, but the claims for "short weights," "off stock," etc. were so numerous that manufacturers here kicked severely against that method of doing business, and therefore established a system of selling their goods, to be paid for when delivered at the railroad station or dock, where, also, the weights were to be tested. Since that time the business has almost entirely been conducted on that principle, as there are from eight to fifteen buyers ready to buy each sale day, representing London, Liverpool, Glasgow, Chicago, New York, Boston, St. Louis, New Orleans and other southern

markets, and no cheese goes on commission, unless it is some poor and off stock.

Sheboygan county is peculiarly adapted to dairying pursuits. The abundance of water, and the numerous and excellent tracts of grass bank, have tended to point the attention of farmers in that direction, until the manufacture of cheese has become the all important feature in the agricultural achievements of the county. The first export of cheese from Sheboygan county occurred in the fall of 1858, and consisted of a lot of fifty-eight cheese; sold in Chicago by John J. Smith, who also established the first cheese factory in the county.

The dairy interests of Sheboygan county have been continually on the increase ever since the organization of this Dairy Board of Trade, and new factories have been erected every year; last year they numbered ninety-six in this county, and produced a total of about eight million pounds of cheese, which sold at an average of about eleven cents per pound; seven cents being the lowest and thirteen cents the highest price paid for Cheddars, and fourteen cents the highest paid for Young Americas here. The total value of Sheboygan county's cheese product last year, then, was about $900,000. Besides the factories of this county, many factories from adjoining counties are represented on this board of trade, and their sales will swell the amount of money disbursed for cheese by banks in this county last year to about *one million dollars.*

The banks through which this business is done are: the Dairymen's Bank and Falls Bank, Sheboygan Falls, Wis., the German Bank and Bank of Sheboygan, Sheboygan, Wis., and the Bank of Plymouth, Plymouth, Wis.

All the factories in the county made full cream cheese last year except four, and two of those made one vat of full cream cheese. This year, however, the present indications are that three to five more of the old full cream factories will commence making creamery butter and skim cheese.

W. C. THOMAS,
Secretary.

JEFFERSON COUNTY DAIRY BOARD OF TRADE.

Sale day on Wednesday of each week.

This Board of Trade was organized in 1880 by uniting the Lake Mills Board, the Watertown Board and the Jefferson County Board in one organization, the united board taking the name of the Jefferson County Dairy Board of Trade, holding its meetings at Jefferson. Its present officers are:

President — S. Brown, Jefferson.

Vice-Presidents — E. B. Fargo, Lake Mills; R. F. McCutchen, Cold Spring.

Treasurer — Yale Henry, Jefferson.

Secretary — W. D. Hoard, Fort Atkinson.

Assistant Secretary — C. T. Carr, Jefferson.

During the year 1881 there was offered at the regular meetings of the board nearly thirteen thousand boxes of cheese, about one quarter of what is annually produced in the county. So far no butter sales have been effected on the board, for the reason that the butter makers of this county market their butter mainly by consignment direct to Chicago, New York and Boston.

W. D. HOARD,
Secretary.

SOUTHERN WISCONSIN DAIRY BOARD OF TRADE.

Organized 1881. *Located at Elkhorn, Wis.*

President — David L. Flack, Geneva.

Vice President — Stephen Favill, Delavan.

Treasurer — W. D. Lyon, Elkhorn.

Secretary — W. H. Morrison, Elkhorn.

Elkhorn is situated fifty miles southwest of Milwaukee and eighty miles northwest of Chicago, on the Southwestern Division of the Chicago, Milwaukee and St. Paul Railroad. It is the county seat of Walworth county. As near as can be estimated, has thirteen thousand cows, producing annually nearly half a million dollars' worth of butter and cheese.

The sales that were reported the past year were as follows: Butter, two hundred and fifty-six thousand seven hundred and eighty-eight pounds, $64,008; cheese, four hundred and twenty-four thousand pounds, $42,786; making the total sales for the first year's existence of the board some over $100,000. Probably not over one-half of the sales made by the membership were reported. It is perfectly safe to estimate that if all the dairy products of the country were disposed of through the board that there would be a gain annually of $50,000, that otherwise goes into the hands of speculators.

Sale day every other Wednesday.

W. H. MORRISON,
Secretary.

ANNUAL REPORT OF THE ELGIN BOARD OF TRADE.

The year that has just closed has been one of prosperity to dairymen, as well as to those engaged in other pursuits, and a review of the transactions on the Elgin Board of Trade during the year 1881 shows a larger volume of business than was ever before done. The prices have been well maintained, and the products have been sold off closer than usual. Several booms were experienced during the year, of greater or less duration, but the steadiness with which prices were adhered to, and the general desire on the part of manufacturers to sell their goods when there were buyers present, added largely to the aggregates, and thus shows the general extent of the business. . . .

The year 1881 opened with a very much larger amount of cheese in the hands of factorymen than they held at the close, with prices rather lower for the season. At the first meeting in January sales of cheese were made at seven and one-half to eight cents, with a probable average of seven and three-quarter cents per pound.

The price of butter held steadily through the month at thirty-two cents, with light regular sales, apparently indicating that the demand was not very good. One reason for this may be found in the fact that so much fraudulent stuff was being put upon the market elsewhere that the sales of genuine butter were restricted.

Cheese took an upward tendency about the middle of the month, and so continued until the 10th of May, when prices again receded.

During a portion of that time cheese frequently sold at ten and eleven cents. Butter continued steady at thirty-two for a number of weeks, until April 19th, when it dropped to thirty, and then its course was downward until June 7th, when it sold at eighteen and one-half to nineteen. This was the lowest point reached by butter during the year. It then again advanced, slowly for a time, and then again rapidly, until December 13, when it reached forty-five cents, which was the highest price attained on the board for many years. After that date the price receded until the close of the year, when it rested at forty to forty-two cents.

There were no regular sales of cheese reported during the meetings held May 17th, May 24th, May 31st and June 7th. On the 14th of June, cheese sold at five to eight cents, and from that date it advanced in price until September 13, when 1,685 boxes were sold at twelve to twelve and one-half cents. This was the highest price reached by cheese during the year, with the exception of one sale of fifty boxes full creams, at thirteen cents, October 4th.

From the table published below it will be seen that the total transactions are far in excess of what they ever were before in any one year, and in number of boxes of cheese and aggregate value of butter and cheese are greatly in excess of the sales of the Utica, New York, for the year 1881, or of the Little Falls Boards for the same period. At the former the sales were two hundred and forty thousand four hundred and seventy-six boxes, aggregating fourteen million four hundred and forty-four thousand seven hundred and sixty pounds, and sold for $1,615,184.17. At Little Falls, the sales were two hundred and fifty-three thousand and twenty-five boxes, aggregating fifteen million one hundred and eighty-one thousand and five hundred pounds, and sold for $1,653,766.34. It will be observed that the cheese sold on the Elgin Board exceeded either of the above in boxes, but fell short two to three millions of pounds.

The accompanying table shows the sales by months on the board:

MONTHS.	Box's cheese sold.	Pounds.	Av. price.	Pounds of butter sold.	Av. price.	Total sales
January	32,992	1,471,188	8¾	278,473	32	$189,976.41
February	21,724	817,457	10	249,822	32½	162,469.14
March	22,765	914,920	9 1-5	374,680	32 2-5	227,493.22
April	19,007	667,653	8⅓	259,371	30	149,641.81
May	21,413	805,348	8	304,800	22 1-5	130,997.00
June	29,105	1,280,119	6⅓	407,683	20	172,998.32
July	18,625	805,329	7	262,597	22	111,164.14
August	26,417	1,096,698	9	399,961	27	194,557.79
September	24,082	872,448	11¾	266,297	33	198,947.28
October	25,037	961,086	10¾	379,307	34¾	239,427.40
November	12,844	480,622	9 1-5	264,559	37 2-5	143,049.75
December	33 673	1,254,657	8½	430,079	42	289,877.78
Totals	287,664	11,327,525	9	3,868,629	30⅓	$2,219,600.04

By comparison we find that the average price of cheese through the year has been nine cents, and butter thirty and one-third cents. The highest price paid for cheese at Utica, New York, was thirteen and five-eighths cents; at Little Falls, thirteen cents; at Elgin, thirteen cents. In both cases the cheese was full cream. The lowest price paid at Utica was eight and one half cents; at Little Falls, seven; at Elgin, five; and the Elgin product was part skims, while the other were full creams. These comparisons are useful in that they show that while comparatively a small portion of Illinois is engaged in dairying, and that while a large portion of of the milk from that section is used as an article of food in its natural condition, Illinois holds a proud rank as a butter and cheese producing state.

COL. R. P. MCGLINCY,
Secretary.

BUTTER AND CHEESE.

Current Prices for each Week during the Year 1881.

(From the Twenty-fourth Annual Report of the Trade and Commerce of Chicago.)

WEEK ENDING	BUTTER.		CHEESE.
	Good to choice creamery per lb.	Medium to fine dairy, per lb.	Good to prime, per lb.
Jan. 8	26@30	18@23	8 @12
Jan. 15	26@30	18@23	9 @12½
Jan. 22	26@30	18@23	9 @12½
Jan. 29	28@32	20@25	10 @13
Feb. 5	28@31	18@25	10½@13½
Feb. 12	27@31	18@25	10½@13½
Feb. 19	27@31	18@25	10½@14
Feb. 26	27@31	18@25	10 @14
Mar. 5	28@32	20@27	10 @14
Mar. 12	28@32	20@27	10 @14
Mar. 19	27@32	20@25	9½@13½
Mar. 26	25@30	18@25	9½@13½
Apr. 2	25@30	18@25	9 @13½
Apr. 9	25@30	18@24	9 @13½
Apr. 15	25@30	18@24	9½@14
Apr. 23	22@27	17@22	9½@14
Apr. 30	20@25	15@20	9½@14
May 7	20@23	15@20	9 @13½
May 14	18@22	13@18	8½@13½
May 21	19@22	14@18	7 @13
May 28	18@21	14@17	5½@11
June 4	16@19	13@16	5½@ 8½
June 11	16@20	14@16	5 @ 8½
June 18	17@21	14@17	6 @ 8¾
June 25	19@21	14@17	7 @ 9
July 2	19@22	14@17	6½@ 8½
July 9	19@22	14@17	6½@ 9
July 16	19@22	14@17	7½@10
July 23	19@22	14@17	7 @10
July 30	19@24	15@18	7 @10
Aug. 6	20@14	17@20	7 @ 9½
Aug. 13	22@25	17@20	8 @10
Aug. 20	23@27	17@21	9 @11
Aug. 27	25@27	18@22	9 @11
Sept. 3	25@29	20@23	10 @12
Sept. 10	26@30	20@25	10 @12½
Sept. 17	28@31	20@25	10 @13
Sept. 24	28@31	20@26	10½@13
Oct. 1	28@31	22@27	10½@13
Oct. 8	28@31	22@27	10 @13
Oct. 15	28@31	22@26	9½@13

Butter and Cheese — Current Prices for each Week during the Year 1881 — con.

WEEK ENDING	BUTTER.		CHEESE.
	Good to choice creamery per lb.	Medium to fine dairy, per lb.	Good to prime, per lb.
Oct. 22	29@33	22@27	9½@13
Oct. 29	30@35	24@28	9½@13
Nov. 5	30@35	24@28	10 @13
Nov. 12	30@35	24@28	10 @13
Nov. 19	30@36	24@30	9½@12½
Nov 26	30@37	24@30	9½@12½
Dec. 3	30@37	24@30	9½@12½
Dec. 10	32@37	25@30	9 @12½
Dec. 17	32@37	25@30	9 @12
Dec. 24	32@37	25@30	9 @12
Dec. 31	32@37	25@30	9 @12

EXPORTS OF BUTTER AND CHEESE.

Exports of Butter and Cheese by Countries during the year 1881, *as obtained from the Bureau of Statistics, Washington.*

COUNTRIES TO WHICH EXPORTED.	BUTTER.		CHEESE.	
	Pounds.	Dollars.	Pounds.	Dollars.
Argentine Republic	1,000	279	140	27
Belgium	126,000	23,378	224	18
Brazil	425,176	100,073	6,447	1,046
Central American States	31,393	8,126	22,477	3,252
Chili	2,802	805	1,165	169
China	24,384	7,834	26,378	4,164
Denmark	98,763	20,951	.....	.....
Danish West Indies	134,508	23,888	26,672	2,999
France	311,427	61,920	21,566	2,168
French West Indies	82,957	14,448	7,246	790
French Guiana	1,008	281	.....	.....
Miquilon, Langley and St. Pierre Islands	96,991	17,128	.....	.....
Franco Possessions in Africa and adjacent Islands	1,224	452	.....	.....
French Possessions, all other	13,740	3,844	4,565	1,053
Germany	1,760,197	279,439	134,100	11,539
England	17,147,428	3,462,868	119,903,552	13,383,288
Scotland	6,344,382	1,238,056	21,111,543	2,206,102
Ireland	.....	.....	107,300	14,500
Gibraltar	10,337	1,619	985	127
Nova Scotia, New Brunswick and Prince Edward Island	30,784	4,913	250	29
Quebec, Ontario, Manitoba, and the N. W. Territory	130,257	25,790	5,196,977	552,129
British Columbia	113,557	32,093	37,442	5,721
Newfoundland and Labrador	452,348	70,096	2,787	272
British West Indies	1,661,399	308,653	495,086	67,653
British Guiana	88,716	17,197	162,588	19,103
British Honduras	63,776	13,521	22,890	2,394
British East Indies	.....	.....	231	36
Hong Kong	7,061	2,304	26,954	4,397
British Possessions in Africa and adjacent Islands	73,079	17,361	2,799	447
British Possessions in Australasia	749	162	.....	.....
Hawaiian Islands	104,863	29,442	31,404	4,524
Hayti	426,595	86,782	129,055	19,824
Italy	103	19	970	110
Japan	106,306	28,060	26,808	4,515
Liberia	1,920	656	927	152
Mexico	94,267	20,949	45,522	6,763
Netherlands	21,032	3,739	663	96
Dutch West Indies	152,400	32,238	9,863	1,310
Dutch Guiana	67,272	12,838	.....	.....

Exports of Butter and Cheese for 1881 — continued.

COUNTRIES TO WHICH EXPORTED	BUTTER.		CHEESE.	
	Pounds.	Dollars.	Pounds.	Dollars.
Dutch East Indies	300	70	250	30
Portugal	80	20	.....	.....
Azore, Maderia, and Cape Verde Islands	984	320	100	8
Russia, Asiatic	76,645	20,427	1,482	245
San Domingo	94,065	21,189	34,782	5,278
Spain	200	50	1,822	319
Cuba	306,950	54,515	71,555	12,113
Porto Rico	245,646	39,296	247,085	30,811
Spanish Possessions in Africa and adjacent Islands	602	162	900	143
Sweden and Norway	1,619	291	174	26
Turkey in Asia	.....	.....	1,630	132
United States of Colombia	269,883	65,105	47,117	7,063
Uruguay	12,086	2,798	2,250	385
Venezuela	338,831	78,986	17,158	2,587
All other countries and ports in South America, n. e. s.	739	216	450	75
All other countries and ports in Africa, n. e. s.	.....	.....	110	17
All other islands and ports, n. e. s.	1,669	377	1,773	299
Totals	31,560,500	6,256,024	147,995,614	16,380,248

EXPORTS OF BUTTER.

(American Dairyman, April 6, 1882)

The following are the exports of butter from New York to the under-mentioned ports since May 1, 1881 (beginning of the trade year), and for the week ending March 5, 1882, and for the same time last year:

	This week.	Total.	Same time last year.
Liverpool	1,000	6,230,920	10,840,713
London	...	477,603	945,400
Glasgow	15,000	3,136,560	6,594,844
Bristol	...	864,000	1,781,602
Cardiff	...	357,000	972,089
Hull	...	63,600	111,980
Newcastle	...	84,200	174,026
Hamburg	...	345,391	340,520
Havre	...	674,510	1,252,301
Bremen	...	684,209	1,048,247
Other ports	65,850	5,865,338	4,217,777
Totals	71,850	18,204,756	28,280,508

EXPORTS OF CHEESE.

The following are the exports of cheese from New York to the under-mentioned ports since May 1, 1881 (beginning of the trade year), and for the week ending March 5, 1882, and for the same time last year:

	This week.	Total.	Same time last year.
Liverpool	802,125	78,458,568	82,432,860
London	37,000	17,736,568	13,125,656
Glasgow	73,000	10,724,479	19,317,780
Bristol	78,608	8,489,733	12,078,661
Cardiff	...	8,506,705	1,277,721
Hull	...	1,336,013	375,841
Newcastle	...	914,239	603,412
Havre	...	148,670	121,145
Hamburg	...	978,524	119,373
Bremen	...	1,159,226	580,043
Other ports	30,450	3,577,258	2,784,511
Totals	1,211,183	134,356,625	132,817,553

EXPORTS OF OLEOMARGARINE.

The following are the exports of oleomargarine from New York to the under-mentioned ports since May 1, 1881, and for the week ending March 5, 1882, and for the same time last year:

	This week.	Total.	Same time last year.
Liverpool		451,774	865,790
London		13,165	90,150
Glasgow		1,641,553	1,513,360
Bristol		47,080	190,150
Rotterdam		5,856,667	6,564,349
Antwerp		1,447,665	554,450
Hamburg		25,430	102,125
Bremen		45,850	84,600
Other ports		1,149,335	623,388
Totals		10,478,519	10,588,362

NUMBER OF COWS IN WISCONSIN, ILLINOIS, IOWA AND MINNESOTA, AS TAKEN FROM THE CENSUS REPORTS OF 1870 AND 1880.

STATES.	1870.	1880.	Increase — per cent.
Wisconsin	308,377	478,374	55
Illinois	640,321	865,913	35
Iowa	369,811	854,187	131
Minnesota	121,467	275,545	121

Average cash production per cow in the four states, 1870, at $25 equals $35,999,400.

Average cash production per cow in the four states, 1880, at $35, equals $86,590,665.

Estimates by W. D. Hoard, President Northern Wisconsin Dairyman's Association.