Thirteenth annual report of the Wisconsin Dairymen's Association : held at Arcadia, Wis., February 24, 25 and 26, 1885. Report of the proceedings, annual address of the president, and interesting essa...

Wisconsin Dairymen's Association
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THIRTEENTH ANNUAL REPORT

OF THE

WISCONSIN

DAIRYMEN'S ASSOCIATION,

HELD AT

Arcadia, Wis., February 24, 25 and 26, 1885.

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.:
DEMOCRAT PRINTING CO., STATE PRINTERS.
1885.

OFFICE OF THE SECRETARY,
Wisconsin Dairymen's Association.
FORT ATKINSON, April 20, 1885.

To His Excellency, J. M. RUSK,
Governor of the State of Wisconsin:

I have the honor to submit the Thirteenth Annual Report of the Wisconsin Dairymen's Association, showing the receipts and disbursements the past year, also papers relating to the dairy interest, read at the Annual Convention held at Arcadia, Trempealeau county.

Respectfully submitted,

D. W. CURTIS,
Secretary.

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OFFICERS, 1885.

PRESIDENT.

W. H. MORRISON,

ELKHORN, WALWORTH COUNTY.

VICE-PRESIDENTS.

CHESTER HAZEN, LADOGA, FOND DU LAC COUNTY.
President Wisconsin Dairymen's Association from 1872–4.

HIRAM SMITH, SHEBOYGAN FALLS, SHEBOYGAN COUNTY.
President Wisconsin Dairymen's Association from 1875–6.

A. D. DELAND, SHEBOYGAN FALLS, SHEBOYGAN COUNTY.
President Wisconsin Dairymen's Association, 1877.

H. F. DOUSMAN, WATERVILLE, WAUKESHA COUNTY.
President Wisconsin Dairymen's Association, 1878.

Z. G. SIMMONS, KENOSHA, KENOSHA COUNTY.
President Wisconsin Dairymen's Association, 1879.

STEPHEN FAVILL, DELAVAN, WALWORTH COUNTY.
President Wisconsin Dairymen's Association, 1880.

C. R. BEACH, WHITEWATER, WALWORTH COUNTY.
President Wisconsin Dairymen's Association from 1881–2.

SECRETARY.

D. W. CURTIS,

FORT ATKINSON, JEFFERSON COUNTY.

TREASURER.

H. K. LOOMIS,

SHEBOYGAN FALLS, SHEBOYGAN COUNTY.

ARTICLES OF ASSOCIATION.

[*Adopted February* 15, 1872.]

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

ARTICLE II. The officers of this association shall consist of a president, secretary and treasurer.

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

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

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

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

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

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

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

ARTICLE 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.

LIST OF MEMBERS, 1885.

A.

Arnold, A. A., Galesville.
Alma Creamery Ass'n, Alma, Wis.
Austin, G. A., Neilsville, Wis.
Acerman, M., Acadia, Wis.
Ashton, Robert, Arcadia, Wis.
Allen, F. C., Eau Claire, Wis.
Andrews, N. S., Dubuque, Ia.

B.

Bach, Nick, Arcadia, Wis.
Bishop, Collins, Arcadia, Wis.
Bigham, John, Arcadia, Wis.
Bouch, John L., Arcadia, Wis.
Bowen, L. R., Bangor, Wis.
Busy, O. A., Arcadia, Wis.
Bristol & Orvis, Oakfield, Wis.
Brigham, Daniel, Arcadia, Wis.
Bamen, Wm., Arcadia, Wis.
Burt, Robert, Arcadia, Wis.
Boheri, Fred, Fountain City, Wis.
Beech, C. R., Whitewater, Wis.
Bohmstedt, John, Trempealeau, Wis.
Rennett, Wm. F., Arcadia, Wis.
Blunz, Wm. F., Arcadia, Wis.
Briggs, Harvey, Arcadia, Wis.
Boist, Virgil, Independence, Ia.
Barry, Thos., Arcadia, Wis.

C.

Cummings, Wm., Trempealeau, Wis.
Comstock, Adam, Arcadia, Wis.
Cyceska, Joseph, Arcadia, Wis.
Coromer, P., Arcadia, Wis.
Celler, F. A., Arcadia, Wis.
Campbell, W. E., Humbird, Wis.
Carswell, F. E., Lone Rock, Wis.
Clark, E. F., Galesville, Wis.
Cooper & Newell, Whitewater, Wis.
Clark & Reynolds, Hebron, Wis.
Clark, Isaac, Galesville, Wis.
Catlin, John, Greenville, Wis.
Courtney, Thos., Glencoe, Wis.
Cowie, Geo., Glencoe, Wis.
Chappel, D. D., Galesville, Wis.
Curtis, T. D., Syracuse, N. Y.
Cilley, D. C., Independence, Ia.
Cook, C. H., Independence, Ia.
Clements, Rev. C., Montana.
Crandall, Albert, East Pipin, Wis.
Curtis, D. W., Ft. Atkinson, Wis.

D.

Dixon, H. L., Arcadia, Wis.
Dressendoffic, John, Arcadia, Wis.
Dewey, D. C., Arcadia, Wis.
Davis, C. W., Ithica, Wis.
Decker, A. J., Fond du Lac, Wis.
Dusenberry, S., Independence, Ia.
Darisch, John, Arcadia, Wis.

E.

Englehardt & Doelle, Fountain City.
Eucksom, John O., Arcadia, Wis.

F.

Foster, C. M., Arcadia, Wis.
Fish, H. Z., Richland Center, Wis.
Fargo & Co., F. B., Lake Mills, Wis.
Fish, H. E., Walworth, Wis.
Field, S., Osseo, Wis.
Fentig, J. M., Arcadia, Wis.
Florine, J., Waumudu, Wis.
Farrand, C. W., Galesville, Wis.
Favill, Stephen, Delavan, Wis.
Fereman, A., Arcadia, Wis.
Farber, Wm. J., Arcadia, Wis.

G.

Grossman, Frank, Arcadia, Wis.
Gillespie, J., Arcadia, Wis.
Gilbert, G. O., Blair, Wis.
Gorton, J. B., Arcadia, Wis.
Gibson, W. H., Centerville, Wis.
Gordon, Arthur J., Arcadia, Wis.
Gibson, Chas., Lind, Wis.
Gabney, James, Arcadia, Wis.
Ganz, J. C., Waumudu, Wis.

H.

Higby, J. M., Arcadia, Wis.
Higby, Edward, Arcadia, Wis.
Hartman, J. Philip, Arcadia, Wis.
Hunner, L. P., Alma, Wis.
Hill, Geo. W., Editor *Live Stock Journal*, Chicago, Ill.
Hoard, W. D., Ft. Atkinson, Wis.
Holms, C. F., Trempealeau, Wis.
Henry, Robert, Anchorage, Wis.
Henry, Prof. W. A., Madison, Wis.
Haggerty, J. A., Mt. Sterling, Wis.
Hoyestead, K. K., Ettrick, Wis.
Henaid, N. T., Ettrick, Wis.
Hartman, H., Arcadia, Wis.
Hoffie, J. A., Arcadia, Wis.
Henneman, Rev. W., Alma, Wis.
Hocomb, D. L., Arcadia, Wis.
Hare, Joseph, Arcadia, Wis.
Hobart, L. D., Alma Center, Wis.
Haigh, John, Alma Center, Wis.
Hensel, A. W., Hume, Wis.
Hunner, L. P., Alma, Wis.
Hazen, Chester, Brandon, Wis.
Harper, Geo., Anchorage, Wis.
Hain, Hildebrandt & Parker, Fennimore, Wis.
Haney & Campbell, Bellevue, Iowa.

I.

Inglish, M. Arcadia, Wis.

J.

Jackson, Walter, Arcadia, Wis.
Jones, T. L., Hellena, Wis.

K.

Kellogg, Joseph, Arcadia, Wis.
Kendall, A. J., Merrillan, Wis.
Kampa, Lewis, Arcadia, Wis.
Kurtz, G., Alma, Wis.
Koenig, P. J., Arcadia, Wis.
Kerchler, J., Waumondee, Wis.
Kindschey, J., Montana, Wis.
Kindschey, Jr., C., Montana, Wis.
Kundsen, S., Arcadia, Wis.
Kindschey, Geo., Montana Wis.
Kulig, Hyacinth, Indep'dence, Wis.
Kelly, Mrs. R. Howard, 31 Major Block, Chicago, Ill.

L.

Loomis, H. K., Sheboygan Falls.
Lewis, J. D., Arcadia, Wis.

M.

Morrison, W. H., Elkhorn, Wis.
Morley, N. W., Baraboo, Wis.
McCollum, J. L., Twin Bluffs, Wis.
Mower, John, Arcadia, Wis.
Mower, Emile, Arcadia, Wis.
Menger, J. A., Fountain City,
Murphy, A. L., Hortonville, Wis.
Mills, L. B., Greenville, Wis.
Mack, C. C., Anchorage, Wis.
Massull, W. P., Arcadia, Wis.
Meyer, N. G., Arcadia, Wis.
Miller, Henry, T., Arcadia, Wis.
Maquenly, J. W., Arcadia, Wis.
Mower, D., Arcadia, Wis.
Markham, G. H., Indep'dence, Wis.
Matterson, Seward, Arcadia, Wis.
More, Wm. B., Arcadia, Wis.
Merwin, Wm., Trempealeau, Wis,
Mabie, E., Independence, Wis.
Marks, Chas., Montana, Wis.
Manley, C., Arcadia, Wis.
Meyer, Peter, Arcadia, Wis.
Mills James, Guleph, Canada.
Moyogihih, Lewis, Arcadia, Wis.
Morgan, Miss Jessie R., Arcadia, W.

N.

Newcomb, Isaac, Arcadia, Wis.
Newcomb, Harold, Arcadia, Wis.

O.

Ochsner, K., Waumandee, Wis.
O'Brien, J. O., Arcadia, Wis.

P.

Pickering, Chas., Galesville, Wis.
Perkins, C. E., Arcadia, Wis.
Perrott, Lewis, Greenville, Wis.
Proctor, Richard, Arcadia, Wis.
Peterson, M. O., Arcadia, Wis.
Pike, Andy, Arcadia, Wis.
Pierce, Henry, Arcadia, Wis.
Prate, D. J., Independence, Wis.
Peterson, O., Arcadia, Wis.

R.

Rhodes, Joshua, Trempealeau, Wis.
Radell, J. C., Arcadia, Wis.
Rogers, Alferd, Osseo, Wis.
Rathbone, Albert, Arcadia, Wis.
Rupp, C. C., Montana, Wis.
Racine Ref'ig. Co., Racine, Wis.
Rosenquist, A. M., River Falls, Wis.
Rickford & Lamson, Prairie du Sac.

Ready, F., Montana, Wis.
Rhodes, Mrs. J., Caledonia, Wis.

S.

Smith, Hiram, Sheboygan F'ls, Wis.
Smith, J. A., Cedarburg, Wis.
Soendon, S. H., Ettrick, Wis.
Shane, D., Bangor, Wis.
Sehiback, N., Arcadia, Wis.
Sabatta, G., Arcadia, Wis.
Simpson, H. E., Home, Wis.
Sarles, Antone, Arcadia, Wis.
Simpson, Thomas, Arcadia, Wis.
Schuster, W. H., Fount'n City, Wis.
Scott, J. T., Richland Center, Wis.
Senty, Geo., Montana, Wis.
Sprecher, John, Independence, Wis.
Shaftner, J., Independence, Wis.
Sneller, Florence, Montana, Wis.
Suttie, W. J., Trempealeau, Wis.

T.

Tinton, John, Arcadia, Wis.
Tarlen, Joseph, Arcadia, Wis.
Taft, James, Arcadia, Wis.
Trim, Wm., Galesville, Wis.
Thurston, Edson, Blair, Wis.
Tripp, S. H., Augusta, Wis.
Thomas, J. M., Dixon, Wis.
Taylor, J. S., Anchorage, Wis.
Taylor, Albert, Galesville, Wis.
Thomas, James, H., Mendovia, Wis.
Thompson, W. B., Galesville, Wis.
Tibbets, E., Arcadia, Wis.

U.

Ulrick, Wm., Wamadell, Wis.

V.

Vangarten, S. H., Schlemville, Wis.

W.

Webb, George, Arcadia, Wis.
Wood, D., Whitehall, Wis.
Williams, W. H., Eau Claire, Wis.
Wintenberga, Henry, Arcadia, Wis.
Whiffin, John, Arcadia, Wis.

Z.

Zeigenwied, Adam, Glenco, Wis.
Zeller, Philip, Alma, Wis.
Zeller, Frank, Arcadia, Wis.

THIRTEENTH ANNUAL MEETING

OF THE

WISCONSIN DAIRYMEN'S ASSOCIATION.

PROGRAMME.

TUESDAY.

11 A. M. — Entry of Butter and Cheese and articles for exhibition.

2 P. M. — Organization of Convention.

Address of Welcome by Hon. J. B. Gorton, Arcadia.

Response by W. D. Hoard, Fort Atkinson.

Opening Address by President Morrison.

Appointment of Committees.

Report of Secretary and Treasurer.

"What Shall be Done to Promote Better Dairy Education Among Our Farmers?"—J. D. Lewis, Arcadia.

This subject is certainly one of great interest to every one who keeps a cow, and Mr. Lewis will no doubt be able to point out the right road to travel.

"What Shall We Do With the Skim Milk?"—Stephen Favill, ex-President Wisconsin Dairymen's Association, Delavan.

Mr. Favill is one of the pioneers in the cause of Wisconsin Dairying, and is still in the harness. What he has to say will be based on many years of valuable thonght, observation and practice.

"The Value of Pure Milk."—H. Z. Fish, Richland Center.

Mr. Fish is the enterprising proprietor of several Cheese Factories, and has had thorough training in both New York and Wisconsin. He will speak of what he knows.

"Is it Desirable to Establish a Dairy School?"— C. R. Beach, Ex-President Wisconsin Dairymen's Association, Whitewater.

Mr. Beach is one of Wisconsin's closest thinkers on agricultural topics. His own success as a farmer and dairyman is sufficient proof of the value of a sound farm education, and what he has to say should be weighed long and well by all who hear him.

"Our Necessities."—Hon. A. A. Arnold, President State Agricultural Society, Galesville.

Mr. Arnold will be able to speak as one having experience in the progress of the northwestern portion of the state. His thoughts cannot fail to have a general as well as local significance.

"Do Hard Times Give us the Right to Doubt the Profitable Results of Good Dairying?"—J. A. Smith, Dairy Editor Cedarburg "News," Cedarburg.

Well trained both in journalism and dairying, Mr. Smith will be able to present the "word and the deed" of this topic in a most instructive manner

"The Home Side of Farming"—Miss Jessie R. Morgan, Arcadia.

Miss Morgan will be able to show the cheery, bright spots in the daily farm life, which are not found in any other vocation.

"Don't Sell and go West, but Emigrate on your own Farm."—Hon. Hiram Smith, Ex-president Wisconsin Dairymen's Association, Sheboygan Falls.

A man like Mr. Smith, who can take 200 acres of land and make them support a larger number of cows, and pay a larger profit than one farmer in a thousand, can not fail to tell something worth hearing.

"Individual Differences in Dairy Cows."—Prof. W. A. Henry, State University, Madison.

Prof. Henry has given this topic much thought and experiment. It is these "differences" that go to make the sum of profit and loss. Every man who keeps a cow for else than fun, should be present and listen to the Professor.

"How Shall the Farmer Better his Condition."—C. H. Cooke, Dover, Buffalo Co.

This is a question always present in the pocket, if not in the herd, of the farmer. To solve it successfully means better homes, happier families, wiser farmers, and more prosperous communities. Mr. Cooke's ideas will no doubt prove a help in the right direction.

"The general Purpose Cow."—W. D. Hoard, President Northwestern Dairymen's Association, Fort Atkinson.

No man has studied better than Mr. Hoard, the value of a good cow, and what it is that creates that value. The claim so often set up that dairymen want a cow for her final value to the butcher, and that the "scrub" is as good as any other if only fed well, will be discussed without gloves.

"What Does the State Owe to the Agriculturist."—Hon. Chester Hazen, Brandon. Member of the Legislature.

Mr. Hazen's early identification with the dairy interests of the state,

and his prominence in agricultural matters for many years, has given him strong vantage ground from whence to view this important topic.

"Cheese Factories and Cheese Makers, as I find Them in Wisconsin."—T. D. Curtis, Syracuse, N. Y.

Mr. Curtis was employed part of the past season by the Wisconsin Dairymen's Association, to instruct cheese makers how to make a better article of cheese. Himself as a practical cheese maker, we shall enjoy in this adddress the rare felicity of "seeing ourselves as others see us."

WEDNESDAY EVENING.

Dairy Banquet and Sociable.

PREMIUMS OFFERED ON BUTTER AND CHEESE TO BE EXHIBITED DURING THE CONVENTION.

CLASS I.—PREMIUMS ON BUTTER.

The Association offers the following premiums on butter:

For the best tub or pail of butter	$10 00
For second best	5 00

CLASS II.—PRINT BUTTER.

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

CLASS III.—GRANULATED BUTTER.

For the best sample of granulated butter	$3 00
Second best	2 00

Granulated butter may be exhibited in fruit jars.

CLASS IV.

Geo. S. Hart & Co., produce commission merchants, 38 Pearl St., New York, offer a prize Silver Cup valued at $100, to the manufacturer of the finest quality of full cream 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 for 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 appropriate inscription. This cup is also enclosed in an elegant satin lined case.

It has been won by A. H. Wheaton, Auroraville, 1878; Olin & Clinton, Waukesha, 1879; W. S. Baker, Cold Spring, 1880; H. A. Conger & Son, Whitewater, 1881; August Klessing, Centerville, 1882; Marr & Dyer, Whitewater, 1883; and E. P. Ingalls, Milford, 1884.

RULES GOVERNING THE EXHIBITION.

1. Entrance fee to be fifty cents for each.
2. Butter made at any time, and to be in packages of not less than eight pounds—a small pail—except in classes 2 and 3.
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; salting, 5; color, 5. Total, 50.
6. Scale of points for judging butter; flavor, 20; grain, 15; salting, 6; color, 6; style of package, 3. 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 on the same.

Parties wanting Cheese and Butter Makers for next season, and those wishing situations, will find Books for Register, that the wants of each may be known.

Arcadia is on the Green Bay, Winona and St. Paul R'y. It is 22 miles east of Winona, and 44 miles west of Merrillan Junction. It is reached by the C. & N. W. R'y, and C., M. & St. P. R'y from Winona and from Merrillan Junction, on the Northwestern Road, The distance either way is about the same.

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

W. H. MORRISON, President, Elkhorn.
H. K. LOOMIS, Treasurer, Sheboygan Falls.
D. W. CURTIS, Secretary, Fort Atkinson.

TRANSACTIONS

WITH

ACCOMPANYING PAPERS AND DISCUSSIONS,

OF THE

Wisconsin Dairymen's Association,

AT THEIR

THIRTEENTH ANNUAL CONVENTION.

Held at Arcadia, Trempealeau Co., Wis., February 24th, 25th and 26th, 1885.

The thirteenth annual convention of the Wisconsin Dairymen's Association, convened at Muir's Hall, in Arcadia, Tuesday, February 24, at 2:30 P. M., President Morrison in the chair.

Song by the Glee Club.

President Morrison introduced Hon. J. B. Gorton, who welcomed the convention to Arcadia in the heartiest manner, as follows:

Mr. President, Ladies and Gentlemen of the Dairymen's Association:— I am delegated by the citizens to welcome you to Arcadia, and this being the first time your honorable body have decided to come so far north and west, to do some real needed missionary work, it makes it easier and pleasanter for me. The character and object of your association are not wholly unknown here, but are as a whole but imperfectly understood. The industry you are organized to promote is coming to be one of the leading industries of the state and of the whole north and west, and it is in a large measure surplanting wheat raising, which was and is now quite the leading industry, not only of this, the northwest part of our state, but of this whole Northwest Territory.

Although Wisconsin has ranked high as a wheat producing state, the agricultural citizens, as a whole, have not succeeded in making more than a living, and I think fully one-half of them have made a complete failure, as far as a financial success goes, and have been sold out by the mortgagee and sheriff, and joined the multitude of tender feet and gone to the new West to do the same thing over again.

It was under this condition of circumstances that induced a few of our leading citizens to make a strong effort to induce your honorable body to meet with the producers of this northwest and see if we could not obtain some knowledge of the ways and means by which you have been enabled to so successfully overcome the difficulties of the situation in the more southern and eastern part of our common state. As you will observe, we are of somewhat mixed population, but our needs are the same; we had a few settlers from the New England and central states, and some from the earlier settled western states, and the few Europeans who were raised in the dairy districts, have been trying to carry on farm dairying to some extent, but they are so isolated from each other, that there has been but little concentrated effort to work in unison, and as a matter of course have not succeeded in demonstrating to themselves and to their more skeptical neighbors, and other fellow citizens, the full benefit of successful dairying, as we expect it will be shown by those here who have had more successful experience, and have been induced to come to impart that knowledge. It has been very difficult so far not only with the private dairymen, but also with factories, the few who have started, to get anything like a uniform or satisfactory report of sales, for some cause, which I think your honorable body will be enabled with past experience to show us the reason why and perhaps point out the remedy. We are fully satisfied as a whole, that there must be some other way for us to make a living and success in getting something more than wheat raising, but so far, with few exceptions, we have not succeeded in convincing our producers that the dairy is the way out, and now we believe you will be able to do so, either by getting such laws passed as will protect good honest

goods, or as the report comes to us, as it occasionally does, of how to procure and properly proportion, suiene or oleoine, so as to compete with city dairies.

There seems to be but little demand for first-class goods at fair prices, except the demand to supply aforesaid city dairies. I will quote from commission merchants' circulars, and it is a very uniform report: For choice and fine fresh makes of creamery the demand continues fair, and for such the market remains steady and firm. All stock, however, not choice and not suitable to the wants of the butterine manufacturers dull and neglected. We hope you will be able to solve the problem for us, so we can meet successfully this competition. Whether the stuff is wholesome or not, is disputed. Some of the leading dairy papers say it is, others say it is not fit to eat, being filled with all kinds of impurities and seeds of disease, but it seems that it can be produced so much cheaper than the genuine article, and leave so large a margin of profit to the manufacturer, that legitimate dairying cannot successfully compete with manufacturers of the patented article; and it looks now as though there was not much to encourage legitimate dairying, or to the increase of dairy stock, and our producers will have to look to some other source of income to eke out an existence. We think that there would really be a demand for more butter and cheese than the present dairy stock of cows in the country could supply, and at fair prices, if we had the city dairies out of the way. And now the way out. We hope you will be able to point out the proper and legitimate road. Do we need legislation, and if so, how are we to procure it?

The old maxim that in union is strength, we see demonstrated all around us; that is a union of moneyed interests. We see all trades and professions have their associations and guilds to consult for their best common interests, and we hope that your association will be enabled to solve the problem for the producers of dairy goods. In all cases where trades, professions and transportation companies ask for legislation in their special calling or business they usually get all they ask for and how is it with the producer. When

he petitions for the passage of laws that will help them to retain a small portion of the products of their labor, so as to enable him to provide the necessary papers and books, and to give him time to read and inform himself as to his want and the position he occupies, they are usually told that they do not know what they want, or that they get more than they deserve, and so far as my observation goes, whenever he does try to organize, he finds all manner of obstacles thrown in his way, and lacking confidence; by being usually kept under by straightened financial circumstances and the results of his former legislators, who he has sent to represent (as he supposes) his special calling and interests, that as a whole he has come to the conclusion that he is born to be a hewer of wood and drawer of water, and to spend his life and that of his family, for the support of and to accumulate moneys for what seems to be growing in republican America, the favored classes. To illustrate, we suppose that the dairyman and stock raiser is interested in protecting his herds from contagious diseases, and our representative cattle men got up such a bill, and presented it to congress for action, with what result? The commission men and Union Stock Yard Co., of Chicago, got the best lawyer that Chicago afforded and sent him to Washington, to get the bill so amended or altered, that it proved to be of no practical benefit to the interests it was calculated to protect. The above is only a fair sample of the legislation that producers usually get whenever they ask for any.

We think that the men with the experience, who live nearer the centers of population, and are able to judge of the public pulse, will be able to give us such advice and information, as will enable us to see more clearly than we now do, our way out of these difficulties, and also enable us to compete successfully with city dairies. And now ladies and gentlemen of this association, recognizing you as representatives of one of the leading industries of the state, we again bid you welcome, and trust you may have an interesting and profitable session, and the remembrances which you may carry away, may be pleasant and profitable.

RESPONSE TO ADDRESS OF WELCOME.

By W. D. HOARD, Fort Atkinson.

Mr. President, Ladies and Gentlemen of Arcadia, and Members of the Association — I thank your representative, Mr. Gorton, for the kind words of welcome that he has bestowed upon the association in behalf of the people of your city. It is not often, Mr. President, in the history of this association, now meeting for the thirteenth time, it is not often, if ever, that we have seen the first session of our annual meeting greeted with an audience like this. It speaks well for the interest that is being manifested in the agricultural heart and mind, the hunger for knowledge, the disposition to study, the endeavor to understand. It also tells another story. In the faces of many of these farmers before me, I read the study of long years of unavailing effort, the study of long hours of toil, unrequited toil, wasted endeavor, and the fruitless striking out into the air for comfort and home, and for emolument, all gone down the remorseless maw of wheat culture. It all speaks well, gentlemen, that when an organization of this character comes before the people, that it is greeted with such an interest.

This organization has heen a traveling farmers' institute, meeting only once a year, but it has been, in its history, one of the most beneficent of any that has ever been organized in any state in the Union. Look at what it has done; when this organization first started in 1872, six or eight gentlemen alone met in the city of Watertown to organize it. The general product of the state of Wisconsin at that time was worth about $1,000,000. To-day the cows of Wisconsin produce $20,000,000, worth of product. Not only that, but thousands of mortgages have been lifted from beleaguered homes, hundreds of farmers in this state to-day are living in comfort, where poverty stared them in the face and their families—a dark and disconsolate prospect.

When I reflect upon the slow accretion of ideas growing up under the influence of this organization, and how large

a number of farmers in this state have only heard of it as something that happened away over there on the east side of the state, and which was not for them. When I reflect upon this, Mr. President, and see how steadily it has gone forward in its beneficent march, doing its good work, I feel to-day proud of the little humble effort that I have made in connection therewith.

I tell you, my farmer friends, the day has come when the mind must go ahead of the hand. We have before us, all over this country, men with hard hands and weak heads, that is the wrong way of putting the question. We had much better have hard headed and soft handed men, for with those fortune is best assured. I am reminded when I think of Wisconsin agriculture of the condition that an Irishman found a man in traveling through the woods. He found a man sunk in a morass, and he rushed over to where a Yankee was chopping wood near by; says he, "For the love of God come over here quick, as fast as you can, here is a man sunk in the quicksand." "Ah! Is that so, how far is he in?" "Bedad sir, he is up to his ankles," replied Pat. "Oh well, he'll get out, if only up to his ankles." Aye, begorra, I forgot to tell ye he went in the *other end furrsht.*"

The difficulty has been, that we have gone wrong end first, we have swamped the head, my friends, when we should have kept that clear. You know no living man can drown with his head above water; now dairying is a thing that is the work of brains, the work of study, or rather the quickening of the mind, and the application of good principles and good thinking. It comes from good study and the action of the mind. It is not a work of main strength. Ole Bull traveling through Ireland, going through Donny-Brook fair, discovered an Irishman sitting on a barrel, fiddling for dear life and the sweat running down to his heels. Ole Bull says, "Do you play by [note?" "Divil a note." "Do you play by ear?" "Divil an ear." "How do you play then?" "By main strength, be jabbers." That is the difficulty. We have all been playing, not by note or by ear, but by main strength.

The blessed spirit we enshrine and call the cow, teaches

us better. She tells us that from the laboratory of her body there comes a delicate fluid, we call milk, we make cheese and from out this elaboration we make fortunes. The wilderness is made to blossom, we stand side by side with life, not with death. No man can live with a cow and treat her decently, that is not a broader and a better man at the end of the year.

Now then, the Wisconsin Dairymen's Association has been almighty hungry to come up here for a long time, you haven't sent us an invitation, and we didn't want to come unless we were invited, but just as soon as you did invite us, we nearly broke our necks to get here; now that we are here, you have given us a hearty, earnest welcome. If we can do you any good, God bless you.

Stephen Favill called to the chair.

OPENING ADDRESS BY PRESIDENT MORRISON.

Ladies and Gentlemen: I congratulate you this afternoon upon the favorable circumstances with which we are surrounded upon this, the thirteenth anniversary of the Wisconsin Dairymen's Association. I am glad of the opportunity of extending a cordial greeting to so many of the older members of this association, and equally pleased to welcome so many who are strangers.

The same spirit of inquiry and investigation that necessitated the organization of this association is with us still. Observation and experience have taught those who have attended our conventions that they have energized and stimulated the dairy industry of our state far more than all other causes combined. The times are demanding a broader and more intelligent class of farmers. To secure success, brains are a necessity upon the farm and in the dairy. "Nothing succeeds like success." Every year of prosperity and success in our chosen vocation places our business upon a firmer and more remunerative foundation, encourages

those engaged in it to extend and grow, giving their undivided effort and attention to its prosecution. Infuse some individuality into your work. Make yourself part of your business. Our homes — the farmers' homes — are furnishing a steady stream of recruits to the cities. The intelligent, active and energetic are absorbed by the professional and commercial classes. Habits of industry, frugality and economy, coupled with the wealth of a well-developed physical organization, are sure to succeed.

Knowledge is power, and he who breaks away from farm isolation and mingles with his fellow-man in a convention like this will be benefited in proportion as he takes a part in its discussions. For this purpose, and to give us enlarged ideas, and to relate actual experience, we have met in convention.

The importance of dairy and stock farming to the well-being of this community is well indicated by your presence. There is a wide field for improvement. I dare say none of us do as well as we might.

Let each of us endeavor to make ourselves a part of this convention. If we have a question to ask, or an argument to advance, let there be no hesitation. All are invited to take their full share in the deliberation, and while the details that will lead to profit and success will take up much of our time, let us not forget the important factors which make up the home life of the farmer. The home, the wife, the boys and girls, all of our toil, and the comforts and luxuries it gives, are for them, and, as one by one they leave the old farm to go out into the world, may their recollections of that home be bright and happy, the best monument ever reared to a parent's memory.

PRESENT CONDITION OF DAIRYING.

Although the prices for dairy products have not ruled high in 1884, yet, comparatively speaking, it has been a prosperous year for dairymen. That large class who are always fearful that some great calamity is about to overtake us, and who have been predicting that the bottom would drop out of the dairy business, are becoming weary in wait-

ing, and one of them recently wrote to one of the largest, and a very successful factoryman, and requested him to send his recipe for making cheese. As long as men endowed with so little common sense can be found that are not aware that intelligence, skill and experience are necessay for the production of butter and cheese of superior excellence, just so long the only surplus will be products of an inferior quality manufactured by this class.

The future outlook is full of hopefulness, but we must aim to make the best. A high standard of excellence is the product that wins and invariably demands remunerative prices.

Wisconsin at the present time has more than 560,000 cows, producing annually 30,000,000 lbs. of cheese, and 38,000,000 lbs. of butter. The yearly product foots up to over $20,000,000. Our dairy industry has become a great industry, and its marvelous growth has been steady and healthy, because it has been profitable. Probably no business venture to-day offers better and surer returns for the capital invested than the dairy business.

Our conventions heretofore have been held in the pioneer dairy counties, but, receiving a cordial invitation to visit this part of the state, the executive committee of the association thought it would be to the mutual advantage of all interested to accept your kind invitation. We have with us this afternoon many of the best dairymen of the state, dairymen that have a national reputation; successful dairymen, who are making their cows earn from $70 to $90 each for the season. You will have an opportunity to hear papers, addresses, and discussions from these men. All of them are ready and willing to speak of the faith that is in them, and by their organized effort and effective work Wisconsin dairymen have been enabled to win more laurels at New Orleans than any other state. No opportunity has ever been lost by them to make a creditable show. Entirely to the Wisconsin Dairymen's Association is due the magnificent show of dairy products from this state, taking eighty-two premiums amounting to $3,371, and two gold medals, no other state taking over twenty-six premiums, amounting to $1,589. No legislature convening last winter, the exhibit had

to be worked up and means contributed by the members of this association, who had confidence in the merits of Wisconsin butter and cheese.

An effort to secure an annual appropriation from the state of $1,000, and to increase the number of the reports of the association to 5,000, bound separately, will probably, through the earnest recommendation of Gov. Rusk and the liberality of our legislature, be granted, thereby disseminating much valuable information in the best and most approved methods of manufacturing butter and cheese.

What are the most serious difficulties in the way of our future prosperity? Here is an extract that I noticed in a paper only a few days ago:

"Consumers of oleomargarine will be astonished to know that many of the hogs dying of cholera and other diseases are sold to soap boilers. Soap grease, scientifically deodorized, is considered a palatable fat by the manufacturers of adulterated butter."

One would naturally think that the amount consumed of this nauseous compound would be small, but the production is enormous and is largely on the increase.

Live cows cannot compete with dead hogs. It is a contemptible business, and all who feel an interest in our dairy industry are compelled to admit that there is a way, and we have a right to demand of our legislature that if men devoid of soul and conscience will palm off cholera hogs' lard for butter, that stringent laws whose penalties cannot be escaped, will compel them to sell the filthy product for what it is.

Have we any besetting sins or temptations in the dairy business?

The Great Master said: "He that is without sin let him throw the first stone." I shall throw no stones, but merely propound a few questions.

Have we banished the skimmer from our cheese factories? Can a full-cream cheese be made from skim-milk? Can you say boldly, fearlessly and without hesitation, "Yes, sir; they are full creams." Are we exercising all of the cleanliness, care, and skill in making the best butter and cheese

that can possibly be produced? I trust that the deliberations and discussions of this convention will be characterized by its harmony, good will, a spirit of inquiry, and to accomplish the greatest amount of useful, practical information in the time allotted.

I cannot close without expressing, in behalf of this association, its sincere thanks to the entire press of the state, for the courtesy and kindness displayed in the favorable notices that have appeared in their columns, without charge, of this convention. To the press, as dairymen, stock breeders or planters, we owe much of our present success and prosperity. Let us give them our hearty, cordial support.

MR. S. FAVILL — *Ladies and Gentlemen:* I am very glad to be here; I am glad that I was one of the very few that helped to organize the Wisconsin Dairymen's Association. I am very glad to know of the good results which it has wrought for us in parts of the state in changing from the plow to the cow.

It has done wonders for us, and I am glad to be able to tell you that you may do the same with a certainty of success. I have attended every annual meeting of this association, with the exception of perhaps one or two, and I have, as Mr. Hoard says, never seen so large and intelligent an audience as we have here, the first session, and it makes me sure that you are in earnest in this matter whatever is the cause. I don't know that it matters so very much, what is the cause, but I speak of this because you have been trying to raise grain, and sell it in the market until you have exhausted your bank; as long as you continue to deposit in your bank, you can continue to draw upon it, but stop the deposits and see how long your checks will be honored. You carry on your farm year after year, and you take your products away year after year, and after awhile it is all gone. Haven't you been doing that in Trempealeau county? With us in Jefferson county, twenty years ago, the farm that did not have a mortgage upon it was a rare thing, and to-day it would be a very rare thing to find a farm

that has a mortgage upon it, and for no other reason only that we substituted the cow for the plow. Mortgages have been lifted, we have good comfortable homes, and very many of our farmers instead of borrowing money are money lenders, not quite so much just now, because we have had low prices for this year, but a year ago to-day in the very town in which I lived any amount of money could have been gotten at five per cent. on good security. And the cow will do for you just what she has done everywhere, where she has been kindly treated.

Now I am glad you have come here to consider this matter, and the best way to get the very best results out of it, is to make it your own. There are a few of us "old heads" that have come up here and I might stand here and talk an hour, and I might say everything you did not want to hear, and fail to say that very thing that you wanted to hear, but if you will fire the questions at me from all parts of the house, if I know enough, I will answer you and in that way you will get the information that you want. Just remember that so far as I am concerned (and I believe it is so with the rest), we came here, firstly: Because we wanted to come and visit you, and then we wanted to do you a little good if we could, and the way to get it out of us is to draw. Now if there are any questions I would like to have you ask them.

Mr. Gorton — Will Mr. Favill tell us what he knows about clover?

Mr. Favill — Any ground that will grow corn, oats and wheat, will grow splendid clover, and it is the very best crop that can be raised upon the farm, without it is corn, and I think it is a little more valuable than corn. Do you know that clover is the very best thing to fatten hogs upon, besides making milk. On our farm last year we made every acre of clover worth $25 by letting the hogs eat it. We did not have to cut it, or do anything to it, but let the hogs eat it, and made it worth $25 per acre, by feeding just a little corn. We turned fifty hogs into a ten acre clover field and they made, after paying for the corn and all, over one hundred pounds on each hog on clover; I sold the hogs

at $5.50 a hundred. Raise clover, it is very much better for your milk than any other grass, but cut it early, don't wait until it is old; after it is old it isn't much better than straw.

Mr. President — Tell us how you make your clover hay, how do you cure it?

Mr. Favill — Put it in the mow and cure it there, cut it green and tumble it into a big mow in a tight barn. Close the doors, don't let any air in, keep all the air out, and let the clover cure in there.

If you don't put some straw on the top, it will be rotten down six or eight inches, put a little straw on and then when you come to get down below and take it out, your clover will come out as good as it went in.

Question — Do you mean to say, not dry it at all?

Mr. Favill — No, sir; I wilt it a little, I have heard of barns burning, but I never saw it myself, and have yet to see the man who has seen such a thing. I know of a case where hay got so hot that the man was afraid it would burn the barn, and pitched it out, and that is as near as his barn came to burning. You must be careful about it; if it is wet, full of water, and the ground is full of water, you must dry off the water or the dew. A great many make that mistake. It must not be cut and put up while the dew is on, but let it dry so there isn't anything but the juices of the grass, put it in the mow and it wont burn up. I have put in hay so green I thought it would spoil myself and it got so hot that I got frightened about it, but I never have had any burn yet. Hay wants to be put in while the juices of the hay are in it, when it is green enough so it will pack very tightly together, then it excludes the air, it keeps its own heat, and drys itself by its own heat, and it keeps all the virtue there is in it.

Question — Does it not become moldy?

Mr. Favill — No sir, if it is wet it will, if it has got water on it, it will be some moldy and burn and turn white, and perhaps get afire, I don't know.

Mr. Hoard — Did you ever notice Mr. Favill, that cattle will eat it even when you would call it spoiled?

Mr. Favill — Yes, I have, the first I put in Mr. Carswell, of Lone Rock, if I would put it in and try it that way, he would

pay me for all that burned up. He was older than I, and so I tried it, and thought when I saw it put into the barn that it would spoil, but it did not. It got very hot, but it did not burn, and when I came to feed it out, the cows that were giving milk, done just about as well as when running out in fresh pasture. I would mow the clover down in the morning after the dew was all off, and put up in a cock in the afternoon. Be sure it is all done before the dew can fall on it or rain. I would leave it there one day, turn it over, and then put in the mow. It won't be dry, but will be sufficiently wilted. Whereas if you let that lay out in the sun and get dry, and turn it over two or three times and put it in the barn, it would be just about as good for the cows as pea straw. You want to put something on top to catch the moisture, or the top of your hay will be spoiled.

Question — Do you use salt on your clover hay?

Mr. Favill — No, I don't think salt does any good to keep hay, it is mostly water. It may have a tendency to make the cattle eat it better.

Question — What do you do if your cattle bloat from eating green clover?

Mr. Favill — About the handiest thing is spirits of turpentine, to an ordinary animal I would take five or six table spoonsful with a little water or milk and turn it down. I have seen many animals that were bloated from eating green clover so that in a minute or two they would be dead, saved by tapping. They will stand up as long as they can and fall down dead if they are not relieved. I have seen them after they fell, stuck with a knife so it relieved them, it blows the gas off and relieves them. That is a little dangerous, I always have a little spirits of turpentine handy. I have heard of lots of other things, fastening the mouth open for one thing. If you let the cattle run in the clover when it is wet with dew in the morning, they are liable to bloat, and I have even had one or two die in the afternoon when everything was dry.

The President — Several years ago I had twenty or thirty head of cattle running in a clover field, and a Prussian I had working for me, came in one day and told me that one of

the younger ones had died with bloat, and he had applied a remedy that he had used in Prussia to the others. He had one of the hired men to hold the animal by the horns, he then took hold the tongue and merely drew it to one side. He went through the entire herd and saved them all in that way. Some had fallen down when he did this, and there was, of course, a great escape of gas.

Prof. Henry — It is well for a person to understand the cause of an animal dying. The reason is this. The paunch, or the first stomach being so extended with gases, the abdomen being limited in space, the paunch is pressed forward against the lungs and the animal dies for want of breath. If you keep that in mind, you remove the cause at once. but the farmer must be careful when he thrusts the knife into the animal. When he takes it out again the gas follows the knife, and if the opening is not very large, the opening in the stomach will allow the gas to follow the knife out, but when as the knife is taken out the coating of the stomach draws past the opening in the skin and the gas fails to pass out. By putting a goose quill in after the knife you can keep it open until the gas passes out.

Mr. Favill — If you can't find a goose quill take two sticks, cut a good large slit with the knife, put in the two sticks and leave a hold between, and you will let the gas out and give the animal a chance to breathe.

Mr. Clarke — We would like to know where you would make this slit in the animal.

Mr. Favill — The paunch lies upon the left side. Right at the point of what we call the short ribs, just right between the ribs and the hip about half way. Stick your knife right down into it. It won't do any hurt, and mind that it is kept open.

Mr. Clement — I know a woman whose husband has been in the grocery business, so she has attended mostly to the farm business. They were troubled a good deal that way, and she would always take a knife along and cut a little hole and turn it a little and hold it open, and she would save the animal every time.

Mr. Favill — I have heard farmers say, that if cattle run-

ning in a clover pasture could have a chance at a straw stack or dry hay, that they would never be troubled.

Mr. Thomas — Would this remedy apply to sheep as well as cattle?

Mr. Favill — I should suppose it would, I have never tried.

Mr. Clement — I don't think it would kill sheep; I have tapped several and it didn't kill them.

Mr. Hoard — Mr. Charles Phillips, of Lake Mills, was one of the most successful farmers that Wisconsin ever produced. He amassed before he died $100,000 in straight farming, and that means success. It was a common practice with him to take some of the farms that wheat farmers had mortgaged up and sold out, and it was invariably his practice, and is the practice of his brother to-day, never to sow a spoonful of grain under any circumstances without sowing a good liberal amount of clover seed with it. He said to me one time, "Clover is cheap when you think what it does." It is the cheapest manurial agency that ever went onto a farm, and when we reflect that according to Liebig, that clover takes seven-tenths of its bulk from the atmosphere it is cheap. No matter what Mr. Phillips sowed, clover went in with it; then he said he had this advantage, if in the spring certain pieces that he had anticipated seeding down proved they were not fit, he had his choice, and even if he ploughed right up again the next spring, he said that the clover was worth four or five times as much as the cost of the seed in renewing and fertilizing the soil.

Mr. Gibbon — What is the value of clover as feed for hogs, when dry, cured?

Mr. Favill — I haven't tried to winter any exclusively, but I always make a practice when I have some nice early cut clover, to give them a little and they eat it well. I suppose clover put through a cutting machine and steamed, and a very little meal put with it is splendid to winter hogs on.

The President — I wish to make one statement in reference to the renovating power of clover. In the southern part of the state, in Walworth Co., in about all of the leases that are made, this stipulation appears, that every acre of small grain that is put in shall be seeded with clover. On a neigh-

boring farm, the man had impoverished his land so that he was only getting about eight bushels of wheat to the acre, and I think about half of that was pidgeon grass. Since that he has clovered his land and now he is producing good crops of wheat. Of course he follows diversified farming.

Mr. Chapman—I want to know what to do with corn stalks, is it worth while to cut them up at all?

Mr. Favill—I think it is, but men that know fully as much as I do, think they are not worth cutting. But I should say, you want to run every one of them through a cutter, have a power cutter that is large enough to cut it about as fast as a man can feed it and cut it up, it will go so much farther. Several years ago, I had an old horse power, and we cut up everything we fed, well, there was eight or nine acres of our corn that didn't get husked in the fall, and the result was that instead of having to buy fodder, we turned off that many acres of stalks in the winter, and I am sure that if I hadn't got that cutter and cut up these stalks, I would have had to buy more fodder than that cutter cost.

Prof. Henry—Mr. Chairman, at the experimental farm, we are trying several experiments to determine the value of corn fodder. Our first experiment is this, and the figures roughly are these. Four acres of land turned off 14,000 lbs. of corn stalks, and fifty bushels shelled corn, to the acre, making 200 bushels shelled corn to the four acres. Two cows were fed corn stalks and two other cows good mixed hay. These cows were fed for three weeks in that way, then the experiment was reversed. The result we found, was that one pound is worth two pounds of corn stalks. Now if land will yield 14,000 lbs. of stalks from four acres, you see it is about nearly two tons of stalks to the acre, you see then that an acre of land besides producing fifty bushels of shelled corn, will produce $1\frac{3}{4}$ tons stalks, and if it takes two tons of stalks to equal one ton of hay, and $1\frac{3}{4}$ is worth nearly a ton of hay, then we have got a ton of hay to the land besides fifty bushels of shelled corn. We are experimenting now with clover hay.

Mr. Hoard—Do you find any difference in the flow of milk when fed upon stalks or hay?

Prof. Henry — Each cow produced during the experiment whether fed upon hay or corn fodder about a pound of butter per day, and the corn fodder gave an equal amount with the hay.

Mr. Hoard — How many more pounds of corn stalks would your cow consume, than pounds of hay?

Prof. Henry — Two to one in bulk, but then she wasted stalks, the waste on feeding dry corn stalks is about forty per cent. You see in making these experiments, we can not feed a cow to get the most out of her. We have to feed whatever we are trying now a farmer feeding to the best advantage should feed some hay and some corn stalks. Mr. Beach (who should be here to-day), after listening to one of our experiments last year, said: "Well, I am glad to learn that science is confirming common sense." And that is what we have been able to do in this case. I think our farmers are very careless with their corn stalks, if four acres can produce 14,000 pounds corn stalks, they can figure up what their land should do.

Question — Have you made any experiments with corn, ground in the ear?

Prof. Henry — Prof. Sanborn has carried on a large number of experiments on that, and he finds that the effects are in no way deliterous. I should say in general, that the cob does not add a very great amount, but possibly if your machine is so arranged you had better grind them together and one good effect is, that it keeps the meal apart in the animal's stomach.

Mr. Hoard — In your experiments with corn fodder, have you determined how many pounds can be raised to the acre?

Prof. Henry — Yes, but I can not carry the figures, it is about 30,000 pounds green stalks, there is about twenty-three to twenty-five per cent. of water, I have 42,300 pounds, but with southern corn, 33,000 from northern corn.

The President — In our farming, are we not more careless in the care of our corn stalks than of any work on the farm?

Prof. Henry — There's corn stalks enough wasted in Wisconsin every year, to keep every four footed animal that eats fodder or hay.

Question — Will corn stalks help the land if they are left uncut?

Prof. Henry — Yes, there is no doubt of it, that is a question that has to be studied, but there is no doubt that every bit that goes under the land helps to lighten it. I wish to go on record here as against the use of this large southern field corn. I have raised corn fodder that weighed from five to seven pounds to the stalk, it is nice to talk about, but I don't think such large stalks are so good as the small stalks.

Mr. Case — Would you kindly tell us what in your judgment is the relative value of eastern corn raised in this part of the country, as compared with our western corn, is it worth while to raise eastern corn here?

Prof. Henry — A chemical analysis shows eastern corn to have more nutriment per one hundred pounds than western corn, quite a little difference in favor of the eastern growth, but that eastern corn brought west soon becomes western corn. I think at this altitude a farmer should grow some flint corn. I think that the farmer that grows southern fodder corn or most any kind of corn for early fall feeding, will find it greatly to his advantage. No corn pays so well as that planted early and cut early, for an acre of corn fed early in the fall, in September and October, is worth two acres fed in January and February.

Mr. T. D. Curtis — Do you think that eastern corn becomes western corn unles there is cross fertilization?

Prof. Henry — Yes, just as an eastern man becomes a western man.

Question — What can a man afford to pay for bran, with butter at 20 cents a pound?

Mr. Favill — If he has got a cow giving milk and has not any other feed, he had better pay $12 a ton than have her dry up. I want to utter my protest against corn cobs. They are very nice for making a fire in summer for the ladies, to make a cup of tea, but they are no good for grinding up, it is almost sure to be imperfectly ground and imperfectly digested. Take your feed corn or middlings and you will get

almost twice the benefit from it, if you will mix it with cut clover hay. Feed the two together.

Mr. Hoard — In our county good dairymen have discovered this fact, that it always pays to give a cow anything she wants, I don't care if it was an Indian. If she wants an Indian she shall have it. She is queen in that county. Give the cow a variety, and if you haven't a variety, suppose you buy it, and in turn the cow will give you more and better milk. Then there is another thing men do not think of. The man that buys bran, buys manure of wonderful richness, and our heavy feeders are making money in the investment. Our farmers are getting so rich, for instance, Mr. Millard says his farm is getting so rich he don't know what to do with it. His hay and grain is all lodging. He has been making money hand over fist in the dairy business, selling his butter in New Orleans and getting a good price. He buys largely of bran.

Mr. Hiram Smith tells me his farm is getting very rich under that treatment. The idea of buying bran for feed is simply to keep up the variety in the feed, to keep up the healthy condition of the cow, for as she is the most healthy, she is the most profitable.

Question — What breed of cows are you using down there, where your land is getting too rich?

Mr. Hoard — We have a good many Jerseys and have a good many Holsteins. As yet our dairymen are cursed with this beef notion; they are getting out of it somewhat. The men who are making butter are largely getting into Jerseys and Guernseys, they are the most profitable butter cow we have.

Question — How about the Galloway?

Mr. Hoard — The Galloway is worth as much for dairy purposes as the hog.

Mr. Favill — The best breed I know of is a good large bin of mill feed, good warm stables, good pure water and most excellent care; these are the best breeds I know of.

Prof. Henry — Before the afternoon session comes to a close, I want to remind you all that this association needs money to discharge numerous expenses incurred in connection

with this convention, as well as the small, but yet necessary regular running expenses. You are all invited to become members by giving your names to the secretary and giving him one dollar. In return, besides discharging a pleasant duty, you will receive far more than the equivalent of that one dollar. You will get a full report from the secretary, just as soon as it is published, containing not only all the papers read here, but all the discussions, the questions and answers. Moreover, those of you that have come from any distance and have had to purchase railroad tickets, will, by becoming members, be entitled to a rebate of four-fifths of your return fare.

Mr. Favill made his customary offer to refund a dollar for every copy of the report returned to him with the assurance of the owner, that he did not think it worth one dollar.

Song—"As I'd Nothing Else To Do."

Convention adjourned to 7 o'clock P. M.

EVENING SESSION.

Met pursuant to adjournment, at 7 o'clock P. M.
President Morrison in the chair.

THE VALUE OF PURE MILK.

By H. Z. FISH, Richland Center, Wisconsin.

In dealing with this subject to-day, it can not be expected that many, if any, new and original ideas will be advanced for it is a subject in the development of which experts in all ages of the world have lavished their time, talent and means. But if I suggest any one new idea, even though an erroneous one, it will at least serve to elicit the comments and the criticisms of others more scientific and practical than myself, who may adduce the result of correct experiments, and will, in doing so, become public benefactors and further the object at issue.

Science demcnstrates that there is a close elementary relationship between animal and vegetable growth; that they

are merely the harmonizing of a very few primary elements, namely, carbon, oxygen, nitrogen, and hydrogen, of some of which the greater part of the universe is principally composed. Pure milk contains all of these elements in combination, and seems to be an essential connecting link between the vegetable creation and the final development of the mammiferous animals, among which man is classed. In treating the subject, I will first take the ground that the purity is essential to the keeping qualities and healthfulness of milk as an article of food. A healthy fatted calf, a tub of fine butter, or a first-class cheese, can not be made out of impure milk. Purity is the prerequisite to inviting and desirable dairy products. Then we would naturally inquire: What is pure milk and how shall we obtain its greatest value? As I understand, it is not proposd that I shall give the market value of products made from tainted milk, and delivered in Chicago and New York markets. The manufacturers of such goods have their customers, and they are either traded off at the village groceries or sold on the market at a price anything but remunerative to the producer. Therefore, it is profitable to know the causes of impurity in milk, and how to arrest or avoid them. Some of these causes may have been induced by agencies so subtle that they can not be traced by any ordinary skill.

Nervous, magnetic and sympathetic causes are among that class, and have their potent effects. Among the more common causes are impure water, improper food, poor management or care, unhealthy condition of the animal, etc. Such milk is bad to begin with, and is lost by maternal inoculation, putrefaction, and decay. Milch cows, the stock upon which the dairymen of this state most depend to get their groceries, pay help, taxes, and raise the mortgage from their farms, are sometimes poorly bred or selected, and most shamefully neglected, turned out to graze on short pastures, or fed upon poor hay, watered at a frog pond or at the terminus of a cesspool, poorly sheltered or not at all, chased, excited, and bitten by dogs, pounded by hired men, not milked dry or regularly, barely supplied with enough food of any kind to keep up the animal economy, much less to

yield any good, wholesome, rich milk. The dairyman who allows his stock to be cared for in this way will soon find that dairying will not pay. There are many vegetable substances which, although not particularly uncleanly of themselves, should not be fed to milch cows, such as cabbages and turnips; decayed vegetable matter of any kind, such as decaying apples, potatoes, etc.; sour whey, swill, fermented substances of any kind should never be fed. Often one cow's mess of poor milk will contaminate the mess of the entire dairy, and that, all which it is mixed with at the factory. Cows feeding on a rank growth of clover will cause a gassy, open curd, which, if not handled with great care, will make spongy cheese. Sometimes in the spring, cows will eat leeks or wild onions, which make the milk very obnoxious to the sense of smell; unburied, decaying animal or vegetable matter, an uncleanly building, filthy yard, or neighboring yards near which the milk is stored, improperly cared for milk tools, wagons, etc., any of these will seriously affect the purity of milk.

To remedy this slackness among farmers in taking care of their milk before bringing to the factory, I would suggest that the factorymen in every county in Wisconsin draw up an article of agreement, and each and every factorymen pledge that he will not receive any tainted, adulterated or impure milk from any patron, and if such is brought to his factory he will either return such milk or punish such patron to the fullest extent of the law, and that he will not receive any milk or patron into his factory, who shall leave or be turned out of a neighboring factory from any cause or complaint from the neighboring factory, and after a patron once begins to carry milk to a factory he shall not be permitted to carry to any other factory during that year, unless he presents letters from the owner and officers of the first factory stating that his milk was pure and satisfactory while he drew to that factory. Unless this or something similar is promptly done among the factorymen of Wisconsin we shall be, and are now in some localities, afraid to send a man's milk home when it is tainted and unfit to be mixed

with the bulk at the factory, for fear he might be offended and go to a neighboring factory with his milk.

Some farmers will neglect their milk and bring it to the factory in poor condition, the cheese-maker will scold about it, but does not dare to send it back for fear of loosing a patron; he makes poor cheese for all his patrons, takes about ten per cent. more milk to make a pound of cheese than he should, thereby oftentimes making less cheese than he would had he thrown away the poor. There are patrons who will take milk to a factory just as poor as they can and not have it returned. This condition of things should be stopped and unless it is, Wisconsin dairy goods will in a few years be of inferior quality on account of adulterated or poorly cared for milk.

Milk is not only a ready absorbent of decaying animal and vegetable taints and odors, but also of the germs of contagious and infectious diseases; scarlet fever and typhoid fever have been spread by the use of infected milk. It has even been stated by good authority that the condition of a mother's mind has caused her milk to produce convulsions and even fatal hœmorrhages in her nursing child.

Feed nothing to milch cows except what is well and properly cured, or fresh and sweet. Keep the stables clean and well ventilated; milk neatly and at regular hours. Aerate the warm milk by dipping, then set it in cold water, or a cooler of water in the milk, and change the water as often as it warms, until the temperature is reduced to about 60°; never place a tight cover over the can, but leave at least eight inches between cover and can for a free circulation of air; store it in as clean, cool, airy a place as possible. Wash the milk tools as soon as you are through using them, first in warm water, then scald them thoroughly. Some one suggests we must have very little pure milk. What shall we do with the impure mass? I have hinted at the way it is sometimes disposed of. Prof. T. D. Curtis says feed it to the hogs; but who knows that that would work well as a general rule; we would question the propriety of making even pork out of spurious milk before disinfecting it. Bring none to the factory but such as has been well made, neatly

milked and thoroughly cared for, and you will have no occasion to censure the manufacturer of butter and cheese, or put a low estimate upon your property invested in the dairy business.

Cow's milk, which is about the only kind that enters into the dairy products of this country, forms a very essential part of human sustenance, being adapted to every state and age of the body. This secretion designed for the use of the young animal, contains every ingredient found in the human body, and is the most healthy, nutritious and cheapest article of food known. Man can live on milk alone, unless he has been addicted to the use of spirituous liquors. In its manufactured state, as in cheese, it has nearly three times the muscle-growing and nutritious properties that beef has; so that the laborer of England buys it at from fifteen to twenty cents a pound.

DISCUSSION.

Mr. T. D. Curtis — In my travels through the state of Wisconsin last summer I visited a number of factories, and I wish to say that those run by Mr. Fish were as intelligently run as any that I visited anywhere. His cheese-makers were all intelligent men, and they are all instructed to operate in the same manner, and their product was quite uniform in the different factories. Mr. Fish comes from a family in Herkimer county, New York, noted as dairymen, who make splendid cheese, and perhaps he has inherited some of his good qualities in this direction, but in addition to this, he has been observing and industrious and studious, so that he has been able to go to New Orleans and carry off a large share of the first premiums, $500, I understand, and the grand sweepstakes and gold medal. He is a good example to any of you young men who are thinking of going into the dairying business.

Mr. Hoard — Mr. Fish, can you give us the average profit, or rather product per cow of the patrons of these several cheese factories the past season?

Mr. Fish — I cannot give the average, but I can tell what the different patrons say they receive from their cows. Between $40 and $50. In some places where I have started factories entirely new and the people are entirely unacquainted with the business of buying cows, it has been only from $20 to $35 in about six months. The largest factory in Bear valley will return about $50 per cow. I think last year the cows netted, after paying all expenses, $55, to several patrons in the valley.

Question — How many months constitute your season.

Mr. Fish — Nine months in the valley, and in some of these other places six to eight months.

Question — In those factories running nine months, does it give any opportunity for butter making besides?

Mr. Fish — They sometimes begin to make the 1st of October, but in none of my factories; I understand it is very profitable.

Question — Then out of a good fair cow, with good management and care you calculate a man should make $50?

Mr. Fish — Yes, a year ago, I had the figures, what it costs the patrons to keep their cows, a good many of them, but I have not the figures now.

Questions — Some of your patrons have received larger net returns than what you have mentioned?

Mr. Fish — Yes, sir.

Question — Can you name some of the largest amounts?

Mr. Fish — No, I only know the average.

Mr. Hoard — Do your patrons feed anything to their cows except fresh pasture?

Mr. Fish—They don't until the feed begins to grow short, but there are some factories that are making butter this year, through the winter; by so doing have a very much larger yield, and are getting more money from their cows than those that have been making summer goods, and in Wisconsin there are many patrons that will net even $70 for their cows in the course of the season, but don't know any one in our neighborhood that will do that, because we only milk in summer, at which time milk is always abundant, and cheese generally low in price.

Prof. Henry—What does your milk bring the patrons per 100 pounds for the season?

Mr. Fish—Somewhere between 75 cents and 90 cents for those six months. For nine months it will run between 80 cents and $1.

Prof. Henry—I was in Polk county the other day, and they said "our factory has netted us $1 per 100 pounds during the season; is that a good result?" What would be the answer?

Mr. Fish—That would be an excellent result for this year; it has been a dull year for cheese.

Mr. Foster—Can you estimate approximately what percentage of loss there is to the product of the factories from bad milk?

Mr. Fish—Well, the loss from bad milk from my factories has been very light, because I tell my cheese-makers in the first place, that if one drop of bad milk comes to the factory, to send it right home again, if the patron leaves the next morning.

Question—But thereby the patron loses his milk?

Mr. Fish—He does, if he brings bad milk.

Question—What I want to know is, how much better off is a factory that puts in good milk all the time?

Mr. Fish—You can make about ten per cent. more cheese out of milk that is good and pure, all right, than you can out of milk that is somewhat tainted, and it will work off faster. Sometimes in the summer when it is very hot, bad damp weather, and thunder showers, it will take over eleven pounds of milk to make a pound of cheese, when perhaps in three days from that you can make a pound of cheese out of ten pounds of milk. It is very essential that patrons should pay more attention to the condition of their milk. In a good many places they lay all the blame to the cheese-maker, if there is poor cheese. It is a very poor cheese-maker that cannot make good cheese out of good milk, but it takes an *extra good cheese-maker* to make *good cheese* out of poor milk.

Mr. Hoard—Do you think any cow can give good milk that does not have good water to drink?

Mr. Fish — I do not, I can give a little experience of my own. One year I was troubled in the factory, with what we call floating curds. I could not understand why it was, I took samples and examined each patrons milk, and I found all of the milk on a certain stream was poor. It would come to the top of the glass tube after standing a while and the bottom would look like water, showing that the milk itself floated. Then I wanted to know what was the cause of it. I took my fish pole and went down the stream one day, when I got through a little early, and above where all these patrons were drawing milk, I found a calf that had been drowned and had been there perhaps ten days or two weeks, and as soon as that was removed from the creek, all the trouble in the factory ceased.

Question —How do you ascertain that the milk is tainted?

Mr. Fish — I can easily tell by smelling it or by heating it a little. If they have any doubt about the milk, I have the cheese makers heat the milk, and then they can detect very quickly by the smell.

Mr. Hoard — Don't you think that if all the patrons of all the cheese factories in Wisconsin were, by some dispensation of Providence, compelled to fence their cows away from all stagnant pools of water, that it would enhance the value of cheese in Wisconsin fully one cent a pound.

Mr. Fish — I think it would.

Mr. Hoard — In this connection I wish to say, that right in the county of Jefferson where the gospel according to the dairy is preached, one day last summer I saw a dairy of about forty cows and the total water supply that those cows had was a stagnant pool of surface water filled with all manner of filth and the cows standing belly deep in it, in the middle of the day, and that man, when I expostulated with him said, "Why the cows like it better than well water." I said to him, "Why, don't you know that they like it for the reason that it is warm?" A cow likes warm water; the maternal function of giving the milk makes a cow very sensitive to cold, so a man should have his water pumped and have it set in the sun where it can be warmed a little.

Question — If we are going to enter into the dairy business here, we want to know how much it is going to cost?

Mr. Fish — It is almost impossible to keep a correct account among our average farmers; they say, "I guess about so much." In New York they pay just about double what you do here for bran and corn, grain of different kinds, and they feed quite extensive on grain. Hay is nearly what it is here, and they think there is no other business that will pay them as well as dairying. If they make it pay there, why can't we, where we have just as good water as there is on the green earth, and a great deal better grass than they have.

Question — How much would it cost to keep a cow, feed and hay, besides the pasture?

Mr. T. D. Curtis — It depends something how well you keep her. It would take two tons of hay and all the pasture she wants. Some six or eight years ago, I read a paper before the American Dairymen's Convention, in which I took the ground that any cow that gave less than 3,500 pounds of milk, which would make 350 pounds of cheese at ten cents per pound didn't pay her keep. The paper caused some discussion. Mr. Harris Lewis said it cost him $40 a year to keep a cow. The Utica Herald printed an article, in which they stated, they had sent all over the dairying country and collected a range of estimates; $15 I think being the lowest (I would hate to be that man's cow), and some running as high as $50, but the average, when struck, was exactly $37.50, or $2.50 more than I estimated it. I think that is a pretty fair estimate of a cow's keep in central New York.

Question — How much less will it cost to keep it in Wisconsin?

Mr. Foster — One third less.

Mr. Curtis — About $25 is low enough, ain't it?

Mr. Favill — About $10 too low.

Mr. Curtis — I would rather put the other $10 on, if I were a member of the herd.

Mr. Favill — You want the extra $10 put on if you want to make anything from the cow. It takes a certain amount of feed to support the carcass of the cow, and if you haven't

anything more than that, you haven't anything in return. You can not run the machine for less than about $20, and if you only just run the machine, you don't get anything out of it, but suppose you run a machine that costs you $20, and then put in $20, extra fuel, and you are going to get something.

Mr. Hoard — C. P. Goodrich, of Jefferson county, is an average farmer, but he is a keen man and a very intelligent man, and a man who ciphers. He has got a herd of fourteen cows, grade Jerseys. He is a farmer living out where an ordinary farmer says you can't do anything with a Jersey. There is no good beef in them. His herd of fourteen grade Jerseys produced for him last year in butter-making, as a private dairyman, shipping his butter to Chicago and selling it on its merits in the open market through a commission man, $84.49, I think, per head. He estimated the cost of keeping those cows at $35, leaving him something like $49.49 profit per head, after paying for every item of expense. Well, now Mr. Goodrich is this sort of a man: He is liberal with his cows, he is careful with them, he never allows anybody to race them, or chase them, or do anything wrong to them whatever, the best water, the best feed and gentle care. He says when he looks at a cow and recognizes in that cow that the giving of milk is a maternal function and that she stands before him in her feminity as a mother, he feels that the man that would dare strike a mother, is a "son of a gun." Old Uncle W. C. White, of Kenosha, one of the kindest men, had a dairy of seventy cows, which brought him in 6,000 pounds of milk. He uttered this aphorism, which I have heard, laughed at, and I have heard it quoted in one of the agricultural journals as one of the shrewdest in the country: "I always speak to a cow as I would to a lady." Now, the secret of old Uncle White's success is this. I went around his farm and saw just how he managed. He had seventy cows. I went there as a stranger. The cows didn't pay any attention to me. There was no idea among them that anybody was going to hurt them.

The old man went out in his calf pasture, he had a dozen calves and they gathered about him, you could see the

affection those animals had for him, you could see the kindly sympathy that existed between them. Now, that was not all humanity, it was sound good business sense. The cow is the most sensitive animal that we have on the farm, particularly if she is high bred. She deserves the best treatment and she answers nobly at the milk pail. I have heard men talk a good deal about improved breeds of cattle, and I have wondered whether we hadn't better get up an improved breed of dairymen; we need it terribly, we need an improved method in which men shall treat their cattle on the farm.

Mr. Favill — Way back before this association was formed, in the old Northwestern Association, Mr. White was telling us about his feeding and I asked him "how much do you feed your cows, Mr. White?" "Why, I feed them pretty well." Well, but says I, "Mr. White, one man would call a quart of bran a day, pretty good feeding, another would call four quarts pretty well, and another eight quarts, what do you mean by pretty well? He says, "I'll tell you how I do. I get a bushel-bag full and put it on my back, and I go in front of the cows and I give each one just about as much as I think she will eat." And that was the way he got 6,000 pounds of milk.

At an agricultural convention in Madison in 1872, this same Mr. White gave his experience as a dairyman, I think he said he had about sixty cows, and his cows averaged him that year about $70 each. He said he gave them a peck of feed a day; four quarts in the morning and four quarts at night, summer and winter, when they were giving milk. He dried them off in the fall, and let them go dry about three months, and yet they averaged him $70 each for about nine months' milk.

Prof. Henry—It is only the farmer that keeps a record, that knows what his cows are doing; he can tell by consulting his record whether it will pay to feed his cows. I don't think it would pay to force a cow to eat anything else, when the grass is succulent and plenty in June, but at other times, I think it is absolutely necessary. The idea of giving the cow all she wants is the correct one. If we can impress

upon the farmers of this section, this one idea, it will be worth all that this convention costs over and over again. I have heard men say they got so much with so little feed. Those men are sharpers of some kind. He is trying to take something from that cow that he doesn't give. If you just take home that idea, we shall feel that some good has been done here.

Mr. Favill—The question is here, will it pay to feed in the summer? It is to increase the number of cows you can feed upon the same pasture. Suppose you have thirty cows on a pasture, by feeding a little each day, you can put forty cows in the same pasture and carry them fully as well as the thirty without the grain; so you have the forty to give milk and increase the milk of the thirty, too; you can see where the profit comes in.

Mr. Tripp—You say heavy feeding to dairy cows is good sense, but you can take cows running to grass, feed them with corn-meal and spoil the cow; she will give gargity milk. You can spoil the best cow that runs by over-feeding. I have spoiled a number.

Mr. Hoard—How many of your neighbors spoiled their cows that way?

Mr. Tripp—Not many.

Mr. Hoard—Don't a good many more spoil for want of feed, than from too much?

Mr. Tripp—That is certain, but there's reason in all things. No cow can give good milk without the proper kind of feed, but you can overdo it.

Mr. Favill—That is true, a cow is nothing but a machine, I would work her to the extent of her capacity without straining the gear.

Mr. Tripp—How long will the machine last if you work it that way?

Mr. Favill—I don't care how long it will last, it pays while it is running, after she is worn out sell her for beef. From the time she is four years old until she is eight, get what you can out of her then sell her for beef.

Question—How much would you get for her if she was a Jersey?

Mr. Favill—It would depend upon how big she was. The Jersey will give much richer milk, you know, than the Holstein, and the beef is just as much better as the milk is richer.

Mr. Austin—I have had a little experience in summer feeding, and I know that no man can afford to milk cows after the feed begins to shorten without feeding them grain. During the month of June, and perhaps the early part of July you won't need to feed grain, but you will have to begin then.

Mr. Favill—Instead of her eating all the grass she can eat, wouldn't it be better to give her something else.

Mr. Austin—Undoubtedly much better for the cow, but I don't know where the profit can come in. You certainly want a cow to be a good feeder. In selecting a cow, I would select one that eats the most. In fact I don't want a light eater for a dairy cow at all. The question is, how much will she eat and assimilate. So much as she will assimilate, so much will she give in the pail. At the same time you are doing this, you are enriching your land all the time. If a man cuts off the product he is raising and sells it, he is drawing upon his capital and it will soon be gone. I believe it has come to this in this valley, that a change must come.

THE HOME SIDE OF FARMING.

By MISS JESSIE R. MORGAN, Arcadia.

How blest the farmer's simple life!
How pure the joy it yields.
Far from the world's tempestuous strife,
Free 'mid the scented fields.

How true is this stanza. How much it says in those few unassuming words. Perhaps none can tell how much there is in it until experience points out to them each truth, and proves that it is a truth. How blest is the farmer's life! Blest, because it is pure and upright, admitting of no

hypocricy and deceit; entirely aside from the grasping, avaricious, and too often dishonest life of the business man.

How pure the joy it yields! What joy is there so pure as the joy produced by the consciousness of not only one day well spent, but every day well spent; spent in dealing with honest mother Nature, where there has been no cheating, nothing but what one is willing the whole world should know. In this kind of joy there are no troublesome twings of conscience making little interruptions when one is trying his best to be joyful.

Far from the world's tempestuous strife! Now, my friends I hope you will not imagine, because I said that experience must point out these truths and prove them, and now I am trying feebly to do it myself, that I, as a matter of course, consider myself an equal of experience. No, indeed, that is not my object, but if with my humble pen I succeed in pointing out any of the facts or proving them, and then you consider how much more powerful experience is, you will surely believe it without giving experience an opportunity to teach you.

How much of the worlds tempestuous strife as spoken of does the farmer escape! In fact all of it. On his farm he is secure and contented. His life is not one round of perpetual worry and fret about whether the markets are up or down, whether this or that speculation will be a success or failure. There is not a continual strife between himself and all the outside world; no angry, resentful feelings because his neighbor has the best custom, has secured by stratagem the bargain that he was trying to drive, his neighbor's family dress better than his own, ride in a better carriage or live in a finer house. No wonder the business man gets to wearing continually around his business establishment or around his home, that weary, tired look, that speaks only too plainly of the constant worry and struggle within. The troubles that he has may be little things, and one alone, as we look at it would appear unessential, but these little frets and troubles come manifold and daily. They prey upon him and rob him of health and peace. Well may the farmer congratulate himself that they are not his lot.

Now we come to the last line of our stanza, Free 'mid the scented fields. Here we are at last in the country. What is the strange sensation that passes over us? Can it be the sense of freedom that we have just acquired? Is freedom such a priceless boon then? Can you ask it? Then you have never experienced it in its full sense. On a farm is health and independence. What would any of us exchange our health for? Surely nothing else could give us so much actual comfort as good health. Without it we are not prepared to fully enjoy any of the other comforts of life, unless it be freedom of opinion and independence. No place is so conducive to health as the country, where the pure, fresh air and quiet, peaceful life can rest and strengthen both body and mind as nothing else can. Then has not the farmer true independence? He is not dependent upon anyone for his daily bread. He raises everything on his farm that is needed for his sustenance. If farm produce is low in the market, he can keep his until the prices suit him better. He will not starve as long as he has good flour, meat, potatoes and other products of the farm at his disposal. He knows moreover that his store of eatables is all genuine. He goes to the city and takes his seat at the table of a hotel. He tries to make himself believe he is pleased with the appearance of the table, it is so showy, but when he falls to eating, his high opinion begins to weaken, and he heartily wishes himself at home, where instead of that greasy stuff in the butter dish, is a ball of genuine, golden butter, actually manufactured from cream, and then too, instead of the scant supply of that bluish fluid in the cream pitcher is a generous amount of that horrid yellow scum that rises on country milk and is so obnoxious when first seen to the young child reared in town, especially in the vicinity of the town pump. He goes home contented with his lot, and well may he be for none are better off. When he wishes to treat his friends to fruit, instead of sending to the store and getting fruit that has lain, nobody knows how long, he kindly invites them to the orchard to look around and help themselves. How much more delicious and enjoyable is this fruit picked by their own hands. And so I might go on enumerating the varied

and numerous advantages of farm life, but for fear I shall make too great a draft upon your time, I will bring my paper to a close. Enough has been said. If I have gained one point in favor of farm life, I am content. If I have impressed the truth of the situation upon one mind, I am satisfied. A happy good night then to you all.

WISCONSIN FARMERS! DON'T SELL OUT FOR THE PURPOSE OF EMIGRATING TO CHEAPER LANDS, BUT EMIGRATE ON YOUR OWN LAND.

By HON. HIRAM SMITH, Sheboygan Falls.

I have nothing to say against people emigrating from crowded cities into the open country. No word of blame for families leaving thickly settled localities in the older states to find homes in the new, neither have I the slightest complaint to make against the oppressed of foreign countries, who have failed to resist successfully against the encroachments of tyrannical rulers upon the liberty and property of their subjects. Such emigration is wise and commendable, for there is connected with it a double blessing, one for the emigrant's family and their posterity, and another for the country in which they settle. But for a Wisconsin farmer to sell his farm for the purpose of emigrating to a new country, at the present time, seems unnecessary and unwise. What is the real significance of emigration at all? In the case of the classes referred to, it is to escape from conditions detrimental to their progress and happiness; opportunities for bettering their conditions are extremely small in cities, the difficulty of obtaining remuneration for capital and labor expended on the high priced land in the older states, the burden of taxation, the difficulty of the working farmer owning land at all in most of the monarchial governments of the old world, the certain draft for military services on all the able-bodied young men, too often to support governments they abhor, or worse yet, to be sent on foreign campaigns in which they can have no interest, satisfaction or

benefits, as is the case at the present time with France and England, said to be the two most enlightened Christian nations of Europe, now engaged in bloody wars—France with China, where retaliation is the massacre of unoffending missionaries—and England with the Arabs, along the banks of the so-called "Sacred Nile" where large numbers of men are killed on both sides and very few prisoners taken, showing that the Black Flag is still in the ascendant.

What interest have the farmers of England, Scotland and Ireland in the Arabs, either in opening a camel communication between Karti and Khartoum, or whether in the future the Khedive or the "False Prophet" shall continue to rob and keep in ignorance the Arabs of the future?

All the disadvantages of crowded cities, of populous states and the aggressions of tyrannical governments, are powerful incentives and justifiable reasons for emigration, that being the only practicable remedy for the evils they have to endure. But none of these evils attach to the farmer of Wisconsin. Population is not overcrowded; remuneration for capital invested and labor performed, is ample. Taxation is light when we consider the provision made for the education of our children in common schools, colleges and universities, and the many charitable institutions for the care of the unfortunate. Human life is as safe, and the rights of property is as well protected, and civil and religious liberty on its broadest gauge universally accorded and accepted, as it is anywhere in the habitable globe.

What real reason then, is there for a Wisconsin farmer to emigrate? The one standing reason given by those that desire or intend to emigrate, is that they want more land so as to increase their productions, and this is more in the nature of an excuse, than a reason, for in nine cases out of ten, the object can be obtained without emigration, and this is the main point I wish to urge. That emigration on your own land means to adopt such a system of farming as will increase the capacity of the farm to produce dollars' worth of products, and at the same time increase the fertility of soil, and the two achievements are inseparably connected, if any permanent advantage is obtained.

It may safely be assumed that there are very few farmers in Wisconsin that farm for the fun of it; nearly all are anxious to make the most money possible without letting their farms run down. Experience is considered more valuable than theory, and as the annual meetings of the Wisconsin Dairymen's Association, are "experience meetings" you will pardon me if I give my experience in emigrating on my own land about twelve years ago. Like most dairymen in the state, I was keeping as many cows as the farm would pasture and raise hay to winter them on. It was called poor farming to buy feed to keep stock. The custom was among all farmers at that time, and by nine-tenths of them still, to feed little or nothing to cows during the pasture season. As all pastures get short in July, if no fodder corn is raised or clover field provided for July and August, the only resort is to turn into the meadows. My experience is that a herd of say fifty cows on a two hundred acre farm will eat all the grass that grows on the whole farm from July to winter, if fed no other feed, and the cows allowed to have, as they usually do, the whole range of the farm. About this system of dairy farming, every dry season there are two certainties about it; one is, there is certain to be too little grass for the cows while consuming it, and certain to be less hay on the meadows the next season. It is as certain to make a meadow poor by over work and under feed, as to make a horse poor by the same process. One-fourth of the meadow, if clover, as it should be, if cut and hauled into the stable and fed to the cows, a portion twice each day, would do the cows more good than to wander over the whole of it, to eat some and waste the balance, leaving three-fourths of the meadow to cut the second crop for winter feed. If I state in the order that experience convinced myself, I should say, that the first emigration on your own land is, "Never pasture your meadows."

Another measure of equal importance and closely connected with the waste of too much pasture is the waste of most of the coarse fodder that grows on the farm, such as straw and corn-stalks. No one needs to be told not to waste good bright early cut hay and grain, but nearly all farmers

waste a large part of their coarse fodder. All the valuable experiments in cattle feeding bear uniform testimony that good hay, corn meal, oil meal and bran, when fed together, make an unhealthy and an unprofitable ration, but a mixture of straw and corn-stalks would add largely to their value.

Prof. Sanborn, the Dean of Agriculture in Missouri, has demonstrated the past year, that corn ground with the cob, pound for pound, made more beef than clear corn-meal, both experiments having an equal amount of fodder. Every observing farmer knows that if the straw and corn-stalks (usually wasted in Wisconsin) were properly saved and run through a feed cutter, and mixed with nitrogenous food, sufficient to make a proper ration, the gain would be immense, and the second emigration would read, "Never waste the coarse fodder that grows on the farm."

From the little experience I have had in under draining, leads me to conclude that a thorough system of under draining on old or wet lands, would be a cheap method of largely increasing production, and would be an almost certain protection against either a protracted rain or drouth. Any measure that will utilize or save the waste of products, or will in the aggregate increase productions, enables a farmer to increase the amount of stock he may keep, which in their turn will increase fertilizing material, that one essential necessity to keep up and increase productions. The farmer should treat his farm as he is obliged to treat a bank, he must make deposits before he can check out money, and he should not forget that he must deposit fertilizers on his farm in order to check out profitable productions. Another reason why the farmer need not emigrate from Wisconsin is, that more than one-half of the state is not yet occupied. Only forty-eight per cent. of the acres of Wisconsin have ever been cultivated. Here, then, is ample opportunity to make or create good farmers' homes in Wisconsin.

Prof. Henry—I understand our good friends of Arcadia have prepared a banquet and if there be any profits arising

from it, they will go to the high school library. The object is a worthy one, and I hope to see this room packed to-morrow night.

Song by Glee Club.

Pres. Morrison — The convention will now adjourn to meet at 9 o'clock to-morrow morning.

MORNING SESSION, February 25, 1885.

Convention met pursuant to adjournment at 9 o'clock A. M.

President Morrison in the chair.

APPOINTMENT OF COMMITTEES.

The president appointed the following committees:

Resolutions —

W. D. Hoard, Fort Atkinson.
J. A. Smith, Cedarburg.
Prof. W. A. Henry, Madison.

Dairy Utensils —

Prof. W. A. Henry, Madison.
J. B. Gorton, Arcadia.
H. Z. Fish, Richland Center.

Dairy Exhibits —

G. A. Austin, Neillsville.
H. K. Loomis, Sheboygan Falls.
F. B. Fargo, Lake Mills.

On Nominations —

Stephen Favill, Delavan.
F. B. Fargo, Lake Mills.
W. D. Hoard, Fort Atkinson.

CHEESE FACTORIES AND CHEESE-MAKERS AS I FOUND THEM IN WISCONSIN.

By T. H. CURTIS, Syracuse, New York.

No ordinary task has fallen to my lot in addressing you on this occasion. My peculiar mission through the dairy sections of your state, last summer, gave me some experience and some chance for observation, which may enable me to give a few hints of more or less value. But I fear you expect too much, and may feel somewhat disappointed in what I have to say. I am no magician, I possess no Aladdin's lamp, and never pretended to have the gift of working miracles. Yet from some things I have heard and read, I have become impressed with the idea that the popular opinion is that an expert in cheese-making is capable of defying all conditions, or of instantaneously changing them to just what is desired. I have never met such an individual, though I have met many of the leading cheese-makers of the country, and all who have a public reputation as experts. If such exist, I should be most happy to meet them.

I have never seen the best of cheese-makers who could always hit just right, even in the factory, where he was supposed to understand all conditions and surroundings, and with the machinery and apparatus with which he had daily familiarity. Much less have I seen one that could go into a new factory, and at once have the best of what is called "luck." On the contrary, I have seen many instances of cheese-makers, who had acquired an excellent reputation make a failure in changing locality. Everything appeared right on the surface, but somehow there was something in the milk or in the conditions and surroundings which escaped their observation, and caused unsatisfactory results. Much more difficult would it be for such a cheese-maker to achieve success should he enter a new factory every day, with different conditions and surroundings, and with different apparatus and arrangements for working. It would greatly add to his embarrassment if he had to overcome the

manifest blunders of somebody else, or to cope with the wilful neglect or ignorant acts of others on leaving his work uncompleted, trusting to their faithfulness to carry out his directions.

Milk is a very complex and delicate compound, and is often very deceitful in appearance. It may contain the fatal germ of many diseases, or be full of subtle ferment, and not show it to any of the senses or usual tests. The trouble may develop itself soon after heating the milk, or it may not appear until the cheese has stood some days on the shelf in the curing-room. Again, milk may both smell and taste badly, and yet the cheese made from it turn out quite fairly. In short, we are so far in the dark as to the real character of milk and the operations of the dairy, that experts and scientists are daily confounded with the results of their experiments.

Knowing these things, I did not start out on my mission, in your state, last summer, with any idea of producing a revolution, or of achieving any wonderful results. Indeed, in the beginning, I had no definite idea of what was really expected of me. I at first supposed butter-making, as well as cheese-making, would be included among my duties. I did not know whether I was to stop at a factory, and completely overhaul it, staying until I got everything right, this to serve as a sort of school, or to merely give verbal instruction, here and there, leaving everything to the operatives of the factory. On reaching my field of labors, a sort of compromise between two courses was thought advisable.

I was to lecture to boards of trade and to dairymen wherever I could get a number together, while visiting as many factories as possible, supervising the operations of cheese-making, pointing out the main defects, and indicating the true method as far as possible. My work at the factory had to be done in a single day, or so much of the day as could be used and permit me to reach the next factory. It must be done in a single operation. I had to take everything as I found it without time or authority to change anything, save so far as it could be immediately modified with the consent of the cheese-maker or proprietor. If there was bad milk, I

had to accept it as it was in the vat. If the rennet was bad, I had to use it—for I could get no other. I could not tell whether conductors, cans, strainers, vats, etc., had been properly cleaned, for they were already in use. Had they not been, unless dirt were visibly hanging to them, I could not tell what sort of water they had been washed in, nor how many ferments it contained. So I had to take the cheese-maker into my confidence, by telling him what results I wanted to produce, in the way of heating, the amount of rennet to be used, etc., leaving him to go his own way as far as I thought it safe. He understood the working of his heating apparatus; I did not. He knew how strong his rennet was; I did not. He knew the character of his milk, and how it worked; I did not. He understood his facilities for cooling curds; I did not. And so I might go on to the end of the chapter. I usually ascertained at what point he set his milk. If it was anywhere from 80° to 86°, I did not change it. I asked how soon his milk thickened after setting. If it was anywhere from 15 to 30 minutes, I did not change it; but always told him I preferred 20 minutes. Seldom, however, did coagulation begin in the time indicated by the cheese-maker. The time was almost always shorter or longer, as he was more or less correct at guessing. Hardly ever did he work by a time-piece. So in many cases was it with the temperature of setting. Almost always it was run above the degree named—sometimes going to 88° or 90°. Several times I found the setting below 80°, when something above was required. But these were minor points. I name them only to show how far many cheese-makers are from being exact in their methods. I shall have more to say on this point.

I was greatly surprised by two things—the smallness of your factories generally, and the primitiveness of their heating apparatus and other appliances. They were almost identical with what we used in the state of New York twelve to fifteen years ago. Nearly all had self-heaters, which are more economical for small factories; but they were not always of the most approved pattern. I was struck with the clumsiness—especially of those bricked

up — though some of them did good work. In two or three instances, I was actually driven out of the factory by the smoke when the fire was started! In four counties, I found only two steam boilers and one curd mill. In the other counties visited, I found many of the same defects, but the apparatus was generally more modern and better.

I had a good deal of trouble in cooling curds. In some cases, the water gave out altogether, and in others the supply was so small or so hard to get as to make it very difficult to cool a curd, or to keep one that worked rapidly from spoiling. In a number of instances, curds were put to press too hot, because of the lack of facilities for cooling, and because the cheese-makers did not have the patience to wait. Most of the time, I had to leave before the curd was put to press. I would direct that it be left in the vat or sink until it had a distinct, clean acid, and was cooled down to 80°. In two cases, at least, the curd was going into the hoops hot and sweet before I had got fairly out of sight of the factory! This I accidentally learned afterwards. In five or six cases, the milk was sour or on the verge of souring, before I touched it; and in two of these, at least, the curd was put to press before being properly cooled, aired, and scoured.

In a majority of cases the rennet was a whey preparation — sour and tainted. Sometimes it was awful! It was like a thick soup made of carrion and vinegar! When the rennet was prepared in water it was generally more or less tainted, because sufficient salt was not used to make a brine. But what could I do? I simply told the cheese-maker his rennet was bad, and directed him how to prepare good rennet. Then we went through the motions of making cheese as it should be made, with directions for after treatment. Then I was off for the next factory, leaving the cheese-maker to carry out my directions, and knowing nothing under heaven could prevent the ruinous effects of the bad rennet. In one case I had from six o'clock in the morning until nine to work up what the discouraged cheese maker considered a hopeless batch of milk. He said he had not had a good batch of milk during the season. He had not a good cheese on the shelves of his curing-room. He was willing I should have my own

way. At the close, as I was leaving, he said, "This is the first good curd I have had this season. I would rather have given $25 out of my own pocket than to have not had you come here." I left at nine o'clock, with directions to let that curd lie in the vat with occasional stirring, until two or three o'clock in the afternoon, when it should be unmistakably sour. Beyond this, I know nothing of the affair. It would very much interest me to learn the result. Indeed, it was but little that I had an opportunity to learn of the effects of my work anywhere. I heard complaints that the cheese made according to my directions was too soft. If it was, it was because not all my directions were followed, or because the cheese was put upon the market too soon. Besides, I find there is a difference of opinion among buyers as well as among consumers, as to the degress of softness. It is quite certain the "sweet whey" process does not make hard like the sour whey process. I will say more about this by and by.

The poor equipment of many of your factories is objectionable, but I do not know as it is avoidable. They are too small to pay expenses and the interest on the capital invested, and afford a profit. Half the number properly equipped, would pay better. In most cases it appeared that lack of capital, as well as lack of disposition to invest it, was at the bottom of the poor equipment of the factory. To complain of the lack of facilities was to complain of the proprietor's poverty— a most ungracious proceeding surely. A great evil arising from this state of affairs is the difficulty of training and controlling the patrons. Factories are too small and weak to offend their patrons by complaints, and the factories are so thick that the patron is not much inconvenienced in the delivery of milk by changing from one factory to another. This leaves the factories at the mercy of careless, selfish, and short-sighted patrons, and the man who is at the mercy of everybody stands a pretty poor chance.

I have read remarks about my having my reputation at stake, coupled with suggestions as to what I had better have done. Ladies and gentlemen, that is a matter that never

entered my head. I always leave my reputation to take care of itself, and it does not give me the least worry. My aim is to do my duty in the best light I have. I aim to do the best I can under the circumstances, and always expect to abide the result. I was actuated by no different motives last summer when working among your cheese factories. How I worked and what I taught, I now propose to tell you. You will be the judges as to how wisely and well I performed my duty.

Starting with a vat full of milk I said, here we have a compound fluid composed of about 87 parts of water and 13 parts of solids. The solids are composed of about 3¼ parts of casein, 3¼ parts of fat, 5 parts of sugar, about .75 of one part of mineral matter or ash, and the balance is albumen and other matter, or what the German's call *ziega*. Our aim is to separate as much of the solids as we can and save them in the form of curd. The sugar is in perfect solution. I assumed it, for illustrative purposes, to be 5 parts. It is generally less, though it may be more, ranging from 3 to 5½ parts. A fair average is probably about 4½ parts. But as I allowed a large amount of solids — 13 instead of 12 or 12½ parts — no wrong was done nor principle violated in calling the sugar 5 parts, which is a large but not extreme amount. This sugar is what makes the acid in cheese, and we want to get rid of as much of it as we can. We must dispose of about 83 of the 87 parts of water. In getting rid of this, if we draw the whey sweet, we shall dispose of at least 4 or 4½ parts of the sugar, which will run off in the whey because held by it in perfect solution. We want to retain all of the caseine and as much of the ash as possible. We can not retain all of the ash, which is mostly in the form of phosphates, for some of it will go off with the whey. But we can retain, say 60 of the 75 parts in the milk. This gives us a remainder of, say 3.20 parts of caseine, 3.20 parts fat, .50 parts sugar, .60 parts ash, 3.50 parts water; total, 11 parts.

These figures are not scientifically correct, but they are a close approximation to correctness, and near enough for illustrative purposes. I have allowed for a loss of a fraction of the caseine, a fraction of the fat, a fraction of the ash, all

of the *ziega*, which includes the albumen and any caseous matter not coagulable by rennet. So we have in our curd 11 of the 100 parts, but 3.50 parts are water. In curing we shall lose from .30 to .50 part of the water. This will give us 9.80 to 10 pounds of cured cheese, composed of 3.20 parts of caseine, 3.20 parts of fat, 3 to 3.20 parts of water, and also the ash and sugar; or, in other words, our cured cheese will be $\frac{1}{3}$ casine, $\frac{1}{3}$ fat, and $\frac{1}{3}$ water. Owing to our imperfect methods of handling, we will assume that the extra waste is equal to the weight of the ash and sugar retained. We thus have an average result.

Now, to accomplish all this, what do we do? We apply heat to our milk, stirring it occasionally to keep the cream from separating, and raise it to 80° in very hot weather, 82° in hot weather, 84° in warm weather, and 86° in cool weather. Custom has fixed upon these temperatures without giving any reason for it. The best that I can give is that, if we set at a lower temperature, the curd works too slow and is too tender; if we set at a higher temperature, it works too fast and is likely to be too dry. But conditions may vary the result in either case.

What we call setting is adding the rennet and stirring it into the milk. If coloring is used, it is stirred into the milk before adding the rennet.

What is rennet? It is supposed to be the gastric juice or pepsin secreted by the stomach of the calf. The secretions of the stomach of the young of any milk eating animal will have a similar effect. The stomachs of these animals are saved in various ways. They are sometimes saved with all their contents in them, which is very objectionable. They ought to be emptied and cleansed of all adhering dirt or hairs, carefully rubbed with salt, stretched on a hoop or crotched stick, and dried. A good way for patrons is to feed the calf at night and give it nothing more, killing it the next day about noon. But it should be kept where it can get no hay, dirt or other matter to eat, and should be at least three days old. If a week old, the better, as the digestive functions would by that time be well established, and the stomach healthy. If the calf goes too long without eating, the

stomach gets inflamed and discolored, and is not fit for cheese-making. Butcher's rennets are often in this way. In saving the stomach, do not cut a piece of the adjoining stomach off on one end, nor a piece of the intestine on the other. If the calf is treated as I have indicated, the stomach will be free from all contents and well lined with gastric secretions for cheese-making. Bavarian rennets are tied at the ends and blown up for drying. The ends are often tainted, and should be carefully cut off and thrown away. Sometimes rennets are salted down, like meat. I have had what is called excellent "luck" with rennets saved in this way, though it is not generally recommended. Rennets should be kept in a cool dry place. Heat injures them, but freezing and thawing appears to do them good, probably by disintegrating the tissue of the rennet and setting the rennet globules free. Old rennets are not only stronger, if properly kept, than new ones, but make firmer curd. I much prefer old rennets. Care should be taken to keep the rennets in the summer. It is well to tie them up in paper bags.

If good rennet extract can be had at a reasonable price, I would recommend its use. Where men make a business of preparing rennet, they can do it more economically, more scientifically, and make it better than the average cheese-maker can. The latter is apt to not properly strain the preparation, leaving too much animal matter to go into the cheese and breed taints. But if one must make his own rennet preparation, let him select his rennets carefully, being sure that they are all sweet and sound. Soak them and rub them in a weak brine, made by adding one pound of dairy salt to twenty pounds of pure water. If the water is not pure, boil it, and let it settle and cool, skimming off any scum. When the strength is out of the rennets, carefully strain the liquid through a good strainer, set it away, and let it settle, drawing off the liquid. Skim it, if there is anything to skim off. Then add enough dairy salt to the liquid to make a saturated brine of it. To make sure, put in enough so that a little will remain undissolved on the bottom of the vessel. Cover or cork tight — the tighter the better — and set in a cool place, as you would meat, for use. The United States

Dispensatory, authority with all druggists and physicians, says gastric juice will keep a long time when excluded from the air; but on exposure to the air it soon loses its characteristic digestive quality, and takes on a very offensive odor. The same is true of rennet, which is a preparation of gastric juice.

Never use whey for preparing rennet. It not only contains albuminous matter that readily taints, but also most of the sugar of the milk, which turns to acid and is so much detriment to cheese-making, the acid neutralizing the rennet to the extent that it is present. But when a weak brine is used for soaking rennets, do not forget to make a saturated brine of the preparation, nor to keep it in a cool place. All the trouble, when water is used, has come from impurities in the water, from not using salt enough, or from not keeping the preparation at a low enough temperature. Sometimes all these causes are combined.

But let us now return to the process of cheese-making. We add enough rennet extract or rennet preparation to cause coagulation to begin in about twenty minutes, We must learn by experience, if we have no other guide, how much rennet preparation is required to do this.

At the end of ten or fifteen minutes more, or thirty to thirty-five minutes after setting, and as soon as the curd will break clean across the finger when inserted and lifted gently upward, we begin the cutting. But I should have said that, up to the time of the beginning of coagulation, the milk is gently stirred to keep the cream from rising and forming a cream curd on the top, or standing in drops of oil on the surface of the whey, as it sometimes will in a cold make-room.

The cutting may be done with a perpendicular knife, or with this and a horizontal one. But I had about as lief have only the perpendicular knife, as I do not find the advantage in the use of the horizontal knife that I once pictured in theory. I consider it a useless expenditure of money. If the curd would lie still, it would work nicely. But it will not, and I find the perpendicular knife, properly used, does all the work quite satisfactorily.

Why do we cut the curd? Simply to facilitate the separation of the whey. This being the case, I am in favor of continuing the cutting, when once begun, until it is completed. If it is fit to cut at all, it is fit for the final cutting. I cut fine because this facilitates the separation of the whey more than cutting coarse. The whey has less distance to pass through in escaping from the center of a small piece of curd than escaping from the center of a large piece. I am in favor of cutting early, because the whey escapes more readily before the curd gets more contracted and tough on the surfaces of the pieces. As an Irish cheese-maker in Sheboygan county remarked, "It bleeds better when young!"

I have heard much talk about starting white whey by cutting whey too early. I have never seen a case of this kind. Last summer I often cut curds when the wise ones shook their heads. But they had to acknowledge that no white whey followed. There is more danger of starting white whey by rough handling of the curd, when tender, than in running a knife through it. If I think it is too soft to bear stirring, I wait a few minutes after cutting before starting the heat. I first rub down the side of the vat, to remove all adhering curd. If you do not, this adhering curd will cook onto the vat and get too much heat; but I never stir before starting the heat. I avoid stirring as much as possible in the beginning. When I begin, I stir gently—just enough to keep the heat equalized. This is all that is required; but this is required emphatically. Never stop stirring until the heat stops rising We want every piece of curd in the vat warmed alike. We want the center of each piece just as warm as the outside. As curd is a bad conductor of heat, this condition can be secured only by slowly and steadily raising the heat. I want it to go up only about one degree in five minutes. I heard a man say at the Western Ontario Dairymen's convention, recently, that he raised the temperature one degree in two minutes. This is too fast. Some stop awhile at ninety degrees. If one is raising the temperature as rapidly as this, it is well to stop at ninety, and several other points, to let the tempera-

ture equalize; but if we go up a degree in about five minutes, we can keep an even temperature all through without stopping until we reach blood-heat, or ninety-eight degrees. The effect of heating too rapidly is to "cook" the outside of the larger pieces of curd faster than the inside. This contracts the surfaces and confines the whey in the center, thus hindering its escape. It would be preferable, if possible, to heat the insides of the pieces the faster, driving the whey to the surfaces; we do not want to do either. We want an even heat.

We talk of "cooking" the curd. But this is a misnomer. There is no cooking at blood-heat. Milk does not cook in the cow's udder, nor does food cook in the stomach. Yet both are at blood-heat. It is not heat that condenses the curd. Temperature is only a condition. The rennet is what does the work. We apply heat to facilitate the action of the rennet, which is most active at blood-heat or the point of digestion. A comparatively large amount of rennet, at a low temperature, will not work as fast as a smaller amount at a high temperature. But two curds worked in this way, and then both put to cure at the same temperature, the one having the larger amount of rennet will cure the faster. Here is a hint for makers of spring cheese, which must soon go to market: Use a fifth or a quarter more rennet, and work it at a low temperature. You can make it curd faster or slower by varying the temperature of your curing room.

When your curd has reached ninety-eight degrees, it should not go much over one hundred degrees, as a higher temperature weakens instead of strengthens the action of the rennet — you may stop stirring if the temperature has ceased rising. It is better to keep the temperature at ninety-eight degrees until your curd is sufficiently "cooked," or the curd is sufficiently freed from whey and has become firm. This, most cheese-makers recognize by the elasticity of the curd. Take a handful and squeeze the whey out. If it is firm enough, on opening your hand, it will at once rattle to pieces. It should do this some time before there is any appearance of acid. By cutting early and cutting fine, we gain time and get ahead of the acid. Some object to

cutting fine for fear of waste. It is hardly possible to cut fine enough to entail waste. Harsh handling of the tender curd, tearing and breaking it, may detach fine particles that will float off in the whey — provided you do not give these fine particles time to settle down and adhere to the mass of the curd.

At Mr. Calkins' factory, near Palmyra, last summer, I saw Prof. Harvy cut a curd finer than I think I ever saw one cut before. When the whey was drawn off, it was carefully run through a cloth strainer by Mr. Calkins. The strainer did not catch half an ounce of fine curd.

After the heat is stopped at 98°, only occasional stirring is required to keep the curd from packing. If the make-room is cool, it is well to then cover the vat, as it is also after setting, when coagulation begins. A cloth, with strips of lath as long as the vat is wide, tacked to it, is convenient for this purpose. It is easily rolled up and put away, and as easily unrolled when needed.

It is well, when the heat becomes stationary, to draw off a portion of the whey, leaving just enough to freely float the curd. This leaves a less amount to draw off when desired, and guards some what against a point of danger when the acid comes on rapidly — especially where the loose curd system is practiced, as it is in most of your factories. The only objection to thus reducing the amount of whey is that, in a cool room, a smaller body loses heat faster, and a loss of temperature prolongs the operation in the vat. One has to be continually guarding against such drawbacks.

I now come to one of the mooted points — the final drawing of the whey.

Why do we draw the whey sweet? Because, if we let the acid develop while the curd is in the whey, we destroy the phosphates, which are essential to nutrition as well as to digestion. These phosphates are formed by the union of phosphoric acid with lime, iron, magnesium, etc. The principal of these phosphates are the three named — lime, iron, and magnesium. The lime is essential to the bony structure, iron and magnesium to the blood, and the phosphorus to the nervous system — there is also phosphorus in the bones.

These minerals, when combined with phosphoric acid, are in exactly the right condition to aid in digestion and nourish the human system. We cannot live without them.

Now, when we develop the lactic acid in the whey, this acid has a stronger affinity for the lime, iron, and magnesium than the phosphoric acid has. Consequently they let go of the phosphoric acid and unite with the lactic acid, thus forming lactates, which are indigestible, or nearly so. Their union with the phosphoric acid once broken, this acid isl eft free in the curd, so far as it is not washed out by the whey—and all authorities agree that free phosphoric acid is very deleterious to the human stomach. So you see a double catastrophe follows if we develop the acid while the curd is in the whey; it deprives us of the phosphates while substituting lactates in their place, and it gives us food with free phosphoric acid in it.

Prof. L. B. Arnold and Dr. Francis E. Engelhardt, by a long series of patient experiments, made at their own expense and without hope of reward, found that cheese became indigestible in pepsin precisely in accordance with the amount of acid in it. Prof. Arnold has suspected this, and hence the experiments. He had previously reasoned the matter out and been governed in his cheese-making accordingly.

By general reasoning and subsequent investigations, he ascertained the fact that lactic acid converted the phosphate into lactates, setting the phosphoric acid free, and hence the indigestibility of acid cheese. Furthermore, the acid cuts the finer fats in the milk and causes a loss of these, thereby impoverishing the cheese and injuring its flavor to the extent of the loss. And when we have robbed the cheese of its phosphates and its finer oils, we have a pretty indigestible mass of curd. It will undoubtedly be hard enough and firm enough to ship, but it is not fit for human food. This kind of firmness, which some cheese-buyers admire, can never be had with a sweet whey curd—for both the phosphates and the finer fats retained tend to make the cheese softer. Hence the popular prejudice in favor of soft cheese for home consumption has a scientific basis. It originates

in a healthy, natural instinct and appetite, and well would it have been for us if we had heeded it and never for a moment thought of making hard cheese for shipping. As Prof. Arnold says, in his book on "American Dairying": "Under the present state of things a cheese that will stand a voyage of 4,000 miles can hardly be called a fancy cheese. * * * But a much fancier cheese than we are now producing, one that will stand shipping, can be made. To do this will require milk to be free from some of the imperfections which are now quite common; it must be transported to the factories in better ventilated cans; it must be made with less rennet and less acidity; and it must be cured in an even and lower temperature." I shall have more to say under this head of lower temperatures for curing when I come to curing-rooms.

Now I wish to say right here that the sweet whey system originated with Prof. Arnold, as I have indicated, and nobody else. It is sometimes attributed to some one in Canada. But no one *openly* disputes his claim in Ontario. I have attended two conventions there, and in both this subject came more or less prominently before the audience, and no one laid any claim to it or disputed Prof. Arnold's title. Besides, we have the signatures of fifty or sixty cheese-makers to the fact that he first taught it to them, and the signature of Mr. Ballantyne, who is sometimes credited with it, to the fact that Prof. Arnold first introduced it in Canada and taught it to Ballantyne's cheese-maker. I say this out of no extra love or regard for Prof. Arnold, though I have great respect for him, both as a man and as a scientific investigator, but as a matter of justice and truth. I hate lying and thieving, and I consider the attempt of a few small-minded pretenders to rob Prof. Arnold of the credit due to him as outrageous and despicable. If the "sweet curd" or "sweet whey" method is to be designated by anybody's name, it is not that of Ballantyne, nor Harris, nor Curtis, but that of Arnold. It is *the Arnold method.* None of the others have the ability to solve such a scientific problem. But Prof. Arnold has one failing common to us all—he does not always make himself understood.

It is much easier to follow the Arnold method where cheddaring and grinding curds are practiced than it is where the curds are worked loose. When you cheddar you can draw the whey almost any time; pack the curd along the side of the vat, after tipping it up; cover the vat with a cloth, and let the curd lie and ferment almost as long as you please. You have got rid of so much of the sugar with the whey that you are in no danger from the acid, about so much of which you have got to have at some time, and you can let the rennet work and the whey exude until the curd is as dry as you want it.

But when you keep your curd loose, the task is harder and much more difficult. You have great trouble in keeping up the temperature after the whey is drawn, and at the same time stirring your curd sufficiently to keep it from packing.

This problem at first staggered me, when I began to move among your cheese factories, almost every one of which that I visited working loose curds. So I hit upon the plan of drawing down the whey soon after the temperature reached 98°, to just enough to cover and float the curd conveniently. Then I let it stand about as long as I dared to, for fear of the acid, before drawing off the balance of the whey. But unless the temperature was lowered, it was almost impossible to stir the curd enough to keep it loose. So I lowered the temperature to 92° or 90°, and then parted with the whey. Still there was great trouble and hard work to prevent the curd from packing. Hence, as soon as the curd was dry enough, I sprinkled on the salt and stirred it in. You all know salt helps wonderfully in keeping a curd loose. I found that, at 90 or 92°, it did not require very frequent stirring to keep the curd in a fit condition to put to press. But here I met one great difficulty. Few cheese makers wanted to wait for the acid to develop after the curd was salted. It seemed to them a waste of time. I also found that almost every one had the impression that salt checked, if it did not prevent, the development of acid. No one had ever saved a sour curd by salting it; and no one ever discovered that the curd did not continue to sour and leak after it was put

into the curing room. But I had to meet and remove this prejudice in neary every factory that I entered.

I do not think the salt in any way checks the development of acid; but the lowering of temperature probably does. Still it is, in the absence of proof, an open question whether exposure of the curd to the air, by the removal of the whey, does not facilitate the development of acid as much as lowering the temperature checks it. But I place no stress on salting the curd before acidifying it. It was resorted to as an expedient to save work. With cheddaring and grinding, I should never think of salting the curd before it is fit for the press. I would prefer to keep up the temperature, instead of lowering it to 90° to wait for the acid; but I see no way that a curd can be kept at 98° and kept loose without subsequent lowering of the temperature and salting, unless we leave it to sour in the whey — a very dangerous practice, to say the least, if we look to quality. The latter will give hardness, but it is at the sacrifice of valuable and essential qualities.

The best we can do is to wait until the first signs of acid and then draw the whey, unless we have some means of stirring and keeping the curd warm, as in the wire vat. But with a loose curd I prefer salting and piling it in the vat or sink, until the acid is well developed, instead of taking risks in the whey. I find it can be kept near 90°, in ordinary weather, by piling, and until the fermentation is beyond all danger. In one instance, at the factory of Mr. Calkins, near Palmyra, we held the curd in this way until it was full of pin-holes. We attributed the pin-holes to some taint in the milk, but Prof. Arnold tells me that any curd held in this way will show pin-holes. When it reaches this point it is beyond all danger from too rapid fermentation in the curing-room, at any reasonable temperature. Pressing takes out all signs of pin-holes, and they will never appear again. The cause of them is such rapid fermentation that the gases can not escape as fast as generated, and so they expand the curd as yeast expands dough in bread-making. I think this fact of carrying fermentation in the vat, or sink, to the point of forming pin-

holes in a perfectly sweet and sound curd, will be new to most cheese-makers. It was new to me.

I did not at first put so much stress on the full development of the acid before putting the curd to press. In view of your universally imperfect curing rooms, if I made any mistake last summer among your cheese factories, it was not sufficiently emphasizing the importance of the full development of the acid before pressing the curd. I will refer to this when I speak of curing-rooms.

My directions were to wait until the curd was a clean sour, or distinctly acid, and was cooled down to 80° before putting to press. I also gave this caution — that, if the cheese was really too soft, they must hold the curd a little longer in the whey, if necessary, but be sure to sour and air the curd more before putting it to press, and especially to keep up the temperature while souring. This would expel more of the whey, and it is unquestionably a fact that cheese must be made considerable drier, in order to secure shipping firmness, if we retain in it the valuable ingredients of fine fats and phosphates. By removing these, we can make a cheese hard enough to suit the most stupid buyer. But, with proper curing-rooms, we can retain all the fats and phosphates that can be retained, and still make a cheese firm enough to ship, if given a reasonable length of time to cure in. One of the evils of the cheese business is the rage of shipping cheese almost as soon as it is out of the hoops.

It is hard to determine which is of the greater importance, good rennet or properly constructed curing-rooms; for both are necessary to the production of the best cheese, while the want of either is sure to injure, if not to spoil it. The importance of controling the temperature in curing has not yet taken hold of the popular mind. The best milk in the world may be spoiled by bad rennet, and the best curd in the world may be spoiled by a bad curing-room. In a large majority of the curing-rooms of the country the temperature ranges from 60° Fahrenheit to 90°, and even above. Sometimes these extremes are realized within a few days. Think of setting a curd to fermenting at 80° to 90°, when it ought to start at 60° to 65°! Yet this is fre-

quently done; and to prevent the cheese from huffing and crawling, it is proposed by some to make the curd so dry and sour in the beginning that heat will not soften it. In this way is made what some buyers style a "firm" cheese. The best English cheddars, according to the American Encyclopedia, are set to curing at a temperature of 60°, and are never allowed to go above 70°. My observation and experience are that the range of temperature should never go above 75° Curing should begin as low as 65°, and no cheese should be marketed under thirty days from the hoops. When the curing is slow, as it ought to be, the cheese will not be ripe in less than that time. If sixty days old before ready for market, the better. The hurrying process is everywhere bad for the product, and no amount of souring helps the matter, however hard it may make the cheese, and however well it may stand up in hot weather. We want something else besides a standing-up quality. With low and even temperature for curing, we do not need to work all the goodness out of the curd to make a firm cheese. We do not have to cut the fats and phosphates out with acid, nor to dry all the moisture out by fine cutting, and high scalding, or long scalding. We can stop the cooking when the curd is evenly cooked through, so as to be springy when pressed together by the hands, take it out of the whey before the acid develops, and put it to press without unnecessary delay.

Last fall I ate some cheese at Mr. N. L. Brown's, Gurnee, Ills., which was dipped sweeter and put to press softer than I ever thought of doing; yet the cheese was close-grained and fine flavored, and would pass muster as a first-class cheese anywhere. But it was not cured in a hot curing-room, nor in one where the temperature went up and down the same as it was on the outside of the building. It was placed in his cellar, at a temperature of 64°, and there remained until it was fit to cut. Nor was it even rubbed, but only occasionally turned over. When cut, it was covered with mold and mites, and looked like a cheese that had been kept in a box a year. The superfluous moisture was dried out, but the butter and mineral phosphates were all left. It

demonstrated what can be done by temperature. Had this cheese been cured in an ordinary curing-room, it would have gone all out of shape in a few days — as soon as rapid fermentation set in — and be off flavor by the time it was ten days old. Several other cheeses were cured in the same cellar, in the same way, though none of them were put to press so soft and sweet, but all sweet-curd cheeses, and all buttery and fine. This particular one was the result of hurry, as other matters than the curd demanded attention. But the thought came that it would make a good experiment, as it did, and the result was satisfactory, though not different from what was expected.

Cheeses made in the same way as the others that were cured in the cellar, and some cooked more and soured more, were made by the same gentleman, and cured in an ordinary curing-room. In hot weather they swelled, and some of them got out of shape, while the flavor was sharp and rough. But those in the cellar at 64° never apparently moved a hair's breadth out of shape, were as solid as old butter, yet enough for shipping even, and of the finest flavor. It is hardly necessary to say that the cellar was exceedingly clean and sweet, and was well ventilated. These cheeses were to me a demonstration if not a revelation.

It should be remarked, by the way, that a curing-room does not want to be a drying-room. We do not want to dry cheese; we want to cure it, that is, let it go through the proper chemical change. This it does best in a somewhat moist room, in which the surface does not dry and become hard and impervious, so that the gases can not escape. It is better to contend with a little mold than with a dry atmosphere, that will make a rind as thick and tough as sole leather.

I see, on turning to Prof. Arnold's "American Dairying," that he says: "The temperature of a curing-room for whole milk should be 65° to 70°; for part skims, 70° to 75°; for hard skims and sour cheese, 75° to 80°." It is thus seen that fat plays an important part in curing. "The more fat," he says, "the cooler may be the room, and the less fat, the warmer may it be."

I insist that we can not do ourselves credit nor realize the best financial results in cheese-making until we build better curing-rooms — rooms in which we can control the temperature without fail. We have not yet settled down to cheese-making. We are still trying experiments and resorting to temporary expedients. We must build far more deliberately and for permanency. It is not necessary that I should point out just how a building may be erected so as to give control of the inside temperature. Architects know how to do it. When our cheese-makers get to the point where they demand such buildings, they will get them without much trouble, and at a moderate expense. It is only necessary that they should have the "will." The "way" will speedily open.

And now a few words, for the benefit of patrons, about milk and its production. I do not enter any special complaint about the quality and condition of the milk that I saw at your factories last summer. It was probably a fair average. I know it is customary, when there is failure, for patrons to blame the cheese makers, and for the cheese makers to blame the patrons.

Under the old acid system of cheese-making, probably both cheese-maker and patrons have cause for complaint — but the complaint is not always reasonable, because it is so often made on both sides in ignorance of the conditions. But there is no denying that very foul milk is often delivered at the cheese factory. I have, myself, been nearly driven out of the factory by what is known as the "smell of the barn-yard," when a batch of milk was heated up, and that smell and flavor followed the cheese until it left the factory, and probably until it was consumed. Such milk is simply an outrageous imposition on the cheese maker and the public. First milkings and the milk of sick cows have been known to be delivered at the factory. This is criminal — or should be, if law can make it so. All farmers know better than to save such milk for human food.

I probably was asked ten times last summer, how I worked up sour and tainted milk, where I was once how I worked up good milk. I do not think a cheese-maker should

be called upon to work up bad milk. It is not fit for human food. It is the business of the milk producer to deliver good milk in good condition. If he can not do this, he does not understand his business, and should get out of it as soon as possible. When, by accident, he finds bad milk on his hands, he should feed it to the hogs, if he has anything against them, or to the calves, if he is not afraid it will kill them.

It is impossible to make first-class cheese out of bad milk. Milk on the verge of souring, and milk having taints and odors derived from food eaten by the cow, may be made into passable cheese, and sell at the highest figure, but it is never gilt-edged. As to milk tainted by sickness of the cow, it is intolerable, and can never be converted into wholesome food. Nobody above a brute will eat such cheese, if he knows it. Healthy cows, fed on healthy food, will always produce wholesome milk. It only requires cleanliness, ordinary care, and a little common sense, to keep and deliver it in good condition. The cheese maker is bound to make good cheese out of such milk.

I do not object to a little what is called "age" in milk, but I do not want it sour or tainted. Milk with "age" works faster, coming right along without delay. Why it does this nobody has ever explained. Some suppose it is because the acid develops sooner; but milk in which the acid develops even more rapidly, does not make as good cheese. The acid theory does not explain it; nor does the oxydizing theory—for oxygen has nothing to do with the action of rennet; it merely develops flavor by acting on both the caseine and the fats. I have a theory of my own, which I announced in the *Farmer and Dairyman*, last summer. It is found that normal milk, has on an average, one-fifth as much rennet as we put into it ordinarily in making cheese. Sometimes this rennet is abundant enough to cause the milk to coagulate before there is the least sign of acid. Now, the amount that is commonly found in milk must be constantly operating toward coagulation. In consequence, when milk is old, it is so much nearer the point desired by the cheese-maker. So, when he adds the rennet preparation, all the results follow

faster than they would if the milk had not stood for hours under the influence of the rennet which it naturally contains.

The fact that rennet is a constant element in wholesome milk is of recent discovery. I think credit for the discovery is due to some German investigator; but I got the fact from Prof. Arnold, who, by the way, was the first man in America, if not in the world, to disclose the active agent of rennet. A German made the discovery about the same time, and Arnold thinks the German is entitled to credit for priority of discovery. But it was original with Arnold. He filtered rennet preparation through a piece of charcoal, and took all of the coagulative principle out of it. The fluid had no more effect on milk than so much water. Putting under the microscope what was retained by the charcoal, he found it consisted of minute globules, very much resembling the cream globules in milk. This he announced in a paper read before the American Dairymen's Association at Utica, in January, 1869.

In raising cream, the rennet globules go with the cream. This is probably why skim-milk requires more rennet in cheese-making than whole-milk does. It is also the reason why cream is so easily digested — and do not be surprised if it should be discovered that the rennet, naturally in cream, is an important factor in churning.

Ladies and gentlemen, I must beg your pardon for detaining you so long. But I could not well condense into less space what I had to say to you, and make myself clear. I could say more, and meant to have said some things which I have intentionally omitted for the purpose of shortening my paper. I have tried to be truthful and just. If I have erred, the error is not intentional. I aim to simply do my duty. If I thought cheese-making and helping dairymen to get a little more money was all there is of it, I do not think I would be here. In my judgment, there is a higher and holier meaning in all this. By consideration of these worldly subjects, we get mental discipline and development. If we work conscientiously, and deal justly with every one, we get moral and spiritual development. This aids us in our upward march of progress, which I believe is to become

more and more glorious, and is without end. By our labors in this life, we are building the ladder by which we descend to lower depths, or by which we rise to eternal light.

DISCUSSION.

Stephen Favill in the chair.

Mr. Clark — Mr. Curtis has traveled quite extensively through the state. Will he state what distance they usually bring the milk to the factories?

Mr. Curtis — Well, sir, it has been decided by pretty good authority, that is, the dairymen themselves, in the state of New York, that it does not pay to carry the milk over *two and a half miles* to the cheese factory. That gives the factory a radius of five miles, two and a half miles each way. Beyond that it is thought to be too expensive.

Question — Is it any injury to the milk?

Answer — Oh, no; the milk can be put in condition to be carried a long way, by being properly cooled beforehand. You know on the railroads they carry it hundreds of miles, and still deliver it in good condition.

Mr. Austin — Have you ever made an estimate of the loss to the dairy interest from bad milk being delivered to the factory?

Answer—No; but it is very great; I should say it was one-fifth or even one-fourth, because it reduces the yield as well as the quality.

Question—Did you find any other parties than this one you speak of that cured their cheese in the cellar?

Answer—No, sir; and he didn't make a practice of curing in that way; there were some dozen or so that he put in for an experiment.

Question—Let me ask you as to the effect your instructions had with the average cheese-makers?

Answer—I think the average cheese-makers went right along just the same after I visited them as they did before, but they were men who demonstrated they were pretty good business men and made a success afterwards.

Question—In what way was this milk gathered?

Answer—In my state the patrons deliver it themselves. In this state, I think the man has a route and goes his round. There is apt to be an advantage in that, too.

Question — I found myself, as winter was coming on, with about forty or fifty boxes of cheese stored in the cellar one year, and I was very happily surprised in the spring to find it the finest cheese I ever sold.

Mr. Curtis — I perhaps ought to mention one point. Buyers last summer requested me everywhere to speak about the subject of coloring, they said there was a limited demand for white cheese. The Liverpool market demands a small amount of white cheese, but they don't want any pale cheese or any excessively high colored cheese.

We found that one of the troubles was, that a number of factories would make up their different lots of cheese and there would be all colors. I suggested that they have a standard color and all use one kind, so that it will come out, not a pale or a high colored cheese, but medium straw color, that is what the buyers want in the market.

Mr. Favill — I have had some experience in cheese-making, and some years ago, I hardly knew of a factory that was properly arranged for curing cheese, and it is a matter of the highest importance; cheese made in the very best manner, may be totally ruined by the curing. If Mr. Curtis says Prof. Arnold is the first man that made sweet curd cheese, he is mistaken. I made sweet curd cheese and I found it would get all out of shape just because my curing room was not properly arranged. With the sweet curd we can make our cheese soft and by letting them cure right, they will keep their place anywhere. There is a great deal of difference between curing and drying. Make better curing rooms. We have many little factories that cannot afford to build a good curing room. You never want to get above 70° or possibly 60°, then you will get good cheese, but you cannot get good cheese in thirty days. It wants sixty days at least, and ninety days will be better.

Question — Mr. Curtis, I want to know what is the most prominent cause at the factory of bad milk?

Mr. Curtis — I think neglect in cleaning vessels, and han-

dling, not properly cooling before starting to the factory; take it in the very hot weather, it is hard to keep milk good while you drive it two or three miles, with the cover on tight, in the sun. Of course, the feed of the cows has its effect. There are so many things I cannot go over them now. I want to say, Prof. Arnold never claimed to be the man that discovered sweet curd cheese; he was simply the man who investigated the matter and found out the cause, the reason why sweet curd cheese was better than sour curd.

Question — How would you put up a building for drying cheese so as to get the temperature as you want it?

Mr. Curtis — It would take some time for me to tell you, and any architect would understand how it could be done. The way would be to have two or three walls with air spaces between, make double walls, and double floors and double windows. If you get air space enough between the cheese and the outside temperature, you can keep it as you want it. One thing you can do — open your windows at night, when the air cools down, and let the air in, and then shut them early in the morning before the sun strikes in. I went into a cooling room last summer where the windows were open, top and bottom, and the sun streaming in there, and the fat was streaming too. I asked the man, "Why don't you shut these windows, except at night, keep the air out?" "Why, I don't know," he says, "but that is a good suggestion," and he was a gray-haired cheese-maker too.

HOW SHALL THE FARMER BETTER HIS CONDITION?

By C. H. COOK, Dover.

In the practice of medicine, physicians will tell you that when the nature of the disease is known, the prescription and mode of treatment thereafter becomes more simple. But as to the social, intellectual and other ailments of the farmer class of the state there is less diversity of opinion I

make no doubt, than in the treatment and remedies proposed. My scheme is a good one, from my stand-point. My neighbor has one equally sound from his stand-point, and, so like all speculations in moral philosophy, when statements cannot be proved within the lines of arithmetical certainty, there will ever be found doctors to differ and dispute.

Dare we begin with the assumption that fewer blessings and comforts fall to the lot of the farmer than to those of the town and city? Some there are who think that the gifts of the gods, the favors of fortune, opportunities and all that, have long since been distributed with an even hand, and whatever of inequality there is, has come of our own doing. Are we all sharing alike to-day. In the lines of human advancement socially, financially, covering the whole ground, are we keeping even in the advance, or are we the stragglers of creation?

It is quite true, perhaps, that all men are made but of the same kind of stuff, and the kind of meat on which they feed makes them small or makes them great. Or if it be true that we have special grievances, what other conclusion else can there be than that the fault "is not in our stars, but in ourselves that we are underlings."

Also were it not for the fall, were not that curse first put upon labor, which singles out the sons of toil by their frock and tan from the rest of mankind, for some the farmer's life would then be more pleasant, the country would then be another Eden. Then might every hut and cottage fireside in our hills and valleys be all that fancy ever dreamed or canvas pictured. Do we ever feel as the shepherds of old felt while watching their flocks, that utter content with our lot? Is it not a little true that some of us whose lot or choice has placed us among the farmers, who may have read the pastoral poets to some purpose, have been taught by Corin, the shepherd in green pastures, to have no wish beyond seeing "our lambs suck and our ewes feed," and when the mood has served, found "sermons in stones, companions in trees and good in everything."

Is it not true I ask, for it has been your experience and mine, that close in the wake of such day dreams on some

sudden recall, some jar like the plow point meeting a boulder, all these fine visions disappear, we are again following the harder lines of real life, and looking upon this picture and then upon that, does not one ask himself is poetry all a lie? Are all these pleasing pictures of the farmers, "such stuff as dreams alone are made of?"

Are all our conditions of life so favoring as have been painted from the time of Jacob and his herd to the present?

A young lady friend of mine once declared that nobody could be a Christian and be a farmer too. She had just been driving the steers out of the corn. Was that a natural expression under the circumstances or does the pious soul of Ruth patiently gleaning wheat in the fields of Boaz suit you better? The farmer's or shepherd's life was the chosen pursuit as it was the original one among the ancients. The descendants of Jacob drove their herds from one range to another unhindered by that modern obstruction, the wire fence and reservation lines.

From an occupation in its first stages came the inspiration of the first song, and to-day, there is no phase of life on which the muses of poetry and art so love to dwell; none more fruitful of themes, none which has given the world more pleasure to read, and the masterpieces of both the poet and artist take their inspiration from its traditions of the past and its customs of the present.

I am in sympathy in heart and soul with the farmer, and when I tell you that I have often wished I could love our calling as I love to read it, that the sunset glories which fancy has thrown around it could be more real, I don't deny it, nor wish impossible things for it; I simply wish that these fair sentiments, these higher aspirations of true men could find in us sympathy, that our "minds like the dyers were less of the color of the thing we work in," then might our daily lives bear better witness to the truth of all the best things written of us.

We ought to be content if we are not; we ought to be noble men and women if we are not. The best sentiments, the truest sympathies, the hearts and minds of the good and

great of the world are on our side. This is a respect which we might better deserve if we would.

I am not one who looks upon the world outside as our enemies. There may be those who sneer and detract, to be sure, but let it pass. The best way to meet that spirit—and to conquer it, is first by bettering ourselves. The brain should be taught to labor as well as the brawn. It is no detriment to the muscle that the mind be educated, and the quicker that stupid sentiment is wiped out which looks upon all effort at self-improvement as smacking too much of the town, the better for all concerned. Yes, improvement in all ways is what we need, and not least of all in those ways which will enable us to make a little more money these hard times. It is said "that he can state a fact best who feels its truth most." Then he who has made money out of farming, is the man who should handle this topic best.

That many of us are poor in pocket is only too clear; and where is the blame? Some lay it to the railroads, some to the election, some to machinery and some to the protectionists. The latter opinion, at least, is palpably unjust; for, through the policy of protection is everything made cheap, so they say. Poverty then is and doubtless ever will be in the world among all classes and trades. But poverty below the point where ordinary comforts can be supplied, where health and a sound mind are given, is in a farmer, of all other men, the least excusable. Providence favors all alike in the fall of rains, the sunshine and dew in seed time and harvest, and sterile is that soil which under the hand of industry will not yield something more than a living. Whether it be the result of false education or other cause, a certain degree of prosperity begets a self respect and an attention, not so readily granted to men of limited means.

We sometimes, it is true, meet with men of a kind of mold superior to all rules and customs, who without a dime in their pocket have such resources of cheek or that degree of address that they can sort with their betters on equal terms on any ground. But with most men it is different. In order to that self-reliance, that unhesitating self-assertion which marks the master from the slave and stamps the

creature a man, he must feel that he has a backing, such as only can come from ownership, from prosperity in some degree.

It is not necessary that he measure his possessions with a Dalrymple or some cattle king of the plains, and gauge his independence accordingly; let him own wholly and of himself alone that which he calls his, though it be but a few acres, a cow and a team and he feels himself a man. And only then can he or ought he to feel himself the equal of other men. Better to have little and be the sole owner thereof than to number your forties by the score and be under eternal tribute to the effete aristocracy of the east, to some retired mill owner of Massachusetts grown rich under protection.

We should not value too lightly the uses of money, or prosperity, if the word pleases you better, nor yet sacrifice our comfort from day to day in our devotion to its acquirement. But by all means get enough of it to pay your debts and to give you leisure in time of need to go to the polls and assert your rights as citizens. Besides supplying the comforts and leisure moments of thought and mental recreation it is wonderfully assertive and bracing to one's spinal column when opinions should be expressed.

Nor yet can we all be rich nor our farms of equal extent and fertility. Some of us must be poorer in worldly possessions, as some of us are richer in the grace of goodness than others. There is a doctrine abroad, and it receives the sanction of some of the best in our land, that man shall be measured by the amount of his wealth, by the extent of his acres, or the length of his rent roll. This is a pernicious doctrine, and rather than see it obtain currency or get a following in the customs and philosophy of our times, we would welcome again the Spartan simplicity of old, when poverty was a virtue and wealth a crime, when courage merited the highest reward, when weakness was branded a stigma and a shame.

Wealth, as a means for the convenience and comforts which it brings us, for its purchasing power in enabling us to secure health, education, self respect, and the respect of the world, is desirable and worthy, and should not be ig-

nored. And little need, I am sure, there is in pointing this lesson. Already it has long been taught, less in theory than in practice, till it has become instinctive, ever present in the minds and motives of men.

But money as an idolatry is an abomination, not less unto the Lord, then unto all men of sense. Notwithstanding, its devotees continue to be numerous and doubtless ever will be, while the passions and appetites of men remain as they are. In spite of the simple democratic tastes of the fathers which found expression in the first Adams riding on horseback unattended and alone to his inauguration as President, we, as a nation to-day, are in hot haste for wealth.

From the country to the town, go the keenest energies and the sharpest minds, and for what? To make money. It is there they find the readiest exercise of the money making faculty, the largest and quickest returns. Is it an advantage or a disadvantage that the town beats us in the accumulation of wealth? Which ever it is we had better be content, for to rival them is not to make ourselves happier, and the advantage in situation can never be overcome. And if there be those who envy and sometimes make themselves miserable by such comparisons of unequal advantage, just remember that in spite of greater riches, many a carved and oaken door closes upon miseries which only wealth may know. Read in the weekly calendar of deaths, those whom the miseries of wealth have driven to wretched suicide. Let us be moderate and reasonable in our wants and industry and good habits will see them all supplied.

Do any of us know of farmers who would deny their calling if they could. I have known such. Men of accredited sense, who hold a high head in the world and consider themselves of consequence, that like to resent the name of farmer. For my part I may not be puffed up with my lot in life on account of the association or occupation. And even in them I believe I have as little to blush for as he of the town. And I am sure I would scorn equality with that individual who should consider the act as condescension to grasp in fellowship the hand of labor.

It is not to be disputed, perhaps, that the farmers of the

land do not stand relatively on a footing with the commercial, professional and other classes in respect to that thing called society, or in political influence, equaling in numbers though they do all others combined. In a measure, to be sure, we are much to blame, but the odds, it must be allowed, are against us in the matter of advantage—advantage, such as closer association, mutual dependence in trade, daily and hourly competition in society and business. Then the secret and skill of all this lies in organization, which of all things else for the promotion of the general good there is no greater lack. But in this, too, we have signs of splendid improvement. In these associations and kindred conventions to which the farmers come flocking as to a feast, there is promise of better times. In these meetings for counsel and mutual encouragement, we all learn a better wisdom, a sounder sense. We get to learn something of business. We get general information. We grow united, which is strength. And all these taken together make social happiness, make better thrift, better men and lovelier women.

Organization among farmers — I mean in the narrower sense of communities as well — must grow largely out of a better acquaintance with newspapers, and a livelier interest for things beyond their own little horizon.

Organization and more intelligent business habits, as I have said, are the crying needs of Wisconsin farmers. This idea, to my mind, cannot be too forcibly expressed nor too often discussed. Better yet if it be preached for the next fifty years with as much regularity and frequency as was that old text of slavery times, "servants obey your masters."

In this new departure we shall, of course, have the traditions and notions of our grand old fathers against us — that is, some of us. They believed more in the virtue of old usages and customs, that each man should somehow rustle for himself, independent of societies and clubs. We shall have ignorance and prejudice to combat, in a diverse population, diverse not more in language and nativity than capacity and zeal. And here again education forms the necessary

basis, the lever of Archimedes, in fact, on which all beside may rest.

How potent is organization. The newspapers have their union, the merchants their exchange, the railroads their pools, and the mechanics, that class nearest of kin to us in employment, learned the strength of association a hundred years ago. Is the farmer forever to loiter in the wake of civilization, the dull pupil who must stay to recite his lesson after the others are fiinished and gone? And here again we plead the old excuse that our homes are scattered widely apart among these hills and valleys.

To this end granges, clubs, alliances, and the like, are all good — better, in fact, for this sort of gain, than for which they were especially intended — commercial gain. Not selfishly by any means do we urge the idea of closer relations and unity of action, not for offensive operations, not in anticipation of enemies to be met and overcome by sheer force or weight of members, not to wrest from weaker classes that which is their own, but that we may better learn the equal rights of all, insist upon their fair division and peaceably maintain them. Organization, though it be the source of all monopolies, may be its antidote. "It is excellent to have a giant's strength" when it is under the dominion of a just mind, and stands as impire for right. Organization does not include the idea of reprisal and conquest. We know that there is no such thing as absolute independence, not even in speech or action.

The world is necessarily full of concessions and compromises. Every man to some extent infringes the rights of his neighbor, and this friction will always be where there is more than one man. Then, as two heads are better than one in solving any question of right, organization by all means should be our aim, that through it we can better help ourselves without jostling or hindering others. And not to unsay in any sense what I have already said, nor to sound a false alarm, it is good through which to compete with other classes. The world of politics at least is not so utterly innocent as Mark Twain when he traveled in the Orient, or not so wholly above suspicion like certain characters in his-

tory as to make vigilance uncalled for or watchfulness a prying impertinence in marking the character of our laws and law-makers; and as detectives in this work, how much we need the discipline and tact. But in all these adjuncts we are growing, if our good and best historian, Hon. J. M. Smith, can be relied on in giving estimates, and he can be. As steel sharpens steel so wit sharpens wit. Comparison of experience makes us better farmers, social intercourse, self-reliance and friction of mind with mind, make us ready men. In some of these latter accomplishments in vieing with the town we may yet take a back seat, but if headway in chopping logic and sharing in readable discussions, count for anything in attainment or excellence as citizens or public servants, then can we not hope that in the sweet bye and bye, we may "get there." It may be a time, indeed, before the students of rhetoric copy our diction, or our elocution becomes the model of the schools, or scrap hunters filch our matter for choice quotations, or our manners become the envy of society. Bean Brummels but in the main business of life, in the matters of good breeding and good sense we may congratulate ourselves on fair progress, and all in spite of difficulties to others unknown. Our opportunities, not always the best, must be improved to the utmost, and while all that heart could wish for does not come as rapidly or in a measure as full as desired, remember that it is the constant dropping of water that wears away the granite.

Let us be more in sympathy with our neighbors. Leave off the bickerings and slights which make us enemies instead of friends. Dismiss from our minds those things which chaff and sour. Repeat to ourselves the words forgive and forget as the religious devotee does his ritual. We cannot hope for agreement in general matters with dissensions at home. It is said the French nation present the strange spectacle of strife and constant broils among themselves, which, on the approach of hostile foes without, changes to concord and unity of action. But we are not a French nation and we cannot rely on caprice to unite us in moments of sudden need, or permit ourselves to indulge in

neighborhood strife on the chance hope of harmony when occasion demands.

I often wish it were even more of a truth that a little leaven leavens the whole lump; that a few such farmers as we all know in this state, might by their example of manhood and character, infuse the entire farming community with something of their tone and quality. But whisper it not in Gath. We have a motley crowd to deal with. All sorts and conditions. More mixed and confused than the tongues at the tower of Babel. Year after year our numbers are increased by a class, robust in health and sturdy honesty, who yet do not, nor cannot instantly adjust themselves to their new conditions.

In trade, politics, law and religion, there are certain precise regulations, rules and principles, to which all followers thereof must at once comply. The arriving merchant from Italy or Norway, adjusts himself to the American mode without friction and with promptitude and ease. In religion the minister takes up the sacred lesson where he left off in Vienna or Stockholm; the lawyer accustoms himself to his new relation without jar or discord, but the farmer brings with him his old ideas, surrounds himself with his old conditions, yielding nothing of his own notion but his citizenship, and thus entrenched, woe is he who invades that vicinity with the dainty notions of the new world ideas. And this is but one view of the nature of our task.

Erase from the hearthstone the slavish idea that all labor is for labor's self, that man is a man to the extent only of his capacity to perform the labor of a beast, that the uses of home are the same as the hovel, a place merely to shelter in from the storms, rather than the dwelling of comfort and refinement; a place to think, to dream. a place for books and papers, for painting and music, and not a retreat for animal ease and sensual pastime.

To keep pace with the rest of mankind we must improve. We must try to overcome in some way the disadvantage of location. We have no telegraphs to be sure, no telephones, no pavements for going and coming, no electric lights, nor music halls. Our nearest place of meeting is the school-

house some miles away, the time always 7 P. M.; and our path, the highway through the mud or through the deeper snow. We meet without ceremony; we never see each other between times, because we live miles and miles apart. Are these trifles to be brushed aside and overcome? Let our brothers of the favored town answer. Yes, and the town, what is it? "Only the country come to town day before yesterday that is city and court to-day." And the same man has said that "the city would have died out, have rotted long ago, but that reinforcements were coming from the farms and fields." The city is the home of the cultured and refined, the home of scholars and poets, the resort of science and art. Dr. Johnson used to say that London was the world and the world was London.

But after all whatever of sturdy character or physical perfection, whatever of rosy health and practical life, for they are the energy and power to success, they came near or remotely from the country — a daily infusion of healthful life to energize and rebuild the decaying and crumbling power of the city. To be sure no credit is given; all the same, the current flows on to sweeten and renew, even as the fragrance from a bank of flowers floats through the shady window of the poet to help him at his task.

Then let us try and make of our business a success; for, of all successes, there is none more pleasing, more gratifying than the success of the true farmer. Away from the fever and excitements of trade; the country is the true nursery of youth, the home of man in his best estate; and to that end we must study something — anything beyond the daily treadmill round of life, anything to lighten labor of its exhaustion, to keep the mind of man from becoming like the clod, the man himself from becoming the mere animal of muscle. Then shall we have reached that ideal period described in the lines of Whittier:

"Then more and more we'll find the truth,
Of fact and fancy plighted,
Of culture's love, and labor's strength,
In these hill homes united."

WHAT SHALL BE DONE TO PROMOTE BETTER DAIRY EDUCATION AMONG THE FARMERS.

By J. D. LEWIS, Arcadia, Wis.

I should infer that this association very probably thought they had made a strong point when they placed me on their list for a paper, devoted to the subject of, "What Shall be Done to Promote Better Dairy Education Among our Farmers?" and then very kindly added, as a sort of a tonic or general panacea, I should presume: "This subject is certainly one of great interest to every one who keeps a cow, and Mr. Lewis will no doubt be able to point out the right road to travel." Well, there is serious doubt of my being able to point out as clearly as the gentlemen have, it seems, anticipated. If it were practicable to point out this right road to secure a better dairy education in a very brief manner, I should at once say, run your agricultural colleges as a separate institution, and send your boys up to Prof. Henry for a term or two, and I would willingly guarantee that they would not only find the right road to travel, but come back very materially benefited in their general education of the dairy interests. In meetings of this character, we suppose the discussions, papers read, and questions asked and answered are all for the purpose of mutual benefit, not only for those immediately connected wiih this meeting, but the whole community that are now, or are about to become engaged in this vocation. The industries of butter and cheese-making have increased with such wondrous rapidity since the introduction of creameries and factories, have been of such real benefit in increasing the prosperity of the communities where they have been most extensively engaged in, not only in the increased value of farming lands, but in the real bettering of the condition of the people, who before this were raising grain exclusively, that it is, indeed, worthy of the most careful consideration of all classes, directly or indirectly engaged in the occupation of farming. As good, natural grasses and plenty of the right kind of water are

the material requisites necessary to successful dairying or stock-growing generally, I propose to discuss in a brief manner, and for the first time, call the attention of the public to the peculiar quality of the soil in this section, and its adaptability for successful grass-growing, especially clover, and of its action, through the grasses and water, in producing a superior quality of butter. I believe by so doing I can in no better way answer this question or promote the general education of the dairy interests among cur farmers, in this locality at least. It is now, I believe, generally conceded by all stock-growers that there is no plant grown that requires so small an outlay of labor and expense generally, and furnishes so great an amount of plant food of just the right kind for producing the best butter, cheese, and good, quickly-fattened beef, as clover, where it can be grown with anything near success. It has been but a few years since the plant was first introduced in this section, and now it is not as extensively grown as it should be. Where there is now an acre there should be a hundred grown in this locality, for I am well satisfied that there is a section of country, including the most of this and Buffalo counties, and a portion of Minnesota, lying across the river, opposite Buffalo county, that can not be excelled for this purpose by any section in the United States.

My attention was first attracted to this subject some eight or ten years ago, by noticing spots along the roads where clover had sprung up in small patches, in soil either wild, or but, at the most, partially subdued. I observed that it grew in the most luxuriant manner, and spread rapidly, did not winter kill; in fact, looked just as if it had come to stay. I then began a thorough examination of the soil that I have not yet entirely completed, but have ascertained enough to warrant me in saying that, through the agency of the decomposition of an ancient stratum of rock, of which the most of our argillaceous clays are composed in this vicinity, I find we have a soil peculiarly adapted to the growth of clover.

As this is not in any sense a scientific meeting, I shall not attempt to describe, in technical terms, this peculiar chem-

ical composition, but simply say that it is here, and, as I believe, in the greatest abundance, and is second to no other known mineral combination in the production of clover. What material benefit would it be to say to a community of farmers that gypsum, or what is best known as land plaster, is composed of 46.51 of sulphuric acid, 32.56 of lime, and 20.93 water, making an even 100? This kind of education they care but very little about. What they want to know is, is it beneficial for the production of certain kinds of crops? They prefer to test its efficiency by actual observations, as I have frequently done. When on the top of some of our highest bluffs, I have looked off a distance of several miles, or as far as one could distinguish color, and could plainly see where clover had been plastered, and where it had not, by the difference in the color. In all other localities that I have been acquainted with, it was necessary to resow land to clover every three or four years at the farthest, in order to grow it with any success. If they did not, it would run out entirely. And more, while we here would only sow about four to six quarts of seed to the acre, they are compelled to use from twelve to twenty, and often a bushel. As the seed is always costly, this of itself is quite an expense. Here I do not know if it would ever run out; its tendency is the other way, to run in. It is the worst thing to get out of a corn-field planted on clover and timothy sod, of anything I have had to contend with. Two years ago I plowed under eight acres of clover that had been cut continuously for five years, and it was better than the first year it was sown. My observations in this direction have satisfied me of another great fact in the butter-making line, that this chemical compound spoken of produces, through the agency of the grasses, a fine color and most delightful flavor to the butter, without which the best butter makers in the world will produce an inferior article, and as all living waters running through the soil must contain, to a certain extent, in their composition, more or less of the material of which such soil is composed, so we find here we have water that can not be surpassed in butter making. What were the reasons, do you suppose, why the Arcadia cream-

ery butter took the first, and the Alma creamery the second premium at the fair held at St. Louis last fall? This was from butter made in Arcadia the second, and in Alma the first season of their operation. You could not believe, for a moment, that the butter makers employed in these two creameries were so much better than all the others that exhibited butter at that time, that this was the cause of obtaining the premiums. I find, also, that the Arcadia butter, when placed upon the Elgin market of Illinois, is considered superior to the other butter there, in all the qualities that go to make up a first-class article, and that is the largest butter market, outside of Chicago, in the state. You would most certainly assign this cause to other and more correct reasons, and, by an investigation into the facts, would find it was produced through the effects of this peculiar chemical material, in its action through the grasses and water of this region.

When a capitalist, or a combination of them, wish to engage in some manufacturing enterprise, they look out the most suitable locality for successful operations, figure out to a cent the cost of the plant as it is termed; calculate, with a reasonable certainty, that the present high protective tariff will continue in force through their lives, and those of all their relations, and then ascertain exactly the amount of dividends that will be received by them, generally, semi-annually, for the support of their over-worked wives and daughters at some fashionable watering place, or in their annual trips to Europe. If a great many dairymen would only partially follow the mechanical exactness of these other fellows, they would frequently come out better than they do. Their cows would be milked with more regularity. Their milk vessels would always be in good shape, and the general management of the whole business conducted in a manner that would always insure success.

It is true, you never can expect the dividends the other fellows are receiving, for they have the inside track, and are going to keep it. The average protection to them amounts to 46⅜ cents, while yours is four cents per pound on butter and cheese, and this dodge is so transparent that it would

require the most powerful magnifying glass ever made to detect a particle of benefit you have ever derived from it. Your surplus butter and cheese is shipped out of the country, and, therefore, subject to no protection. But our eminent statesmen assure us, with the utmost gravity, and faces as long as your arm, in their intensity of feeling, that if it were not for this enormous sum of four cents a pound protection, that they have with so much wisdom placed upon butter and cheese, the country would be flooded with pauper butter from Europe. I apprehend that we have nothing to fear from this pauper butter spoken of. I think it will be found strong enough to take care of itself.

Any one looking on Prof. Owens' geological chart of his government survey of this state and Minnesota will see a small area, colored and marked metamorphic shades. It is no great extent of territory, includes this and Buffalo counties, and a portion of Jackson, and about as much in Minnesota. It has been badly cut up through the agencies of erosion, corrosion, and denudation, and probably one-fourth of this area is now composed of arenacious valleys. But I predict that the time will come, and at a not very remote period either, when from this small extent of territory there will be more butter manufactured in one year than is now in the whole state of Wisconsin. All that is necessary to do is to clean up the hills, break them up, and sow clover and timothy after the soil has been partially subdued. It is not going to dry out or run out; in fact you cannot drive it out. Then bring on your cows, and you have got a gold mine that the Pacific slope never equaled. Those placer diggings, however rich they might have been first, were soon worked out and exhausted; but this I believe to be practically inexhaustible. Now do not say I have not pointed out the right road to travel, but rather say I have made the way so plain that the wayfaring man, though entirely unacquainted with the business, need not err to any great extent therein.

Mr. Hoard — I would like to ask Mr. Lewis, what agencies what means shall we employ to get at the agricultural

mind, to work upon it, stir it up, and thereby promote this very desirable dairy education among these farmers?

Mr. Favill — I just want to put the answer in your mouth for that. It will be to take *Hoard's Dairyman.*

Mr. Hoard — Mr. President, Mr. Favill will please hand over a dollar, for he is not a subscriber.

Mr. Favill — I live close by and get it by word of mouth. We will be very glad to hear you now, M. Lewis.

Mr. Lewis — To promote that interest with farmers in my estimation, the first thing that would be necessary would be to excite some interest, attract their attention, to show them that they can make more money out of it, than out of raising grain. That, of course, would be the first. Now then, if they can be convinced that they are in the right place to raise cattle — and cattle must have grass, and the right kind of grass — when they are brought to see that, it is another step, and it seems to me the farmers must at least think of trying it. My idea of what can be done to promote dairy education, is what has been done for a number of years. We have talked it over among our farmers, that farming was poor business and that we want something to replace the present method of farming, but we want to feel the dignity of labor, and that if a man is successful, there is no difference where he labors; that every successful man on the farm is entitled to the same respect that the successful man has in any other business. In fact, that you cannot bring too much intelligence to farming, and that there is no man on God's green earth that knows too much to do this work right. Tell a boy that there is more money in one Jersey cow than in any ten acres of land to till, and after you have convinced him of it, he will want a Jersey. Where is the boy who will plow and till ten acres of land when he can get the same amount of money out of one little cow? Teach a community that it is not disgraceful to milk a cow; We want to put dairy farming and stock raising all on the same great equality. And in this case we don't want to exclude the other side of the house. Let us treat our women, our girls as our equals; their interests are just the same as our interests. Our success should be theirs.

OUR NECESSITIES.

Hon. A. A. ARNOLD, President State Agricultural Society, Galesville.

Maturity means ripeness. With mankind physically, in order to produce the best results as to hardihood and facility for endurance, the case is not different from that of the lower animals. Maturity with these should occur at proper ages, and with proper treatment in conformity with nature's laws. If proper food and protection from the elements are denied, it must be at the expense of vitality, and thus affect the progeny. The idea that exposure and neglect will make an animal more profitable and hardy is not true.

If circumstances are such as demand exposure and fatigue as in man or the working animal, habitude to extremes will for the time better fit them for the efforts which may be necessary to endure the trial when it comes, but when the exposure is so great as to be at the expense of vitality, the loss is greater than the benefits.

Statistics from the insane asylums show that insanity is more prevalent among those that have had to endure privations, those of bad and intemperate habits and those that have had bad and irregular diet.

It is climatic conditions and diet that have, during the ages, brought about the great diversity in the human race. The dwarfed Patagonian and Esquimaux are the result of great extremes of temperature, while the best physical and mental development of the human species are found within the temperate zones, thus proving that great extremes, while it may enable persons to endure by reason of habit, it does not tend to the more desirable development of the human race.

The same is true of the brute creation. Climatic conditions and treatment have developed the different breeds of stock, so that if we would raise as good or better stock than we have we must afford them the conditions necessary to this development, and it may be done more rapidly by the infusion of better blood.

If a man would raise good Jersey cows he must give them

a good liberal diet, and plenty of shelter from the extremes of heat and cold; have them bring forth young at a reasonably early age, and milk them well up to within two months of calving.

No cow, or dairy of cows, no matter what may be the breed, will attain the maximum of profitableness unless all these details are complied with.

The cow Mary Anne would never have produced 36 lbs., 12½ oz. of butter in seven days unless she had been fitted for it for the four months preceding the trial. So we may not expect the best results unless we observe the proper treatment of the cows the whole year through.

A good physical development is as necessary to a Jersey in order to produce the best results, as in any other animal. It is preposterous to suppose that a little machine weighing 700 pounds will produce as much butter as the machine (like constituted) weighing 1000 pounds.

In reading the record of the cow Mary Anne, I noticed that she weighed 1000 pounds and over, a large cow for a full-blooded Jersey. She was fed during the trial as high as fifty quarts of meal per day composed of oats, peas, linseed and bran, in from five to seven rations, and at every meal partook with a relish.

I think this is about the amount of meal that a good farmer in Trempealeau county would give ten cows, and he would receive about the same amount of butter as from Mary Anne in the same number of days.

A farmer purchases a Shorthorn bull to grade up his stock in size and quality. The first thing he does, perhaps, is to try the Irishman's experiment to make an easy keeping horse — by gradual approaches he had got him down to one straw per day when he said the old fool up and died.

With a young bull, as with any other young animal destined for utility in after years, the treatment is the same, only more liberal as a necessary effort for their restlessness, and consequent waste of flesh and vitality. As well might a man who feeds his horse three quarts of oats per day when standing in the stable most of the time, and then expect him to do as well with the same feed on hard work, as to

turn his bull loose in his herd, where he will be almost constantly on the race, and expect him to thrive as the other cattle with the same keep.

If a man wants a breed of cattle that will survive on the least feed he should never attempt to improve them by buying improved breeds of any kind. A mongrel of any kind will do for him. All the profit he gets from stock is to turn his coarse fodder into manure and a mongrel will do this as well as any other. Improved breeds have only been produced by careful selections, feed and treatment that have been continued until the desirable characteristics have become habitual and constitutional, and will, if properly handled, be transmitted to their offspring, even if bred on inferior stock. I have seen some half blooded Shorthorn steers that had all the characteristics of full blooded Shorthorns. A bull that shows this potency of blood in his offspring is cheap at almost any price.

Hunger, exposure and consequent unthrifty condition, show directly in the progeny, and the longer it is maintained the greater are its effects.

So on the contrary a thrifty habit becomes constitutional, and if maintained, will show in the progeny.

A man that begrudges the feed his stock eats had better turn his attention to some other business. Say let him keep bees, they steal most of their living.

Now early maturity with the cow means that she shall be well developed at two years of age, and then have a calf; then, if she is properly fed and has a calf once a year, she will not attain her full size until she is eight years old, when she will be at her best; after which, she will slowly decrease in her milk producing qualities.

With the horse destined for work, early maturity is not desirable, however much it is practical, in order to get rid of the three year olds for the same price as for a five year old.

I am aware that many horses sell now a-days for their beef, but these are not always the best horses, as every body knows. Horses are valuable for their speed and powers of endurance, and they should be reared with these prominent ideas in view. As before stated exposure and neglect does

not produce this; on the contrary it induces disease and constitutional weakness; also, forcing is nearly if not quite as bad for the horse or breeding animal, for their future utility.

A too early maturity is not desirable in any breeding animal or in an animal destined for hard work.

With animals destined for the butcher, experience proves that early and quick maturity is not only profitable, but produces a kind of flesh most palatable, if butchered when ripe as it is called. Meat from an animal in low condition is not the best for food, nor is the meat from an over fed animal, healthy, for the over fed animal is liable to disease; indeed, all animals that have been pampered for a long time are not healthy, which is manifested by their loss of power to reproduce, the proper attendant with all healthy animals during the ages marked out by nature. This thought kept constantly in view by the farmer, will guide him, and he may not expect vigorous young things on his farm unless he feeds well, nor strong, healthy stock if he pampers and over feeds.

The profits derived from early maturity of animals destined for the butcher, must depend much on the cost of food, and the markets. No invariable rule can be followed in this, any more than in any other, that the farmer has to deal with.

There is no occupation that demands so much of care and good judgment to insure the best results as in farming, and especially in stock raising; and if a farmer thinks to escape all care and have the money come in without persistent efforts he must not go into the stock business, unless perhaps he moves to the southwest, where stock care for themselves the most of the year; and even there they are constantly obliged to introduce new blood in order to keep up with the demands of the times.

This explains the reason why there is such a demand for all the improved beef-producing breeds of cattle, and all the young bulls find a ready market at paying prices.

The average price of Shorthorns that have been sold at the public sales for the last fourteen years is $262.32 per head; and for the year 1883 it was $205.50, thus showing

that, notwithstanding the great supply of these cattle, the demand is as great as ever.

I found by consulting the 26th Vol. of the American Shorthorn herd-book, that there are over 2,200 breeders in the United States and Canada that have animals therein recorded. Doubtless each of those represent as many as ten head of pure-blooded Shorthorns, which would make 22,000 head, and no doubt there are as many more owned by men not reported as breeders that have purchased these for use in common herds, and thus we have a total of 44,000 head of these cattle in this country. Surely if there is any aristocracy in stock these are the champions, for they can show the best and longest pedigrees, and their works live after them.

Twenty years ago the average price of export cattle was about $38 per head. Now the average price of export cattle is $87 per head, showing the rapid increase in the quality of the cattle of this country produced by good feeding and the infusion of the Shorthorn blood, for until a recent date, no other beef-producing cattle has been imported into this country. All the cattle exported, except from the southwest, are grade Shorthorns. The average price for Boston last year was $90 odd, from New York $80 odd, while from New Orleans and Galveston it was $38 per head. Most of these grade Shorthorns shipped from Boston and New York are raised in the middle states right from the homes of the fine herds of Shorthorns that are constantly sending out their pedigreed bulls to be used in the herds of the farmers that are building up these beautiful steers, graded up many of them so that no one could detect them from the full blooded Shorthorns. They are beauties, and no one that has ever been in the Union Stock Yards at Chicago, could have failed to see the difference in quality and price of these as compared with the improved stock shipped in mostly from the northwest. A buyer with a car load of grade steers, whether fat or lean, can tell just what he can get for them in Chicago by the market reports, and if he wants them he will pay their full value when buying rather than not handle them.

With scrub cattle it is different. He never knows what he will receive, for the quotations cannot show. In fact there are no quotations for our scrub cattle; they are not as good as the Texas cattle are now, for they are more or less graded of late.

This being the case, the buyer is cautions in buying, and unless on a wide margin he lets them alone, which in part explains the low price paid by our local buyers for scrub cattle of all kinds. Sometimes they strike a man in Chicago that wants that kind of stock, and they make him some money, while often going on these returns, in buying again they often sell in Chicago for less than they pay for them here.

Farmers that have poor stock can afford to sell for what they can get; there is no money in them to keep; no profit when sold, and often no profit to those that handle them.

Another point should be kept in view by the farmer that has good stock, that is to know their value. When the buyer goes around, and is paying from $20 to $25 for two-year-old steers, and comes to your door and offers you the same price for your grade yearlings, don't be too quick to accept the price offered, for if these yearlings are of a fine quality, as large or larger than the two-year-olds, they are worth for stockers or feeders much more to you, and the buyer knows they will sell for from one to three cents more per pound in Chicago.

Farmers should know the markets, and to know this they must know the grade of their stock in the markets in order to know how much to ask for their stock.

Farmers often ask such outrageous prices for their stock that they are the laughing stock of the buyer, but a man that is posted and wants what they are worth is entitled to respect, and the buyer likes to deal with him, and will handle them, if possible, and take his chances in fooling some other man, that assumes to know it all, and knows but little of what he is talking about.

It does not take a very smart man to learn the price of wheat in Arcadia at any given time, but it requires some in-

vestigation to have an intelligent understanding of the value of cattle destined for the Chicago market.

Many farmers would make money to take a daily paper and study the markets. Invest a few dollars in the papers and spend some time on them every day and get the run of the markets, rather than being perched on the neighboring dry goods box in the grocery, or perhaps drinking and swapping lies in the saloon.

Farmers have as much good sense as other people in most things, but in matters of business they are sadly lacking.

Much of our success in life depends on a business education, be we farmers or anything else.

A gentleman in the southern part of the state keeps about seventy-five head of grade Shorthorn cows that he breeds every year to pure blooded Shorthorn bulls. He allows the calves to run with their mothers until they are dry or nearly so, and claims he makes money as fast as he could if he milked the cows, and thus saves all the bother and annoyance of the dairy. He milks only one cow and buys his butter.

He feeds all these calves all they will eat and eat clean, from their birth, until two years old past, and then ships them to the Chicago market. He tell me that his cows are as fine as any herd of pedigreed cattle in the state, and he sells his heifers at one year old as high as $50 each. He says he has always kept a pure blooded bull, raised his own cows, and don't know how little other blood his cattle have in them. He does not buy cheap bulls either, but the best he can get, and has paid as high as $600 for a bull to use in order to make these fine steers that will attract attention wherever they go.

His steers weigh generally about 1,400, and bring from six to eight cents per pound, according to the market, at any rate top prices, or about $90 per head, when if he observed the rule adopted here by our farmers he would realize not to exceed $45; for a two year old that would sell for $45 here would be considered a good one.

Now the question is whether it is not better to keep a few

good steers and keep them well, force them and get a good price, than to keep a large lot and take small prices.

Many farmers say, "I want my stock to eat up the straw, stalks, and rough fodder on my farm, and therefore can't afford to feed much grain." Every farmer that has tried it will testify that no animal will consume rough fodder as well and with such relish as the animal in good condition that is fed grain in the winter season.

Nature demands a certain amount of rough fodder to promote digestion, and no man need fear but what he will have a place for all his rough feed if he only feeds plenty of grain, they are just the things to eat straw and will eat it even if they have hay. Grain and straw is much better than hay and no grain.

I sometimes sell hay when it brings a good price, but I never sold but often buy straw.

When the steer is old enough, and the farmer desires to turn him into money, after he has been accustomed to grain by gradually increasing his feed, then give him all he will eat and eat up clean, just as you would fatten a hog. This puts on flesh the fastest, with the least work; puts it where it is wanted (that is all over the animal), and the butcher will tell you from the handling the animal that has been thus fed, and the connoisseur by the taste on the table.

To make the most of an animal the young thing should never lose the baby fat. Let a calf lose the calf fat and he will never be quite as good in all points as if he had been kept growing.

Any young animal should be kept in good condition. Never let it go back, either in summer or winter, whether for a butcher or for a breeder; and if for the butcher, when the topping off comes give it all its system can handle, and then you will have good meat that will sell well.

This same rule maintains in all kinds of stock used for food, be it cattle, hogs or sheep.

I have no doubt that the most profitable animals destined for the butcher are the early matured things, and this is the sentiment of all that have tried it.

I am much interested in the welfare of the farmers, of

Trempealeau county especially, and would like them pursue a course of stock raising that will not only be profitable but creditable.

Sheboygan county has almost a world-wide reputation as a dairy county, and other parts of our country are becoming celebrated for some specialty, from which the people are growing rich. This county is well adapted to stock growing, and if our farmers would unitedly work together and try to improve their stock we too may yet hold up our heads and be content. The advantages to our county by such a course are manifold. Farmers would thrive and become rich that are now poor, and the price of land will advance just in proportion as it is made profitable.

I hope our farmers will, as fast as their means will allow, turn their attention to this profitable and pleasurable branch of farming.

REPORT OF COMMITTEE ON RESOLUTIONS.

Resolved, That the sincere thanks of this association be, and are hereby tendered to the citizens of Arcadia and surrounding country for their generous hospitality extended to this association, and the wise and liberal provisions made for the success of this convention.

Resolved, That the thanks of this association are tendered to Gov. Rusk for his earnest endeavor to advance the agricultural interests of Wisconsin, and the cordial support he has always given us as a society.

Resolved, That the earnest thanks of this association are tendered to the Chicago & Northwestern, and Chicago, Milwaukee & St. Paul railroad companies for their liberal action in greatly reducing the rates of freight on all exhibits sent by this association to the New Orleans Exposition, and for a liberal reduction of rates to members attending this convention; in addition, we also thank these companies for the wise and liberal aid and sympathy they have always extended to the promotion of the growth of the dairy interest in Wisconsin.

Resolved, That the thanks of this association are heartily extended to the management of the Green Bay & Minnesota railroad for marked courtesies extended to this association, and for a liberal reduction of rates to members attending this convention.

Resolved, That the earnest thanks of this association are hereby tendered to its officers of the past year for their zeal and wise judgment in administering its affairs, and especially for their efforts in promoting the splendid

exhibit at New Orleans, whereby the state received great credit and the dairy interest large encouragement.

Resolved, That we give our earnest support to the bill, now before the state legislature, creating a state board of agriculture, and we urge upon our members that they do all in their power to secure the passage of said bill.

Resolved, That we urge upon the state legislature the passage of a bill providing for the publication of not less than 5,000 copies of the proceedings of this association of not more than 250 pages, separate and apart from other reports, to be distributed by the secretary of this society, except —— copies, which shall be distributed as follows: To the governor, 100 copies; to the secretary, 100 copies; to the state librarian, 25 copies; to the agricultural society, 100 copies; to the horticultural society, 50 copies; to the agricultural college, 100 copies; to the northern society, 100 copies; to the state treasurer, 25 copies; to each member of the state legislature, 10 copies.

Resolved, That the association respectfully urge upon the legislature the passage of the Estabrook bill, providing for the holding of farmers' institutes in various portions of the state.

W. D. HOARD,
J. A. SMITH,
Prof. W. A. HENRY,
Committee.

Motion to adopt, seconded and carried.

Convention adjourned to 1:30 P. M. same day.

AFTERNOON SESSION.

Convention met pursuant to adjournment at 1:30 P. M. President Morrison in the chair.

THE GENERAL-PURPOSE COW.

By W. D. HOARD, Editor *Hoard's Dairyman*, Fort Atkinson.

In what I shall have to say on this question I wish first to lay down certain propositions as a guide to myself, and also to explain my purpose and connection.

I. I believe the idea of a general-purpose cow, such as is entertained by, I may say, a majority of farmers and dairymen in Wisconsin and many other states, is a delusion and a snare. I steadfastly believe it to be the greatest obstacle

that exists to the spread of sound ideas of breeding, based, as these ideas ever must be, on that universal drift in the tendency of all perfected animal life toward *specific* purpose.

II. While I am a steadfast believer in the good effect of sound ideas of breeding in the production of a good and profitable cow, I just as steadfastly believe that erroneous ideas will in their action produce a week "general-purpose" dairyman, and a cow just like him. "As a man thinketh, so is he."

III. I have no fit breed to advocate. What I am trying to do is to endeavor "by as much as in me lies," to disseminate what I conceive to be a true idea of dairy cow; to combat what I believe to be false ideas or notions, and get the farmers of Wisconsin to accept, as fast as it is possible for them to do, sound principles, as applied to their ideas and practice; in other words, to make real, not half-way dairymen of themselves, for to the latter there cometh neither profit nor honor. There is always a big chance for a man to be mistaken. I may be wrong in my notions. Evidently an important portion of the farmers of Wisconsin think so, for their practice shows it. However, I believe I am right, and hence I speak my mind.

I said I believed the general-purpose cow was a delusion and a snare. What is she as a butter producer? Her average yield in Wisconsin is less than 150 lbs. per annum. What is the average worth of that butter? I answer $30, if well made. If made by a general-purpose farmer, $24. What is she as a cheese-producer? Her average yield in Wisconsin is, as near as can be reckoned, 300 lbs. What is that worth? If well made and sold, say $30. That, gentlemen, is what we amount to as general-purpose breeders. Does it pay? Are you satisfied you are a success as compared with specific-purpose breeders. The loose, ill-defined ideas of breeding that prevail among our average farmers are a fearful cost to profitable dairying. It goes without saying that no man can make dairying pay its *best profit* who estimates the cow in any other light than the largest result in milk, butter or cheese. And the fact that so many cheese-factory patrons and butter-makers complain that

they cannot make their cows pay is only a living, wide illustration of the low standard by which the cow is measured. As an example, select some farmer who keeps, say 14 cows, and devotes them to butter-making. We will suppose that he is a fairly-posted dairymen, understands the value of good care and plenty of feed, and knows how to sell his butter after he has made it. Ask him for the points that govern him in the selection of a cow for his dairy, and in a majority of instances he will tell you he considers size and ability to lay on flesh one of the chief considerations. His reason for this is that when he dries off the cow he can sell her for as much more for beef. That is a general-purpose dairyman. If he buys, it is from a general-purpose standpoint. If he breeds, it will be from a beef rather than from a butter or cheese stand-point. Now, that man is a type of a large proportion of the men who own the cows of Wisconsin. He is the man I desire to take issue with. First, I want him to look over the cows his ideas have produced, and whose record I have given, and then I want him to tell me if he thinks such ideas will ever give us better cows. The cows we have he has bred, and their record is the best answer I can give to that question.

One of the greatest hindrances to the improvement of the dairy cow is this beef notion that so widely prevails among our dairymen. They have only to turn to records of breeding to see the absolute fallacy of it. No reputable breeder dares to mix purposes in his breeding. If we study the history of our domestic animals, we find that, by natural selection, they are divided into specific lines and purposes. This is the universal tendency of nature, and the intelligent breeder conforms to it. The breeder of the thoroughbred or racing horse would laugh at us if we should ask him if he did not think it would not increase the speed of his horses to mix in a little Clydesdale or Norman blood. Yet the lines of purpose are no more distinct in the horse than in the cow. It is only in this way that the principle of "like begets like" can be preserved. The question is, are these ideas correct, and if they are, can any dairyman, whose best profit should be the line of his closest study, afford to ignore them? He

shows partial obedience to them, when he says he would like a heifer from the best cow in his herd; yet, ignoring the fact that she has no regular line of parentage, one consequence of heredity, he breeds her in a no-purpose manner, and expects the calf will prove as good as the mother. Because she has individual excellence, he erroneously thinks that she will breed from her udder rather than from her own parentage, and that of her mate. It is strange to me that, with all the discussion that has been had on the laws of heredity, that our average dairymen should so generally set them at defiance, or even show indifference to them.

It is only by adhering to a strict construction of the law of heredity that anything like a certainty of result can be obtained in the production of a good and profitable animal. The race-horse breeder knows it; the draft-horse breeder knows it; the fine-wool breeder knows it; the mutton-breeder knows it; the breeder for beef knows it; all intelligent breeders for milk know it. All these are religiously obedient except the average dairyman, the very man of all others to whom a profitable cow is a prime object. He shuts his eye to law and sound practice, and goes in for confusion, worse confounded. He must believe in his practice, or else he would not so tenaciously adhere to it. The work he has constructed, in other words, the cow of his hands, and her results, remind me of the Frenchman's description of an old-fashioned tipple called flip.

"A leetle brandy to make him strong, a leetle vater to make him weak, a leetle lemon to make him sour, and a leetle sugar to make him sweet. Zat make une grand confusion in my mindt."

There is not a farmer in Wisconsin that has ever had any chance to observe the results obtained from the Jersey or Guernsey cow in butter, the Holstein or Ayrshire in flow of milk and cheese production, the Shorthorn, Hereford or Polled Angus in beef, but must see that the best and most profitable results can only be obtained by adhering to these long and well established lines, then let him measure his "all-sorts," "general purpose" cow, with these, and how does she compare? Still farther, suppose he attempts to im-

prove her progeny, will he select a male of her kind? This shows us, gentlemen, the value of right ideas, and how much influence ideas, either good or bad, have on the result of our labor. Specific purpose, not general purpose, has given us the magnificent breeds of cattle I have montioned.

Look now at the sharp contrast in result. The general-purpose cow of Wisconsin yields an average of 150 pounds of butter a year. The very best may possibly reach 300 pounds. The best specifically bred butter cow in the world yields 803 pounds of butter in 328 days, and 38 pounds of butter in one week. The general-purpose cow of our average dairies yields an average, say, of 300 pounds of cheese a year, or a milk flow of 3,000 pounds a year (and I very much doubt if she does even this). The best specifically bred cheese cow, a Holstein, astonishes us with a yield of 23,870 pounds a year, which, if made into cheese, would make at least 2,000 pounds.

There stands the record before you. Which line of practice, which set of ideas will in the end give us the largest number of good cows? We cannot keep on in this business and hope to stand up against all vicissitudes that threaten, unless there is a rapid improvement in the character of our cows as in everything else.

Why, we can hardly compete to-day in the English cheese market with the Hollander, who makes cheese from cows worth $150 apiece, fed on land that he pays $30 an acre rental for, and which is worth $500 to $700 an acre. These are sober facts. How does he do it? The answer is very simple. He does not milk a general-purpose cow. His cow has been bred for a hundred years for one specific purpose, and like a thorough-bred trotter, it is hard for dung-hills to overtake her.

If I were asked to define what I considered the chief excellence of a prime dairy cow, I would answer, the power to transmit her qualities, with a good degree of certainty, to her offspring. I can find thousands of good cows who have individual excellence, but they were not bred for any specific purpose, and their excellence will die with them. Right here is seen the value to a dairyman of correct notions con-

cerning breeding; right here, in the question of offspring, is where "blood tells."

The difficulty in Wisconsin, as I have said many times before, is that the men who are keeping the cows are not dairymen in the true or most profitable sense of the word. They are wheat farmers commencing to keep cows. They are slow to believe that the breeding of the dairy cow, the care and feeding of a cow; in a single word, "dairying" should be made the principal business of the farm. The farmer here in Trempealeau county may not be in as good shape to do this as the farmers around Elgin, but he can get his ideas on the right track and then, under their lead, push forward.

Dairying, as a distinctive pursuit and principal business on the farm, is yet in its infancy in Wisconsin. It is only fourteen years, gentlemen, since the total capital invested in cheese factories in this state was only $18,000. There has been a tremendous cutting down of erroneous notions among our farmers in that short space of time, and more correct ideas have taken their place. Only fourteen years ago it was a common idea among Wisconsin farmers that cultivated grasses would never prove a success here, and yet there is no state in the Union that can now excel it in this particular in proportion to the number of acres so cultivated. What has dispelled this wrong notion and made thousands of grass-blades grow where one grew before?

The cow has done it; or, in other words, dairy education. But this is only one example. There has been encouraging progress in the growth of right ideas in other directions, among which are the proper care and feed of cows, the construction of suitable barns, the providing of good, pure water, and in easy abundance, the knowledge of the laws that govern the making of fine butter in place of the universal grease of a few years ago, the making of fine cheese that to-day commands the respect of the best markets of the world—all these are triumps of no mean order. But a vast amount of underbrush had to be cleared away from the agricultural mind before this good seed could be sown and have a fair chance to bear a harvest that should awaken the

pride, stimulate the thought, enlarge the knowledge, and enhance the profits of the Wisconsin farmer. Just in proportion, then, as he has allowed himself to become obedient to the advanced teachings of dairy science, has he made progress; just in proportion as he has refused to do this, is he a relic of the unprofitable past. The tape-line that every dairyman should measure himself and his business by, it seems to me, should be this: What are the ideas that govern the most successful dairymen in the conduct of their business? Second, How are those ideas carried out? Third, How shall I, the soonest possible, place myself in contact with such ideas and practice? Let any man that can barely read, and who has an average quality of brain and energy, set those three propositions squarely before him and become obedient to their deductions, and his success is assured. But every man will learn, sooner or late, cheaply, or at sore cost, depending on the man, that ignorance and wrong ideas in this business are the dearest freight he can carry. When he goes into partnership with the cow, he will find that the old, easy, indifferent, slip-shod notions of wheat farming will not do at all. He has come into the domain of brains where knowledge, and not main strength, is power. He must feed his mind with dairy knowledge. If he is too stingy to do that, he had better stick to his wheat, even if it is only fifty cents a bushel, for there he can depend on an occasional streak of good luck, but in dairying never.

DISCUSSION.

Mr. Clark — Has Brother Hoard had any experience in dairying with these same breeds, and strains of cows that he had been recommending to these people?

Mr. Hoard — Yes, my experience in dairying is based upon the fact of being well born in the first place. I say it with pride gentlemen, with an honest pride, I come from good stock, and so far as abundance of food was concerned, it was Jersey. My father was one of the best dairymen I ever knew in my life, he was not large in his operations but he was very successful. My father was not a breeder to the

extent that many are, still he was among the first that ever introduced the Devon in that section of the state of New York; the Devon was his butter cow. So far as my personal experience, I am not at the present time engaged in dairying, but my observations with regard to these laws are based upon study of the nature of these things. My ideas of this matter are based upon a verdict that I see in nature and the most successful way of doing business.

Question — Have you ever seen a man more successful than Mr. White, who averaged $70 per cow per year?

Mr. Hoard — Yes, I told you Mr. Goodrich averaged $84.49.

Question — How many cows did he keep?

Mr. Hoard — Fourteen; then Mr. Oatman of Oatman Bros. kept 64 cows and they averaged him $84 and over a year.

Prof. Henry — What kind of cows does he keep?

Answer — Holstein grades; he makes his milk into butter and cheese; one other thing I want to add, I hear dairymen talking about size. If I was a dairymen I wouldn't pay any attention to any other purpose than that, I would either go steadily straight towards cheese making or towards butter making and adhere to it. If a man wants to make the largest amount of butter at the least expense, and the largest profit to himself, he certainly ought to take advantage of one hundred years of effort to produce a dairy cow. Now, a large number of men want Shorthorns, they say they are good dairy cows.

Now I say the two things cannot occupy the same spac at the same time, even the Almighty himself cannot do that. No dairy cow ever yet was a square block and legs put under her, and the principle that makes a Durham a beef animal is that one principle of heredity. If she is worth anything at all as a beef animal to produce beef, and give you a certain result as a beef animal, it lies in the fact that she has been steadily bred to that purpose. Turn around and see how it is with the Jersey. She has been steadily bred to extract the largest amount of butter fat out of the smallest amount of feed in proportion. She is a peculiar organism. She takes some feed and she will surely give you a large

proportion out of it. Feed the same food to the Durham and you get your large amount of flesh. Feed your same food again to the Holstein and it becomes converted in another direction. It is a result in the difference in the machinery. That machinery has been established by long lines of effort. A gentleman over in our county was not satisfied with a Clydesdale horse; said he was worthless. I said, why? He is purely Clydesdale. He said "Oh, yes, but he has only three crosses in him." His ancestry had not been established long enough so he did not throw towards the lower forms. So it is the principles of heredity are demonstrated. My friend, Hiram Smith, several years ago didn't believe much in this principle, but he has been a close observer, and he told me some time ago of an experiment he had made with three different sets of cows, two good common cows, two Ayrshires, and two Jerseys, and he found the common cows made a pound and a quarter of butter to the cow; the Ayrshires made a pound and a half, and the Jerseys a pound and three quarters to the cow.

The Jerseys, you see, had not near the size, but they had the distinctive elements in them to make butter. You see with these facts staring a man in the face he would be insane in his own business if he said, "Oh, well, I prefer that cow because when I get through with her, she will make me five hundred pounds more beef than the others." Let us figure that. Here is a native cow, made a pound and a quarter and the Jersey made a half a pound more a day, that was worth, at the price he is getting on the average, thirty-two cents, sixteen cents a day apiece, the average production as they would run along would naturally make it $50 a year difference. But suppose it gains only $25 a year more. Well, now the average life of a cow we will say is eight years, and at $25 you have in one cow $200 on the one side and 500 pounds of beef more on the other side. I have heard hundreds of men say they would not have a little cow. Mr. Phelps had a little cow that made fifteen pounds of butter on grass in a week, and she didn't weigh nine hundred pounds. How long do you think that little cow would have to continue making fifteen pounds a week to pay for a dozen

cows of the larger size that make less. So I say, let us look towards the final outcome of this matter. Become dairymen. We can't be everything. We can't do everything, but if we adhere to these purposes, then we take our own skill from others, we enlarge our capacity and our powers.

Twenty-eight years ago I worked for a man in the state of New York, where I made the butter and cheese from forty-five cows. He had a cow he called "Old Hanner," one of the most wonderful milkers I ever saw. She was of strong Durham descent. He had saved from that cow five heifer calves, and he never got one worth a cent. They were absolute failures. You see that cow had an individual power that made her a large milker; but when she gave that power to her young it dated back, don't you see; within the principles of heredity, and her children took her character as she, from her ancestor but not as she gave into the pail.

Mr. Favill — Do you know of any breed that will raise us universally good calves, good heifers?

Mr. Hoard — No, sir, I do not, the exceptions are altogether too large, but I do know of certain breeds that give you more good cows, and that is how I get at it.

Mr. Favill — I don't want to go back on the Jerseys at all, but suppose you raise Jersey cows and not more than half of them prove good milkers, what are you going to do with the rest?

Mr. Curtis — Does it cost any more to develop a thousand weight of meat in the Jersey than it does a thousand weight of meat in the beef animal?

Mr. Favill — I guess it wouldn't; but if a Jersey proves not to be a good milker, she is of pretty light weight. If we raise a large animal and she proves not to be a good milker, there is lots of beef in it.

Mr. Hoard — The question is, can you make more money by raising beef than you can by producing butter and cheese. Do you intend to go into your milk breed after your beef? Of course not.

Mr. Favill — I am doing it then, for I am raising grade

Durhams, but I've got some tip-top good milkers, and if I get good milkers, I don't care if she is any breed or not.

Mr. Hoard—Would you go over to the Jerseys or over to the Holsteins after your best beef product?

Mr. Favill—No, I wouldn't; I would go to the Durhams and Herefords if I was going to have one exclusively, but I want both.

Mr. Gorton—We want to learn something while you are here. We want to know what is best for us to do up here; would you recommend us to raise Jerseys exclusively?

Mr. Hoard—I would do the best I could; I want you to understand I have been striving after the idea that the dairyman should himself strive toward a specific purpose; suppose one of you farmers has made up his mind that he is going into dairying as a private dairyman to make butter. He is going to put his time and labor into it, he wants to get the best results, and I say if he undertakes to put beef between him and his purpose, he will loose money. Or suppose he is going into making cheese, let him select a class of cows that will give him the largest flow of good milk and the longest flow, not a short season cow. Let these things come in a straight line; that is the idea I am trying to get at.

Mr. Gorton—What I want is to know whether you would recommend us to do any such thing?

Mr. Hoard—I would recommend to any farmer to do it, to go to work and put a Cooley creamer, or any other good creamer, into his milk-room and make this effort towards becoming a good, A No. 1, dairyman. There's a good solid future to that. Any farmer can become a good dairyman if he will just start out with that purpose, and select his cows specifically for that purpose.

Prof. Henry—I hope this convention will bring out the wants of this portion of Wisconsin. There are farmers here who have come thirty or forty miles, and if they are going to feel that they are paid, they want to speak right up on this most important question. You haven't got as good cattle up here as you ought to have. These cattle that rustle out here under the oak trees are a pretty hard set. Your

three-year-old steers are not as big as our two-year-old steers in our part of the state.

Mr. Clark — Isn't there as many in the dairy business in this state that have grade Durhams as Jerseys?

Prof. Henry — Yes, I think there are.

Question — And which men are succeeding the best in their business?

Prof. Henry — The men that are succeeding the best as butter men, are the men that have Jersey cattle as grades. The point of all this is that it does not pay to strive after both beef qualities and dairy qualities. You never hear beef men talking about the dairy qualities of their beef. Now in a dairy convention when the farmers are coming here to seek for light, I say we don't want to throw the dairymen off the track. When I go to a Shorthorn convention, I will throw my hat for Shorthorns that have been breeding for a hundred years for beef. I saw cattle in Chicago that weighd fifteen hundred pounds, and they kept eating until they could hardly stand. In a Shorthorn show that is what they are exhibiting, the great weight of beef.

Mr. Curtis — Mr. Camden, of New York state, who sold the "Duchess," the $40,000 cow of which you have all heard, used to always keep a native cow to feed the calves because the Shorthorn did not give milk enough to support them.

Mr. Favill — If I could raise calves that would sell for $40,000, I would keep two or three common cows to raise the calves.

WHAT SHALL WE DO WITH THE SKIM-MILK?

By Mr. STEPHEN FAVILL, Delavan.

The question assigned to me has been so often discussed in our conventions, it seems to me all has been said upon it that is necessary to a full understanding of the whole subject, and I am of opinion that the need of to-day is not so much knowledge as conscience in this matter, for I verily believe there are no cheese-makers to-day engaged in the manufacture of skim cheese but know that they are making

an article of very little commercial food value, and they know, too, that the final outcome of this business will be disastrous to the cheese trade of the country. But I am aware that the cheese-makers are not alone to blame. The patrons of factories could stand a good deal more conscience in this matter, and not be injured by it, and, in addition, a large invoice of commercial intelligence might be distributed among them, greatly to their advantage, and to the advantage of the cheese trade generally.

The factory men's excuse for making skim-cheese is that their patrons demand it; and the demand is made upon the factory men in the hope that a little more present money will be made than could be made from butter or cheese alone.

They do not stop to inquire whether they are doing a legitimate business, or what the final effect will be upon the cheese trade. A little present gain is allowed to outweigh all commercial considerations. I am speaking of our commercial reputation. All know how difficult it is to establish a good reputation, and how very easy and how little time it takes to entirely destroy it. The history of the cheese trade in this country for the last fifteen or eighteen years will demonstrate just what I mean.

Those of you who remember our cheese trade in its infancy will remember the prejudice that existed against Wisconsin cheese; will remember the time when the Chicago dealers bought the best of our cheese, took it to Chicago, branded it "New York factory," and sold it as such. Why, I ask, was this deception? Simply because New York state had a national reputation for the excellence of her cheese, and the Chicago dealers took advantage of it, and made it a source of profit to themselves. A little more of the history of these times may be interesting and help to illustrate the point I am trying to make. Several of the cheese-makers of those early days, when they detected the fraud being practiced by the Chicago dealers, said if our cheese is good enough so it can be sold in Chicago as New York factory, why will it not sell in New York, and we at once took the "bull by the horns" and, instead of sending our cheese to

Chicago, we sent it direct to New York. The practice of making skimmed milk cheese in the west had its beginning about Elgin, Ills. Some butter and cheese factories combined were started there about 1870, and, while the number was quite small, the results were quite satisfactory: But they soon spread over the state of Illinois, and as the demand for skim-cheese was quite limited, it soon became a drug on the market, and, of course, they failed to reap the golden harvest they anticipated. During these years Wisconsin was making only whole-milk cheese.

Then followed the centennial show, which resulted in placing Wisconsin in the front rank in regard to the quality of her cheese, so that from 1876 to 1880 our cheese was considered of sufficient importance in the New York market to demand a special market quotation.

But since that time the childish desire to "eat our cake and *sell* it too," seems to have taken possession of many of our dairymen, and they have been making skim-cheese and butter from the same milk, and the result is, we have lost the enviable and profitable reputation we once had in the markets of the world.

Mr. Hoard, of the Jefferson County *Union*, is my authority for saying that Canadian cheese to-day is worth from 1 to 2 cents per lb. more than our best, and the reason is mainly due to the fact that they have kept the skimmer away from the cheese vat. They have the reputation of making first-class whole milk-goods, and buyers take it, knowing they are not going to be swindled. The question may be asked, cannot the expert tell whether it is skimmed or not? I answer yes, after it is cured; but for the first 15 days from the press, the skim and whole-milk are so nearly alike that it is very difficulty to tell to what extent (if any) the skimmer has been used. Both are tough and tasteless until the curing has gone on to a certain stage, then it is very easy to detect the loss of the cream. The one remains tough and tasteless, the other grows mellow and soft and palatable. But for the sake of the argument, we will suppose this cheese has been sold every time from factory to retailer, and suppose the retailer is particular to tell his

customer that he is selling him skim-cheese, then you ask, what harm has been done? I answer, the whole transaction is just calculated to defeat the object we have in view, viz., the building up of the cheese trade. Let us look at this matter a little. To accomplish a commercial transaction three things are necessary: First, something to sell; secondly, somebody to sell it to; and thirdly, somebody who wants to buy what we have to sell.

Now, apply this to the cheese trade. It is a well known fact that the taste for many kinds of food is largely cultivated. We learn to like many things by eating them, for which we cared but little when we commenced to use them. Cheese is one of these things and one, too, that is bought rather as a luxury at first. Now, suppose the purchaser (because he can get it a little cheaper) buys a piece of skimmed. It is put upon the table; the family nibble away at it a while; none of them like it, and, of course, eat but little of it, and it dries up, and the final result is, part of it is thrown away, and the family come to the conclusion that they do not care much for cheese anyway, and the disaster to the trade is in the fact that they do not buy any more. But suppose that instead of buying the skim goods, the purchase has been made of a good, mellow, rich, toothsome piece, made from whole-milk, the results would be just the opposite of what I have described. Every member of the family would have relished his allowance, and the whole would be consumed, and at the same time the taste for cheese would be cultivated, so instead of deciding they were not fond of cheese, and the conclusion arrived at not to buy any more, the order would be given for another and larger piece of the same kind of goods.

Gentlemen, cheese-makers and patrons of cheese factories —you all know that what I am telling you is true, and yet for a paltry pittance of present gain, you are willing to ruin the golden reputation we have had in the markets of the world. I say golden reputation, and I mean just what I say. A good reputation means dollars and cents in our pockets, and loss of it, we shall find to our sorrow, means empty purses. I come now to answer the question given

me, viz.: "What shall we do with our skim-milk?" You will understand from what I have said, I am not in favor of making it into cheese. What shall we do with it? I answer—feed it to your hogs or calves, and if you have neither, feed it to your cows. Almost any cow can be taught to eat it, by mixing a little mill feed with it, and I will guarantee that the increased amount of milk will pay much better than to make it into cheese, and we run no risk of injury to the cheese trade. I am confident, taking the years together, we can get as much money from feeding the milk as we would to make into cheese, and just now there is a large balance in favor of feeding. If the market quotations are reliable, the price at which the cheese will sell now will not pay the making, boxing, and transportation to market. You will understand that I regard skimmed milk as very valuable for feeding purposes.

Skimmed milk, if fed sweet, will grow a calf or pig almost as fast as whole-milk. Of course it will not fatten so rapidly, but will make nearly as much growth, and that is what we are after in the young animal more than fat.

I can not give the exact value of skim-milk, either for feeding or for cheese-making, but am fully satisfied that, leaving all commercial considerations out of the question, the gain in cheese-making over feeding is a mere pittance. But when we take the commercial view of the question into the reckoning, the balance will be largely in favor of feeding. Then, I say, keep the skimmer away from the cheese vat. Make either butter or cheese as seems best for you, but do not try to make both from the same milk.

Song by Glee Club.

DO HARD TIMES GIVE US THE RIGHT TO DOUBT THE PROFITABLE RESULTS OF GOOD DAIRYING.

By J. A. SMITH, Dairy Editor *Cedarburg News*, Cedarburg.

In the consideration of this question, we are not to assume that the great changes which take place in the commercial value of all other productions of the soil, or the mines, or the fisheries, are not to affect the value of the products of the dairy; but whether amid all the disasters and financial crises that we see occasionally overtake most industries, the business of daiying enjoys so much more a charmed life than other leading industries, that the ordinary experiences of "hard times," so called, have less of financial terror and trouble in them than pertain to other agricultural pursuits.

If I answer the question in the affirmative, and have any success in establishing the truth of the answer, it will be because there is some vital reason for the business being less affected than other agricultural interests by periodical revulsions, that in part at least, stop the plows, that put out the furnace fires, that still the loom, that close the manufactories, that greatly lessen the value of the muscle in the laborer's arm, and reduce the price of bread far below the compensating wage of production.

To attempt to find that vital reason, or reasons, is all the apology that can be made for breaking the silence. Whittier long years ago sang:

"The one sole sacred thing beneath the cope of Heaven is man,"

and we may add, it is the thought of man that makes the one sacred and most valuable element in him. It would follow, then, that the higher and better and more practical and useful the thought, the more value it has, and the less able is the world to get along without its use; and therefore the more solid is the industry that is founded on that thought. The crude thought is enough for the crude age, and is sufficient basis for the industries of that crude age; but the high

and refined thought of a well-developed civilization makes for itself industries as solid as its own foundation. For illustration: The vast system of railways that span the continents, resulting from the initial thought that made the first one, has created a condition of civilization and development that makes their continuation and extention imperative, and thus makes one of the most solid industries, because the man it has advanced must have the railway to maintain his advanced position. For another illustration: The cultivated ear calls for the symphonies of the song and the strains from ten thousand of harps, and thus makes the world of music part of the solid realities of existence, and as a consequence has created an industry as solid almost as that of the production of bread, and an industry the savage does not know. Still another—the most potent that has ever blessed the world—the thought involved in the movable and revolving type made learning accessible and cheap, and has created an industry that is vast, and is indispensable as the most conserving power of civilization and progress.

So we might go on—but it is needless—and show that the continued utilization of the high thought involved in the conception of these instrumentalities of modern civilization and development, and which the ancients and the present savages, and the low-keyed men not strictly savages, then lived, and now live without, is the one thing that is to keep moving forward the finger on the dial of progress.

While it may be conceded that there are numerous superfluous vanities of our modern civilization that may easily be dispensed with in stringent times, it must be held there is much that that civilization requires and must have, and does have, except when bare existence is the only question, and men become nearly as wolfish as the animal that is said to be "at the door," when starvation is nigh. Bare existence is not civilization. If to avert absolute starvation of the people of the land were the vital question; if the fruition of civilization, religion, and statesmanship, and our chief farming industries, had no other end or aim than to do that, and the most direct means were but barely adequate, then I

would not hold that butter and cheese-making would be less liable to collapse, and more remunerative than the raising of bread; I would then no more so hold than that music is better than bread for a famishing army. But given the world's acquired capital and tastes — its splendid civilization and its essential instrumentalities — and that we are not going backwards and downwards, then I say the higher and the better the thought that lies at the basis of our needs and comforts and enjoyments, so much the more solidity is there in the industries that supply such wants. If we are to have continued the development we have to-day, then it is still going to subsist upon the natural and essential elements of its growth.

Now, if modern dairying is one of the accompaniments of an advanced civilization, then it is anchored to the latter in the nature of things, and will be part of it. We find it originated with, and has followed the fortunes of the proselyting hosts of civilization, that inch by inch, and through long centuries, have marched from ancient Persia across Europe, across America, and are now assaulting its ancient home — Asia — from its eastern shore. So we may conclude it has come to stay. I admit that if the wheels of progress are to roll back, and "chaos and old night" are to come again, that such "hard times" as would then ensue would "give us the right to doubt the profitable results of good dairying," for the condition of the savage calls only for the food of the savage; and Jersey creamery butter is not one of the items in his "bill of fare." But if we are not going back to the embrace of ignorance and barbarism, then the advances that show how far we have moved on and up from these conditions are to be among the cherished objects to be kept and transmitted.

I said, in the first place, that the object in breaking the silence, was to find the vital reason for the permanent and respected position of the dairy interest among the industries of the world; and we find it to be its close alliance with the essential conditions of an advanced civilization. I will now add that if the stability of the business has not been proved

by the facts of the past, then the inferences from the reasoning, would, as a guide for the future, be utterly valueless.

The constant iteration of the term "hard times," suggests a definition of what they really signify. Whatever other definition may be given to them, and however much all may be affected by their general presence in the financial affairs of the world, the vital definition I apprehend to be a condition in which more is spent than is being earned, or a condition in which production costs more than the value of the receipts from sale. The cruel and spirit-crucifying results of hard times are best known to the man who, having no other legitimate source of income but his labor, either finds there is no demand for it, or, if wanted at all, is wanted at wages below cost of inexorable consumption. They strike with next greatest force the men who are manufacturers, whether farmers or mill-owners, engaged in working the soil, or wood, iron, wool, cotton, or grain, who find their products, when sold, do not cover the cost of production. They experience the same financial pangs as the workman, who either does not or can not earn as much as he consumes, and often have added to their miseries, blame for not being almighty enough to be able to coin a profit from a losing business. It is undeniable that the general influences of hard times have taken their fiercest hold on laborers without cash capital, or farms, or manufactories, and their next fiercest hold on those whose capital is invested in general, mixed, or exclusive grain farming and in large manufacturing enterprises for the employment of labor, and of the trustee who owes for an unsold or a trusted-out stock, and have laid their hands lightest on the good dairy farmer, who, through his own skill, if he really has it, or through the use of cheese-factories and creameries, gets a good profit from his labor, for the reason that its products — milk, first-class butter and cheese — have sold so far above the costs of production that he is not in the same class with those who spend as much or more than they get back in performing their labor.

Now, these are the solid facts of the business to-day, right in the midst of the present general depression, and the same

facts were patent before the war of the rebellion; during the war in 1868, when the oozing of the water out of our currency commenced to ooze financial blood; in 1873, when the collapse came; in 1878, when bloodier water was wrung out in preparation for redemption; and after it came, and held good through all times; when nearly all other branches of business were in financial throes, and it prospered more still when others prospered. Those of us who lived in those times know that the prices for nearly all kinds of property responded to the inflated condition of the currency that paid for it, and that when the water went out of the currency, it also took with it the nominal value of the property measured by it. But the good dairy farm was the exception to the rule. What I mean by this is, that the well managed and full stocked dairy farm has not been worth less at any time, or been sold for less as a rule, than it was worth in currency during and soon after the war. The same may be said of the cows on it, while nearly every other kind of property suffered, general real estate included. This is not speculation; it is history, and the chief dairy sections of the west, at least, contain the proof. Now, if in matters political, as Patrick Henry held, there was no surer way to judge the future than from the past, then is it not as good a rule as mortals have by which to estimate the future prospects of the essential industries of the land?

While it may be contended by some that the theories and reasons I have adduced, fortified as they are by the facts that have existed through long years of successful experience by many of the best-known dairymen of the west, ought to be deemed conclusive, yet the novice and those partly skeptical, and, toughest class of all, those who have only half tried and failed, will toss all these considerations and histories aside, and will raise what they appreciate as a more vital question to them, this: "We know, to a certainty, that wheat, in the Chicago market, for the crop of 1884, was sold till the bulk of it was out of first hands, at less than seventy-five cents per bushel; and we further know that raising wheat at that price is pretty near blue ruin to the exclusive grain farmers of Wisconsin, living 200 miles or more from market, and

using land that cost from $40 to $80 per acre; now, what assurance is there that the dairy business will not go the same way?" This is a legitimate inquiry for this class of men. But I greatly fear that if they should completely fail to take note of the views I have adduced, that all I might say from another stand-point would be of but little more use to them, as an aid in deciding, than to toss a penny. But we may safely assume that the anxious inquirer has accepted some fundamental truths of the business as proved, and is, therefore, ready to accept more.

One strong reason why the dairy business will not go the same way of exclusive grain raising is, that it has within itself the power of continued reproduction; while exclusive grain raising, as conducted by very nearly all its followers, does not contain within itself the power of continued existence. To "new fields and pastures green," is its ever-ringing slogan; while the depleted soil it uses for a few years, if not abandoned, has to be put to other uses, or tilled for lower wages and lessened profits. To explain further on this point, I will say that I once heard one of the large dairy farmers of the state say, in one of our conventions, that if he could raise wheat for a life-time, and his children after him, producing each year twenty bushels per acre, as he did at first, that he would not be so ardent a dairy farmer; but he knew he could not, and did know that he could make each acre produce 2,000 lbs. of milk, and could even make a gain on that; and that he had rather take his chances in the market in the race for dollars with 100 lbs. of milk than with one bushel of wheat. He said he further knew that if he cropped his land, then worth $50 per acre, to wheat for ten years that it would not be worth, to farm or for any purpose, more than $40 per acre; while he knew as well that if he devoted it to almost exclusive dairying, that he would have a sure yearly income as great as the very best years for wheat would produce, and at the end of the ten years would have a highly fertilized farm instead of an impoverished one; one actually worth double the one wheat-raising would leave him for money-earning purposes. He would thus, through the cow, create another farm inside of his own fences. He

therefore held there should be added, as income from the cow, the increased value she put upon the soil. Estimating that each cow fertilized three acres, and added $120 to their value in ten years, then she really earned $12 per annum, besides the value of her milk and calf. I must say, however, that he was a man who made his cows produce him more than 6,000 lbs. of milk each per annum. I would not want the keeper of starved cows, that yield only starved milk and manure, to infer he could make the same gain, for he would be disappointed.

The experience of this gentleman is by no means an individual or a rare one. I have patrons who find it not hard of accomplishment, by the aid of cows, to lay aside the interest at 7 per cent. on all the land they occupy as dairymen at a valuation of $100 per acre, besides paying all costs of keep and labor. I know grain farmers in the same time who could not pay three per cent. on their farms at $25 per acre. I could call up the living witnesses here from the practical and honored dairymen who have and who will address you, to prove that they are making their own farms do as well or better than those farming the $100 dairy farms.

It is only fair to say that such results are not achieved by the cow alone. It needs a man at the helm with a fertilized brain as surely as it needs the good cow and the fertilized soil. The man who does not see hell in ignorance and rags, in dilapidated barns, houses, and fences, and in milking scare-crow stock in mud and rain, and does see a congenial heaven through rifted clouds of tobacco smoke from short pipes and drinks in its beatitudes from the upturned whisky jug, had better keep out of the dairy business. Such a man needs civilization more than he does the high school teachings of the æsthetic dairyman.

Another reason for putting confidence in the solidity and stability of the dairy business is, that there is likely to be no sudden or long-continued depression in it because of over-production, for the reason that it is practically impossible to quickly and greatly augment the supply of dairy

products, so as to greatly change the operation of the law of supply and demand, as can be done in producing pork, mutton and wool, for it takes from three to five years to produce the good-paying cow, while a large percentage of those started on the way as dairy cows go to the butchers' block for one reason or another before they reach the age of five years. The increase is, therefore, gradual and slow. There are nearly four persons in the United States to each milch cow, and the ratio of increase of the people is greater than that of the cows. Besides, the field for an increase of sales outside of our own domain, notably for cheese, is larger than it is for an expansion of our market for most other products of our soil. Dairy products will bear transportation farther than less concentrated food. There is also less likelihood of the undeveloped people of other nations undertaking the manufacture of butter and cheese than there is of their producing other foods on their own soil. Men can eat and relish, and pay for good butter and cheese, who have not the capital, cleanliness, or education to make either. India, Russia, and Australia can walk right into the wheat and meat markets of western Europe and compete with us, so that cheaper labor and production seem to be the only refuge for the American farmer who produces only wheat and meat. But it will be a long time before East India butter and cheese will modify the price of American dairy products. Being a child of intelligence, cleanliness, and a high civilization, the people who can father it will naturally reap the avails of the labor of the child. The monopoly of the shoemaker's business by the St. Crispins is not more surely theirs so long as children are born barefooted, than is the monopoly of gilt-edged butter and cheese-making secured to cleanliness, persistent good habits, and educated brains. It is largely confined now to the very best and highest developed portions of the world; and, indeed, we might ensmall the limits and say it is largely confined in this country to to the most intelligent and cultured portions of our own land. While this is true when we look for actually accomplished work, it is also true that the cow is the most quickly, radical and effective reformer there is

abroad in the land. A man in Georgia has been converted by her into a thoroughbred, practical abolitionist, through her proving, by the arithmetic, that there is more clear profit from each Jersey cow now than there was in the working slave before the war. While it takes a certain amount of brains to appreciate the instrumentality, you may be sure that intelligence, refinement and a religion that is worth having, will flourish and abide more securely wherever the fifteen-pounds-of-butter-to-the-week cow preaches her glad tidings.

Again, the sales of many products do not altogether depend upon the times. It may not be flattering to our human nature to be told that we, as a race, independent in our prosperity, give a more remunerative and reliable market to some products that administer to our vices and bad habits and tastes less harmful, than we do often to the prime necessities of life. But it is true, all the same. It is said to be a historic fact that when the early settlers of one of our lake cities had only money enough at the end of a long winter to buy of a passing vessel either a barrel of whisky or a barrel of pork, they took the whisky. If they had really been out of material for bread, perhaps — and only perhaps — they would have decided differently. The reliable market for liquor and tobacco attests the truth of what I am saying — that articles of useless indulgence, and worse, of positive harm, are often less affected by stringent times than those of actual necessity. The gawky boy whose rapid growth had stuck his legs far through his pants, and who could cheerfully go to church barefooted, but was really suffering for a bosom-pin, was but a a type of the men who, through good times and hard times, keep the liquor and tobacco industries on a solid financial basis, even if their stock goes unhoused, or they have to wear rags and leaky boots to do it. While nearly all the rest of the material world is temporarily unjointed, wrestling with the conditions imposed by over-production and non-consumption, they manage to exempt the whisky and tobacco business from commercial agonies through steady consumption. Habit and vitiated tastes, more than stern necessity, fix the measure of con-

sumption with those who have plenty of money, and also with those who divert money from more imperative uses. The dairy business gets the benefit of the same weakness in human nature — though it is a cleanly and harmless weakness — for the chief commercial product manufactured from milk, butter, which in this country has four times the weight and nine times the value of all the cheese made, of course, is no such disgusting and deleterious product as whisky or tobacco, yet it can not be denied that its use is largely dependent on habit, and that rigid economy, even that not born of poverty and semi-starvation, might strike it from the *menu* among the first of dispensable articles; yet, because of acquired tastes and because the average consumer in America has yet to learn experimentally, the meaning of agonizing poverty, but little of it is discarded for that reason, and hence one cause of the solidity of the dairy business. Its vast consumption at prices higher in gold than those that rule in any other nation of the world, is a measure of the enjoyment and prosperity of the American people. It is a commercial fact that the best of it can not be exported, and that the foreign market reaches chiefly for that which must be sold below our prices, for that which is "gilt-edged."

Although this is a fruitful theme, there must be an end to this talk; and so, to cut it short, I will say you must be intelligent to see and fully comprehend all the inducements involved in the dairy business, and you must have good habits to care for the stock, the perseverance of the saints, an unbending faith in the cow, and scrupulous cleanliness in manipulating her product, and to avail yourselves of its advantages and reap its golden rewards.

Mr. Clement — We are anxious about the question of over production.

Mr. Curtis — There is no fear of over production for a good many years ahead.

REPORT OF COMMITTEE ON DAIRY PRODUCTS.

Your committee wish to report through their chairman, that the exhibit is remarkable for its smallness, yet they were appointed and have discharged their duty, and believing that these conventions are sort of schools of instruction, we thought we would give, what in the opinion of the committee, might be improved upon the products exhibited.

In the first place I will take up the article of cheese, there are two samples. One of them is unexceptionally good. The other is the kind of cheese which would perhaps sell quicker in this market than the other. It took the first premium because it had as fine a flavor as the other, it had keeping qualities that the other lacked; aside from that, one would sell on the market for the same money as the other.

As far as the butter is concerned, there was but one sample of butter. It was made by a creamery and shows fine work; is well manufactured, but if the commission man has not notified the manufacturer that it is off color, the committee wish to do so now.

The selling qualities would be improved if it was colored, and so with the sample roll of butter, and granulated butter. The committee commend the lady who had the courage to bring the sample here, there is but one of each kind, and in consideration of that they have awarded her the premium. She has got $8—$5 on the granulated butter and $3 on the two little rolls. It showed she had an interest here, but in the opinion of the committee that product could be largely improved upon. It has taken on odors from surrounding objects, and particularly, there is no color to it, and so with the sample of granulated butter; it was simply as it should be when the salt was put in the churn, but it shows it had been churned in a granulated state. It is a fact that a large number of farmers' wives never see any butter color, and do not understand its value.

CLASS I.

TUB OR PAIL OF BUTTER.

First Premium..... ..... $10.00
Awarded to Arcadia Creamery Co., Arcadia, Trempealeau Co.

CLASS II.

PRINT BUTTER.

First Premium..... ..... $5.00
Awarded to Mrs. J. Rhodes, Caledonia.

CLASS III.

GRANULATED BUTTER.

First Premium $3.00
Awarded to Mrs. J. Rhodes, Caledonia.

CLASS IV.

PREMIUM ON CHEESE.

Geo. S. Hart & Co's Silver Cup.

Awarded to H. Z. Fish, Richland Center.

This cup must be won three years in succession to hold the same permanently.

It has been won by A. H. Wheaton, Auroraville, 1878; Olin & Clinton, Waukesha, 1879; W. S. Baker, Cold Spring, 1880; H. A. Congor & Son, Whitewater, 1881; August Klessing, Centerville, 1882; Marr & Dyer, Whitewater, 1883; E. P. Ingalls, Milford, 1884 and H. Z. Fish, Richland Center, 1885.

Respectfully submitted,
G. A. AUSTIN,
Chairman.

President Morrison — A gentleman will stand at the door and hand to every person that wants it, a small bottle of butter color which you can try.

Mr. Hoard — I want to say a word about butter color. The grand sweep stakes prize was awarded to Mr. W. H. Potter,

of La Soeur, Minnesota, at New Orleans. There was a sharp contest, it had narrowed down to these two men and the committee worked long and laboriously at it. There are lots of men who think there is nothing in color, but when those two samples were brought up in two separate tryers, the sample opposed to the Minnesota sample was found to be *three points off* in color and it lost the manufacturer the grand sweepstakes prize of $150 and the gold medal on account of it. That illustrates the value of good coloring in butter. At Sparta, the landlord put some butter on the table that was as white as lard and when I asked him about it he said, "Ah! you don't catch me having colored butter on my table." I didn't ask him why his wife colored her stockings.

Question — Does the color in the butter make any difference in the flavor?

Mr. Hoard — No sir, if it is good color and well handled.

Question — What is the benefit of color any way?

Mr. Hoard — It is for the purpose of adding to the value of it.

Mr. Gorton — What does it add, any more than to the eye?

Mr. Hoard — Very well, but when you go into the market your uncolored butter will sell from five to ten cents a pound less. Isn't that practical? It does make it more presentable to the eye.

Mr. Gorton — There are men in this audience who believe, and with cause, I think, that much of the butter color is made out of grease that they would not use in the house for any purpose. There are ladies here, who would tell you they could taste it in the butter.

Mr. Hoard — I think they have got sharper taste than I have then, and I have always counted myself an extra good taster.

The President — Don't you think there is a good deal of imagination about that?

Mr. Hoard — That idea loses hundreds and thousands of dollars to the butter makers of the country, in their refusal to put their butter on the market in marketable shape. In

deciding about the butter at New Orleans one hundred points was adopted for the grading of butter: so many points for flavor, so many for grain, so many for color; and that man lost $150 and a gold medal because he had not colored his butter to the standard which is accepted among all markets in the United States — that is June color.

Mr. Gorton — Don't you have to color your butter according to the market to which you send it?

Mr. Hoard — No, sir; I don't know of any market that wants white butter. It may be, there is a slight difference in the shade, but June color is marketable in all markets the world over.

Mr. Austin — What are we making butter for? If we are making it for ourselves, let us make it to please ourselves; if we are making it to sell, give them color if they want it and will pay for it.

THE WORLD'S EXPOSITION AT NEW ORLEANS; WISCONSIN'S DAIRY EXHIBIT THERE AND THE LESSON IT TEACHES.

By Hon. HIRAM SMITH, Sheboygan Falls.

It is no exaggeration to say that the World's Exposition at New Orleans, during the past winter, was the largest and most perfected exhibition of educational facilities, industrial resources, agricultural productions, mineral deposits, extent and variety of timber, labor saving machinery, useful implements and fruit and flowers from every clime, the vast extent of objects of use and beauty, demonstrating the genius and handi-work of men and women, far beyond anything of which the world has hitherto had any record.

And yet this grand aggregation of the tangible evidences of the World's progress, has been unjustly criticized by the ever-ready croaker, the bigoted politician, and the parsimonious nobodies to an extent that has seriously crippled the Exposition and lessened the benefits that otherwise would have been obtained.

How best to accomplish the proper assimilation of food in the human stomach is the highest development of medical skill, and to accomplish the same purpose for the animal creation is the unsolved problem, that is, to determine the profit or loss in the rearing and care of domestic animals. The inauguration of wise measures, that effectively secure the assimilation of the people of the nation or of the world, is an evidence of the highest type of statesmanship, and constitutes the germ, out of which, may grow the broadest philanthrophy.

Without stopping to discuss the question, whether or not these high motives constitute the ruling influences that resulted in the inauguration of the World's Exposition at New Orleans, yet, the consequences resulting from that exposition, cannot fail of conferring lasting benefits on all those attended. It has been said that the exposition has been a financial failure. Grant if you will, that such has been the fact; yet, of all the failures that might have occurred, the financial embarrassment was of the least consequence. Suppose for a moment, that all the great and wonderful machinery that created "light and motion" had been missing, or the endless variety of agricultural productions remained at home, or any other of the great industries that contribute to the progress and happiness of mankind, had been left out, the failure would have been almost disastrous, and well nigh beyond remedy. But a financial difficulty, occasioned mainly by non-attendance, could be, and was, promptly removed by an act of congress, granting additional aid, and the great exhibition moved steadily on. The board of management evidently had broad and comprehensive views, and seemed to understand clearly the requirements essential to make this exhibition the best educator of modern times, for no important industry was neglected. It was, essentially, a true representation of all the industries that employ labor, reward genius, and enrich a nation.

Its management was the first World's Fair that ever fully comprehended the magnitude and importance of the dairy interests, and its liberal offer of over $10,000 in prizes for dairy products, and dairy stock, created a commendable

rivalry among the most intelligent dairymen of the country, and more car loads of butter and cheese were on exhibition than at any former Dairy Fair ever held in this country.

The officers of the Wisconsin Dairy Association early recognized the vast importance and deep significance amounting almost to a necessity, that Wisconsin dairy products should be placed as near the front as possible. The necessity of making an exhibit of dairy products at New Orleans, became more apparent, in view of the fact of the rapid increase of dairy supplies in Canada, and throughout the great northwest, and without a corresponding increase of consumers, the producers of dairy products would, in the near future, have to call a halt. Avenues of trade, like railroads, will not open themselves, but both require human aid.

The promising field tributary to the trade of New Orleans, embracing the whole southern tier of states, the domain of Mexico, and the South American republics, all rich in possibilities of being large consumers of dairy products, with but few natural advantages to become producers—all this vast country is rich in fertilizing deposits for the northern grain farmer. Cotton seed meal for the dairyman; early vegetables and tropical fruit for all, so that an interchange of commodities is only waiting for facilities, that enterprise or greed of grain will soon discover. While in New Orleans in January last, I told the lady where I boarded that I would like to give her a pound of cheese for a pound of lettuce, or radishes, and a pound of butter for one dozen oranges, and she answered that she would be glad to give all three for a pound of butter. Transportation is practical where return freight can be obtained. In the light of the foregoing facts the officers of Wisconsin Dairy Association, aided by Commissioner Holton and J. M. Smith, decided to make the best exhibit possible, and through many discouraging circumstances, the expenditure of much personal labor and a liberal advance of money their efforts were crowned with a success far beyond their most sanguine expectations, as the following awards will show: Out of 153 prizes awarded on butter and cheese, Wisconsin obtained 82 prizes, including the two largest prizes on best show of cheese, of $300, and $200, and

3d best show of butter, $100. Out of a total of $7,596 awarded on butter and cheese, Wisconsin obtained $3,372, a sum greater than any other two states.

In addition to the successful termination of the competitive exhibit, an acquaintance was formed by many of the producers with the largest dealers of dairy products in the city of New Orleans, that give reasonable expectations, that our trade may be largely increased in that city in the future.

President Morrison — The convention will now adjourn to 6 o'clock this evening that the hall may be prepared for the banquet gotten up by the ladies of Arcadia. There will be music, toasts and responses, and the best session of the convention will be this evening's session. Let no one stay away.

The convention will meet to-morrow morning at 9:30.

BANQUET — EVENING SESSION.

Reception by the citizens of Arcadia given the Wisconsin Dairymen's association at Muir's hall, Wednesday evening, February 25th, 1885.

Toasts.

Supper — 6 P. M.

Toast Master — S. Richmond.

1. Music.
2. Our Guests — Response by Rev. T. Grafton Owen.
3. Our Hosts, "The People of Arcadia" — Response by President W. H. Morrison, Elkhorn.
4. The Cow with the Crumpled Horn — Response by Hon. A. A. Arnold, Galesville.
5. Music.
6. The Milkmaid. "She never fails to respond to the call 'To Arms.'" — Response by C. R. Beach, Whitewater.
7. The Farmer's Legal Status with Reference to Railroads and Inventors — Response by E. C. Higbee, Arcadia.
8. The Coming Farmer. "Book Learning vs. Muscle." — Response by Prof. W. A. Henry.
9. Music.

10. Pioneer Dairying — Response by Hon. Hiram Smith, Sheboygan Falls.
11. Wisconsin Cheese. "It is Mitey, and hath Prevailed" — Response by T. D. Curtis, Syracuse, New York.
12. The Town Pump. "Its use in the Dairy" — Response by D. L. Camp, Whitehall.
13. Music.
14. Butterine. "The Illegitimate Competitor of Honest Dairying" — Response by Stephen Favill, Delavan.
15. The Dairyman. "A Calling of Noble History, Wholesome Sentiment, and Useful Achievement" — Response by W. D. Hoard, Fort Atkinson.
16. How is it Down South. Response by D. W. Curtis, Fort Atkinson; Wisconsin Commissioner to New Orleans Exposition.
17. Music.
18. Our Legislature. "One of the Necessary Evils of Modern Civilization" — Response by Hon. Chester Hazen, Brandon, Member of Legislature.

Six hundred sat down to the banquet, that was good enough to "set before a king." Good music was interspersed with the speeches, and, thanks to the excellent management, there were no hitches of any kind, so that the evening passed off in the pleasantest manner possible, and to the great enjoyment of all present.

MORNING SESSION, February 26, 1885.

Met pursuant to adjournment at 9:30 A. M.
President Morrison in the chair.

REPORT OF COMMITTEE ON NOMINATIONS.

Your committee appointed to select names for officers for the Wisconsin Dairymen's Association for the ensuing year, beg leave to submit the following:

For President—W. H. Morrison, Elkhorn.
For Secretary—D. W. Curtis, Fort Atkinson.
For Treasurer—H. K. Loomis, Sheboygan Falls.

Respectfully submitted.

S. FAVILL,
W. D. HOARD,
F. B. FARGO,
Committee.

Report of committee was adopted.

TREASURER'S REPORT.

Mr. President and Members of the Association:

The following itemized report is made, showing the source from which all moneys paid into the treasurer's hands were received, and the disbursements paid on orders from the secretary, which I hold as vouchers:

RECEIPTS.

Jan. 1, 1884.	Cash on hand	$393 14
Jan. 18, 1884.	Memberships, Lake Mills	143 00
Jan. 18, 1884.	Entries received from dairy exhibitors	25 50
Mar. 27, 1884.	Received from state treasurer	500 00
Sept. 2, 1884.	Received from Commissioner E. D. Holton, for New Orleans Exposition	500 00
Oct. 10, 1884.	Received from Commissioner E. D. Holton, amount raised by Hiram Smith and De Land	200 00
Jan. 1, 1885.	Rec'd from state treasurer, raised by D. W. Curtis.	140 00
Jan. 1, 1885.	Rec'd from state treasurer, raised by A. J. Decker.	80 00
Jan. 9, 1885.	Rec'd from state treas., raised by W. H. Morrison.	130 00
Feb'y, 1885.	Rec'd from Com'r E. D. Holton, raised by H. Z. Fish	100 00
	Total receipts	$2,211 64

NOTE.—The money raised by Smith and De Land, Curtis, Decker, Morrison and Fish, was for expenses in making Dairy Exhibit at New Orleans.

DISBURSEMENTS.

1883.		
Jan. 18.	W. D. Hoard's printing bill	$27.50
	Paid J. B. Harris to attend annual meeting	100.00
	Paid J. B. Harris, hotel bill	8.00
	Paid Mrs. Kelley, short-hand reporter	44.00
	Paid hotel bill Mrs. Kelley	5.00
	Paid hotel bill Prof. Henry	1.50
	Paid T. D. Curtis, essay on cheese-making	15.00
	Paid D. W. Curtis, essay on butter-making	15.00
	Paid hotel bill T. D. Curtis	50

Jan. 20.	D. W. Curtis, for secretary's office	$20.00
	C. P. Goodrich, 2d premium on butter	3.00
	Harris Bros., 2d premium on butter	2.00
	H. Z. Fish, 2d premium on cheese	5.00
	Marr & Dyer, first premium on butter	3.00
	H. W. Kellogg, 2d premium on butter	5.00
	H. W. Kellogg, 1st premium on butter	5.00
	Wm. Everson, 1st premium on butter	10.00
	E. P. Ingalls, 1st premium on butter	10.00
	H. Wrightson, essay on cheese-making	5.00
Mar. 15.	Exchange on drafts	10.00
11.	Reading proof of report, by Democrat Printing Co	10.00
22.	Letter heads of Gugler Lithographing Co	9.00
24.	Use of room at Plankinton House for executive committee	75
25.	Salary of secretary, D. W. Curtis	75.00
June 2.	Express on reports and stationery	1.45
July 24.	Democrat Printing Co., extra pages of the report	25.40
25.	Postage	74
Aug. 5.	T. D. Curtis, for work as instructor in cheese factories	225.00
Oct. 16.	Use of room at Plankinton House for. Ex. Com	3.00
Nov. 6.	D. W. Curtis, for stamps to send premium list and circulars for New Orleans Exposition	50.00
	Exchange on drafts	1.60
Dec. 27.	Paid A. De Land for exposition at N. O	358.38
	Paid for 451 lbs. cheddar cheese for N. O. Ex	54.12
	Paid for 254 lbs. flat cheese for N. O. Ex	30.48
	Paid for 152 lbs. Young America cheese	18.24
30.	W. D. Hoard's printing bill. N. O. Ex	30.50

1885.

Jan. 1.	Express on medals for N. O. Ex	45
2.	Collecting medals, H. K. Loomis, for N. O. Ex	6.00
	D. W. Curtis, for N. O. Ex	500.00
	Paid bill of H. Z. Fish, collecting cheese for N. O. Ex	38.79
3.	Paid sight draft, D. W. Curtis, New Orleans	150.00
	Paid D. W. Curtis, by Com'r. E. D. Holton, at N. O	100.00
	Hiram Smith, meeting with Ex. Com., 1884-5	20.00
	C. R. Beach, meeting with Ex. Com., 1884-5	15.00
	Chester Hazen, meeting with Ex. Com., 1884-5	10.00
	Stephen Favill, meeting with Ex. Com., 1884-5	15.00
	W. H. Morrison, meeting with Ex. Com., 1884-5	15.00
	A. D. De Land, meeting with Ex. Com., 1884-5	10.00
	W. D. Hoard, meeting with Ex. Com., 1884-5	20.00

D. W. Curtis, meeting with Ex. Com., 1884–5	20.00
H. K. Loomis, meeting with Ex. Com., 1884–5	20.00
Balance in hands of treasurer	91.74
	$2.211,64

Respectfully submitted,

H. K. LOOMIS,

Treasurer.

SECRETARY'S REPORT.

Mr. President—The past year has been one of interest to this association, and the labor it has performed and the good it has accomplished, will compare favorably with any association of a like nature, in any part of the country.

At a meeting of the executive committee some time in April, it was decided to employ T. D. Curtis, of Syracuse, N. Y., if the money in the treasury of the association should be found sufficient. Mr. Curtis generously offered to go to work, leaving it to the executive committee to pay him whatever they could.

The railroads furnished free transportation to Mr. Curtis, which lessened traveling expenses, and enabled the society to continue the work much longer than it could otherwise have done had this favor not been granted.

The following circular letter was sent to all of the dairy boards of trade in the state, which explains the work outlined by the executive committee for Mr. Curtis.

WISCONSIN DAIRYMEN'S ASSOCIATION,

FORT ATKINSON, WIS., May 20, 1884.

DEAR SIR—The Executive Committee of the Wisconsin Dairymen's Association, have decided to employ T. D. Curtis, of Syracuse, N. Y., for the purpose of instructing the cheese makers of Wisconsin how to make a better article of cheese.

He will visit your Dairy Board of Trade, should you wish to have him, and talk on cheese making, and the next day will visit some factory and give practical lessons to cheese makers, in making cheese. He will visit as many factories as he can in your vicinity. The only expense you will be to, is to take care of him, while with you. We trust that he will get to work some time in June.

An early reply is requested, that the dates may be fixed when he will be at your place.

Yours truly,

D. W. CURTIS,
Secretary.

Mr. Curtis went to work about the 10th of June, working until the 1st of September, visiting all parts of the state, wherever requested. His stay at each factory was necessarily short, but enough was demonstrated to the cheese-makers, to awaken a new interest and a determined effort on their part to make a better article of cheese. That there was good work done which was of great value to the state there is no question.

The work is almost too much for one man to undertake; his stay is too short at each factory, the cheese-maker hardly having time to unlearn some of the errors which he had fallen into. The state should be divided into districts, with an instructor in each district. The general results would be much better. There are too many careless cheese-makers who are anxious to get through their day's work that they may have a ride (as a large number keep a horse and buggy), and all at the expense of the patrons. Cleanliness and faithful labor should be a badge every cheese-maker should wear.

About the first of August the Executive Committee met to determine upon a plan of work to secure an exhibit of butter and cheese at the world's exposition at New Orleans under the state commissioner, Hon. E. D. Holton. At a subsequent meeting of the executive committee which was largely attended by prominent dairymen from all parts of the state, D. W. Curtis, of Fort Atkinson was appointed superintendent of dairy products, and Hon. A. D. DeLand, of Sheboygan, takes assistant superintendent.

The following committees were appointed to canvass their own sections for butter and cheese to be exhibited at New Orleans and to solicit funds to defray the expenses, Governor Rusk promising to do all he could to have the money that was raised refunded by the state when the legislature met.

The committee consisted of:

W. H. Morrison, Elkhorn.
D. W. Curtis, Fort Atkinson.
H. Z. Fish, Richland Center.
A. D. DeLand, Sheboygan Falls.
A. J. Decker, Fond du Lac.
R. F. Roberts, Woodworth.
W. D. Breed.
Fred Shultie, Manitowoc.
John Luchsinger, Monroe.

The following sums were received and turned over to Commissioner Holton, and have been paid back by the state.

Hon. Hiram Smith and A. D. De Land, from the Dairy Board of Trade, Sheboygan Falls,	$200 00
D. W. Curtis, Jefferson county,	140 00
W. H. Morrison, Walworth county,	130 00
H. Z. Fish, Richland county,	100 00
A. J. Decker, Fond du Lac county,	80 00

Commissioner Holton gave the association $500 from the $5,000 which was allowed him, and with this money the exhibit was made at the World's Fair at New Orleans, and the shortage was paid out of the funds of the association.

The following tables will show who were the exhibitors, who won premiums, and the amounts won by each:

In this connection it may be proper to state, that there were two judges and an umpire, and the umpire was called upon to decide, where there was a tie.

The following was the

SCALE OF POINTS FOR JUDGING BUTTER.

Flavor,	40
Grain,	30
Color,	15
Salting,	10
Style of Package,	5
Total,	100

The following table shows the entries in Lot A, Class 1, Creamery Butter, made previous to September 1st. Best five tubs of not less than 50 pounds each. 1st premium, $100; second premium, $75; 3d premium, $50; and the award of the judges, C. F. Dexter, Chicago, and C. E. Udell, St. Louis (same judges in class 1, 2 and 3).

NAME OF EXHIBITOR.	Flavor.	Grain.	Color.	Salting.	Style of package.	Total.	Grand Total.	First premium.	Second premium.	Third premium.
H. K. Loomis	35	27	14	7	4	87				
	32	26	12	7	4	81	168			
G. C. Mansfield	37	30	14	9	4	94				
	36	28	13	9	4	90	184			$50
CLASS 2—SEPTEMBER AND OCTOBER CREAMERY BUTTER.										
Cooper & Neville	37	28	13	10	5	93				
	37	28	14	10	4	93	186			
G. C. Mansfield	38	29	14	9	5	95				
	38	29	14	10	5	96	191			
John Brown	35	28	12	8	4	87				
	36	27	13	8	4	88	175			
Harris Bros	36	26	12	7	5	86				
	36	27	13	8	4	88	174			
A. L. Snyder	32	25	9	8	3	77				
	34	26	13	8	4	85	162			
Alma Creamery Co	34	26	9	7	5	81				
	34	28	11	7	5	85	166			
CLASS 3—NOVEMBER AND DECEMBER CREAMERY BUTTER.										
Cooper & Newell	37	27	14	8	5	91				
	37	28	14	10	5	94	185			
G. C. Mansfield	36	29	13	9	5	92				
	30	30	14	10	5	89	181			
J. M. Thomas	33	25	11	7	5	81				
	33	25	12	9	5	84	165			
Harris Bros	37	27	12	7	5	88				
	36	27	13	9	5	90	178			
A. L. Snyder	34	24	12	7	4	81				
	35	26	12	8	5	86	167			
Alma Creamery Co	30	25	8	7	5	75				
	35	27	10	9	5	86	161			
Millard & Everson	34	25	6	6	4	75				
	32	22	8	8	4	74	149			

The following table shows the entries in Lot B, Class 1—dairy butter, made previous to September 1st. Best tub of butter of not less than 40 lbs, 1st premium, $75; 2d premium. $50; 3d premium, $25, and the award of the judges, G. W, Simpson, Boston; C. A Huston, Cedar Rapids, Iowa; E. B. Jennings, umpire, New Orleans. Class 1, 2 and 3.

NAME OF EXHIBITOR.	Flavor.	Grain.	Color.	Salting.	Style of package.	Total.	Grand total.	First premium.	Second premium.	Third premium.
Wm. McConnell	35	30	15	10	5	95	....	....	....	....
	37	30	15	10	3	95	190	....	$50	...
Hiram Smith	33	30	15	10	5	93	....	....	....	...
	37	30	15	9	5	96	187	....	....	$25
CLASS 2. SEPT. AND OCT. DAIRY BUTTER—										
Hiram Smith	30	28	14	8	5	85	....	....	....	....
	30	28	12	8	5	83	168	....	....	....
Wm. McConnell	33	30	15	10	5	93	....	....	....	....
	35	30	15	8	5	93	186	....	....	....
J. T. Scott	34	30	15	10	5	94	....	....	....	....
	36	25	14	10	5	90	184	....	....	....
CLASS 3. NOV. AND DEC. DAIRY BUTTER.—										
H. W. Kellogg	30	20	14	10	5	79	....	....	....	....
	35	25	13	10	5	88	167	....	....	...
J. T. Scott	28	30	14	10	5	87	....	....	....	....
	35	30	15	9	5	94	....	....	....	....
Wm. McConnell	33	30	15	8	5	91	....	....	....	....
	32	30	15	8	5	90	181	....	....	....
N. W. Morley	35	30	13	10	5	93	....	....	....	....
	35	30	12	8	5	90	183	....	....	....
Hiram Smith	34	30	14	10	5	93	....	....	....	....
	36	36	13	10	5	94	187	....	....	...
J. G. Flack	37	30	14	10	5	96	....	....	....	....
	38	30	14	10	5	97	193	....	....	$25
L. Perrott	30	30	15	10	5	90	....	....	....	...
	32	28	13	10	5	88	178	....	....	....

The following table shows the entries in Lot C, pro rata premium of $1,000, and the award of the judges, Samuel B. Davis, Chicago; and E. B. Jennings, New Orleans. Best tub of butter of not less than 50 lbs., made at any time or place, or by any process. The total of the above premium to be divided among the exhibitors in proportion to the number of points obtained by each entry which shall be awarded 85 points or over, in a scale of 100.

NAME OF EXHIBITOR.	Flavor.	Grain.	Color.	Salting.	Style of package.	Total.	Grand total.	Pro rata premium.
F. E. Carswell	27	22	13	8	5	75	....	.....
	30	22	13	9	4	76	151	.....
Cooper & McNewell	21	15	8	5	4	53	....	.....
	20	13	8	5	3	51	104	.....
H. K. Loomis	35	25	13	8	4	85	....	.....
	36	25	11	8	5	85	170	.....
G. C. Mansfield	26	22	10	7	3	68	....	.....
	26	23	10	9	4	71	139	.....
J. M. Thomas	36	28	13	8	3	88	....	.....
	38	28	14	8	4	93	181	.....
Solon Brown	28	20	12	7	3	70	....	.....
	29	26	10	8	3	76	146	....
Harris Bros.	34	20	11	8	4	77	....	.....
	35	20	7	8	4	74	151	.....
N. W. Morley	29	20	10	7	3	69	....	.....
	23	20	10	7	3	63	132	.....
Wm. McConnell	28	20	12	6	1	67	....	.....
	28	23	10	7	1	65	132	.....
Millard & Everson	20	18	8	8	1	55	....	.....
	20	20	10	8	1	59	114	.....
J. T. Scott	24	25	13	7	2	71	....	.....
	24	24	18	7	4	71	142	.....
A. L. Snyder	29	20	10	5	3	67	....	.....
	28	25	10	7	3	73	140	.....
Alma Creamery Co.	22	20	10	7	4	63	....	.....
	20	15	10	7	3	55	118	.....
W. S. Greene	28	22	10	8	4	72	....	.....
	35	25	8	8	4	80	152	.....
W. S. Roach	22	15	8	6	4	55	....	.....
	20	18	10	8	4	60	115	.....
Hiram Smith	29	18	9	5	5	66	....	.....
	28	26	10	8	4	76	142	.....

In Lot D, Class 1, for the largest and best display of butter (quality considered), by any dairy association, dairy board of

trade, or dairy produce exchange, if manufactured by the members thereof — 1st premium, $300; 2d premium, $200; 3d premium, $100 — the judges, C. F. Dexter, Chicago; and C. E. Udell, St. Louis, awarded the third premium to the Wisconsin Dairymen's Association.

The following table shows the entries in Lot E, Class 1. Print and ornamental butter, of not less than 10 lbs. First premium $50, 2d premium $30, 3d premium $20, and the award of the judges in classes 1, 2, 3 and 5—Samuel B. Davis, Chicago; E. B. Jennings, New Orleans:

NAME OF EXHIBITOR.	Flavor.	Grain.	Color.	Salting.	Style of package.	Total.	Grand total.	First premium.	Second premium.	Third premium.
G. C. Mansfield	34	20	12	9	2	77	....	....	....	....
	32	25	13	8	2	80	157	....	....	....
H. W. Kellogg	30	15	2	8	0	61	....	....	....	....
	28	20	10	7	0	75	126	....	....	....
CLASS 2.—ROLL BUTTER.										
G. C. Mansfield	30	21	12	8	3	74	....	....	....	....
	30	23	14	7	3	77	151	$50	....	....
H. W. Kellogg	29	20	12	9	1	71	....	....	....	....
	30	20	11	8	2	71	142	....	$30	....
CLASS 3.—GRANULATED BUTTER.										
Cooper & Newell	32	25	13	9	4	83	....	....	....	....
	30	25	14	9	4	82	165	....	....	....
Wis. Dairymen's Association	33	24	13	8	4	82	....	....	....	....
	31	26	14	7	4	82	164	....	....	....
Harris Bros.	30	20	12	8	4	74	....	....	....	....
	32	20	12	8	3	75	149	....	....	....
A. L. Snyder	25	15	12	8	4	64	....	....	....	....
	25	15	11	7	3	61	125	....	....	....
Wm. McConnell	32	20	10	8	4	74	....	....	....	....
	30	16	14	8	3	72	146	....	....	....
CLASS 5.—BUTTER PACKED FOR WARM CLIMATES.										
G. C. Mansfield	35	24	12	9	4	84	....	....	....	....
	32	23	13	8	4	80	164	....	$50	....

The following table shows the entries in Lot F, Class 3, for the best tub of butter of not less than 50 lbs., made at any time, in the states of Ohio, Illinois, Indiana, Missouri Wisconsin, Michigan, Iowa, Minnesota, Kansas, Nebraska, California, Oregon, Nevada, Colorado, and all of the territories. 1st premium, $75; 2d premium, $50; 3d premium, $25; and the award of the judges, Sam'l B. Davis, Chicago, and E. B. Jennings, New Orleans:

NAME OF EXHIBITOR.	Flavor.	Grain.	Color.	Salting.	Style of package.	Total.	Grand total.	First premium.	Second premium.	Third premium.
Cooper & Newell	28	25	12	9	5	79	....	....	....	....
	30	22	13	8	4	77	156	....	....	....
G. C. Mansfield	26	25	9	8	4	73	....	....	....	....
	30	23	12	7	4	76	149	....	....	....
J. M. Thomas	28	25	12	8	4	77	....	....	....	....
	30	20	12	8	3	73	150	....	....	....
H. W. Kellogg	28	18	8	8	5	61	....	....	....	....
	26	18	10	7	3	64	125	....	....	....
Hiram Smith	32	25	8	8	4	77	....	....	....	....
	34	22	10	7	4	77	154	....	....	....
Harris Bros	27	20	10	8	5	70	....	....	....	....
	30	22	12	8	4	76	146	....	....	....
N. W. Morley	36	28	14	9	5	92	....	....	....	....
	32	28	12	10	5	87	179	....	....	....
Millard & Everson	25	27	13	9	2	74	....	....	....	....
	28	24	10	8	1	71	145	....	....	....
J. C. Scott	36	24	13	8	4	75	....	....	....	....
	30	22	13	7	4	76	151	....	....	....
Alma Creamery Co.	30	25	9	7	4	76	....	....	....	....
	30	20	10	8	5	73	149	....	....	....

PREMIUMS ON CHEESE.

SCALE OF POINTS FOR JUDGING.

Flavor	30
Quality	30
Texture	20
Color	10
Salting	10
Total	100

The following table shows the entries in lot G, class 1, best five boxes cheese (cheddar shaped) of not less than 250 pounds, made in June. 1st premium, $100; 2d premium, $75; 3d premium, $50; and the award of the judges, S. B. Davis, Chicago; C. E. Udell, St. Louis; E. B. Jennings, umpire, New Orleans (same judges in classes 1, 2, 3, 4 and 6):

Name of Exhibitor.	Flavor.	Quality.	Texture.	Color.	Salting.	Total.	Grand total.	First premium.	Second premium.	Third premium.
H. Z. Fish	28	25	18	8	8	82	....	....	....	....
	22	22	15	6	8	73	155	$100	....	....

The following table shows the entries in Lot G, Class 2. Best five boxes cheese (cheddar shape) of not less than 250 lbs., made at any time or place. First premium $100, 2d premium $75, 3rd premium $50, and the award of the judges:

NAME OF EXHIBITOR.	Flavor.	Quality.	Texture.	Color.	Salting.	Total.	Grand Total.	First premium.	Second premium.	Third premium.
Cold Spring cheese, White-water	22	25	14	8	9	78	....	....	....	....
	22	25	15	8	8	81	159	....	....	....
Chester Hazen, Brandon....	27	25	18	9	10	89	....	....	....	....
	25	28	18	8	9	88	177	....	....	....
Clark & Reynolds, Hebron..	18	19	18	7	8	70	....	....	....	....
	18	20	18	8	8	72	142	....	....	....
N. J. Hooker, Lake Mills....	20	20	18	6	9	73	....	....	....	....
	15	25	18	7	8	73	146	....	....	....
Aztalan Cheese Co, Aztalan	15	20	10	5	9	59	....	....	....	....
	15	20	10	8	8	61	120	....	....	....
H. Z. Fish, Richland Center.	29	29	20	7	10	95	....	....	....	....
	28	28	20	7	10	93	188	$100	....	....
E. P. Ingalls, Milford.....	15	23	10	6	8	62	....	....	....	....
	15	15	10	7	8	55	117	....	....	....
M. N. Seward, Harvey.....	25	23	15	8	9	80	....	....	....	....
	20	20	15	8	7	70	150	....	....	....
Olin Crossfield & Co., Fort Atkinson.....	15	20	17	8	8	68	....	....	....	....
	18	20	18	8	8	72	140	....	....	....
J. L. R. McCullom.....	12	20	18	8	8	66	....	....	....	....
	10	20	18	8	8	64	130	....	....	....
C. B. McCanna, Springfield..	27	25	18	9	8	87	....	....	....	....
	20	20	18	8	8	74	161	....	....	....
E. B. Fargo, Lake Mills.....	27	26	17	9	9	88	....	....	....	....
	25	22	15	8	8	78	166	....	....	....
C. W. Davis, Ithaca..... ...	20	15	10	6	8	59	....	....	....	....
	20	18	12	8	7	65	124	....	....	....
V. West.....	12	20	14	6	8	60	....	....	....	....
	15	18	18	8	6	65	125	....	....	....
F. Luchsinger	10	15	12	5	6	48	....	....	....	....
	10	15	10	6	6	47	95	....	....	....
H. Z. Fish	16	10	15	6	7	54	....	....	....	....
	12	12	10	6	6	46	100	....	....	....
Otto Friend	25	20	13	7	8	73	....	....	....	....
	25	20	15	8	8	76	149	....	....	....
L. Perrott	25	25	15	10	9	84	....	....	....	....
	25	25	15	10	9	84	168	....	....	....
F. E. Carswell.....	20	25	19	7	8	84	....	....	....	....
	25	25	15	8	8	81	165	....	....	....
H. K. Loomis	28	29	18	9	10	94	....	....	....	....
	28	28	18	9	8	91	185	....	$75	....
G. C. Mansfield.....	10	15	10	6	6	47	....	....	....	....
	10	10	5	5	5	35	82	....	....	....
F. E. Carswell.....	20	25	14	7	7	73	....	....	....	....
	20	18	18	7	8	71	144	....	....	....
H. Z. Fish.....	15	25	17	8	8	73	....	....	....	....
	15	24	18	8	8	73	146	....	....	....
Chester Hazen	28	27	18	9	9	91	....	....	....	....
	28	28	18	9	9	92	183	....	....	....

The following table shows the entries in Lot G, Class 3.—Best five boxes flat cheese, of not less than 140 lbs., made in June. 1st premium, $100; 2d premium, $75; 3d premium, $50, and the award of the judges:

NAME OF EXHIBTIOR.	Flavor.	Quality.	Texture.	Color.	Salting	Total.	Grand total.	First premium.	Second premium.	Third premium.
B. Holden	25	25	10	5	8	75	....	....	....	....
	20	20	15	8	8	71	146	....	$75	....
A. D. D. Land	27	27	17	9	9	89	....	....	....	....
	26	25	20	8	8	86	175	$100	....	....

The following table shows the entries in Lot G, Class 4. Best five boxes flat cheese, of not less than 140 lbs, mads at any time or place. 1st premium, $100; 2d premium, $75; 3d premium, $50; and the award of the judges:

NAME OF EXHIBITOR.	Flavor.	Quality.	Texture.	Color.	Salting.	Total.	Grand total.	First premium.	Second premium.	Third premium.
Clark & Reynolds	18	15	10	8	7	58	....	....	...	....
	15	15	10	8	7	55	113	....	....	....
Aztalan Cheese Company	15	15	10	7	6	53	....	....	....	....
	15	18	10	6	6	52	105	...	....	....
H. Z. Fish	28	25	19	8	9	89	...	....	....	....
	26	26	18	9	9	88	177	....	$75	....
H. Z. Fish	22	20	18	8	8	76	....	....	....	....
	20	15	15	8	8	66	142	....	....	....
M. J. Bumford	15	20	18	8	8	69	....	....	....	....
	20	20	18	8	7	73	142	....	....	....
H. H. Kuntz	28	22	15	9	8	79	....	....	....	....
	20	20	17	9	8	74	153	....	....	....
P. Perrott	23	24	14	9	8	78	....	....	....	....
	15	15	15	8	8	61	139	....	....	....
F. E. Carswell	25	25	16	8	9	83	....	....	....	....
	24	24	18	8	8	80	163	....	...	....
Cooper & Newell	15	18	10	7	6	56	....	....	....	....
	18	18	15	6	6	63	119	....	....	....
H. Strothoff	16	18	13	6	8	61	....	....	....	....
	20	20	14	8	8	70	131	....	....	....
A. D. DeLand	20	20	15	5	8	68	....	....	....	...
	28	20	15	6	8	67	135	....	....	....
H. K. Loomis	25	24	18	9	8	84	....	....	....	....
	23	24	18	8	8	81	165	...	....	$50
Wm. Vetting	28	28	17	10	9	92	....	....	....	....
	26	26	19	9	9	89	181	$100	....	....
G. C. Mansfield	15	18	10	6	6	55	....	....	....	....
	15	15	10	7	6	53	108	....	....	....
J. M. Thomas	20	22	15	7	6	70	....	....	....	....
	18	18	15	7	7	65	135	....	....	....
Gartman & Etreren	16	20	12	7	7	62	....	....	....	....
	20	20	18	7	8	73	135	....	....	....

The following table shows the entries in Lot G, Class 6. Best five boxes of four in a box, Young America cheese, made at any time or place, 1st premium, $100; 2d premium, $75; 3d premium, $50; and the award of the judges.

NAME OF EXHIBITOR.	Flavor.	Quality.	Texture.	Color.	Salting.	Total.	Grand total.	First premium.	Second premium.	Third premium.
Chas. A. Bahr, Manitowoc..	26	25	15	7	8	81	....	....	....	....
	25	25	20	8	8	86	167	....	$75	....
Clark & Reynolds, Hebron..	25	22	12	7	8	74	....	....	....	....
	25	23	18	8	8	82	156	....	....	$50
H. K. Loomis, Sheboygan Falls.....	28	28	19	9	9	94	....	....	....	....
	29	27	20	8	8	91	185	$100	....	....

The following tables show the entries in Lot H, and the award of the judges, C. F. Dexter, Chicago, and G. W. Simpson, Boston, for pro rata premium of $1,000, to be given for best box of cheese, made at any time or place; the total of the above premium to be divided among the exhibitors in proportion to the number of points obtained by each entry, whose exhibit shall beawarded 85 points or over in a scale of 100.

NAME OF EXHIBITOR.	Flavor.	Quality.	Texture.	Color.	Salting.	Total.	Grand total.	Pro rata premium.
H. Z. Fish, Richland Center	23	22	16	8	9	78	....	.....
	25	24	17	8	8	82	160	.....
T. R. Fish, Neptune	23	25	20	10	10	88	....	.....
	28	28	18	8	10	92	180	$17.45
Chas. A. Burr, Manitowoc	18	22	17	9	10	75	....	.....
	20	23	16	8	8	75	150	.....
Aug. Woelfer, Lake Mills	27	26	19	10	10	92	....	.....
	27	28	18	10	10	93	185	17.95
Eugene Wardwell, Cambridge	23	22	18	9	10	82	....	.....
	22	23	15	10	10	80	162	.....
D. Gardner, Milford	24	26	19	9	10	88	....	.....
	27	27	19	8	10	91	179	17.36
A. D. Fish, Richland Center	26	27	27	10	10	83	....	.....
	29	29	20	10	10	98	191	18.50
Cold Spring Cheese Co., Whitewat'r	20	24	18	9	9	80	....	.. ...
	25	26	19	8	10	88	168	.....
C. Hazen, Brandon	25	26	19	9	10	89	....	.....
	26	28	19	9	10	92	181	17.55
Clark & Reynolds, Hebron	22	23	19	9	10	83	....	.....
	20	22	19	8	10	79	162	.....
F. J. Hooker, Lake Mills	24	24	19	8	10	85	....	.....
	27	28	19	8	10	92	177	17.55
Aztalan Cheese Co, Aztalan	26	25	17	9	10	87	....	.....
	26	25	18	8	9	86	173	16.80
E. P. Ingalls, Milford	23	25	19	9	10	86	....	.....
	27	26	19	8	10	90	176	17.35
M. N. Seward, Harvey	26	28	19	10	10	93	....	.....
	27	27	18	8	10	90	183	17.75
Olin, Crossfield & Co, Ft. Atkinson.	27	28	19	10	10	94	....	.....
	28	28	18	10	10	94	188	18.25
J. L. R. McCollum	22	25	20	9	10	86	....	.....
	22	23	17	8	8	78	164	.. ...
C. B. McCanna, Springfield	23	22	16	10	10	81	....	.....
	20	25	15	10	10	80	161	.....
E. B. Fargo, Lake Mills	27	28	19	10	10	94	....	.....
	27	28	18	10	10	93	187	18.15
C. W. Davis, Ithica	26	24	19	10	10	89	....	.....
	25	25	17	8	8	83	172	16.70
V. West	23	27	19	8	10	87	....	.....
	22	25	18	8	8	81	168	.....

NAME OF EXHIBITOR.	Flavor.	Quality.	Color.	Texture.	Salting.	Total.	Grand total.	Pra rata premium.
H. Z. Fish, Richland Center	24	26	20	9	10	89	....	.....
	25	26	20	9	10	90	179	$17.35
H. J. Bumford, Plymouth	28	27	19	8	10	92	....	.....
	27	27	19	8	10	91	183	17.75
H. Widder, Hingham	27	28	19	10	10	94	....	.....
	27	27	18	8	10	90	184	17.85
M. McKennon	19	26	17	9	10	81	....	.....
	27	25	18	8	9	87	168	.....
H. Lemknil, Ostburg	24	22	18	10	10	84	....	.....
	25	26	18	8	9	86	170	16.50
G. Lammers, Cedar Grove	28	29	20	10	10	97	....	.....
	29	28	20	10	10	97	194	18.80
M. Lemwlin, Edwards	26	27	18	9	10	90	....	.....
	26	25	17	8	9	85	175	16.95
H. H. Kentz, Manitowoc	26	27	19	9	10	91	....	.....
	26	26	18	8	9	87	178	17.25
Chester Hazen, Brandon	27	26	20	9	10	92	...	.....
	26	24	19	10	10	89	181	17.55
Otto Friend	20	22	18	10	10	80	....	.....
	20	23	18	10	10	81	161	.....
H. Weiskopf, Edwards	24	25	18	10	10	87	....	.....
	24	24	17	8	10	83	170	16.50
H. Walvoord, Cedar Grove	24	25	19	10	10	88	....	.....
	23	24	18	9	9	83	171	16.60
Q. A. Danford, Meemee	27	28	20	10	10	95	....	.....
	28	28	18	10	8	92	187	18.15
Wrench Bros, Hika	23	24	20	9	10	86	....	.....
	25	26	17	7	10	85	171	16.60
Geo. Eldrige, Waldo	29	28	19	10	10	96	....	.....
	29	28	20	10	10	97	193	18.70
H. Olin, Edwards	24	26	19	10	10	89	....	.....
	25	25	18	9	10	87	176	17.05
J. Dassaw	21	24	18	10	10	83	....	.....
	23	25	17	10	9	84	167	.....
J. Friek, Plymouth	27	26	19	10	10	92	....	.....
	27	26	18	8	8	87	179	17.35
C. T. Kersted	24	25	17	10	10	86	....	.....
	24	23	18	8	9	82	168	.....
H. Habihorst	23	25	17	10	10	85	....	.....
	25	22	15	8	10	80	165	.....
F. G. Meyer, Meemee	23	24	18	9	10	84	....	.....
	24	25	18	9	10	86	170	16.50
Carl Reik, Sheboygan Falls	27	26	17	10	10	90	...	.....
	27	26	17	10	10	90	180	17.45
F. Luecke, Howard's Grove	23	25	18	10	10	86	...	.....
	26	27	18	8	10	89	175	16.95
F. A. Kilsman	24	23	16	9	10	82	....	.....
	23	22	18	9	8	80	162	.....
Milford Cheese Ass'n, Milford	21	26	19	7	10	83	....	.....
	25	24	18	9	10	86	189	17.55
Loomis & Laver, Hingham	29	28	20	10	10	97	....	.....
	30	28	19	10	10	97	194	18.80

NAME OF EXHIBITOR.	Flavor.	Quality.	Texture.	Color.	Salting.	Total.	Grand total.	Pro rata premium.
Nick Pauley	23	24	18	9	10	84	....	.....
	20	22	18	8	9	77	161	.....
Wm. Fleischman, Winooska	27	27	17	9	10	90	....	.....
	25	24	17	8	9	83	173	$16.80
Carl Goldbeck, Winooska	25	28	18	9	10	90	....	.....
	26	26	18	8	10	88	178	17.25
J. C. Peck, Waldo	26	27	19	10	10	92	...	.....
	25	24	18	9	10	86	178	17.25
J. Whissellink	20	23	17	10	10	80	....	.....
	22	23	19	8	10	82	162	.....
A. Antone, Belgium	26	27	18	9	10	90	....	.....
	24	25	18	8	9	84	174	16.85
F. Themar	24	26	17	10	10	87	....	.....
	23	22	17	10	8	80	167	.....
Torry Walvord	20	22	19	10	10	81	....	.....
	22	23	18	10	10	83	164	.....
H. K. Rondre	20	24	18	10	10	82	....	.....
	20	22	17	8	10	77	159	.....
John Hartel, Meemee	24	25	18	9	10	86	....	.....
	26	25	16	8	9	84	170	16.50
F. Widder, Sheboygan Falls	28	24	20	10	10	95	....	.....
	28	28	20	10	8	94	189	18.35
C. Buscher, Ada	26	26	17	9	10	88	....	.....
	27	28	19	10	10	94	182	17.65
F. Wagenkneicht, Keil	26	27	20	10	10	93	....	.....
	28	28	19	9	10	94	187	18.15
D. Evans	20	21	17	9	10	77	....	.....
	18	20	15	5	8	66	143	.....
H. Z. Fish, Richland Center	27	26	20	9	10	92	....	.....
	27	27	18	8	10	90	182	17.65
L. Perrott, Greenville	22	26	16	10	10	84	....	.....
	27	26	18	9	10	90	174	16.85
F. E. Carswell, Lone Rock	26	25	19	10	10	90	....	.....
	27	25	18	10	10	90	180	17.45
Cooper & Newell, Whitewater	23	26	18	10	10	87	...	.....
	24	23	17	7	8	79	166	.....
W. S. Greene, Fort Atkinson	26	27	19	10	10	92	....	.....
	25	23	17	7	8	80	172	16.70
W. S. Roach, Johnson's Creek	26	27	18	9	10	90	...	... ..
	27	27	19	8	10	91	181	17.55
H. Strothoff	25	26	18	6	10	85	....	.....
	25	25	17	7	8	82	167	.....
B. Holden, Plymouth	21	20	18	9	10	78	....	.....
	20	22	18	7	8	75	153	.....
A. D. DeLand, Sheboygan Falls	24	26	19	10	8	87	....	.....
	23	20	18	9	10	80	167	.....
H. K. Loomis, Sheboygan Falls	26	28	20	9	10	93	....	.....
	28	28	20	9	10	95	188	18.25
Wm. Betting, Manitowoc	27	25	18	10	10	90	....	.....
	26	28	20	9	10	93	183	17.85
Gartman & Ehren, Sheboygan Falls	21	27	18	10	10	86	....	.....
	25	24	18	10	10	87	173	16.80

NAME OF EXHIBITOR.	Flavor.	Quality.	Texture.	Color.	Salting.	Total.	Grand total.	Pro rata premium.
G. C. Mansfield, Johnson Creek...	26	25	19	10	10	90	....	.....
	23	25	17	9	9	83	173	$16.80
J. M. Thomas, Dixon.....	25	27	19	10	10	91	....	.....
	25	26	18	8	10	87	178	17.25
F. E. Carswell, Lone Rock.....	26	27	18	10	10	91	....	.....
	27	28	19	9	10	93	184	17.85

In Lot I, Class 1, for the largest and best "display of cheese" (quality and variety considered), by any dairy association, dairy board of trade, or dairy produce exchange, if manufactured by the members thereof — 1st premium, $300; 2d premium, $200; 3d premium, $100. Judges — S. B. Davis, C. E. Udell. Umpire — E. B. Jennings.

The *First Premium* was awarded to the Wisconsin Dairymen's Association.

The *Second Premium* was awarded to the Sheboygan Co. Dairy Board of Trade.

In Lot I, Class 2, for the largest and best "display of cheese" (quality and variety considered), by any individual manufacturer — 1st premium, $100; 2d premium, $75; 3d premium, $50. Judges same as in Class 1.

The *Second Premium* was awarded to Geo. C. Mansfield, Johnson's Creek.

The following table shows the entries in lot K, classes 1, 2, 3 and 4, and the award of the judges, the premiums in each class being alike, $75, $50 and $25:

NAME OF EXHIBITOR.	Flavor.	Quality.	Texture.	Color.	Salting.	Total.	Grand total.	First premium.	Second premium.	Third premium.
CLASS 1, FANCY CHEESE.										
G. C. Mansfield	28	28	17	10	9	92	....	....	....	....
	26	26	19	9	9	89	181	....	$75	...
CLASS 2, SWITZER CHEESE.										
John Luchsinger	28	10	25	20	10	93	....	....	....	....
	27	10	25	20	8	90	183	....	75	....
CLASS 3, LIMBURGER CHEESE.										
F. Luchsinger	25	20	20	9	10	84	...	....	....	....
	25	21	20	10	8	84	168	....	75	....
CLASS 4, SAGE CHEESE.										
Chester Hazen	25	28	18	8	7	86	....	....	....	....
	20	20	15	5	10	70	136	....	....	$50
F. E. Carswell	27	28	17	10	9	91	....	....	....	....
	30	25	20	10	10	95	186	$100	....	....

The sweepstakes on dairy butter, Lot B, Classes 1, 2 and 3, fifty dollars and gold medal, were awarded to J. G. Flack, of Elkhorn, Walworth, county.

The grand sweepstakes (every entry awarded a first premium in lot G, and no other shall compete for this premium) one hundred and fifty dollars and gold medal, were awarded to H. Z. Fish, of Richland Center, Richland county.

The following table shows the number of premiums on dairy products, to the different states at the World's Exposition, New Orleans, for 1885.

	Premiums	Value.	Percentage.	Medals. Gold.
CHEESE—	71	$2,838	.84	1
Wisconsin	5	325	.10	0
Minnesota	6	135	.04	0
New York	3	67	.02	0
Vermont				
Total	84	$3,375	1.00	1
BUTTER—				
Iowa	22	$1,566	.67	1
Minnesota	21	1,264	.30	1
Wisconsin	11	534	.13	1
Vermont	11	631	.15	0
Mississippi	1	75	.02	0
Indiana	1	51	.01	0
Missouri	1	50	.01	0
Dakota	1	50	.01	0
Total	69	$4,221	1.00	3

DAIRY IMPLEMENTS.

Cornish, Curtis & Greene, Fort Atkinson, were awarded first premiums, a medal and diploma, on each of the following articles, at the World's Exposition, New Orleans: On rectangular churns, farm butter workers, Curtis' improved factory churn, Mason's central drip butter worker, first prize dog power, windmills for dairy use, gold medal for best display.

BUTTER COLOR.

F. F. Fargo & Co., Lake Mills, were awarded first premium —medal and diploma.

RESOLUTION.

The following joint resolution, proposed by Hon. Pliny Norcross, in the Assembly, at Madison, February 6, 1885, was adopted unanimously by both houses of the legislature:

WHEREAS, The World's Exposition, now in session at New Orleans, after a competition which embraced the dairy products of England, Denmark and Holland, and, in fact, the entire world, has awarded to the dairy farmers and associations of Wisconsin the following high premiums:

Ten important premiums on butter; ten important premiums, largely first, on cheddar cheese, together with the grand sweepstakes prize of $150, and gold medal in this class; besides, in the great pro rata prize of $1000, to be divided among all exhibitors in this class taking premiums, there were awarded fifty-five premiums, and Wisconsin sweeps the board by taking fifty out of the fifty-five. In the grand prize of $300, to any dairy association or dairy board of trade, the Wisconsin Dairymen's Association takes the first and the Sheboygan county board of trade the second, of $200. In the largest and best display of cheese by any individual manufacturer in the world, Wisconsin takes second. In the best display of fancy cheese, Wisconsin takes the first. In the best display of Switzer and Limburger, Wisconsin takes first in both. In the best display of sage cheese, Wisconsin again takes first; and

WHEREAS, The high honor of being one of the foremost dairy states in the Union has been achieved by the zeal, industry and enterprise of our own dairymen and dairywomen; and

WHEREAS, We recognize the substantial awards of merit the most convincing evidence that the dairy farmers of this state in the face of many obstacles and with but little state encouragement, have built within our borders a most healthful, honorable and magnificent industry, and have brought wealth, honor and renown to our commonwealth, and in this grand beginning, which now reaches a product of $20,000,000 annually, have demonstrated the certainty of still greater future success; therefore, be it

Resolved by the Assembly, the Senate concurring, That the legislature of Wisconsin herewith tenders to the dairymen and dairy owners of this state its most profound acknowledgments and earnest thanks for the great work which

they have performed, and it hereby pledges itself to do whatever is right and reasonable to aid them in securing still greater achievements.

[Attest] CHARLES E. BROSS, *Chief Clerk Senate.*

[Attest] E. D. COE. *Chief Clerk Assembly.*

The expenses of the office for the past year were $90.25. An itemized account has been furnished the executive committee.

Respectfully submitted,

D. W. CURTIS,
Secretary.

INDIVIDUAL DIFFERENCE IN DAIRY COWS.

By PROF. W. A. HENRY, of the State University.

One of the essentials of a good dairyman is the ability to distinguish between a good and a poor cow. That some men without any particular training can point out quite accurately the good animals of a herd we all know, but to most of us there is no royal road, and wisdom comes only with study and experience. It is not so much the occasional failure in buying a cow, however, that works against a dairyman as it is the lack of ability to determine and appreciate the worth or worthlessness of the animal after purchase. To know which cows to retain and which to sell, that the standard of quality in the herd may be constantly advancing, is the ever-recurring problem with the vigilant dairyman.

I maintain that the difference in value between a good and a poor dairy cow is too great for any one who is governed by hard money principles to substitute guesses and estimates for the solid facts, which may and should be brought out by carefully kept records.

Of the infinite number of differences that may, and do occur in the individual members of our herds, I will here speak of three or four which have a practical bearing, taking the facts and figures from the records of our little herd at the farm of the experiment station.

One of the first differences that strikes our attention, is the variation in time of giving milk between two cows. A cow may, by giving a large flow for a time, delude the owner into the belief that she is the leader of the herd, when in truth her total yield may fall below that of some very ordinary members of the herd. To illustrate this let us look at the record of two of our cows, Cherry and Doubtful, the former having dropped her calf April 28th, the latter May 28, 1883.

In the beginning Cherry's yield was very satisfactory, and continued so for a time, when it rapidly fell off, while Doubtful, starting with but a moderate record, gave the greater quantity by the close of the season.

MILK RECORD.

MONTH.	Cherry.		Doubtful.	
	Lbs.	Oz.	Lbs.	Oz.
May	1,172	1	....	....
June	1,008	4	931	11
July	839	12	842	9
August	682	0	738	0
September	544	0	606	15
October	407	12	466	4
November	123	12	424	8
December	.....	....	335	0
January	.....	....	460	12
February	.....	....	345	0
March	.....	....	93	4
Total	4,777	9	5,253	15

By the table, we see that Cherry's record for the first three months is over 3,000 pounds of milk, or about 500 pounds more than that given by Doubtful in the same length of time, and a hasty judge might have considered her good for a couple of thousand pounds more than that cow, by the

close of the season, yet, by the record, we see that Doubtful's yield was nearly 500 pounds in excess of Cherry's.

The record brings out plainly the great fault of this cow that starts out so finely, and reduces her to the rank of a very ordinary cow.

A good flow of milk, well maintained, is a prime requisite, but we must not stop with this unless we are selling milk by the quart, and care nothing for quality. A cow may deceive us as much in the quality of the milk given as in any other way. I can not illustrate this any better than by showing what the churn told us of four of our cows, of four different breeds.

Name of cow.	Breed.	Milk for 1 lb. of Butter.
Winnefred	Holstein	56 lbs. 13 oz.
Asylum	Ayrshire	29 " 0 "
Heroine	Short-horn	31 " 0 "
Nibbie	Jersey	13 " 6 "

These cows all happen to be full bloods, but it is not between the breeds that I here wish to introduce the comparisons. A churn test showed just these results with the milk of the animals here named, and the variations are so striking that they must arrest the attention. How easily one might be deceived with these cows if only quantity of milk was looked at. A good pailful of milk is a most satisfactory sight to a dairyman, yet quantity is one of the most deceptive measures we have.

The third point I wish to touch upon is the great difference in the returns for the food given. To illustrate this, I instance the case of two cows which stood side by side in the stanchions during the early part of this winter. The food of the cows was the same—five pounds of sorts two and a half each of corn-meal and ground oats, and about twenty pounds of mixed hay. Both cows were fresh and doing their best. Hacker, a native, was giving from one to three pounds of milk more per day than the Jersey Nibbie, and was held to be the equal of any cow in the barn; the churn showed her butter record to be one pound two ounces,

while Nibbie's was one pound and fifteen ounces. At twenty-five cents for butter, the little Jersey was giving about twenty cents a day more than her neighbor, and this, too, without extra feed or care.

A fourth difference is not between different individuals, but a difference in the same individual in different years. In the natural existence of every good dairy cow, there is a season when, through age, and fortunate surroundings, she makes, or can make, her best record. This should be borne in mind by the dairyman in measuring the values of the individuals of his herds.

Here is the best monthly record of two cows for two seasons:

	1883.	1884.
Cherry	1,172 lbs. 1 oz.	866 lbs. 8 oz.
Doubtful	931 " 11 "	1,353 " 4 "

In 1883 Doubtful was purchased, and brought to the farm before calving. She was not wonted to her new quarters, and did not thrive as she should have done. Had we judged her by her first year's record, she would have taken the wrong position in the list.

I have here pointed out a few individual differences, giving a single illustration in each case. Not a person who hears this paper and has kept cows but could add others if he has been observing. The point I am trying to reach is briefly this: the milk of each cow should be weighed and recorded each milking, and occasional tests should be made of the quality of the milk by churning it separately.

I know I shall be met with all sorts of objections, such as "Too much trouble," "It will take too much time," "Can tell well enough how a cow is doing without," etc., but, I claim, not one of these excuses is valid with progressive farming. A good business man must know every detail of his business, and have all these details under careful supervision. A cow is too expensive a machine to be run hap-hazard and by guess for years.

I maintain these records should be kept and studied for the following reasons, though I shall not enumerate all:

It will induce more careful milking. The one milking a

cow, upon finding the quantity of milk decreasing, is careful to drain the udder at the next milking to increase the record. The owner of the cow, by means of the record, follows the yield from day to day, and when a fall in amount occurs, naturally inquires of the milker the cause.

It induces regular and liberal feeding. The owner comes to look upon his cows as machines which must be supplied with grass, rough material, as hay, grain, etc., out of which can be made the finer products of milk, butter, and cheese. The record is a daily hint that there is a close relation between food and product.

The daily record and the butter test with the churn, together, soon reveal to the owner the valuable animals of the herd, as well as the poor ones. These last can be disposed of and replaced. In this particular alone, a record is worth all it costs.

Many a dairyman now listening to this paper has a cow or two that is worth ten times as much as others in his herd; yet, he may not hold the best of his herd at over $75, while for the poorest he would not take less than $30 or $35.

If it is a fact that one cow may be worth several times as much as another, who ought to know it if not the dairyman owning both, and how can he if he keeps no record?

Not only do we come to appreciate certain animals of the herd more highly, but we will be better prepared to select calves for the future herd if we know exactly what the dams are doing.

A pair of scales for weighing milk can be had for $5, or spring balances costing less will answer.

A sheet of paper, ruled and tacked on a board, and a lead pencil, will complete the requisites.

Begin at once to note what each cow yields, and after two or three weeks, when you have made up your mind as to just what each is worth to you, begin and set for one day the milk of each cow separately, taking one at a time. Upon churning, you will be surprised at what changes you will make in the list. If you do not have a little business with the cattle buyer or butcher as soon as you can dry up and fatten some of your herd, you are fortunate.

DISCUSSION.

Prof. Henry—There is one thing that I want to impress upon you; that is, the importance of keeping a record of what your cows do. Use the scales; keep them handy. They have done more to advance the cause of science than any other article; and when we bring the scales into dairying we have done more to advance dairying, and the interest we take in it, than anything else. Then, if you only rule off a piece of brown paper and put it down on that—keep some kind of a record of what your cows are doing—then you will know what they are worth. I want you to try it; put it down in words, on paper; then when you find out that you have a cow that is giving two pounds of butter a day, it will go into the list of the glorified cows.

Mr. Hoard—A gentleman by the name of Brandell, in Jefferson county, said to me: "You have been trying for a year or two to coax us fellows to test our cows, and I had my eyes opened the other day on that." Now, he is one of our best dairymen; a profitable dairyman, too. He has very keen judgment, and his eye on a cow is worth more than a great many men's further experiments. He says: "I had a cow that I paid $50 for; I thought she was a good cow. I was certain from the character of her milk that it was rich and contained a good supply of butter fat; I had no doubt but what I should get a handsome return on her keep. But," he says, "under the influence of being talked to about testing cows, I concluded to put this cow under test. In the first place I tested her percentage of cream, and that disclosed to me the fact that the cow was absolutely worthless in my herd." Well, now gentlemen, the cream runs up in some instances to as much as forty-five per cent., and he only got eight per cent. He came to me and asked if I could tell him what was the matter. I said: "There are two conditions: everybody knows certain milk is very sticky and will hold the cream—it won't rise. There seems to be a sort of a gluten in the milk, and cream globules won't rise. Perhaps the milk of your cow has very small globules. The difference between the Jersey cow and the

Holstein is the difference in the size of the cream globules; the Jersey has large cream globules, which come bounding to the top very quickly. The Holstein has small ones, which do not raise quickly; consequently, the Jersey skim milk won't be worth as much as the Holstein skim milk." He says: "What shall I do with this cow?" I says: "I don't know; if you cannot make any use of her you had better sell her." He says: "I'll tell you what I will do; I think a calf's stomach will extract that fat." I said: "I don't know anything that a calf's stomach won't extract." He put that cow to feeding calves, and she has done wonders. That was where she was valuable.

Mr. Clark—We want to learn something from these dairymen who have studied and experimented. We want to know, for instance, whether we shall get the best results from deep or shallow settings. My mother used to set in earthen pans quite deep; they were not in use very long; then they went to tin. Now we have deep settings, with ice to make it raise. That is something we didn't know anything about until quite recently; if they did, I didn't know it. Can one of these men tell me, after all their study, whether the result is better or not from deep setting—setting fifteen or eighteen inches deep, three pails in a can, and fill it with ice—whether the same results could be obtained, or more cream raised setting about three or four inches? We stand here theorizing, but practically, how is it? We are none of us employed by the State; we are able and willing to employ Prof. Henry; we are glad to get his knowledge, but we can't all have testers and scales, and all that sort of things.

Mr. Hoard—You have all of you got brains.

Mr. Clark—Yes, but we haven't got time; we farmers have something else to do besides trying this cow's milk and that cow's milk. I have got a pair of scales myself, and I can tell you what it costs to raise a pound of butter in my dairy. But we have to go slow here, because Prof. Henry says Jersey cows are the best. We cannot start out and pay $100 for a Jersey cow; you have got to grub a little; it won't do to run alone before you can stand. When you

come to reckon the interest on that cow, and the feed, I don't believe but very few farmers would feel that they could do it.

Prof. Henry—In forty days the Jersey will pay the difference in the interest, and at that she is cheap at $100 if the other cow is worth $50.

Mr. Clark—I don't think that the general farmer can do it.

Mr. Hoard—That is what bothers us; we want particular farmers, not general farmers.

Question—I believe there was something said here about deep settings; I would like to hear about that.

Prof. Henry—Let me tell you about that—both are proper. There is no difference in the amount of butter obtained from shallow settings or deep settings. The result of the Danish experiments shows that by the proper setting you can practically get all the fat out of the milk whether it is deep or shallow. It is like many other things, it is a matter of convenience. If a woman wants to wash a large number of milk cans and put them out in the sun to keep them clean, rather than set the milk in ice out of the way, of course it is a question of convenience and preference.

Mr. Hoard—The deep setting brings up the cream in six hours and the shallow in twenty-four.

Prof. Henry—The shallow setting gives us sour milk, which we cannot use in raising calves; the deep setting, in ice, gives us sweet milk, which is profitable feed when warmed, for calves and pigs. There are a great many farmers' wives in this audience that live where they cannot patronize the creamery—they are interested in this dairy question. I think the best way for you to do is to sell your butter to private families in the city. I stopped with a family up north here in Pierce county, where the young lady supplies seventeen families in town with butter, regularly, at a stated price. There are many people in the cities who would be glad to purchase their butter directly from some maker.

If our farmers' wives will go to their city friends and say, "I have some butter that I wish to sell, and I will let you have it if you are willing to pay me twenty-five cents the year around." And you ought to get that on such a con-

tract. Then make arrangements by which you shall have cows fresh to allow you to keep your contract; that is the first thing for you to look out for, or the cows will all be fresh in the spring, butter will be worth eighteen cents, and you will have plenty, but winter will come on, when these people will have to pay a big price to supply themselves, and you cannot keep your contract—you cannot send to them.

Deep setting, without doubt, is the most economical if you can use ice. You need not wash your can more than once a week if you are ordinarily careful in handling your cream. Then the skim milk is good feed for your calves, but don't feed it cold from the ice—warm it up. I have had calves gain over two pounds a day on oats and skim milk. I know a gentleman who is feeding one hundred calves on skim milk, and he says the calves are as good as those that run with the cows. But one thing I want to tell you: whether you set your milk deep or shallow, you want to use a modern method of churning.

Question — Wouldn't you advise a churn with a dash or a whirligig inside?

Prof. Henry — No sir, I don't believe in it at all. As to the temperature at which you shall churn, it varies with circumstances, but I should say about sixty-four to sixty-six. Take your thermometer out, clean off the gauge and see that it is sixty-six. Begin churning, and as soon as your butter comes the size of wheat grains stop churning, now, that is why you cannot use a dash churn, you can bring it to wheat grains with a dash churn, but after that there is no way to relieve it of buttermilk as there is in the other churns. You pull the plug out from the bottom and you hold your strainer under and what little butter runs out you can put back in the churn. Have a pail of cold water there and a little salt if you wish, pour in that water, close up your churn and turn over a number of revolutions, the butter drops apart and the water passes through it, clean out the buttermilk. If you repeat that process two or three times until the water runs out clean, the granulated form is not then lost. It will roll off your ladle just as wheat will.

There are a number of ways of salting, generally about the rate of one ounce of salt to the pound of butter; as to color, put your color in before you close it up to churn, don't try to color your butter afterwards. My father used to say, if you wash butter you wash the flavor out. You need not be afraid of that, you cannot wash the flavor out of butter. You see to follow out this method of doing it only requires beyond what you probably have, a churn. Suppose you try it and like the results you reach, then I would advise deep settings; there's the Cooley and a number of others. It is like a sewing machine, whatever you like best; I am talking now for private dairying, none of these suggestions would have any bearing on creameries.

Mr. Gorton — Here is a resolution I would like to offer and bring it before you:

Resolved: That it is the sense of this convention that the dairy interests in this state demand the passage of a law prohibiting the manufacture of adulterated butter in any form.

Why I would do this, is simply this: You read the market reports of the value of butter, you ask us why we can't get more for our butter. There are several causes, but the principal is this, that we have to enter into competition with bogus butter, which brings more than the average creamery butter in the Chicago market. It brings twenty-eight cents when the best butter brings thirty-two cents and common at twenty-six.

Motion to adopt and seconded.

Mr. Clement—The resolution speaks of adulterated butter. Is it intended to include more particularly counterfeit butter?

Mr. Gorton—What I am after is butterine.

Mr. Hoard—I understand that all counterfeit butter contains some butter. Thirty per cent. butter is the usual formula, and seventy per cent. neutral oil.

Mr. Gorton—I wish to bring before you the idea that we want to get rid of this, what is called oleoine, margarine, suine, or any other "ine" that competes with butter and is

driving us out of the market with common butter, not only our dairy butter but our factory butter.

Mr. Hoard—The fact is, gentlemen, that Chicago turns out of this counterfeit butter, as much as all the cows of Iowa and Minnesota are making. Then, when you add to this all the other cities of the United States that are making counterfeit butter, you get at a very fair relative commercial idea of the situation. Now, a variety of efforts have been put forth to invoke the power of legislation. The thing is on its face a fraud, an injustice. A great moral wrong is being done every day. Let me say that the wholesale dealer of Chicago does not sell his butterine for anything only butterine, it is branded, but he sells to the grocer and the boarding house keeper, and when we consider that ninety per cent. of all the butter sold in the United States is sold by the pound, we can readily conceive that no brand can be made upon the mass of butter sold by the pound. The question is full of difficulties. Without a direct violation of the law requiring the branding of this stuff, the consumer is deceived.

Question—Is he injured?

Mr. Hoard—He is injured in this particular, he is given something he did not ask for. If you ask me chemically or physiologically of its effects, I have got this to say, I don't know that pork fat rendered at the heat that all lard is rendered—from three hundred to five hundred degrees,—I don't know that that fat is injurious, but remember that this neutral oil is rendered at not to exceed one hundred and twenty degrees, from one hundred and twelve to one hundred and twenty. They take the caul fat and suet of the hog and subject it to a gentle heat and bring it up to one hundred and twenty and then extract this oil, that is called neutral oil, because it is odorless and tasteless, but it is a surreptitious undertaking and manufacture, and you have no protection from these men, by virtue of the fact that they will fairly argue that they will make it as cheaply as they can make it, and as much as they can, and as a consequence you have no protection against their introduction of deleterious fats. This much is clear common sense, that these

men ought by virtue of the natural law of right, to be forced to so conduct their business that they shall not enter into an unfair competition with the dairymen. I have had some hesitation in trying to do anything about this matter. In the agricultural convention two weeks ago some gentlemen asked me why I didn't "pitch in." I said, "Why, I am appalled at the size of the undertaking; bless you, I would like to pitch in. I have been pitching in a good many years, and I haven't been so well backed sometimes as I thought I ought to be."

Mr. Gorton — We are farmers here, we are the ones that are going to suffer, our legislature says "Why don't you ask for what you want, you never ask for anything, how do we know what you want?" I would like to see the resolution put before the house.

Mr. Curtis — Mr. President, I believe that every one here is ready to vote for this resolution or anything else that will hurt butterine, but is this resolution just what we want to pass? Hadn't we better postpone the resolution until after dinner and then we will talk it over and see if we can't put it in different shape so it will be a little better or different from what it is.

Mr. Morrison — I move this thing be referred to a committee of three of which Mr. Gorton shall be chairman, to report at our afternoon session.

Motion seconded. Committee appointed by the chair consisting of Mr. Gorton, the president and Prof. Henry.

Convention adjourned to 1:30 P. M.

AFTERNOON SESSION.

Convention met pursuant to adjournment at 1:30 P. M. W. D. Hoard in the chair.

J. M. Smith, Green Bay — *Mr. President, ladies and gentlemen*: I have been requested to tell you a little about New Orleans and the great exposition there. I was appointed one of the commissioners from our state to get up an exhibit and go to New Orleans with it, and, after a good deal,

of hard work by both Mr. E. D. Holton and myself (he being the commissioner with myself), we went together, and after some four or five months of steady hard work we got up a very creditable exhibit, got it down to New Orleans and set it up there. This was a representative one of the industries of the state, representing the grain, the cereals, corn. We have thirty-nine varieties of corn, and I think there is no finer exhibit of corn in the whole building than we have from Wisconsin. Our grain is also a very fine representation of all the different kinds of grain, and flour made from them. We have a very fine exhibit of honey, very handsome indeed; with the exception of California there is nothing larger, and there is certainly nothing finer in the line of honey than Wisconsin honey. In the line of sugar made from amber cane, I think we have the finest in the building. Minnesota has a larger amount, but not nearly so fine as the sugar from this state, and so with our syrup. Then we have samples of our manufacturing interests; a very fine lot of samples of the different kinds of wood from nearly all our forests.

I have been speaking of the exhibits, in the government building. There are really two distinct expositions there, the large main building covering about thirty-three acres, in which are exhibits for premiums, and the government building, so named because the government itself has its exhibit there; an exhibit for which they appropriated $300,000 to put up this building and it is really a magnificent thing. That of itself would pay any of you to go down and examine it, study it. The government exhibit is nearly in the center of the building. Then each state has its place around on the outside of the building. Wisconsin occupies one of these places. Our goods are nearly all put up in glass cases so that they are protected from dust. We had cases made and took them with us from Milwaukee; there are thirty cases, four feet wide, six feet long and six feet high. Those are filled with these goods. In addition to these there are five large cases that are hexagons, or six sided; those are ten feet in diameter and ten feet high. Those first named occupy along the side of our space; then the five larger

ones occupy the center, making a third row; in that way our goods are placed very nicely and I think I may say without boasting that the general feeling is that there is no state in the Union that has a more nicely arranged exhibit than Wisconsin. We are constantly receiving compliments on the nice pleasant arrangements.

In the main building, as I have told you, exhibits were put which were competing for premiums. There was where cheese and butter dairymen went in and made their exhihits, and I may say to you without boasting that in that line no state stood as high as Wisconsin, in New Orleans.

The State Horticultural Society has made an exhibit of apples of Wisconsin, and perhaps it will be new to some of you, when I tell you that no state in the Union had so fine an exhibit of apples as Wisconsin. Perhaps Nevada may have had a few that would average larger, but not even California had as many as Wisconsin. I would like to give you an idea of how the premiums went. The country was divided into three sections. The section that we belong in took everything north of forty degrees north latitude and east of the Rocky Mountains; that takes about down to Central Illinois and Central New Jersey; thus we had for competitors almost the entire apple growing district of the United States. There were seventy-nine premiums awarded upon apples; of those Maine took three, Conneticut three, Vermont one, New Hampshire none, Massachusetts none, New York none, New Jersey none, Pennsylvania two, Ohio two or three, Michigan two or three, Missouri one, Illinois seven, Nebraska seven, Kansas two or three, Iowa thirteen, Minnesota two, Wisconsin *twenty-six* taking double any other state. We took, also, out of seventeen medals, seven. We took about one-third of all the money premiums awarded and fully one-third of the medals. We were, of course, feeling pretty good about this and right upon the back of that the premiums were awarded upon cheese and the cheese dairymen of Wisconsin, as you know from others, made a clean sweep.

The comparison between the cheese dairymen of Wisconsin and the other states is about as follows: Wisconsin has

taken about $3,400 in cheese and butter together; the two states next highest to Wisconsin are Iowa and Minnesota, they together have taken about $3,100 or $3,200. Thus you see that Wisconsin has taken more than the two next highest states together, and if Mr. Holton and myself had not been crippled for means, if we could have said to the dairymen, "Gentlemen, go ahead and make your exhibit of butter and cheese just as good as you can, and we will stand behind you," they would have cleaned the board as completely, I believe, with butter as they did with cheese, but we could only promise them a limited amount, and they acted wisely and put the most into their cheese exhibit and made a splendid success of it. In addition to that there is no finer machinery in the main building than that from Wisconsin. The Allis engine, built by Allis & Co., of Milwaukee, is a most magnificent thing, and is equal to anything there is there, although there are eight engines upon that one platform. So that taking all these things together you see Wisconsin stands very high. Some of them asked me what kind of a country we have up here. "Oh," said I, "we live in God's country up there, we live well, eat well, drink well and sleep well." I was going to tell them we voted the Republican ticket, but I thought that would not do.

Mr. Hoard—I desire to announce that the Northwestern Dairymen's Association will meet in Algona, Iowa, on Tuesday, March 10, for a session of four days. This association is the largest of its kind in the United States. The program has been carefully prepared and it is expected that some very important work will be done, particularly in demonstrating the various methods of extracting cream. The new creamery of J. Wallace & Co. will be turned over to the association for that purpose. As one of the officers of the association, I desire to extend to every person here, and in this portion of the state, a cordial invitation to meet us at Algona.

Mr. Gorton—As chairman of the committee, I will say we

compromised a little, and the resolution now reads as follows:

WHEREAS, the manufacture of oleomargarine and butterine has assumed a magnitude of alarming proportions, and the deceptive manner in which it is placed upon the market is a fraud upon the public, as well as destructive to the best interests of state.

Resolved, That the organization demands of the Legislature the enactment of a law framed with such wisdom and efficiency, if possible, to protect the consumers of butter, and incidentally to foster the great interest which we represent.

Motion to adopt, seconded and carried.

Resolution offered by Mr. Clark:

Resolved, That in the judgment of this association, the time has arrived to establish an agricultural school, as provided for in a bill introduced by Mr. Adams, of Dane county. We believe a more general diffusion of sound agricultural knowledge can be secured by the teachings and experiments of such a school than can be obtained in any other feasible way; and that agriculture, in its varied branches, being the leading industry of the state, and its taxes more largely raised from the tillers of the soil than from any other class, justice demands that the farmers should have the benefit of a larger portion of a higher and better education in their calling, as well as the followers of other professions that are so liberally fostered by the state; and, therefore, we ask for the passage of said bill.

Motion to adopt seconded.

Mr. J. M. Smith—*Mr. President, Ladies and Gentlemen:* I just came from Madison here. I talked with several members of the legislature about our college. They say: "We are ready to do whatever you want done. If you want an agricultural college you can have it." Says one: "I am at a loss to know what to do. I am ready to vote for it if I am satisfied that the farmers want it; and I don't want to vote away the people's money unless it is wanted." And I think that man expressed the views of nearly all the members of the legislature. They are ready to do whatever the farmers ask for.

It seems to me that the time has come when the farmers ought to have some place where they can go and get a farmer's education. It is true that we have an agricultural branch in our state university, and it is also true that in the history of these agricultural colleges, where they have been attached to the state university, or a classical school of any

kind, they have proven to be failures. I think there is no exception in this country to that statement.

On the other hand, where they have been separated from any other institution they have been successful. I hope this resolution will pass by a unanimous vote.

Mr. Hoard—Mr. President, Mr. Hill here makes a suggestion that the resolution should not ask for a college for the education of farmers' sons, but for the education of anybody's sons. I don't think we ought to say that the farmer's boy ought to be a farmer, anyway, and a mechanic's son ought to be a mechanic; but that we ought to have some system in this State whereby a knowledge of agriculture can be taught; and if the resolution covers that ground sufficiently, broadly, I am in favor of it.

Mr. J. M. Smith — It does embrace that and nothing else. We none of us wish to be used for farmer's sons and daughters and nobody else. We wish it to be understood that it is for everybody that comes there.

Mr. Favill — I want to repeat what I said the first day: that it was the largest gathering that I had ever attended on the first day of the meeting of this association, and now I have the same to say of the last day, and we feel a little flattered by it, we are going home feeling pretty good. I want to say one thing. There are ladies here, house keepers, who have three or four or half a dozen cows and want to make butter, and they haven't any sort of facilities, no place to set the cream, nothing necessary to do with. Let me ask you gentlemen, for God's sake, give them something better. Your wife with the kind of facilities she has will make butter that will bring you perhaps fourteen to sixteen cents a pound, when if she had things as they ought to be she could make butter that would sell for thirty cents. Your wife can not do her best with no appliances. The thing is of course to do the best you can with what you have, and can rig up, but get better as fast as you can. This is the very best convention I ever attended. The audience has appreciated everything that has been offered, and here you are yet six or seven hundred strong, just the last afternoon when we are going off. Well, good bye.

Prof. Henry — I this morning had the pleasure of visiting the creamery over the other side of the river, and I was informed that they churned but one day in the week. Now, farmers, there is something wrong up in this part of Wisconsin, you are patronizing the creamery in a weak way. Now, no merchant could afford to open a store one day in the week. He would have to sell out and go to a place where things were more enterprising, and it is the same with the creamery business. Last year when I was up this way and scolded you farmers, I thought I saw the promise of better things in your faces, and now I find things just about as bad as they were before.

Mr. Gorton — I guess we have doubled.

Prof. Henry — Then I want you to double again more than double in the next year. You must stand by this creamery or else choke it right off; have it die at once. Now, I want to refer again to skim milk. You know that I told you about my calves, who are gaining from ten to fifteen pounds a week on skim milk. If this creamery is to be profitable it depends largely upon how you are going to use your skim milk that you have left at home.

Those calves got eight quarts of skim milk a day; all excepting two of them that got eleven, the two older calves. It is warmed up and shows by the thermometer 90 or 100 degrees. We feed it in three feeds; our experiment in feeding hogs is the same. We found after trying all sorts of ways that we got the best results to make a thick pudding with the skim milk and corn meal. I believe that in dairying that it is on the skim milk that our profit comes in very largely. I wish you would take two or three cows and try a little experiment on them; feed them heavily and see if you don't have more cream to come to the factory the next time the wagon comes around to gather, and if your cows are dry now, feed them well, that is one of the greatest mistakes a farmer makes; he lets his cow get poor at this time of the year.

When she first becomes fresh she has used her strength in raising the calf and in giving it birth, and her energies are gone; she wants to be well kept up. Keep up your

cows. Don't sell your hay at $5 a ton or let this elevator take your oats at the price they give you. The next mistake the farmer makes is when the fall comes on and the cows dry up, and there is not feed enough, they should feed heavily; look out for these things and your creamery will be a success. The large amount of butter that will be made there will diminish the cost per pound.

I want to thank the editors of your local press for what they have done in helping us. The success of this convention is largely due to two or three farmers in this vicinity and the local press, in talking it up to the citizens of Arcadia.

Mr. O. C. Gregg, Camden, Minn.—Mr. Chairman, your time is short, but I want to say a few words because I maintain there are some in this crowd who are exactly where I used to be. I got my first and best help in just such a convention as this. I am talking from a farmer's experience, and if you should see me three hundred days out of the three sixty-five, you would see me in overhauls and blouse; I milk on an average eight cows before breakfast, and do it in the winter time before daylight. I am proud of the fact that I am a farmer. Now, as to the success of dairying with a private dairyman, these creamery men may kick a little, but let them kick, you can make better butter than they can. The best butter made by private dairymen is wanted in every city in this Union, and wanted badly; there are certain rules you must comply with. In the first place you must have a good cow, but more important, keep her clean, make a platform upon which she shall stand, a trench behind her about eight inches deep, and have that platform short enough so that her hind feet will just rest squarely upon the hind edge of the platform; now, put plenty of straw upon that platform for the cow. Now you have got a clean cow. I know of a cow in Minnesota just as white as snow; you take her out of the stable any day and she is just as white as she ever was.

2. Feed good feed; you can't get a good quality and quantity of milk without feeding good feed, and plenty of it. After you get your milk; submerge it. You heard what

Prof. Henry said about that, and he is right I think. When the milk is submerged it is safe from the odor of cabbages or anything else. Then, in order to ripen your cream, you can heat it; raise it as high as seventy degrees. Put the can right in a dish pan of water, keep it moving all the time, and when your thermometer shows it is warm enough take it off. The next thing when that cream gets to the point of ripening, when it gets to be just a little acid, then say whoa! to everything else and churn, that must be churned right then and there. Now, to prepare it for the churn, the thermometer shows that it is down to fifty-seven or fifty-eight, it must be raised to sixty-four, then put it into the churn and use one of these box or *rectangular churns*, the next thing put in your coloring, you must color the butter sure. I ain't going to argue the question, you must do it; now churn just as the Professor told you, draw off the butter milk and wash it as he said; I would suggest however, that before you put it in the water, it should be tested by the thermometer and ascertained to be at sixty-four degrees. Salt the butter right in the churn, you will soon learn to know how much to take, then turn the churn. I think Mrs. Gregg turns it twenty-four times, then put it on the butter-worker; and by the way, you want a *lever butter-worker*, something of that kind. When you take it out of the churn put the butter onto a cloth and put the other part over it, so it is wrapped in cloth and has never been touched by the hands, and if you want to turn the butter, take hold of the cloth and turn it, it is a very convenient thing and it saves sticking on to the butter-worker; now, be careful you don't work it too much. I heard a man say that his mother wasted five years of her life in smashing grains of butter. Now, you want to put it in packages and it is ready for market.

Prof. Henry—Do you work your butter a second time?

Answer—No, we don't; we just work it, and put it right into the packages. You want good packages. I have experimented on a good many, and I find Bradley's butter box is a good thing.

Prof. Henry—Would you use a stone jar?

Mr. Gregg—No; I don't like a stone jar. You want wood of some kind—ash or something of that kind. And I don't believe much in the return packages. I think you will find that in order to keep your dealers supplied, you must have a winter dairy. Fifteen-cent oats can be fed profitably to a cow, when you get twenty-five cents for the butter, and there ought to be a good margin, to say nothing about the fertility to the farm. By keeping the winter dairy, and making your arrangement with your dealer, you can make your winter butter sell your summer butter, and that is one of the best points in the business. I want to say one thing to you. Don't you go away from this place with a single bit of prejudice against this man, because he is an editor, or that man, because he is a professor, or anything of that kind, because I know the things that they have said are in the very direction, which I have found by practical experience led me to success. I wish we had a Prof. Henry in Minnesota, most heartily. I have come all the way from the western border of Minnesota, and I feel well paid for coming. Another thing: Lay in a good supply of books and papers. I have proved by my own experience, running over some four years, that I can keep a good man, and keep him contented, by having my house filled with the best books and papers I can get, and give him time to read them. My father was brought up in New England, where the rule was, that while it might do for some men to do their work and then sit down and take it comfortable, that for the farmer to make a living he has got to get up in the morning, slave away through the day, and go to bed so tired he aches. And there are some men in this country who have got the same idea. I believe it is an outrageous curse on any farmer to have that idea in his head. When I took my farm, a few years ago, I made up my mind that one great difficulty with the hired men was the long, continued labor. A man gets tired and nervous and wants to go off and do something different. I thought I would try and break this thing up, and I made an arrangement that every morning, noon, and night we would take, at least, three-quarters of an hour for meals, when we came to the table, and we would

all have books and papers; and it cost me just $30 a year for the books and papers. We sat down at the table, and at first it seemed rather odd; the men were a little sheepish about it, but I had mine, Mrs. Gregg had hers, and the result is that those men don't waste any time; they don't comb their hair ten minutes before they get at their books and papers, and we are all looking forward to the good read we are going to have at noon. We are all talking about it. We know all about Khartoum, and what is going on in the world, and, the result is, that the men are contented. They have never failed to come back at four o'clock on Sunday to take hold of the chores, and they have never failed to come home at night, and when I get home there is always one or two of them come out and hustle me in, while they take care of the horses. It is all the outgrowth of books and papers.

The President — We will now proceed to close this convention. We thank you for your kindnsss, and your attention and forbearance.

I have endeavored to keep these old wheel horses at work as hard as possible, and I think we have got a good deal out of them.

I wanted to have told you about our farms in the southern part of the state, to show you how much easier we make more money from one acre of land in the dairy business, than what we used to from five, but it is unnecessary.

If there has been anything whatever unpleasant spoken in the heat of debate, I hope that it will all pass away, and that we will come together in conventions like this, and that we will receive the benefit that they will give us. I understand that the $5,000 appropriation, on the Estabrook bill, will probably give us conventions and institutes in different parts of the state; and I trust that they will stir up that spirit of inquiry that will infuse into the heart of the farmer the conviction that he is just as good as any other man. This idea, of the farmer, that the city man, that the business man is better than what he is, is wrong, and unless you will think that your vocation has got as much dignity in it as their's has, you never will occupy the position that you should rightly occupy. We will now have a song by Miss Perkins.

Song — Miss Perkins.

The President — Again thanking you for the kindness and attention, and the interest you have manifested in this convention, I now declare this convention adjourned *sine die.*

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