Sixth annual report of the Wisconsin Dairymen's Association : held at Whitewater, Wis., January 23-24, 1878. Report of proceedings, annual address of the president, and interesting essays relating to ...

Wisconsin Dairymen's Association
Madison, Wis.: David Atwood, Printer and Stereotyper, 1878

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SIXTH ANNUAL REPORT

OF THE

WISCONSIN

DAIRYMEN'S ASSOCIATION,

HELD AT

WHITEWATER, WIS., JANUARY 23-24, 1878.

REPORT OF PROCEEDINGS, ANNUAL ADDRESS OF THE PRESIDENT, AND INTERESTING ESSAYS

RELATING TO THE

DAIRY INTERESTS.

COMPILED BY

D. W. CURTIS, SECRETARY.

MADISON, WIS.:
DAVID ATWOOD, PRINTER AND STEREOTYPER.
1878.

OFFICERS.

1878.

PRESIDENT:

HON. H. F. DOUSMAN,
Waterville, Waukesha Co.

VICE PRESIDENTS:

T. C. BLANCHARD,
Oakland, Jefferson Co.

JUDGE GEO. W. WEEDEN,
Sheboygan Falls, Sheboygan Co.

HONORARY VICE PRESIDENTS:

CHESTER HAZEN,
Ex-President Wis. Dairymen's Ass'n.
Ladoga, Fond du Lac Co.

STEPHEN FAVILLE,
Ex-President N. W. Dairymen's Ass'n,
Lake Mills, Jefferson Co.

HON. HIRAM SMITH,
Ex-President Wisconsin Dairymen's Association,
Sheboygan Falls, Sheboygan Co.

SECRETARY:

D. W. CURTIS,
Fort Atkinson, Jefferson Co.

TREASURER:

O. P. CLINTON,
Waukesha, Waukesha Co.

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ARTICLES OF ASSOCIATION.

[*Adopted in* 1872.]

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

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

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

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

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

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

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

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

ART. IX. 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,

1878.

Ayer, H. M..... Lodi.

Blanchard, Thos. C. Oakland.
Butler, D ..... Kenosha.
Benson, B. L..... Genoa Junction.
Berry, Wm..... Taycheedah.
Benedict, A M. ... Mazomanie.
Billings, Charles... Oconomowoc.
Boice, A. A..... Lodi
Brown, Solon..... Jefferson.
Baker, Benj. P..... New York City, 129 E. 34th St.
Barker, Charles.... Portage.
Billet, Geo..... Whitewater.
Beach, C. R..... Whitewater.
Barckley, B. F..... Elgin, Ill.

Curtis, D. W..... Fort Atkinson.
Curtis, F. C..... Rocky Run.
Cheever, D. G..... Clinton.
Clough, James..... Edgerton.
Crossfield, F. O... Oakland.
Champney, G. W.. Oakland.
Chipman, A..... Sun Prairie.
Cole, Norman..... Brodhead.
Cowles, J A..... Elkhorn.
Carpenter, E. J..... Beloit.
Clifford, Geo. F.... Mazomanie.
Chapman, H. N.... Randolph.
Chase, O. C..... Elkhorn.
Charles, R. B..... Lima Center.
Cartwright, C. S... Rome.
Conger, H. A..... Whitewater.
Conover, S. H,..... Plymouth.
Colt, R. P..... Poysippi.

De Land, A. D..... Sheboygan Falls
Dousman, H. F.... Waterville.
Deveraux, E..... Evansville.

Flack, J. G..... Elkhorn.
Foster, A..... Sugar Creek.
Faville, K. E..... Lake Mills.
Faville, Stephen.. Lake Mills.
Foss, Jacob..... Woodland.

Gleason, G..... Whitewater.
Galloway, Wm.... Whitewater.
Green, L. B..... Hebron.
Godfrey, Henry... Whitewater.
Gibson, Charles.. Lind.

Hoard, W. D ..... Fort Atkinson.
Hazen, Chester.... Ladoga.
Hart, J. L. ..... Watertown.
Hoxie, B. S..... Cooksville.
Hacker, T. L..... Cottage Grove.
Houston, R. S..... Kenosha.
Hart, G. S. & Howell..... 35 Pearl Street, New York.
Humphrey, H.... Mazomanie.

Ingalls, E. P..... Milford.
Ingersoll, J. B.... Port Washingt'n

Kemp, C. W.. ... Cooksville.
Kemp, Geo..... Waupun.
King, E . ..... Whitewater.
Karlen, C..... Juda.

Leggett, A. W. & F. W..... 39 Pearl Street, New York.
Loveland, D. K... Waukesha.

McCutchan, R. F. Whitewater.
Mown, J. J..... Oconomowoc.
Morse, A E..... Bloomington.
Millard. C. J..... Lake Mills.
Morrison, J. S.... Fort Atkinson
McPherson, Jas... Fort Atkinson
Marshall, Wm.... Whitewater.
Moulton, Fr'cis D. New York.

Olin, O. C..... Oakland.
Olin & Clinton.... Waukesha.
Orledge, W..... Kenosha.
Orvis, James..... Oakfield.

Peebles, E..... ... Peebles.
Phepls, Prof. W. F. Whitewater.
Porter, Edward .... Waukesha.
Picket, Edward.... Picket's Station.
Pierce, S. C..... Brodhead.
Pratt, M..... Whitewater.
Prosser, Warren.... Ft. Atkinson.
Porter, John..... Mazomanie.
Prentice, C. M..... Dane.
Pardee, A. G..... Eagle.
Puffer, W. C..... Ft. Atkinson.

Ridge, John..... Whitewater.
Richards, Thos..... Cataract.
Robert, Robertson.. Oakland.
Roberson, D. C..... Mauston.
Root, L. B..... Whitewater.

Smith, Hiram ..... Sheboygan Falls.
Starin, H. J ..... Whitewater.
Smith, J. A..... Sheboygan.
Stearns, G. O ..... Monroe.
Steel, J. L..... Genesee.
Sparta Cheese Co... Sparta.
Shultis, Frank..... Waukesha.
Strohn, C. J ..... Oconomowoc.
Smith, R. B ..... Ft. Atkinson.
Smith, J. M..... Green Bay.

Sherman, Jas. M. Delavan.
Stowe, Wm ..... Whitewater.
Skidmore, O. P.. Stockbridge.

Trippe, D. C..... Whitewater.
Thurber, H. K. &
F. B..... New York.

Vanderheiden, A. Wrightstown.
Vosburgh, J. B... Richmond, Ill.

White, H. D..... Kenosha.
Wilkinson, H. J.. Whitewater.
Wells, Jacob..... Lodi.
Woolen, D. A... Algona, Iowa.
Wright, W. E.... Whitewater.
Wheaton, A. H... Auroraville.
White, J ..... Waterville.
White, W. C..... Kenosha.
Warne, Dr. H.... Whitewater.
White, C. D . ... Kenosha.
Woodruff, H. S... Janesville.
Wilton, Wm..... Eagle.
Wescott, W. S ... Monroe.
Washburn, J. H.. Kenosha.
Warren, Carter &
Co ..... 161 S. W. St. Chi.
Weeden, Geo. W. Sheboygan.

WISCONSIN DAIRYMEN'S ASSOCIATION.

SIXTH ANNUAL SESSION.

Whitewater, January 23 and 24, 1878.

PROGRAMME:

WEDNESDAY.

12 M. — Organization of convention.

2 P. M. — Address of Welcome, by Hon. T. D. Weeks, of Whitewater. Response by Hon. Hiram Smith, of Sheboygan Falls.

2:45 P. M. — Report of Secretary and Treasurer, and appointment of committees.

3:30 P. M. — Opening Address by President A. D. DeLand.

4:00 P. M. — The Dairy Interest in Wisconsin, and the Inducements for Further Development, J. H. Wilkinson, Whitewater; W. D. Hoard, Ft. Atkinson (editor Jefferson County Union).

4:50 P. M. — Cheese Making, and Over Production, C. H. Wilder, Evansville; H. F. Douseman, Waterville; B. F. Hoxie, Cooksville.

7:00 P. M. — Dairying as an Elevating and Intellectual Occupation, J. A. Smith, Sheboygan.

7:30 P. M. — Industrial Education, President Phelps, of Whitewater Normal School.

8:15 P. M. — How Much Money Can a Man Afford to Make? Hon. E. D. Coe, editor Whitewater Register.

8:40 P. M. — Butter Making in Wisconsin, J. S. Beach, Whitewater; Dr. L. W. Wicks, Oconomowoc; Asa Foster, Elkhorn.

THURSDAY.

9:00 A. M. — What are the Chacteristics of the Best Cheese, and How is it Made, Especially Early or Hay Cheese? Hiram Smith, President N. W. D. Association.

9:40 A. M. — Cows for the Dairy, and How to Breed them, Prof. Frank H. Hall, Principal Normal and Industrial School, Sugar Grove, Illinois; Thos. H. Glenn, agr'l editor Western Rural, Chicago; Chester Hazen, Ladoga.

11:30 A. M. — Dairy Farming as a Renovator of Impoverished Soils, F. C. Curtis, Rocky Run; S. G. West, Sec'y Walworth County Agr'l Soc., Elkhorn,

2:00 P. M. — Election of officers and award of prizes.

2:40 P. M. — Improved Cultivation of the Farm and Farmer a Necessity in Dairying, J. M. Smith, Green Bay, Pres't Wis. Hort'l Soc'ty; C. F. Holt, Kenosha; J. G. Picket, Picket's Station.

3:30 P. M. — Feed of Cows, I. Boise, Davis' Junction, Illinois; W. C. White, Kenosha; W. S. Wescott, Monroe; D. L. Black, Elkhorn.

5:00 P. M. — Paper by R. McGlincy, Sec'y N. W. D. Association, and editor Elgin (Ill.) Advocate.

7:00 P. M. — Dairy Banquet and Sociable, to be opened with a paper on the wonderful art of "Brewing Cheese," by George Washington Peck, Dairy Editor and Home Missionary to the LaCrosse Sun.

ADDRESSES, PAPERS AND DISCUSSIONS

AT THE

SIXTH ANNUAL MEETING

OF THE

WISCONSIN DAIRYMEN'S ASSOCIATION

Held at Whitewater, January 23d and 24th, 1878.

The sixth annual meeting of the Association was held in Bowers' Hall January 23d, at 12 o'clock M., the Hon. A. D. DeLand, of Sheboygan Falls, president, in the chair.

The convention was called to order; and

W. D. Hoard moved that a committee of three be appointed by the chair on resolutions.

Hiram Smith moved that the chair appoint a committee of three on dairy utensils.

And a committee of three who should appoint the judges on butter and cheese.

That the judges should be required to bring the prize article upon the stage and tell why they were the best.

The chair appointed W. D. Hoard, Chester Hazen, J. G. Picket, R. F. McCutcheon and F. C. Curtis such committee.

W. D. Hoard moved that the chair appoint a committee of three to suggest names for officers of the Association for the ensuing year.

On motion, the convention adjourned until 2 o'clock.

Afternoon Session.

President DeLand called the convention to order, and introduced the Hon. T. D. Weeks, who welcomed the dairymen to Whitewater, heartily and eloquently, putting the convention in the best of spirits

ADDRESS OF WELCOME.

Mr. President, and Gentlemen of the Wisconsin Dairymen's Association:—I have not the honor of being president of our village, nor yet one of its trustees, nevertheless, I have the pleasure as a private citizen, for and in behalf of our city fathers and the entire community, of welcoming you to our village and our homes. We have not decked ourselves in holiday attire as we would have done in the leafy month of June, and our outward greeting is not so pleasant and cheerful as it would have been had you met us in the golden summer time; still it is none the less hearty, you, none the less welcome. The object of your convention is, as I understand it, to consult together as to the best means of promoting one of the most important industries of the state. You are gathered here from all parts of the commonwealth, and I see, by your programme, that you are favored with the presence of distinguished gentlemen from abroad. Your knowledge and experience must give to your discussions a value from which those here, engaged in like pursuits, must derive great benefit. It is not long ago that we supposed no good butter or cheese could be made except near Philadelphia, in Orange and Lawrence counties, New York, and perhaps Northern Ohio. We were told that we had not the climate, the grasses, or the water necessary to make good dairy products, and there was no use in trying so to do. Stern necessity, however, compelled us to make the experiment. Failure upon failure demonstrated the fact that the raising of wheat was financial suicide, and something else must be done to prevent the mortgage on the farm from being foreclosed. Some of our energetic farmers, notwithstanding the croakings of the east, had faith to believe the dairy would pay even in Wisconsin, and determined to try it. I recollect when one of our now prominent dairymen went to Chicago to see what encouragement he could get for engaging in the business, and what he said on his return. The dealers there told him, and were doubtless

honest in it, that he could find no market for his products and the enterprise would be a failure. Notwithstanding this, gentlemen, he and you went ahead. In due time you formed this association, and you have already shown to the world that Wisconsin has the climate, has the grasses, and has the water, with proper skill and knowledge, to make cheese equal to the best, and butter that Chicago dealers are anxious to get, and that sells for as much in the Boston and New York markets as any from New York. This result is due, in a great measure, to your association and the gentlemen who compose it. We are therefore glad that you have met with us. Candor compels us to admit that even in Whitewater, where the dairy interest has received so much attention, we still have poor butter. It is not long since, my better half informed me that we were out of butter, and company coming. And so like a good husband that I am, I took my basket and came down town for the needed article. I went into one of our first class grocery houses and asked for butter. I was told that they had it, but it was not first class. I then tried another; they had good butter, but would not warrant it, "gilt edged," and so I went to a third. Here I found that article for which I was in search, and was asked to step down cellar and see it. I said, I will take your word, bring it up. The grocery man went down and came back with just ¾ of a pound, and said that was all he had left, and so you see, gentlemen, why we are glad you have met here. I once heard a woman say, that the "way to a man's affections was, by the way of his stomach." At the time, I thought it a hard saying, but after all there is some truth in it. After the toils, and cares and perplexities of the day, let a man go home and sit down to a good, wholesome, inviting meal, and how soon will the shadows lift and the sunshine of peace and happiness and contentment light up the family circle. What is more conducive to the meal of which I speak, than good butter. Hence, our wives welcome you here. They want their husbands to love them, and their homes happy, and they expect you will contribute somewhat to that desired end. But I am detaining you too long. I see that you have before you a varied and interesting programme, beginning in a "week" and humble manner, but closing with all the brilliancy which the dairy editor of the La Crosse Sun, with his base burning Radiant home, is able to spread upon the scene. Midway, between these extremes, I see Hoard, the noblest

Roman of them all. It is said that he has the faculty of telling good butter and cheese, by the smell. Though we have not equal *facilities*, yet we trust he will be able to impart some of his knowledge to us, and if he does, we shall be more than grateful, that you have chosen Whitewater as the place of your meeting. I trust you will have a pleasant and profitable session. Again, gentlemen, I welcome you to our village and our homes. Make yourselves at home, but if, during your gastronomic investigations among us, any of you should discover any necessity for this convention having been called here. why the less said about that, the better.

Response by Hon. Hiram Smith, of Sheboygan Falls:

In behalf of the dairymen of Wisconsin, permit me to extend thanks to the enterprising citizens of Whitewater for this cordial welcome so courteously expressed by your chosen representative, the Hon. T. D. Weeks, who has, in his kindly greeting, given evidence of an intelligent comprehension of the value and importance to the people of this state of the enterprise in which we are engaged. And an enterprise that is steadily increasing in value and volume, and now has the capacity to export over 20,000,000 pounds of cheese from this state annually, valued at $2,000,000. The amount of butter used and exported, also runs into the millions. It is an enterprise that gives employment to a greater number of men, women and children than any other one occupation in the state. The laborers are liberally and promptly paid, and from whom come no indications of strikes or complaints. It gives employment to skilled labor; encourages scientific investigations; induces experiments that are constantly resulting in improved methods in every department of dairy farming. The dealers engaged in this enterprise are in the main, honorable and capable men, who make no attempt to get up a "corner," never sell "short," have no "puts" or "calls"; but all the transactions are real and tangible, and are conducted by men of large capital, and by men of small means, to equal advantage. There is no opportunity or desire for the "big fish" to eat up the little ones, for all the parts work to the mutual advantage of the whole. There is no danger, that the avails will ever be concentrated in the hands of the few. for the inevitable result is, that it is divided and subdivided among the many, and is universally used to improve the farm, to beautify the home, to

educate the children, and to increase the knowledge and culture of the present and the rising generation. We are not so vain as to suppose that the courtesies shown us on this occasion are in consequence of the personal popularity of any of the officers or members, for so far as I know, none of them ever held the office of president of a savings bank, or a life insurance company, or has by other means been able to save $50,000 a year out of an annual salary of $5,000. Neither have we the cheap notoriety of being great financiers, able to prove (by argument) that it would be disastrous to buisness and ruinous to the people if the government should pay her past due notes as soon as she had the money, or on the other hand able to prove (by argument) that it would be fraud and rascality for the government to pay her obligations in such commodity as the contracting parties specified, without regard to the sickly sentimentality, and etherialized (supposed) understanding, that like some fungus growth, has of late, been striving to struggle into life. But not being engaged in any scheme to catch the popular breeze, and only intent to practice the useful, we value more highly the courtesies shown on this occasion that they were extended to an enterprise instead of to men. For men may come, and men may go, but dairying goes on for ever. Among the many eccentricities of character, the angularities of some organizations, and the ignorant, suspicious nature of others, that buisness men engaged in any enterprise, inevitably must, who misunderstand our motives, misrepresent our speech, and conduct and cast suspicions upon honorable transactions. It is a relief to turn from such contemplations to the pleasant surroundings of this afternoon, where earnest working men are appreciated and encouraged, honored by the presence of such an assembly, so largely represented by the intelligence, beauty, and culture, of this pleasant town. It will be a powerful incentive to all of us, to strive more earnestly to be worthy of the attentions bestowed upon us. And it is with no unmeaning formality that I again most cordially thank you.

President DeLand appointed the following committees:

On Dairy Utensils—

Chester Hazen, Ladoga,

J. G. Picket, Picket's Station.

J. B. Ingersoll, Port Washington.

On Nomination of Officers—

J. A. Smith, Sheboygan.
O. C. Olin, Oakland.
J. B. Vosburg, Genoa Junction.

On Resolutions—

W. D. Hoard, Fort Atkinson.
J. L. Hart, Watertown.
Hiram Smith, Sheboygan Falls.

On Dairy Statistics—

Wm. Fisher, Mondovia, Buffalo county.
C. P. Skidmore, Stockbridge, Calumet county.
H. M. Ayer, Lodi, Columbia county.
C. M. Prentice, Dane, Dane county.
G. R. Talbot, Juneau, Dodge county.
James Orvis, Oakfield, Fond du Lac county.
A. E. Morse, Bloomington, Grant county.
W. S. Wescott, Monroe, Green county.
W. D. Hoard, Fort Atkinson, Jefferson county.
D. C. Robinson, Mauston, Juneau county.
J. B. Vosburgh, Genoa Junction, Kenosha county.
A. Ecke, Meeme, Manitowoc county.
A. D. Thomas, Good Hope, Milwaukee county.
C. H. Smith, Tomah, Monroe county.
E. M. Gowell, Greenville, Outagamie county.
J. B. Ingersoll, Port Washington, Ozaukee county.
G. J. Caswell, Lone Rock, Richland county.
C. H. Wilder, Evansville, Rock county.
S. Littlefield, Plymouth, Sheboygan county.
Robt. Pearsons, Sharon, Walworth county.
H. F. Dousman, Waterville, Waukesha county.
E. W. Brown, Waupaca, Waupaca county.
A. H. Wheaton, Auroraville, Waushara county.
J. G. Picket, Picket's Station, Winnebago county.

Chester Hazen in the chair.

ANNUAL ADDRESS

BY HON. A. D. DELAND, PRESIDENT.

It has been the custom of this Association to have the presiding officer deliver an address at its annual meetings.

I regret that the society was not more fortunate in the selection of the person to perform that duty, and trust it will make a better selection in the future. The field from which to produce something of interest and value for an opening address has been cropped and recropped, like many wheat fields in this state, till there is nothing it will produce but sorrel, but, with your indulgence, I will briefly state some of my ideas pertinent to the general subject which we have met here to discuss.

The general business depression, affecting all branches of business at this time, is not felt as much by those engaged in the production of cheese as it is by the merchant, the manufacturer, and the farmers who make wheat, pork, or beef, the main production of the farm. Why it is that those farmers having a farm favorable to dairying will still continue to plow and sow, wearing themselves and their families out in an endeavor to make money by wearing out and exhausting the fertility of the soil is beyond my ability to answer. The past few years certainly have taught us that no branch of agriculture is more remunerative than dairying, and as we can only judge of what it will be in the future by what it has been in the past, it may be safe to predict a fair return for our dairy products the coming year.

The excess of receipts of cheese in New York for the year just closed is some 244,000 boxes over the previous year, and the excess of exports is reported at 270,000 boxes for the same time.

Liverpool reports 13,000 boxes less on hand, and London 5,000 more, while New York has less on hand than at this time last year. The amount held by the factories cannot vary much from previous years. This shows that the consumption of cheese has increased, both in this country and in England, and cannot but inspire us with hope and confidence in the coming year.

We can increase the home consumption of cheese, by cutting for our patrons only good, nice cheese, and by selling to grocery men only good cheese. Too often the factories cut for their patrons dam-

aged, sour or poor cheese, thereby engendering ill feeling and discouraging the patron for calling for much cheese. It is short-sighted policy for factories to dispose of their poor cheese, should they be so unfortunate as to have such, to their home trade. Consign it to a commission house or, better, to the pig pen.

While we would continue to increase the quantity, we should not overlook the quality. As has been said before, "improvement in quality is the best guaranty of future profits. To become skillful as manufacturers, or successful as dairymen, we need all the enlightenment and encouragement possible upon this subject, and I consider the Wisconsin Dairymen's Association an important auxiliary in disseminating this knowledge.

Through the liberality of the last legislature an act was passed appropriating a sufficient amount of money to publish our annual reports, thereby furnishing hundreds of farmers with information derived from the valuable papers and addresses delivered at our annual meetings, and which many of them would not have if the society published them. The last report was published by the state and compares favorably with other reports of like character; it is very complete, and reflects much credit on our efficient secretary in its arrangement.

A few words in regard to the sale of cheese may not be amiss at this time.

The past season is unparalleled in the various fluctuations of the market. The market opened at 12½ to 13 cents for April and first of May make of cheese at the factories, and dropped suddenly to 10 and 9 cents, where it remained for a longer time than we had reason to expect, judging from past experience. August and September cheese sold at 12 to 13 cents, which was from one to two cents more per pound than the cheese sold for the remainder of the season, consequently those who held the fall make for an increased price over August and September, as has usually been the case previous years, were doomed to disappointments. That "coming events cast their shadows before," may be true, yet few of us were wise enough to discover the "shadow" and sell at just the right time. The best rule to adopt is to sell when the cheese is ready for market, at the best obtainable prices; do not hold, thereby losing in shrinkage and often resulting in a depreciation in quality, and consequently a lower price than might have been obtained if put on the market when all right.

The practice of twenty or thirty years ago of keeping the cheese till fall, and then sending it to market in barrels will not do in this age of 'fast men' and 'fast horses.' It cannot be denied that our Dairy Boards of Trade furnish the best means for keeping informed in regard to the market, and is the best and only place where we should make our sales. Prices are quoted, by telegraph, on the day of meeting, and the salesman knows just what to ask for his cheese. Buyers can visit the several factories a day or two previous to the meeting of the board and test the cheese, as well as a day or two after, and having seen the style and make of a factory a few times, it will not be necessary to incur the expense of going to the factories for a supply, but they can attend the meetings of the board, and buy more cheese in half a day than they could by riding through the country a week. I regret that factories do not avail themselves of all the advantages of a Dairy Board of Trade by selling only at its meetings.

The several dairy fairs held the past season have been a great benefit to the dairyman and dealer and should be largely encouraged.

While our State Association does not feel able to compete with the Northwestern in offering premiums on its products, yet through the enterprise and liberality of several dealers in dairy goods, we are enabled to offer several valuable prizes at this meeting, and I trust we will have a creditable show of dairy products for this season of the year.

Many things have been learned, and much remains yet to be learned pertaining to dairying. Verily, a wide field is before us!

Believing that this, our sixth annual meeting, will elicit much valuable information from more competent explorers, I wish you, kind citizens and fellow dairymen, a prosperous and happy year.

THE DAIRY INTEREST IN WISCONSIN AND THE INDUCEMENTS FOR FURTHER DEVELOPMENTS.

BY H. J. WILKINSON, WHITEWATER.

Agricultural Editor Whitewater Regi-ter.

The average writer or speaker can hardly resist the temptation to dilate, whenever occasion offers on the amazing rapidity with which American institutions and industries have sprung into ex-

istence, and astonished the world with their remarkable vigor and unparalleled growth.

Nor is it to be wondered at, that such is the case; for much as we may desire to avoid unseemly boasting, and mere egotism, the fact still remains, that no people ever lived, who worked out for themselves, in so short a time so great a measure of home comfort and happiness, and security against want, as can be found in the homes of thousands who dwell in the northwest.

Not a few are yet among us who staked the first claims, built the first cabins, and turned the first furrows, in the region where now dwell more than ten millions of people, surrounded by the elements of wealth and all the advantages for social comfort and refinement that pertain to civilization in much older countries. Circumstances, it is true, have been favorable to such a development, a fertile soil, a hospitable climate, a chain of great lakes and rivers leveling out of the sea, the great highway of nations, immunity from the scourge of warlike invasion or pestilence or famine, and a government that at least cannot be said to have governed too much, have all worked together in building up a magnificent empire in a single generation of men.

It has also become apparent that a new era has dawned on the agricultural world. The tidal wave of progress, for the first time in the history of mankind, has swept with marked effect, over field and farm, as well as workshop and factory, old methods of performing labor have given place to new ones, and old theories have become obsolete. It is not an easy task now to find a young man who can sow and reap as our fathers did, or swing the scythe and cradle, and it might be added with truth perhaps, that to find one who seriously cares to master those old time accomplishments, would be a task, harder still.

Conspicious among those who are revolutionizing the industries of the nation are to be found the dairymen.

In inquiry and investigation; in experiment and invention; with untiring effort and unflagging zeal they stand in the front rank of intelligent workers. Radical changes in the manner of conducting the industry have already been wrought by them; but inquiry among the masses is more active then ever before. Valuable inventions have resulted from experiment and investigations; yet experiment and investigation still continue the order of the day,

and science holds open court in every cheese factory and creamery in the land.

The dairy interest in Wisconsin is identical with the dairy interest in the entire Northwest. To speak of the one in particular is to treat of the other in general. The same characteristics have marked the development of the industry in Wisconsin or in Illinois and Iowa. Suckers and Hawkeyes and Badgers alike. did not for years dare to dispute the oft-repeated assertion that "good butter could not be made in these respective states; and were long subjected to the mortification of seeing it quoted in eastern markets as "western grease butter."

It was said, and with some degree of truth probably, that the wild grasses gave a disagreable flavor to the milks, which was in turn commmunicated to the butter. Unless recollection is at fault, it was also asserted that the water was not good, and injured the keeping qualities of the butter, and intensified the unpalatable flavor imparted by the grasses.

A similar difficulty was experienced by pioneers in cheese making in placing their product on the market; and the extent to which Wisconsin cheese was sold by middlemen to consumers as "New-York factory" can only be justified on the ground, that if the buyer did not get exactly what he called for, he got something near as good, and just as nearly worth his money.

All this a few short years have changed, and to-day the dairymen of Wisconsin find ready sale for their product, in the markets of the old world and new. Profitable dairying in Wisconsin is assured, and the industry is established on a firm and reliable foundation. It commends itself strongly as a specialty to many, and to the general farmer as a profitable feature of his farming operations.

If dairymen may be fairly satisfied with the progress made in establishing a reputation for good quality of their product, the rapid increase in the amount of the product is still more a cause for wonder and congratulation. The entire dairy product of the state in 1850 is set down at 4,034,000 lbs. In 1860, at 14,765,000 lbs. In 1870, at 24,064,000 lbs. and in 1876, at 67,130,000 lbs. The product of 1877, of which I have seen no estimate undoubtedly reached the near neighborhood of 75,000,000 lbs.

In 1866, the entire amount of dairy product shipped over the Milwaukee & Prairie du Chien Railway is comprised in the single

item of 1,218,000 lbs of butter, nearly one-half of which was shipped from Prairie du Chien, and, doubtless, came from Iowa. In 1853, Milwaukee shipped 92,000 lbs of butter. In 1876 the shipments of butter and cheese from that port aggregated 10,829,000 lbs. At the state fair, held in Milwaukee in 1853, the judges on dairy products had a serious time of it. Two tubs and four jars of butter and six cheeses were presented for examination and competition.

It is claimed, by those whose advantages for observation should enable them to judge correctly, that a large portion of our state is peculiarly well adapted to dairying, and that the limits of possible production can only be guessed at, and not defined.

If we glance for a moment at the development of the industry in this locality within the last dozen years, the figures will be still more surprising. It hardly seems possible that the entire shipment of dairy product from this point in 1866, only 11 years ago, could have amounted to no more than 6,750 lbs of butter, not a pound of cheese mentioned. I am told that the shipment in 1877 aggregated over a quarter of a million pounds of cheese, and more than a quarter of a million of pounds of butter. And the number of those in the section of country tributary to this village, who will make dairying a specialty, will be largely increased in 1878.

It may be interesting to recur, for a moment, to opinions held and published 25 years ago in regard to the dairying in Wisconsin.

In the volume of transactions published by the State Agricultural Society in 1852, Mr. B. F. Adams, in an article written at the solicitation of the secretary of the society, says: "Those farmers who have turned their attention to the business are, many of them, of the opinion that it cannot be made a source of great profit, and, consequently, do not prosecute it with the expectation of realizing much therefrom. They regard our soil as not adapted generally to the growth of grass. At the present time many of our farmers keeping from two to six cows do not make butter enough for their own use. But little is expected, and they are not disappointed in their expectations."

He urges, however, more attention to the business, and points out the road which has been traveled in achieving the present success.

In speaking of the inducements for the further development of the industry, in our midst, it is no part of my purpose to urge a rapid increase in the future in the amount of the product. That is

quite likely to take place as fast as is compatible with a healthy condition of the business. Our people are quite too apt to embark in new enterprises with a grand rush, that sometimes threatens financial, if not social, revolution. The famer, who is considering the question of making dairying a specialty, should take a careful survey of the ground beforehand; whether his farm is well adapted to the business; the expense that will be needed to put his farm and buildings in the proper condition and shape to enable him to take the care of his cows necessary, to insure him the best returns from them. If he proposes to make butter, he should consider the expense of fitting up with the conveniences that will enable him, with skillful manufacture, to produce an article that will attract attention by its merits, and stand the test of competition, when put on the market, side by side, with the product of other dairymen. And, finally, whether he is entering upon a, to him, new business, which is expected to return a handsome profit whether carefully attended to in all its detaiis or not. The careless and negligent dairyman had better sell his cows and embark in some other business. The man who adopts it as a make-shift had better keep out of it to begin with. A genuine love for the business, and a natural ambition to excel in conducting it are the necessary qualifications of a successful dairyman.

Nor shall I urge as an inducement for the further development of the industry, the probability that high prices for the product will prevail, and large profits be realized. On the contrary, it is likely that dairymen, generally, are expecting a lower average of prices in the future.

Besides, I am not at all certain, just yet, "How much money a man can make." Nor do I forget the frequently quoted truth (undoubtedly) that "ill fares the land, to hastening ills a prey, when wealth accummulates and men decay." A certain amount of money it is convenient to have; a certain amount of gold, or silver, or greenbacks (I have considerable respect for all of them), it is *necessary* to have, if one expects to enjoy the amount of worldly comfort and luxury any man may reasonably and laudably aspire to.

But the strongest inducement, undoubtedly, for giving further attention to the development of the industry exists in the fact that it is a *a certain and reliable source of income from the farm.* It will be conceded that this has been demonstrated by past experience.

So it is not the question whether the average price of butter and cheese will be higher or lower in the next ten years than it has been in the last ten; but whether the average price, whatever it may be, will not insure a more reliable income from any farm adapted to the business than any other branch of farming.

There is no use in talking to this community about raising grain for a living. We have been through with the whole programme several times, from beginning to end. We know what it is to raise 35 and even 40 bushels of wheat to the acre, and we know all we *wish* to know about raising 1 bushel of wheat to 35 or 40 acres. We have too often seen the profits of a good crop swept away by a succession of poor ones, until money was gone, credit gone, the farm impoverished, and bankruptcy stared us in the face. We tried raising coarse grain, for sale, only to a very limited extent, as we soon discovered that it frequently took two bushels to get the third to some points, hundreds or thousands of miles away, to feed cattle, hogs and sheep, that might, with profit, have been grown and cared for here.

Gradually attention was turned, little by little at first, to dairying. It has been found a source of *certain*, if not large revenue. The patronage is good, and is yearly growing better. Since wheat growing went out, and stock farming came in, farms have been constantly improving in condition, and are generally in a high state of culture. The experience here is not unlike that of other localities, and still other communities will profit by the experience of those who have thus gone before in changing their industry.

There are not wanting other inducements for the further development of the industry, such as are in the interest of comfort and convenience on the farm, and economy in producing and disposing of the product. The work on a dairy farm is quite evenly distributed throughout the year, or the greater part of it. There is no particular season of unusual hurry, necessitating a large amount of extra help, to tax severely the strength of wife and daughter in providing for them. The work, in doors and out, may be thoroughly systematized and, with modern conveniences, may be immeasurably lightened from what it used to be in the dairy room.

The so-called Hardin, or the Cooley system of setting milk, or some modification of them, is undoubtedly practicable and, sooner or later, is sure to be adopted on every farm where butter is manufactured.

There is a profitable field for labor in developing the industry in another direction.

Owing to neglect in the care and treatment of cows, want of convenience for setting the milk, and making and storing the product, a large portion of the butter manufactured by the general farmer is not put on the market in a condition to realize the price of a first class article. The loss on this account is very large in the aggregate. Butter, especially, is never any better than when first manufactured, and how far cold storage may be economically used to prevent deterioration until needed for consumption, is a question inviting attention. The same may be said with reference to handling the midsummer cheese.

The effort of the dairyman to win success will not be complete without studying to adopt the best method of putting his goods on the market; and how far organization for the purpose may be of advantage to him, he will do well to inquire.

A great *advantage* Wisconsin and all Western dairymen have over those at the East must not pass unnoticed. We can raise the feed for the cows much easier and cheaper than they can, and it is an item that makes all the difference in the world with the profits, now that it costs but a trifle more to send a pound of butter or cheese from Wisconsin to Boston than it does to send it from the interior of the state of New York to the same point. The outlay for feed on the celebrated Ogden farm, of which you have all heard so many times, swept away every dollar of profit, although the butter produced was sold at a dollar a pound.

I cannot, in closing, do better, perhaps, than to refer to what Col. Waring says of the dairymen of Holland, in his readable book, "A Farmer's Vacation Abroad." He speaks of the wonderful neatness and comfort, and even elegance of the stables and barns, and of the almost loving kindness with which the animals are treated by those who care for them. He says, in substance (I quote from memory), that, as a community, they are very wealthy, and highly refined and intelligent, beyond almost any other class of people in the country. That they take a leading part in all the political movements of the day, and are conversant with advanced thoughts on all topics which interest an intelligent people.

W. D. Hoard—I was assigned that subject, with Brother Wilkinson, but have not done my duty; but it is not a state prison

offense to turn states evidence; he has said something in justification of himself, and I have the same privilege.

Be he farmer, be he editor; Is the business stable, will it pay, will it last, and are there any inducements for further developments? Is it a money making business?

The future we want to seriously scan; the rates of increase have been very rapid in the last few years. I was secretary of this association for three years, when our cheese product was not more than seven or eight million pounds; now I estimate it at twenty-four million pounds.

I get at this from the ratio of increase of the box manufactories. Has there been the same ratio of increase in other kinds of farming?

One great trouble is, our farmers can not put their finger down and tell what a thing costs. When I took the census a few years ago, I only found two farmers, out of 11,000 inhabitants, who kept books.

The milk producer will tell you that he will sell you milk for so much, yet he cannot tell how much it costs, but we are certain that the profit is much larger than in raising wheat.

One man told me that he had made cheese at six cents per pound, and made money by it, and should continue in the dairy business until it touched that figure again.

Will you just look to the history of butter and cheese, and see the cost, and the price it has sold for. It has not suffered the ups and downs, in the market, that many other products have; it is a stable product, good for nine months in a year. You can sell it in the spring, summer, autumn, and winter.

While in New York, last summer, I talked with many of the leading dairymen there, and many of them admitted that they could not stand up against Wisconsin dairymen, with land at $100 per acre.

One man thought the difference could be overcome by difference in freight, but pallor overspread his countenance when I told him that we shipped, in refrigerator cars to New York City for 38 cents, while they shipped in common box cars and paid 40 cents. The difference alone of freighting wheat and cheese to market leaves a good profit on the line of cheese.

I wish to call your attention to the town of Cold Spring in this county, which was considered the poorest town in the county. To-

day it is the richest town to the square acre, and it all comes from the dairymen.

CHEESE MAKING AND OVER-PRODUCTION.

By Hon. H. F. DOUSMAN, Waterville.

It is a maxim which commends itself to every man's experience, that the things which seldomest happen to us in this world are the things we hope for and the things we fear, and the course of the cheese market for the last six years helps to confirm this maxim.

The cry has been, ever since the factory system began to obtain any considerable development, you will make more cheese than the market will take; you will break down the price by over-production; but the make has gone on, steadily increasing from year to year, home consumption and the foreign demand have kept pace with the make, and prices have been almost uniform. But, in confirmation and support of these figures of speech, let me call your attention to a few figures of arithmetic.

The exports of cheese in 1872 were 66,000,000 lbs.; in 1873, 80,000,000 lbs.; in 1874, 90,000,0000 lbs.; in 1875, 101,000,000 lbs.; in 1876, 97,000,000 lbs.; and in 1877, 107,000,000 lbs.

This reported export of 107,000,000, for 1877, being the amount exported via New York city, does not quite tell the whole story, as a considerable amount goes out via Philadelphia and Boston.

The export then shows an increase of 40,000,000 lbs. in six years, or an average annual increase of about ten per cent.

Let us see then how the price has stood up under this increased production, and, in determining this, I have taken the figures from my own books, as being both accessible and reliable. In 1872, my cheese averaged 12 cents; in 1873, 11.89 cents; in 1.74, 13 cents; in 1875, 10.86 cents; in 1876, 10.61 cents; and in 1877, 11 cents; or reduced to gold values, in 1872, 10.60; in 1873, 10.50; in 1874, 11.50; in 1875, 9.50; in 1876, 9.55; and in 1877, 10.70; or stated in general terms, the price of cheese in gold, in 1877, was a trifle higher than in 1872, and during the six years, under consideration, it has never varied more than ten per cent. from the average of these two years, viz., 10.65. It must be borne in mind besides, that during these six years the world has gone from universal good times

to universal hard times; from universal business prosperity to universal business stagnation and depression.

What staple article, of either natural production or manufacture, can show a value at once so stable and so remunerative. Of course, there must be some reasons for this; I take it there are two.

In the first place, we have so improved the quality of our cheese that practically *all* of it is fit to be eaten.

In the next place we can take the cheese from our American factories and lay it down in the markets of Great Britain at an average cost of a cent and a quarter a pound, or from 10 to 12 per cent. of its value at home.

By so doing, and at this slight cost, we bring our lands, worth on an average fifty (50) dollars an acre, into competition with the lands of England, worth on an average three hundred (300) dollars an acre, and this competition is more than the English farmers can bear, so that, as I understand it, we are gradually forcing them out of cheese making into more profitable avocations, and filling this vacuum with our own products.

The fact is, the farmer of England can better compete with the farmer of Minnesota in raising *wheat* for the British market than he can with the dairymen of Wisconsin in making *cheese* for the British market. These, I take it, are the strong points in the situation. Now for the weak ones.

In the first place, Great Britain is the only country to which we export cheese; of the 107,000,000 lbs. shipped from New York, last year, she took 106,000,000 lbs.

At the same time she took from us 150,000,000 lbs. of bacon, or a pound and a half of bacon for every pound of cheese. During the same time, France took 26,000,000 lbs.; Holland and Belgium, 23,000,000 lbs.; Germany, 20,000,000 lbs. of bacon, or in round numbers, 70,000,000 lbs. in all.

During the same time France and Holland and Belgium took from us *not a pound* of cheese, and Germany only 27,000 lbs., whereas, had we fed them cheese in the same proportion to their bacon that we did England, they would have taken from us 45,000,000 lbs. of it. It would seem as if here was a field worth the attention of our exporters.

In the next place, our home consumption is not what it should be. I find that, during the last year, the sixty patrons of my factory

have used 4,000 lbs. of cheese, or on an average of 67 lbs. to a family.

Had the 4,000 families of Waukesha county used cheese in the same proportion, they would have consumed 268,000 lbs., or about 45 per cent. of the whole amount made in the county, which I estimate at 600,000 lbs.; whereas, I doubt if more than 5 per cent., or 30,000 lbs. was actually consumed.

Carry this throughout the state, and there isn't half cheese enough made to supply its own wants.

These calculations show us that here, as in the world of morals, "the heathen are at home," and the very largest field for missionary effort lies within sight of our own doorstep.

How to get at them is the question, and it's easily asked, but hard to answer.

I know of but two things we can do—give them good cheese, and give it to them as cheaply as possible.

I would have every factory keep cheese always cut for its patrons, and whoever else might want to buy. I would have it cut only good cheese, and deal it out at some fixed, regular price, not too high. I would have it make some cheese in family size, say in 12 inch hoops, weighing about 25 lbs., for many will take such who will not take a larger one; finally, I would have it serve only prime cheese, and such as will be readily eaten, to the retail groceries which it supplies.

Each factory managed in this way will be a center of influence, which by and by will leaven the whole lump.

What then is the conclusion of the whole matter?

First, that the foreign markets will so expand and grow that, while there may be slight and temporary fluctuations, good cheese will always bring a fair price.

Second, that if home consumption can be worked up to a fair heighth, we can not begin to supply the cheese that will be wanted, and prices must advance.

Stephen Faville — I could not resist coming here, though my health was such that I ought to have staid at home — was like an old war horse, could not stay away. I have been a dairyman all my life, and ever since I was ten years of age, I have heard fears expressed that there would be an overproduction of butter and

cheese, the markets would be glutted, and there would be no sale. Now the truth is we have about so many cows, and the putting up of a dozen cheese factories, more or less, would not make a single cow more, and we could not double our crops of butter and cheese in ten years, if we should want to, and besides the eaters increase as fast as the cows. Make good butter and cheese and there will be no trouble about selling it.

CHEESE MAKING AND OVER PRODUCTION.

BY B. S. HOXIE, COOKSVILLE.

The topic assigned to me at this time is one of much importance to us as manufacturers and dairymen. In fact the subject of *demand* and *supply* is the foundation on which rests the whole structure of the commerce of nations, and in all transactions of whatever kind or commodity a true relation of one to the other must exist, in order to hold the equilibrium.

Science and the enventive genius of man is every day unfolding and fringing out something new and useful for which before, no demand existed, but for its usefulness and adaptability to the need of art or manufacture, and the wants of man, a new market is at once created.

Many such new products or compounds have been brought out during the past few years, pushing their way to a market, until we have asked ourself the question, "How did we get along without it, and what will be the next new and useful thing under the sun?"

Natural causes beyond our control sometimes result in the production of an over-abundance. This is true in relation to many or most of all agricultural products. But this same nature soon restores the equilibrium by a lack in other localities or a general lack the next year. And here again science and the skill of man have so far succeeded in preserving fruit and other articles to our wants that we have nearly outwitted nature in this respect. We can see that in every product of the soil depending upon climatic, changes with the labor and skill of man to produce, there must be a fluctuation of supply and demand; and the more perishable or the least time and expense to produce the article, the more general is the rule of this disturbance.

We are all aware of the fact that causes have existed which stimulated and increased the production of a commodity beyond any legitimate demand, until such commodity was placed upon the market at a great loss to the manufacturer.

Again there are products requiring skill and capital to produce, which are controlled by wealthy companies or combinations, who have it in their power to regulate the supply to the average demand of the market; and the price to a certain profit or percentage above the cost to produce.

In this way monopolies oppressive have been created, until legislative enactments have been sought to control the one and protect the other.

It is also true that commodities and products in portions of the world which were supposed to be the only places that could produce them have been in a great measure superseded by the same productions, but from localities where circumstances were more favorable to its production.

You and I, gentlemen, have often heard it asserted that the States of New York and Ohio were the only dairy regions where good butter and cheese could be produced in the United States, and many of us, when we settled in Wisconsin, wrote thus to our friends in the East. And so Switzerland and Geneva thought at one time that they could supply the world with watches, but our Centenial Exhibition taught them the fact that we could make a watch 50 per cent. better than theirs at 50 per cent. less cost, and New York people and the rest of the world that Wisconsin could produce just as good cheese as was ever made in old Herkimer county, and we know, at a much less expense for feed and for cows than in New York State, and consequently at a better profit to the dairymen. This then brings us more directly to the question assigned to me of over production of cheese in Wisconsin. We all remember ten or twelve years ago when the factory system was being inaugurated in this State, that this same question was put and doubts maintained by some that the business would soon cease to be remunerative, and it is not strange that with those not well posted in the ratio of demand to supply these doubts should exist.

But a few facts only will be necessary to show such even, that their fears are groundless. The past four years, 1874–75–76 and 1877 represent the period of our largest exporation, and taking

the purchasing value of gold into account, the past year has been the most remunerative to the cheese dairymen of any in the history of this branch of American industry. This fact, then, is one answer to my question. And whatever may be the result of over production in the future, I think Wisconsin need have no fears as to dairying being a profitable investment.

It has been already shown, and the fact is true to all observers, that we can produce cheese cheaper than in the Eastern States, and it was stated by Mr. Smith, I think, last winter, that we could ship cheese from Sheboygan county to New York city at less expense per pound than from Western New York to that city.

Again, another fact: The quality of our cheese has attracted and challenged the attention of our English buyers and consumers, and their agents are already taking our cheese from Chicago direct to London and Liverpool at about the same rate as from New York to Philadelphia. And our English cousins and Scottish neighbors find that their narrow farms cannot produce cheese as cheaply as they can buy it of us. Besides, as an article of food it has been demonstrated that in no way can the different elements so necessary to human life be so condensed and so easily transported and kept intact as in a pound of cheese, and it is being more and more used as an article of food. There has been, there may be, and perhaps always will be, an over supply of a poor article, and this will stimulate us to produce better until perfection is attained; and it costs no more to produce a pound of good cheese than it does a pound of poor.

When Henry Disten commenced the manufacture of saws in Philadelphia a few years ago, he determined to make the *best* saw that could be made, and the result is that Disten & Son's saws are known now in the old country and here as the *best* made in the world. The poor are driven from the market. and their place supplied by a cheaper and much better article than Sheffield ever produced.

Let our association in the future, as in the past, discourage the practice followed in other States, of making a low grade of cheese by part or whole skimming. And let Wisconsin dairymen and factory men be stimulated to produce the *best*. Let us manufacture, if possible, an American cheese with some peculiar flavor which shall create a demand like some of the fancy cheese import-

ed to this country. If it be a sage cheese, as I see some of our New England people call for (and which is now quoted two cents higher per pound in the market). Let us make that, and if necessary let us make them in new forms or more attractive style, and if by so doing we can create a greater demand for a cheaper and more healthy article of food then we have benefited ourselves and our fellows; they reaping the blessings and we the profits.

BUTTER AND CHEESE MAKING.

By Col. P. B. BAKER, New York.

There is a tendency to praise American ingenuity, for those rapid strides of progress which have given our country the foremost rank of the world in valuable inventions, richness of resources, and the gigantic scale upon which we prosecute enterprises giving promise of profit. I would not detract in the slightest measure from the full exercise of that spirit which has overcome almost insurmountable barriers in our progress, but none the less is it true that a gradual and painstaking approach to perfection in certain branches of industry is the only SURE approach. Thoroughness, a tedious mastery of all detail, a study of cause and effect are essential to a crowning success. Among the branches of industry to which I refer, it seems to me, that of the dairy takes a conspicuous place. By the ingenuity of your brain, and the deftness of your fingers, are prepared the products of your skill, and for you to challenge the world's taste, is no mean task. I speak of the world's taste as applied to one of the fine senses. Nothing, it seems to me, is more capricious than the human appetite. A chemist may compound an extract that will be a sweet smelling perfume to all men. An artist may paint a picture that will please the eyes of all beholders. A musician may produce harmony of sound that will delight every hearer, but, I need not tell you, how difficult it is to make butter that a fastidious epicure will pronounce perfection, or cheese just suited in flavor to the fickle palate of the capricious world. Though not a dairyman now, my early days were passed on a farm, and I am not sure that the hay seed is all out of my hair. Over thirty years ago, I commenced business, and, in all the period since, I have been more or less associated with the butter and cheese trade. Starting

as a tradesman in a country store, I exchanged calicoes, pins and needles for butter and cheese, and, later, as a commission merchant, I have handled butter and cheese more largely, and, meanwhile, I have, at times, billed orders for the English market.

But to address such an intelligent body of men as those composing this convention, requires a knowledge not altogether acquired in those pursuits. We used to sell western butter in New York at ten cents per pound, when New York state butter would bring 14 and 15 cents. During the past few years, western butter and cheese have gained in favor, until, to-day, none commands a higher price in the eastern markets than that from some of the Illinois and Wisconsin creameries. This is owing to the intelligent, painstaking spirit of improvement manifested by western dairymen, and not least among their discoveries is the fact that *pure* salt is an essential in making good butter. I would not, however, overlook the fact that many of the most enterprising and intelligent young men of New York and New England have come west and, quite as important, they have generally returned to select the smartest and best girls for helpmeets, thus improving the original stock by transplanting, until, to-day, we find our eastern friends coming west to pick up improvements in mechanics and the arts, as well as to learn how to run a dairy farm or build a creamery. Dairymen are learning that good butter and cheese pay a profit, while that which is poor loses money. Conventions, such as this, are acquainting them of recent improvements in the mode and process of manufacture. What feed is best for the production of milk, and what breed of cows is most profitable. The dairyman of to-day does not hesitate to pay $150 for a good cow, and is eager to learn all modern improvements in butter and cheese making, and is supplied with all necessary utensils. Singular it is, however, that some do not appreciate the necessity of using pure salt. In a statement to a convention, a year ago, I said: "It is believed by many that the necessity of using the purest salt obtainable, if we would have the best butter and cheese, whether for immediate use or for its keeping qualities, has been partially overlooked. Whenever the subject is introduced, it is admitted that it is better to use none but the purest that can be obtained. No one dares to dispute it; but when it comes to practice, the butter and cheese maker says, it will not make much difference, and I shall buy the cheaper and save a dol-

lar a bag, which is about half a cent per pound; and so he uses the second quality, which, to the casual observer, may appear to be as good. Let us look into this penny wise and pound foolish system. In the manufacture of cheese *only two and a half pounds of salt* are required to *one hundred pounds of cheese.* At half a cent per pound(the difference in price between the first and common quality of salt) *the difference in cost is* one and a quarter cents per one hundred pounds of cheese, or *one-eighth of a mill* for *one pound. In butter* three-fourths of an ounce to one ounce of salt is used to one pound of butter. *One ounce to the pound is six and a quarter pounds to the hundred,* which makes a *difference in cost of five-sixteenths of a mill for one pound.* Taking this financial view of the question, it would seem to be necessary to suggest to any well informed dairyman that he is acting on this penny wise and pound foolish system. If the question were not admitted at once, it might be proper to bring forward argument to prove the necessity. All admit that impurities in salt, whether lime or any other foreign substance, will cause the flavor of the butter to deteriorate from the moment it is put in; and the longer the time before using, the greater the injury to the butter. The same is true in regard to cheese, but, owing to the fact that only two and one-half pounds of salt are used to the hundred pounds of cheese, while six and a quarter pounds to the hundred are used in butter, the difference in injury bears about the same proportion as the cost of the salt in one to the cost of that in the other. Probably one reason why the dairyman is not conscious of the injury is, that he sends his butter to market nearly as fast as it is made. Should he pack a few tubs with each kind of salt, that is, a part in which the common salt is used, and retain them for two or three months, he could form an accurate judgment of the advantages of the pure over the common salt. No dairyman, having once tried it, would ever after use other than the purest. To ascertain which of the many kinds of salt offered to the public is best may be difficult, but, probably, taking the reports of tests at public expositions, the Centennial and others, or the tests of our most reliable chemists, is the best availab le means to the dairyman who is not sufficiently informed to make critical tests himself. Let the dairyman have the latest improvements in machinery, the best feed, the best breed of cows, and let him use the utmost care in the manufacture of dairy products, if he would excel, he must also use the best salt attainable."

The farmers of the northwest have inscribed on their banners "Excelsior," and the New England and New York dairymen must look well to their laurels, or English orders for fine butter and cheese will continue to be sent over their heads, by telegraph, to the enterprising dairyman of the west.

The fair held at Chicago, in December last, was, probably the largest display of fine butter ever made in this country. Eastern buyers were so pleased with its quality that the boards were swept, and now, while common butter is both plenty and cheap, nearly all of the exhibitors sold their entire winter product, rendering it difficult to buy large lots of any first class creamery in all this section.

On motion, adjourned until 7 P. M.

Evening Session.

DAIRYING AS AN ELEVATING AND INTELLECTUAL OCCUPATION.

BY J. A. SMITH, SHEBOYGAN.

One theory of man's first appearance upon the earth is, that he sprang, full-blossomed, from the creative hand, endowed with a language that enabled him to convey his thoughts to others of his race, and was otherwise furnished with developments that, analogical reasoning teaches, could only have come through long ages of earnest endeavor, and a safe storing up of much of the mental power manifested by slowly developing brain, and its transmission to the progeny of the successive representatives of the race. The theory, to be accepted, involves a robustness of faith that is proof against the assaults and conclusions of science; and its truth can now be safely doubted without subjecting the skeptic to torture, by either rack or fire, or drawing down upon him the amathemas, even of many of the advanced reformers and so called orthodox theologians of our times.

The opposite theory, that the early representatives of the race, when they had developed enough to entitle them to the prefix human (and behind that I do not wish to raise the veil for the purpose of letting in light upon the topic named for my central

thought) were in an extremely rude, childish and mentally feeble condition; in short, that they had it all to learn; and, at the dawn, wrote not with the historian's pen, but made their records on the rocks, not even yet enchiseled lines denoting written language, but informations that appear to us only in the forms of majestic ruins.

Accepting this later theory, we can account for the slow development of man's achievements, and safely draw the experience that continued progress, and subsequent achievements are to be attained only by the same means. Following the chain of causation back, and seeing how its links grow smaller and weaker, and are finally lost to the researches of authentic history, we may in imagination look into the "To-Be," and infer that its links will be larger and stronger and be made of more refined and more polished steel. To make these preliminary reflections appear to be germane to my topic, it is only necessary to remember that elevation in anything presupposes a *status* from which to ascend. The train of thought they suggested, I was led into by an accidental re-reading of a page in history that arrested my attention since I gave to our secretary the text of the topic I would discuss. The reading of that page gave rise to a thought that bore distinctly upon the point, for it gave the historic origin of the great interest in which we are engaged. Initiating the very germ of the dairy buisness, cultivating it even though rudely, prepared a race to develop the intellectual progress of the world. It originated with that one of the three great branches of the human family, first founders of the region on the soil of which the brillant empire of the Medes and Persians was afterwards founded; and from whose ancient hive there first swarmed the Indo-Europeans, some to found ancient Greece, but more to pour through the passes of the Caucasus, and spread over northern Europe, meeting almost everywhere the barbarians who had preceded them, and by the force inherent in them, being the conquerors, even as their descendants were the conquerors of the barbarians who peopled America. It may be well at this point, to ask how it came to pass that this branch of the race was so much developed that it had the stored up power to thus project such a comet of mental light, into the then midnight g loom of utter barbarism, and illuminate its pathway with what was civilization and government, as compared with the institutions of the barbaric races they

conquered. That page of history my eye caught, answers the query. That great Aryan family was the first to catch a glim pse of the inchoate civilization that was about to appear, the first that founded institutions that could produce the developments now so familiar to us in this age. Those institutions were first, the domestication and rearing of flocks and herds, and following this the cultivation of the soil, and the providing of the family for each man, which there and then first had its sacred character recognized. This occupation of the race promoted and enjoined peace and industry — the primal factors that compose true wealth and progress among all peoples, and in all times. Here was the very germ of the dairy business, point, remote, evanescent you may say, but yet the necessary first step, as truly as the first rude lever that ever crossed a fulcrum was the germ of the huge Corliss engine that furnished the motive power used to propel the machines at our late centennial show. There, for century upon century, this branch of the race lived, toiled and grew; coiling up, as it may be said, the mainspring that finally projected civilization into pretty nearly cimmerian darkness, and diffused a radiance over the world that has brightened into our resplendent day.

There is a degree of satisfaction in learning that dairymen, and the manufacturers of dairy products, professors of the fine arts in the agricultural world, can trace their lineage back to the original dairymen of the race, and find that modern civilization and the Aryan milk pail are allied; one the cause, and the other the result, you may say such a civilization might have been developed without such a start from a people modified by their peaceful and humanizing occupation, and it can be replied, it did not; and, further, the other great branches of the early races, not having the send-off of ours, marked out their destiny in accordance with their controlling motives, and compared results that cut but a sorry figure, in comparison with the acheivements of the brainy progeny of Japhet, the primeval fathers of gilt edged butter and cheese.

While what has been said in relation to the origin of the business is worth, perhaps, the time it has taken to refer to it as a reminiscence of the past, it is chiefly valuable as a substantiation of the truth involved in the text of my topic, that dairying is an elevating and intellectual occupation, for it came along with, and aided to develop the brain that ultimately gave us government for

the protection of personal rights, gave us the printing press, the indispensible daily paper, the steam engine, the steamship, the locomotive on steel rails that span continents, and the telegraph over the mountains and under the sea. While its general condition, as we have seen, was most honorable, its successful prosecution to-day, calls into activity and development many of the finest powers of the human mind, many more, and more varied in their acquirements, than those requisite for comparatively successful forming that is chiefly confined to the production of grain, for it adds to those all the questions involved in breeding, in the care of animals, their proper food, the properties of milk, the problem of how to better manufacture, preserve, sell, transport and retail the products of the dairy. It thus makes a field for the exercise of the intellect, probably more inviting and elevating than any other in the whole verge of agricultural labor.

In making these estimates of its pre-eminence in the way of taxing, and, at the same time, stimulating the sharper faculties of the intellect, I do not wish the term "elevating" to be restricted in its signification to mental processes alone; but claim that there is moral power also inherent in the occupation, that makes those engaged in it better men than they would be likely to be if not surrounded by the objects and animals necessary for the successful prosecution of their business. First among the moral educators, he comes in contact with, humble though the teacher may be, is the cow herself. A man may have an intellect keen and cultivated enough to tell within a grain the weight of a planet, and be a devil at the heart, but he must have humanity pretty broadly developed, and the rich milk of human kindness in him, to properly care for a cow so that he can make money by keeping her. That proper care induces the erection of warm stables, an ample supply of nutritious food and pure drink, cleanliness of the animal and its surroundings, and a manifestation of kindness in all his treatment of the breathing, delicate machine, the use of which is to give him all his profits. The very conditions upon which he can expect profits at all constrain him to rise in the sphere he has chosen for his activities. Moral development of himself is right in the line of his financial interests, for he is a low-browed, low-keyed individual, who can practice the virtues on which success is predicated, and not be modified in his character by their humanizing influences.

While the mute appeal of starvation and neglect of his dumb beast will rebuke his cruelty, and retributive justice will dissipate his profits and empty his purse, the satisfied hunger of his kine, giving distending fatness, and the ever flowing pail will chase from his mind the thought that he is a thief, seeking returns where he has made no honest, intelligent investment of capital, kindness and care. Compare such a dairy farmer's surveying animate property that almost responds to his thought, that does, at least, beam its gratitude for delicately appeased appetites, stimulated in his pride of the sleekness, the comfort, and robustness of the occupants of his stalls, while the bleak winds howl, or the rains pour, with the exclusive grain producer, who farms with but little barn room, who keeps but little stock, who is selling his farm in Europe, or elsewhere, by the bag-full, whose comparative success for the year all turns on the point whether the weather and rains are right for a few days or weeks, who is filled with more apprehensions of ill, and oftener has disastrous realizations, and then tell me in which of those farmers you will be likely to find the most moral development, the most culture, the most refinement, the most music in the soul, in short, the most man? So long as it is true that man is modified by his surroundings, it cannot be otherwise than that the tendencies of the dairy business are as I allege.

If, then, this is the tendency of the business, it rolls upon the recipients of its blessings corresponding obligations to diffuse the knowledge they gain. It is characteristic of true knowledge, as well as of supposed knowledge, that it has a penchant for communicating what it regards as good news. Open discussion, attention of thought with thought, will show the fallacies of the latter, and fix the value of the former — the true knowledge. This, I take it, is one of the meanings of such a convention as we are now holding. But for these expanding convictions on various points, coupled with a desire to learn more, we should have no desire to come, and be of no use, either as speakers or listeners, after we got here.

We have plenty of work for the exercise of our powers. If you have a doubt on this point try to get your neighbor to adopt some of the improvements you have demonstrated are valuable. The loftier among us can always find that some plodding scholar, or some practical, unheralded inventor can let in upon his mind a flood of light. Webster said, in speaking of the sphere of the lawyer, "there is al-

ways room up higher." So there is in the sphere of the dairyman. The mooted points in the manufacture of butter and cheese, where difference is radical and important, have yet to be decided by the overthrow of the false and the installation of the true; and it will require some of the most practical learning of practical men, and the most practical researches of the chemist to establish the conclusive truths involved in some of the bottom facts; and then if truth is, at last, discovered so as to be beyond cavil by the honest and intelligent, it will take years of the exercise of all the power and influence of the forum and the press, and private expostulation, to get the truth popularly acknowledged and the false abandoned. To teach and commend to mankind the truths they ought to know and practice in their manipulation of delicate material things, elevates the teacher as well as the taught, even as the teacher of sobriety is elevated by the truths he commends to the victims of the flowing bowl. He was a sound philosopher, who, when told that the emancipated slave owed a great debt of gratitude to the early anti-slavery men of the nation, replied: "Yes, but the anti-slavery men owe a still greater debt of gratitude to the slave for the mighty moral and intellectual development it gave them to be freedom's brave defenders. While the heroism of but here and there a victim of chattel disposition is ever sounded through the trump of fame, that of a long line of his deliverers, some of whom laid down their lives in prisons, on the scaffold high, perished by the assassin's hand, or stepped to glory from freedom's battle-field, will be numbered among "the few, the immortal names, that were not born to die." Error has one redeeming feature, in that it develops a foe to combat it. If there were none to be converted from the error of their ways, no new and better ways to be commended, no new light irradiating the pathway of some of us, there would be no stimulus for holding this, and similar dairy conventions; and we would all stay at home and go on rusting, as I fear many of us are doing, who ought to be here to teach, and to be taught.

The very existence of this organization is proof of the truth involved in my topic,—its assembling at all is a manifestation of the swelling thought the occupation begets and develops. It is not the number of its members that entitle it to so large a share of public attention as it receives, or the power of mere numbers

that entices such a congregation as this to listen to our proceedings. It is the subtile power of thought, taxed to make progress in such a thoughtful field of labor, that interests you,— a field that success in has so much to do with making homes pleasant, the board inviting, the edibles palatable, and the soul serene,— at meal time. You may have everything about your table otherwise perfect to the remotest details, but if the cream is either sour or *non est*, your coffee is a failure; if your cheese is indigestible as a bullet, and your butter is rancid, there is sand in your domestic machinery, you are flushed with mortification, and your guest pities, but yet feels decidedly "sold."

Again, in proof of the elevating and intellectual tendencies of the occupation under consideration, we have but to scan the programme for the proceedings of this convention, so auspiciously opened to-day. The wide range of subjects embraced, the well-known ability of the successful farmers, dairymen, manufacturers, dealers, editors, and scholars, who have spoken and who are to speak to you, shows the magnitude and interesting character of the interests involved, and prove that the dairy enterprise has so far elevated a corps of thinkers, workers. and writers in our state and vicinity, that their doings are watched, and their sayings greedily sought for re-production in the press, and their publications, now fostered by the state, are largely an educating instrumentality among the people, improving the products of the dairy, and rapidly augmenting production. I was not one of the pioneer band, and so I can say what I am about to say without indulging at all in self-congratulation, which is this: If ever a small body of determined and earnest workers, in their chosen field, had reason to be proud of the work of their hands, it is the men who founded and have given character to the Dairymen's Association of Wisconsin,—men, and some women too, who have developed the most humanizing branch of agricultural labor in the state, who have blazoned the purity and value of their products, and have proved by the tryer, they were entitled to the merits claimed, till the brand "Wisconsin" is an open sesame to the most exacting markets of the world, who have fearlessly competed for, and fairly won recognition, commendation and prizes in the great fairs in which the world was invited to do its best, who have turned the term "western" a word that has crept into the market reports before Wisconsin so

largely exported dairy products, from being a term of reproach into one of honor; and last, not least, have instituted a method of sale, safer and more business-like than that enjoyed even by the older dairy districts of the east. Whether the occupation of dairying has elevated them, whether it has strengthened their intellectual powers to compass these results, or whether they have elevated the interest, rather than been elevated by it, I enter upon no "irrepressible conflict" to determine; but am inclined to think that the benefits have been reciprocal, and that, like the exchequer of active charity, they have been emptied and fillee by the same act.

Though we may all survey with much pride and satisfaction what has been accomplished, we need not sigh for the same reason that Alexander did,— for there are more worlds to conquer, and waiting chaplets to adorn the brow of him who is truly able to announce to the dairy world, "Behold, I show unto you a more excellent way."

INDUSTRIAL EDUCATION.

By Prof. Wm. F. PHELPS, Whitewater,
President Whitewater Normal School.

I am neither a dairyman nor the son of a dairyman; but my mother was a dairywoman. I once learned to milk the cows, but was always ready to compromise the job by doing any amount of work at any other respectable human employment. I was taught to churn, but was ever eager to turn my talents in any other direction than that from which the butter was to come, especially when it was a long time coming. I was my mother's first assistant in the cheese business, but had such a narrow escape from being struck by lightning one morning, while attending to the "whey" and the "curd," that I considered the circumstance a loud call to choose some other occupation! The lightning spared the assistant dairyboy, but so sadly demoralized a large English pear-tree near at hand that it ceased to bear fruit thereafter, forevermore! My mother endeavored to encourage me, nevertheless, by telling the neighbors, in my presence, that there was not one of her six girls that was half so handy about the house as the oldest of her three boys. But I never relished the compliment of being considered able to excel women in their own special sphere! You will readily per-

ceive, however, the respect for her memory, for myself and for the truth compel me to say that in my opinion, my mother and her assistant made as good butter and cheese as are now produced by the refined and highly scientific processes of the modern dairy, with its elaborate conveniences, and its improved methods of securing equability of temperature, dryness and purity of atmosphere, and all the other conditions of success, in that which is now a special branch of industry, conducted upon a scale so stupendous as to have called into existence state, and even national organizations for the promotion of its great and important interests.

As we look back upon the primitive methods employed even within the recollection of many who are here assembled, in the leading industries of the past, and compare them with the present, we are forcibly struck with the conviction that the times have vastly changed. We discover that a scientific spirit is every where abroad; that men are no longer satisfied to learn *processes* and *methods* merely, but that they demand to know the *principles and laws* that govern, and that are superior to them. They begin to recognize that these methods and processes must change with time and place and circumstances, and that those which are good to-day and here may be worthless to-morrow, or in some other place, where the circumstances are different. The world is beginning to discover that principles are unchangeable and eternal; that they are the same yesterday, to-day and forever, and that it is only their *applications* that must change to suit the changing ciscumstances of human needs, the onward movement of human progress. Hence the great problem in all human work is to *determine its underlying principles and immutable laws*, and then to devise the wisest, best, most successful methods of applying them to the relief of human wants, and the promotion of human welfare and happiness.

The stage-coach, the post-boy, the carrier-pigeon and sailing vessels no longer meet the demand of commercial and social intercourse with men. The genii of steam and electricity have therefore given us our fast freight and express passenger trains, our steamships, our telegraphs and telephones, whereby the ends of the earth are literally brought together, time, space, and resistance being practically annihilated. To-day we may listen to the voice of the silver-toned orator, or to the magical music of the "queen of song," we place them on record and at the dawn of another centen-

nial morning they may be made to join in the acclaim of another national jubilee. Had a Gray and an Edison lived in the time of Demosthenes, and in the light of our present knowledge of the molecular forces, we might now listen to the words of the world-renowned Grecian orator after a lapse of more than two thousand years. We take up our morning papers, study yesterday's market reports from London, Shanghai, or Yokohama, or read of the fall of Plevna and Kars, of the surrender of Adrianople, and of those other tremendous events that foreshadow the near collapse of a once powerful, but now decayed empire, as ordinary common-places of daily life.

Compare Franklin's crude device for printing with Hoe's marvelous power press; compare the rude farming implements employed by our fathers with the wonderful labor-saving machinery in modern agriculture; compare the spinning-wheel and the hand-looms of our mothers with the equipments of a well-appointed factory of the centennial year; compare the achievements of the toilsome, finger-plied needle, with the almost miraculous work of a first class sewing machine; compare the nearly indistinguishable miniatures of our grand-parents with the instantaneous sun-pictures produced in an ordinary photograph gallery; or, look at yonder stately forest tree, and reflect that in four or five hours you may be writing on sheets of paper fabricated from its trunk by the cunning magic of modern machinery, look in every direction and in every field of human activity and comparing the present with the near past, you will discover innumerable evidences that man's inquiring, penetrating spirit is abroad, and that the methods of human work have been completely revolutionized. You will discover that the processes employed in the various industrial pursuits, even within the recollection of many here present, are no longer tolerable. You will discover that there has been an advance along the whole line. The methods of production, of distribution, and even of *destruction* have been radically changed. Vast armies are now operated by telegraph. The implements of warfare are far more effective than formerly. The power of each man who carries a rifle or needle-gun has been multiplied more than tenfold; victories are achieved by changes of position, and campaings are as often won through skill of machinery as by heroism in fighting. In short, in whatever field of activity we survey the situation, whether in agriculture or com-

merce, whether in the manufactures or arts, whether in the professions or trades, whether in the forum or field, in peace or war, we shall discover that victory perches upon the banners of those who carry the most, and the *best cultivated brains!* Bullets and bayonets with *clear* heads behind them will always carry further and do better execution than when sighted by *block* heads. And so in the grander contests of peaceful life, intelligence wins and comes to the front, while ignorance and incapacity, baffled and defeated must go to the rear and be content to take back seats.

We are thus brought squarely to the consideration of the problem that for a few minutes is to engage our attention — the problem of *industrial education.* In approaching it, gentlemen, permit me to express the opinion that no topic that can come before you either here or elsewhere, can possess a deeper or more abiding interest. You belong to the great industrial class that comprises at least nineteen-twentieths of the total population of the republic. You are engaged in the most ancient, the most useful, and the most indispensable of the arts; the art of tilling the soil, of cultivating the fruits of the ground, of aiding to bring forth that which is pleasant to the sight, and good for food. It is no less for the interests of the race than for your interest that your labors should be so guided and directed as to yield the greatest possible reward. The case is not altered whether you are devoted exclusively to the special avocation of developing the products of the dairy or to the pursuits of general agriculture, as well. From the dust we sprang. From the dust we literally derive our sustenance. Even the success of the dairy must depend upon the preservation of the integrity of the soil. The cultivation of the great cereals is not the sole cause of its exhaustion. Whatever tends to deprive it of those essential elements that enter into the composition of food tends also to that ultimate sterility which has depopulated vast acres and withdrawn them from human uses. This process of exhaustion is going forward in this country at a fearful rate. We are following in the footsteps of some of the older nations. It needs no expert arithmetician to determine with reasonable certainty how long this can be continued without disastrous and even fatal consequences. Unless the process of exhaustion shall be arrested, and the restorative measures which science alone can suggest shall be faithfully and thoroughly applied, we, as well as the nations that

have preceded us, will be called upon to suffer the penalty of violated law. The grand principle which should be made operative in our agricultural operations, of whatever grade or branch, or under whatever name or specialty, and in whatever portion of the country, is that *of restoring to the soil that which by cropping or cultivation we extract from it.* This is no less necessary in dairying than in wheat raising, in horticulture than in stock raising. This principle, simple as it appears, once faithfully applied, would not only arrest deterioration, but restore exhausted soils and with that, a degree of prosperity and certainty in agricultural enterprises now scarcely known except in the virgin soils of the far northwest and other localities of limited extent not yet cursed with the blight of man's folly and neglect. This is the great fundamental truth, which, more than any other in industrial science, needs to be pressed upon the attention of the agricultural classes until it becomes thoroughly operative in all their pursuits.

The pressing need of the hour in every branch of industry is more thoughtfulness, and especially more *forethought*fulness, more intelligence and more skill. The value and the profit of labor are determined not by the amount of muscular and mechanical strength put forth, but by the degree of intelligence and skill that lie behind it. Wealth is the product only of *intelligent* labor, and its increase is determined by the amount of such intelligence applied to labor. Hence the right education of the laboring classes is the prime condition of the highest success in industrial pursuits. It requires vastly more knowledge to be a good farmer, mechanic or laborer to-day than ever before. Thinking bayonets are said to be the bravest in battle, and there is no doubt of it. We have proved the proposition on a large scale. Even so, a thinking plow or spade, or hoe, will do more effective and profitable service than ever entered into a "clod-hopper's" wildest dreams. It has been proved by experiment and observation that a man or woman who can barely read or write can earn more and save more by at least twenty-five per cent. than an illiterate. It has been established beyond all dispute that educated labor is worth from 100 to 1,000 per cent. more than uneducated labor, depending, of course, on the quality and extent of the education. An educated man, in the proper sense of the term, is a thoughtful man, a careful man. He saves material instead of wastes it. He takes care of his tools and implements

instead of leaving them to decay in the sunshine and the storm. He repairs his own working utensils or provides to have it done promptly and well. His mind being active, his body is active. His mind being clear he foresees the wear and tear of machinery, and provides for them, and in a hundred unnamed ways prevents loss, increases profit and enlarges production.

Inactivity of mind, on the other hand, begets inactivity of body. The ignorant man is therefore apt to be an idle, wasteful, careless, vicious man, consuming and destroying more than he produces. Being measurably blind to his own interest, he is indifferent to that of his employer. Wanting both in forethought and ingenuity he allows his machinery to break, and when broken, he is both indisposed and incompetent to repair it. Being incompetent to enjoy the higher pleasures of reason, imagination and taste, he seeks the lower ones that come from vicious associations. And so he drudges his way through weary life without the aid of intellectual implements and tools, a mere human machine that must be operated and moved by a power from without instead of controlled and guided by a reasoning soul within. Savages never accumulate wealth, never build cities, cultivate farms, work mines, invent machinery, erect churches and school houses, or frame and execute a code of just, wise, and wholesome laws. Just in the ratio of a man's ignorance does he approach the savage. According to the degree of a man's intelligence and moral worth, does he approximate the highest type of civilization.

Industrial education should be considered from two stand points, or rather it may be said to be divisible into two parts; first, education *for* the industries, and second, education *in* the industries. For obvious reasons we can refer on the present occasion only to the first, or education *for* the industries.

This is the education demanded, absolutely required, by every child and every citizen of whatever rank, condition or sex. It should even be borne in mind that the value of any action by any rational being is dependent upon the intelligence and the moral power that lie behind and direct it. To increase the value of work therefore, we must increase the intelligence and improve the moral tone of the workman. This is the aim and purpose of true education. This is the true aim and purpose of our elementary schools, and of that common school system established and supported by

the state. A true education seeks to cultivate, sharpen and refine the senses as the media of communication between the exterior world of matter and the interior world of mind. We have eyes, but too often see not; ears have we, but they are frequently dead to the harmonies of the universe; we have organs of smell and taste and touch, but by abuse they fail to fulfill their great purpose of giving us that accurate knowledge of the properties of the substances both helpful and hurtful, that everywhere surround us, that challenge our investigation, and that are needful for our guidance or warning in every walk of life. This cultivation of the senses is almost entirely ignored in our schools. It is not only of the highest importance in the arts, but it is even more indispensable in its relations to the cultivation of the higher powers of the intellect. To be able to look carefully and minutely at the myriad forms both animate and inanimate with which we come in daily contact is the very first step in the direction of all right mental training, and of that clear insight into things unseen that distinguishes man from brute, civilization from barbarism. Who needs to *see* more or farther than the farmer, the mechanic, the engineer or the sailor—laborers all? Who wants a keener scent than the dairyman, the dyer, the butcher, the butcher's customer, the chemist, and almost every body else? In these days of mixing and adulterating the necessaries as well as the luxuries of life, who does not need to see with Argus eyes, to smell with the scent of a blood-hound, to touch with the delicacy of Æolus on his harp-strings, and to taste with the daintiness of an epicure, in order to detect the presence of the "destroying angels" that lurk in our daily food, and lure us to a slow but sure destruction?

In its relations to mental training the cultivation of the senses as before suggested, is of the highest importance. The power of close and accurate observations is directly dependent upon the action of the senses, while all our knowledge of the properties, qualities and uses of the things about us is dependent primarily upon observation. If education fails to develop the observing powers, it fails to lay the foundation of a practical, useful and successful life. If it fails in the foundation, it fails altogether, and this is the main reason why so many of our schools are yielding such unsatisfactory results. We begin with words, the symbols of things, rather than with the things themselves. We attempt to load the memory with

abstractions rather than fill the intellectual treasure house with ideas, images and facts that possess a real significance to the child. We seek to compel the learner to repeat the words of the book rather than train him to an intelligent expression of the thoughts previously developed. We fail, in brief, properly to lay the foundations of that education needed in all the industries of life, and then vainly attempt to repair the injury by mending and patching up the superstructure.

To be properly educated for any of the industries, every child should be trained,

1. To the healthful and accurate exercise of all his senses.

2. To the right use of his powers of perception and observation which consists in rightly translating, comparing, classifying and retaining the impression conveyed to his mind through the senses.

3. To forming true conceptions or judgments concerning the things with which he will be constantly required to deal, and ascending through his reasoning powers to those relations which connect *them* and *him* with the world in which he lives and the universe of which they and he form a part.

4. To recreating and reproducing those forms and combinations of utility and beauty that minister to his comfort, convenience and happiness. He should be taught to think clearly, carefully, and accurately; to read intelligently, thoughtfully and habitually; to speak fluently and forcibly; to write legibly and rapidly; to compute correctly and readily; to draw freely and with precision; to obey promptly and willingly, and to act wisely and nobly.

This, gentlemen, is a summary of the education for the industries and for good citizenship, now more needed than all things else in this nation and under this government *of* the people *for* the people and *by* the people. Our education is behind the necessities of the age and the country, not only in its industries, but in its administration. We need a labor reform, and a civil service reform, but more than all, we need an education reform, because that lies at the basis of all other reforms. But this education reform is beset with the gravest difficulties. Not the least of these difficulties is the indisposition, in some cases the opposition, of the people to the enforcement of the necessary measures. There is an education of public opinion that is now especially demanded, because ours is a overnment, and ours are institutions based upon and supported by

this opinion. There is a necessity that it move forward to higher conceptions and nobler duties, so that the masses of the people, the great industrial class, may more fully realize the benefits of a civilization based upon the equality of all men before the law, and the right of every man to enjoy to the fullest extent the fruits of his own intelligent and well directed labors. Every common school may and should be made in a literal sense an industrial school. To accomplish this result, they must be conducted by skilled laborers, who comprehend the intimate relations between true education and the success of those great industrial pursuits upon which the prosperity and the perpetuity of the race and the nation alike depend. In your individual, and in your collective capacity as an organization for the promotion of one of the leading interests of the state, you may exert a powerful influence in behalf of that intellectual and moral development which underlies and I may say, overleaps n importance all industrial and material development.

HOW MUCH MONEY CAN A MAN AFFORD TO MAKE?

By Hon. E. D. COE, Whitewater.

Editor Whitewater Register.

It has been announced that I would read a brief paper on the subject, "How Much Money Can a Man Afford to Make?" I find that a good deal of confusion has been induced in the minds of some who have read the above title, as to what is intended thereby, or what may be reasonably expected from its discussion. And I, myself, am obliged to confess that I do not find in the announced subject a very clear indication of the matter I had in my mind to write about. I will say, however, that I fully determined on receiving the invitation of your secretary, to avoid the example of that good and great philosopher, philanthropist and editor, Horace Greeley, of blessed memory, and not commit the error of writing upon some farm topic whereof I know nothing, and about which you know all that is known; consequently I have endeavored to touch upon some matters of every day experience and of concern to us all, and which also have a financial side and involve a proposition about which I know as much, probably, as any man in the room, viz.: "How not to make too much money."

It is a very general idea and an oft repeated statement, that the desire to be rich is the ruling passion of the American people, and that nearly the whole of our population is engaged in a wild and feverish race for wealth. I am suspicious of all general propositions; they are liable to be general exaggerations. General rules are apt to be valueless on account of the numerous exceptions which tend to neutralize their effect. Still we all know that very many people spend the energies of their younger days in heaping up wealth, which they hope, at some future time, to enjoy in full measure. But old age and decrepitude come upon them while they are yet busied with present care and looking to the future for enjoyment and comfort, and they find, when the time has come in which they were to realize all the happiness and pleasure of their lives, that the capacity for enjoyment is gone, or has but little opportunity for exercise, on account of the changing tastes and the weariness and weakness of advanced years.

We all agree that the first duty of every man, to himself and to society, is to live a pure, honorable, moral life. And if he has the grace to live religiously, so much the better, no doubt, say we all. But after the duties of life are provided for, there comes a wide range of plans, methods, and purposes from which to choose and order the manner and aims of our lives. Some men seek wealth, some scholarship, and some political fame. But, with nearly all, there is a tendency to look continuously to the future for real enjoyment. "The good time coming" seems to be the only good time which we think is attainable. And so we fill to-day with cares, toil, anxieties and worryment, and hope that on the morrow will come rest, leisure, comfort, sunshine, and happiness. The hope-faculty in man is one of his noblest attributes; and the trait which leads him to provide for the future is also an indispensable one in any true, well proportioned, manly character. But these characteristics, developed to excess, lead inevitably to unhappy results. Some philosopher has said that "all vice is virtue, either in excess or in deficiency." As, for instance, courage is a virtue; but if deficient it makes a coward, and if in excess it leads to foolhardiness; also economy is a virtue, but in excess it becomes miserliness, and if deficient it makes a spendthrift. So I claim that the man whose life is governed largely by anticipation, and whose thoughts continually run out to the future instead of taking in the

privileges and opportunities of the present, is quite as apt to wreck his own happiness and the happiness of those dependent upon him, as if he were an improvident and reckless waster of his substance. I would, therefore, argue in favor of a present, every day, rational enjoyment of life. A day spent *now* in a thoroughly happy manner, is worth just as much as one spent happily forty years from now. An opportunity for legitimate pleasure and enjoyment offered *now*, if within one's reach, ought not to be refused on the plea that in the "sweet by and by" such things will be the common experience of every day and every week. A man cannot heap up his happiness like corn in a bin, for future consumption. It will not keep. If he would save it, he must seize it as he passes along.

But, lest I be misunderstood, I desire to say here that I do not wish to utter one word against a reasonable and provident care for the future. It is the duty of a man to work while he has strength, that he may have an accumulation of the fruits of industry and economy for his use when his strength is gone; and, also, it is his duty to prepare his family to be independent of his support at a time when that support is liable to be taken away. It is a source of enjoyment to any man to know that he is in circumstances which ensure him a competence in the latter years of his life. But a man cannot afford to wear out his nature with fret and worry over mere money getting; neither can he afford to follow it till it becomes a disease, as too often it does. There is no truer saying than that "money alone cannot bring happiness." Probably not a person before me would be willing to take all of Vanderbilt's wealth, knowing that it was to be the price of the love of his children, and that, after his death, they would hate each other with deadly bitterness because of the very millions he should leave them. A man may spend his life in getting a fortune, or riches may come upon him suddenly, and in either case he will find that wealth is not without thorns, and that the power which money brings is supplemented with cares and annoyances that the poor man knows not of.

It is a difficult matter to put into figures an answer to the question, "How much money can a man afford to make?" One man can afford to make more than another whose circumstances are different. But I would answer, in general terms, that a man cannot afford to sacrifice any duty, or any reasonable enjoyment, for the purpose of mere money making. By this I do not mean that a man

should indulge in luxuries which he cannot afford, or should live beyond his income. I consider that the first object of laying up money is to provide for the wants of old age. As men's tastes and habits are different, so will their expenses be different, and different sums will be required for their various needs. Some years since, a famous insurance company passed by one year without declaring the usual dividend, for the reason that it "wished to change from a five per cent. to a four per cent. reserve." To most people it seemed that a "five per cent. reserve" would take more money than a "four per cent. reserve." But an explanation showed the contrary, for the reserve had to be sufficient to produce a given income at 4 per cent. interest, and, of course, had to be larger than when the same income was expected to be realized at five per cent. interest. I think any man may be regarded as having very reasonable expectations, who seeks to lay aside enough wealth for his support in old age on the basis of "a 4 per cent. reserve."

The second object in accumulating wealth, usually, is to provide for one's family. The man who started in life without any capital, and who has suffered all the privations and hindrances of poverty or semi-poverty, is naturally anxious that his children should have a better opportunity in the world than he had. So he seeks to lay up money for their benefit. But there is apt to be an overdoing of this generous and well intended work. First, a man is in danger of defeating the very object he seeks by allowing the children to become unfitted to value and care for the wealth which comes to them without an effort of their own; and, secondly, he gradually loses sight and thought of his own individual worth and importance in giving all the energies of his life to his children. This last is a thing which may be said of almost every generation since Adam. The usual history of the average business man is this — he has a happy childhood, enjoys a brief season of social pleasure and delight as he grows to manhood, marries and settles down, and then, as children gather about his fireside, he begins to gradually shape his plans and his life more for their benefit than for his own. It may seem captious and unfeeling to criticise adversely so generous a sentiment and course of conduct, but I think it is time that there was a change, and that we should be allowed to see a generation which labors more for its own improvement, and happiness, and welfare, and less for that of the one to come after. The history of the

civilized world at all stages, shows the people, as a mass, toiling, denying self, and sacrificing comfort and personal happiness for the benefit of a generation which is to succeed them, and which, in its turn, comes upon the stage of action, and engages in the same process. I believe it would be better for the human race if all this should be modified in a large degree, and if the people in active life, at any one time, should seek to get for themselves, out of their existence, all the benefit, enjoyment and growth there are in it; and, after giving their children a fair opportunity to begin life should leave them to work out their own destiny and happiness. I believe that a man of 1878 is just as worthy as a man of 1908, and is just as much entitled to all the pleasure and value there is in life; and that a man of sixty should be as ready to look upon the world as a domain in which he has a personal and a pleasurable interest as the young man of twenty. The famous Irish member of Parliament, Sir Boyle Roche, who mingled good, hard sense and a capacity for blundering to a degree which has no recorded parallel, once created great merriment by demanding, "Why should we do these things for posterity? What has posterity ever done for us? Let posterity take care of itself." And, after all, there is a grain of sense in the old baronet's idea, and I think he is quite as near right as those who over-sacrifice themselves for the sake of their children. This may seem harsh teaching but I believe that the man who lives up to the doctrine here laid down, will be the better father, husband and companion for it. That household cannot fail to be a happy one where the enjoyment of each day is regarded as being as indispensable as the work and the duty of the day. The man who resolutely determines that he will have out of every twenty-four hours whatever of comfort and happiness there is available in them, will soon learn to prize at the highest value the pleasures of the fireside, the affection of his family, and the society of friends. He will remand the care and anxieties of business to the hours when he is at his daily work. A man can do all the profitable fretting and worrying of one day, in the most aggravated case, within two or three hours. He cannot enjoy good health, or religion, or be a pleasant associate, if he spreads his worryment over the whole twenty-four hours. He might as well eat all the time, or sleep all the time, or work all the time, as to worry all the time. He owes it to himself and to his family to leave care behind him, a part of

the day at least; and, where no benefit is to be derived therefrom, he should never bring it home to cast a shadow over the household. And above all, he should never take it to bed with him. The worst bed-fellows a man ever ever had are care, trouble, and anxiety. They will sap the springs of life, and make old men of young ones faster than toil or hardship possibly can.

I have said nothing in this brief paper of religious duties—those are for each man to settle for himself. I have endavored to consider a phase of business, social, and private life, which I have long felt was worthy of having something said upon it. We make the trip through life but once, and the beneficent ruler of the Universe has given us the capacity and the opportunity to realize from it a great deal of rational enjoyment, if we will. Therefore, I consider that it is doing no wrong to ourselves here, nor prejudicing our chances for happiness hereafter, if we look for the beauty there is in the world rather than the deformity, and seek to experience the enjoyment of life instead of its trouble and misery.

It may be asked, perhaps reasonably, what has been said in all this about the subject which had been announced? I can only answer, that it has had, at least, some attention; and, in order, to give an appearance of consistency and unity to what I have written I will try and re-state the argument in a brief sentence: first of all, do the duty laid upon you—which includes providing for the present and future necessities of yourself and family; secondly, enjoy your life, day by day, as you live it; and, lastly, make all the money for which there may then be time and opportunity left to you.

BUTTER MAKING IN WISCONSIN.

By C. R. BEACH, Whitewater.

If the discussion of this important subject devolved upon me alone I should shrink from the task.

But I am to be followed by gentlemen of larger experience and of maturer wisdom, who will more than make good any deficiency of mine, and I can assure those gentlemen that in following me, they will find richer gleaning, than ever Ruth in the fields of Boaz. Not handfuls scattered, here, and there, but whole fields of thought, unrept and ungathered.

My business, and my habits have disqualified me for standing here — mine has been a life of physical labor, and while I may not say with that old Roman who in reply to a powerful harangue, simply answered, "all that he has said I will do," yet I can ssure you in plain English, that I can milk, and make butter, better than I can stand up before this audie ice, either to interest or instruct you.

I shall not presume to teach, and I can only hope to stir up your pure minds to the increasing importance of this subject of butter making; a business which already occupies an important place in our agricultural industry; and which seems destined in the near future to our outrank, and to lead all others.

The agricultural productions of every country, and every community, are marked by some peculiar characterestic; they can produce something better than others. And very often better, and more economically than anybody else. These different productions are the result of various causes; among which are soil, climate, the character of the inhabitants, the wants of other communities, with whom the people have commercial intercourse; these causes combined with others, go to determine what shall be the leading production of any particular community.

The older the country, the more fixed and marked these peculiarities become.

Cuba produces sago, Australia wool, Texas, cattle, the south, cotton, while the older northern states have long been distinguished for their *butter*, in the manufacturing of which they enjoyed almost a monoply.

But the star of empire has been moving westward, and the failure of our wheat crop, together with the runious competition of newer and cheaper lands in the production of wool, and of beef has turned the attention of our people to the making of cheese and butter.

And the rapidity with which the twin industries have developed themselves is truly surprising — it is marvelous.

The success of the cheese factory system in this state has become an established fact; and our productions compare favorably with those of the older states, and as to butter, though it may not have reached so high a state of uniform excellence, yet the quality is rapidly improving, while in the increase on the amount produced it has far outstripped that of cheese.

I make this statement based upon the statistical returns of the comparative amounts of their two products received in Chicago in the year of 1875 and those of 1877. In 1875 there was received in that city in round numbers 21,000,000 pounds of butter to 12,000,000 pounds of cheese. In 1877, 42,000,000 pounds of butter to 20,000,000 pounds of cheese, being an increase of 100 per cent. in the amount of butter to an increase of 60 per cent. in the amount of cheese.

I suppose our own state is entitled to her equal share of this increased production.

In the year 1866, there was sent abroad from this community of which Whitewater is the center, less than 7,000 pounds of butter. In the year of 1877, the amount will not fall much below 300,000, and this too in a community where cheese factories are as thick as school houses, and where there are no butter factories and but few large dairies that manufacture butter exclusively. If to these 300,000 pounds sent abroad, you add the butter consumed by our own people, the commercial value of this aggregate will nearly equal the combined production of all our cheese factories.

What then must be the combined amount of the butter production of our whole state, if with no systematic development such results have been attained? Can any one estimate or measure the limit of our future production? Can any one doubt that Wisconsin is to be a great butter producing state?

Situated as we are in the north half of the great grass belt of the continent, with our cool and health giving climate; our diversified surface, our sheltering belts of timber, our cheap lumber and stone for building, our numerous ponds and lakes for the production of ice, our countless streams of clear, crystalline, running water, our flouring mills, our springs, and our windmills affording everywhere the finest water for our dairies.

Our rich grasses, which flourish everywhere, with a soil peculiarly adapted to the production of clover, of corn, of oats, of barley, and of rye, the cheapness of the refuse of our flouring mills, our railroads, and water communications, for reaching the markets of the world; the cheapness of our dairy lands; and the cheapness of our dairy cows, when compared with those of older states, all these and more, which time will not allow me to mention, point to our state as the very *paradise* of butter makers.

But not only are we invited to this buisness by our surroundiugs, we are driven to it by our necessities; well, it is a very good business any way — and pardon me, when I say that it takes a pretty good man to be a good butter maker. He can't drive fast horses. He can't hang around saloons. He can't smoke; if he does, the butter will taste.

And the habits acquired in the care of the cows, and in attending to all the details of butter making, go to develop those qualities which make the good citizen.

Some object to butter making because it is so confining, while if more of us were forced into something which would compel us to mind our business, it would be the better for us. In all business there are disappointments, but the certainty with which the butter maker can estimate the amount of his future production, and the probable income he may receive renders it extremely inviting. And I have never known a single instance in which the people of a community, or an individual who was once established in the business left it for some other branch of farming, because it paid better. But if we all go to making butter, can we sell it? I am no prophet or prophet's son, and therefore can not forecast the future — but thus far, with all the depression in business, and with all our increased production, we have found a ready market, at increased prices, when those prices are estimated by their purchasing power. There is another view of this market question: There can be no large accumulation held for a long time which shall come in competition with good fresh-made butter. Hogs may increase, and pork accumulate. Sheep may multiply, and wool piled up year after year, and the corn and the wheat may be stored in your granaries until they are full to bursting, and not deteriorate.

But when the spring comes and the grass grows, the market is as free from all competition for your fresh-made butter, as though there had never been a pound made.

Everybody eats butter, and pinching must be the poverty that will not allow a man to have it upon his table. We are a nation of butter-eaters, and we are eating it, more and more.

We used to have for our breakfast pork and potatoes, with pork-gravy upon our bread. We must now have beefsteak and buttered toast.

The foreign demand, which during our civil war had almost en-

tirely ceased, has of late increased with wonderful rapidity. And the improved methods of handling butter on board steam vessels seems likely to increase the demand in a tenfold ratio. As to our eastern home market, we can put down butter in New York or Boston to-day at a price not to exceed one-half cent a pound above the dairies of central New York.

The south and southwest are taking large and increasing quantities of our butter.

There is not a market in the world open to the sale of American butter, in which we may not successfully compete with the older butter producing states with great odds in our favor, with only this condition: That we make it as good, and that we make it cheaper.

And the real practical question for us as butter-makers is: How shall we produce an article of the highest excellence with the greatest economy? The reason why so much poor butter finds its way into the markets is not to be attributed so much to ignorance or want of skill, as to the neglect on the part of the makers. From the feeding of the cows, to the last working of the butter, they do everything else before it is attended to. All this must be changed. We must make butter-making a specialty. All business upon the farm must be made subservient to it.

The factory system which has affected such a revolution in cheese making presents its claims to the butter-maker, and to those who have but few cows, and fewer consumers, for handling milk, it offers peculiar advantages. But it is an open question whether from a given amount of milk moved from a long distance and furnished by a large number of patrons, under dissimilar surrounding, and with different methods of feeding, as good results can ever be shown, either in the quantity or quality of the butter produced, as the same amount of milk from a private dairy. The private dairy would seem to have the advantage for the successful handling of milk in the winter. These two reasons combined would in my mind give the preference to the private dairy.

And in my remarks, I speak more particularly to private dairymen. This subject of winter-making butter deserves more of attention. By making butter while the eastern dairies are idle, we partly solve this question of market, and the high prices of butter during the winter months enables us to produce it with greater profit. I used to think that the cow was indispensable in the mak-

ing of butter, but modern science has learned to do without her. But should we conclude to use the cow, how should we choose her? From what breed shall we select? Shall we choose a Jersey or a Holstein, a Durham or a common cow? Has any one of them so established their superiority as to make their use necessary in the production of butter of the highest excellence, with the greatest economy? I shall not attempt to argue this question, but will simply state my own side, never to choose a cow on account of her breeding, nor reject her because of it.

The improved breeds have, no doubt, many excellencies of which we are pretty sure to learn from those who have them to sell. But, as yet, they are exotics among us. They are not yet thoroughly acclimated. They have not been placed under unfavorable circumstances to try them. And a good many of us ar'nt fit to have them. About the barns of too many of us they would be as much out of place as one of Phelps' highly finished and highly adorned school marms in the home of a Comanche Indian. I do not exaggerate, I speak the words of truth and soberness.

I am but a common dairyman, you will, therefore, bear with me while I speak a word for the common cow of our country. By common cow, I mean one so far removed in blood from any of the improved races as not to be classed as among their grades. She is thoroughly acclimated. She can endure the extreme cold of our winters, and the burning heat of our summers. She is hardy. She has lived through all our abuse and all our neglect, and still she is a pretty good cow.

That crumpled-horned, rough-haired, old cow behind the straw stack yonder, with her back to the northwest wind; if you will take her and give her the place of honor in your stable; if you will treat her, in all respects, as though you had paid a thousand dollars for her and thought her cheap, my word for it, if she does not prove to you that she is thorough bred, she will, at least, show that she is *high grade.*

But how about the quality and the quantity of the butter? As to quantity, I think, records will show as large yields under the same circumstances from the common cow as from any of the improved breeds. As to the quality, I know that Col. Waring, of the Ogden farm papers, has claimed that butter of the highest excellence (such as he makes) can only be produced from Jersey cows, and

deep settings. Col. Waring, with all his good qualities, which are many, has a little of the Mrs. Grundy about him.

Let me illustrate. In a neighboring city there lived a man so favored by fortune, that he thought it due to his social position to furnish his table with Jersey butter. And, having found his man, he was satisfied; he was more than satisfied; he was constantly praising his Jersey butter. But the supply of the market run short, and, not wishing to lose his customer, he bought a tub of a well known dairyman, who milked common cows (but, by the way, was a high feeder), remarking, "I know that Mr. B. will detect this at once, and that he will not like it." But he carried the tub, and said nothing. The next time he saw his customer, he was still loud in his praise of his Jersey butter, and said he, "that last tub you sent me was the best butter I ever saw."

I have, when in Chicago, made careful inquiry of men who received and handled butter represented to be Jersey, sent from at least three well known owners of Jersey cows, and in no case have I found that the price received was greater than that paid for butter from common cows. And I am fully convinced that a select lot of common cows will compare favorably with a like number from any of the improved breeds, both as to quality and quantity. When we have developed all there is in the common cow, we may look higher.

Do you ask how I would choose a cow? As I would choose a wife. If her looks pleased me I would get her if I could; and in both cases, it would be about an even chance of being taken in. The cow is the saint of the barnyard. More, she is the patron saint; and if you would succeed, her aid must be invoked, and she should receive all that considerate attention which is bestowed upon saints of a higher order. All her wants should be anticipated. She should be carefully handled, watered and sheltered, and during the summer, should her pasture be poor or scant, she should receive extra feed. And here let me say, that in, and around, and about this word "feed" clusters the most important elements of butter making.

When Demosthenes was asked what was the first requisite in an orator, answered, action. And the second? Action. And the third? He still answered, action. And so, were I asked what is the chief requisite in making butter of the highest excellence with the greatest economy, I would answer, high feeding; and the second,

I would say, high feeding; and the third, I would answer, high feeding. It is the Alpha and the Omega, the beginning and the ending, the chief foundation upon which all success in butter making must rest. Overlooking this one idea, with the best cows, be they Jersey, or be they Holstien, with the most scientifically constructed milk room, and with the best appliances, you will make a most miserable failure. And why? Because you cannot draw water out of a dry well; you cannot get something out of nothing. The butter, both the quality and the quantity, is in the feed. The cow is but the machine for extracting it. The goose that clearly laid the golden egg must have been fed, at least, on gold-bearing quartz.

Do you ask, how and what the cow should be fed? That will be the subject of another discussion, and my old gray-haired friend Boyce will tell you more in one half hour than I ever thought of knowing in my life. I will simply say, that the cow should first be fed those substances which contain the elements of her growth, and which will supply her natural decay and wants, and then enough more of those substances that contain the elements of butter to enable her to supply what butter your customers will take or your pecuniary wants require. Not carelessly and wastefully; not as the man who drew a full load of potatoes and threw them to two hogs, because he wanted to fatten them, but regularly, carefully, systematically, economically.

I need not stand here and tell you that in order to make good butter that the milking should be done regularly, and the milk kept at uniform temperature, and that everything should be kept clean, and the milk skimmed at the right time, and that the churning be done so and so, and the butter carefully worked. There is not a woman here but what knows how to make butter better than I can tell her. And more, her husband knows that she knows. There is only one time when a man has the least shadow of a doubt of his wife's ability to make the best of butter, and that is when he has failed to get as much for his butter as some one else; and then, perhaps he has come home and blamed his wife. Well, what ailed the butter? Oh, the man said that it was white and salvy, and that it was over-worked. Well, what if it was? So was the woman, and the fault in both cases was with yourself. That milk which you brought her lacked all the elements of good butter, and the butter

that it did produce was so weak and sickly that it could not stand even careful handling. And she, seeing that it lacked something, she has worked it and turned it, she has patterned it and prepared it, trying to make good butter out of it, and she has failed. Had your cows been well fed, that milk would have contained the elements of good butter, and it would have come from the churn with that solid, crystalline, almost metalic, grain that would have defied her weak power to destroy it. It might be impaired, but like fallen man, it would show indications of its origin. But she would not have spoiled it. Her quick sense of what was good and beautiful would have shown her when to have stopped working it.

If any of you have an inward consciousness that you have thus cast blame upon your wife, when you yourself was to blame, go home, confess your fault, and pray for faith that you may keep your cows better, and then show your faith by your works.

And here let me say, if any of you are turning your thoughts towards butter-making as a business, have planned that your wife do the skimming of the milk, the churning and the working and the packing of the butter, you had better relinquish your plans, and turn your thoughts to something else. On the other hand, let no man hope to succeed in butter making without the hearty and cordial co-operation of his wife. A house divided against itself cannot stand. And if satan, with all his wisdom and experience, cannot sustain himself with a divided interest, how can a poor dairyman hope to succeed under like circumstances?

Of the various new and improved methods of handling milk in the production of butter, I shall say but little, for I know but little. I have thus far followed only the good old way of my father. I am here as a learner. There is a wide undeveloped field in the improvement of the appliances in butter making. While their adoption may not be a necessity in the production of good butter, their use in many cases will tend to lighten labor and make the business more attractive. Let us therefore examine these improvements in the spirit of candor and liberality; not abandoning old and approved methods for those which are new, simply because they are new, but rather follow the apostolic injunction, "Prove all things, hold fast to that which is good," remembering that success in this, as in every other business, can be reached only through the paths of persistent, intelligent labor.

Brother butter-makers, I trust we shall go from this gathering and from this place with a higher and a juster appreciation of the dignity of our calling. Let us show a commendable pride in our profession. Let each of us and all of us, individually and collectively, do what we can to elevate the standard of butter making. To hasten the time when every package of butter which shall go from our highly favored state shall be not only gilt-edged but solid, golden from center to circumference, from the bottom to the top. When the word Wisconsin, applied to butter, shall be but another name for all that is excellent.

BUTTER MAKING IN WISCONSIN.

By ASA FOSTER, Elkhorn.

President Walworth County Agricultural Society.

My experience in butter making is, there are none but wish good butter, and all agree that a good article is a necessity to supply the wants of the people. Can this quality of butter be made in the west? The trial of the last few years has settled this question fully, that it can; now, as we have the inside track, we ought to maintain our reputation abroad by putting forth our best efforts here in the west. Only a few years ago, our butter was known in the eastern markets as western grease, to-day the butter of our best western creameries is outselling the best eastern made butter in their own markets. The eastern markets now are asking for good western butter, and they get it; one reason for this is the superior quality of our feed, which is the first essential thing in making a good article of butter.

Now, what next? First, use good judgment in saving this feed, and in feeding it. Second, warm, dry, well ventilated stables. Kindly, well cared for cows, that are not governed by the dog or milking stool, but by kind, gentle treatment from calves until they become cows, and all the time. The dumb beast appreciates kindness. Never let them want for good feed, never let them get poor, always have a good shelter, keep them constantly growing from calves, as, in my judgment, they make far better milkers than those that are poorly cared for when young. Now we have the feed, the stable, and the cow, it is self-evident that with the proper conveniences for setting the milk, we have the foundation for good butter.

Our mode of setting milk. We use the tin pails 20 inches high, 8 inches across, set in water; change the water as often as needed to keep the temperature as near 60° as possible, skim at 36 hours, set the cream in the same kind of pails used for the milk, on the milk room, cellar floor, which is made of grout (our milk room is stone), skim morning and evening, churn the next morning, skim pretty well down, taking in some of the sour milk, as we think it adds to the firmness of the butter. We use a No. 7 Blanchard churn. Churn with a horse, a small sweep, time of churning, about ¾ hour, when the butter comes in lumps about the size of kernels of wheat, draw off the butter-milk; while the butter-milk is running, keep pouring on cold water, with a dipper, until the water runs off clear, handle the butter with care, as at the churn is where, I think, much that would otherwise be our best butter is spoiled by rough handling, before and at the time of salting; use one ounce of salt to each pound of butter, set the butter away 24 hours, then work with "Snow's" butter worker until the grain is right, to suit your fancy and taste, then pack in oak or ash tubs, well soaked in brine before using, cut bleached cloth the size of the tub, cover well with salt; set in cellar a few days, and ship to regular houses. We find no difficulty in getting 26 to 35 cents net per pound. We feed sour milk to hogs, and to calves after they have been well started on new milk. Calves do better this way than those that run with the cows. We raise about 30 calves to 40 cows, and feed about 30 to 40 hogs on sour milk, running in pasture with a little grain makes early pork, which usually brings a better price than later; generally, sell the steers and such heifers as, we think, will not make good milkers, when two years old, keeping the best heifers to fill the place of cows sold the butcher. We feed sowed corn from July to September, then feed corn in shock, and pumpkins increasing the quantity of feed as the quantity of milk decreases; in October feed oat and corn meal and shocked corn, until we wish to dry them off, then our cows are in high flesh, then take all the grain away from them, feed one week on marsh hay, so as to thoroughly dry them off; milk them out once in two or three days, and see that they are perfectly dry; if milk is left in the udder to curdle and dry, we may look for bad teats and udder; there should be great care taken.

And I do believe, after a cow has its growth, that two years is

all that it is profitable to keep her with high feed and constant milking. I think, in that time the milking qualities are exhausted, and she should be sold to the butcher. The coloring we use for our butter in the winter is yellow corn meal fed to the cow. The cow should be kept in from all storms, kept warm and well bedded.

Cattle, in general, can be so well cared for and so evenly kept, summer and winter, and all the year round, that there will be no wrinkles on their horns. These wrinkles are only marks to tell us of our neglect to the animal; it cannot always be avoided, as some cattle are tender, others get hurt or diseased, and will grow poor in spite of good care. I mean good, strong, healthy animals.

I would like to add one thing more in regard to butter making in the west. That a party in North Vermont,—my old home—has quite recently written me that he must "throw up the sponge," to Wisconsin butter makers, for Boston was paying two cents per pound more for fresh western creamery butter, than Vermont dairymen could get; and, what was worse, the exactions of local freighting made it cost more to ship butter 180 miles into Boston, than competition made it cost from Wisconsin to Boston. Probably one of the reasons for this is that corn and grain-fed cows in the west give better milk, particularly in the fall and winter, than the hay-fed cows of the east, where they think grain too costly to feed.

BUTTER MAKING.

By MRS. L. E. HAWS, Whitewater.

Very much interested in listening to the papers read, and discussions on this topic, finding them both interesting and instructive; but one fact is noticeable, either the speakers, with one exception, who referred to the homework of farmers, the making of butter, etc., were without wives, or else considered them so wholly absorbed in themselves as to be included in the pronoun, I. If a new era is to be inaugurated, and farmers' wives are to be freed from the responsbility of butter making, etc., I would like to rise to my new privileges in the good new way, leaving the skimming of milk, etc. to my husband and sons.

In this community, when butter is to be sold, the first question asked is, Who made it? The answer invariably is, Mrs., not Mr;

thus the farmer's wife is recognized as the maker in its sale. If the farmers of our state consider their wives as helpmeets and not servants, they surely have been unfortunate in the manner of expressing their thoughts. But is there not great need of improvement in our homes? Is not the young wife brought to the farm house and usually expected henceforth, to devote all her strength and energy to making butter, raising poultry and a thousand other cares, often doing the work of three, besides caring for her children, being up early and late, no time for rest or improvement? Is it strange that she crystalizes into a mere servant for the household, instead of being its life and inspiration? We cannot claim that the husband is wholly to blame for this state of affairs. Woman must take the initiative steps to break her chains; the men who from boyhood have been accustomed to this home life, take it is a matter of course, and must be drawn from the rut. It is an admitted fact that man is developed by contact with the outside world, comparing thoughts, reading, etc.; should not the wife have opportunities for development also? Every improvement for helping on the farm work is eagerly secured; should not every facility for making the work of the house lighter, be as eagerly secured, that the wife's strength and nervous energy be not needlessly wasted? Books and papers be provided, read and discussed; the home made enjoyable, if need be, at the expense of not quite so much scrubbing as is sometimes deemed necessary, by a strong pair of hands being provided for the heavy tasks?

The remarks regarding the care of cows interested me. There seems to be a new era dawning for cows as well as women.

At the next meeting of the Dairyman's Association, can there not be a home department where farmers wives may learn what far reaching opportunities are within their reach and how to grasp them?

Moved to adjourn until 9 A. M., Thursday.

THURSDAY, *January* 24, 9 A. M.

Convention called to order by President DeLand.

The President stated that there was an opportunity now for those in want of cheese machines to register their names, also those wanting situations to register, that such might be known.

REPORT OF SECRETARY,

Was read, showing the expense of his office, for the past year, including paper, stamps and printing was, $37.42.

REPORT OF TREASURER.

RECEIPTS.

1877.		
Jan. 1.	Balance on hand	$4 00
Jan. 16.	Received for membership	78 00
	Total receipts for 1877	$82 00

DISBURSEMENTS.

1877.		
Jan. 16.	Prof. Daniells, traveling expenses	$9 00
Jan. 16.	W. D. Hoard, printing bill	25 50
May 28.	D. W. Curtis, secretary	33 00
	Total disbursements	$67 50
1878.		
Jan. 24.	Balance on hand	$14 50

JAMES ORVIS, *Treasurer.*

The report was, on motion, accepted.

The committee appointed to select judges on butter and cheese, made the following report through their chairman, W. D. Hoard:

On Butter.—H. N. Chapman, Randolph; W. F. Hovey and D. S. Ewing, Whitewater.

On Cheese.—H. Smith, Sheboygan Falls; J. H. Real, New York; J. H. Hart, Watertown.

WHAT ARE THE CHARACTERISTICS OF THE BEST CHEESE, AND HOW IS IT MADE, ESPECIALLY EARLY, OR HAY CHEESE?

BY HON. HIRAM SMITH, SHEBOYGAN FALLS.

President Northwestern Dairymen's Association.

In considering the topic assigned me, it will be necessary to go somewhat into detail. If I proceed in the order as indicated in the language of the topic, and answer the first interrogatory, What are the characteristics of the best cheese? I shall not attempt to reconcile the various standards by which cheese is adjudged for different

local markets, thus: In the south and west, a weak curd, open make, soft cheese, that would not keep its shape if over five or six inches high, would be called the best. But for the New York or the English markets, such cheese would be called the lowest grade, and usually sell at the lowest price, for the reason that they soon lose flavor. They are insipid when new, and (if full cream) would become strong, rank and odoriferous when old. The characteristics of the best cheese for the New York and English market, where the great bulk of Wisconsin cheese is sent, are the main questions to be considered, and happily these characteristics are now well defined, and are not a question about which inteiligent judges of cheese differ, any more than would master masons differ about the character of brick to go into a building. The square, shapely, well-burned, perfect brick, go into the front and outside walls, and the slack or over burned brick go into localities where they would do the least damage. Cheese for the English market, like brick for the front wall, must be as near perfection as possible. In the first place, they must be full cream to insure quality; mild, sweet flavor, to be palatable; close texture, in order to retain flavor as long as possible; firm, without being dry; mellow, without being soft, and made chedder shape, that is about 13½ or 14½ inches in diameter, by ten inches high, and weigh fifty or sixty pounds when cured. Such cheese, if made in May, June or July, should be sold at an average of twenty days old, or go into cold storage, where the mercury stands at 40°. If kept in an ordinary curing room until September or October, they have lost their nutty flavor, and lost in price; that, no swagger of salesman can ever recover, any more than a horse that has passed into his teens can be sold for a young horse by any trick of the jockey, unless he sell to an ignoramus, and they are not over plenty among large cheese buyers. Such cheese as I have described, if made in August, September and October, can be safely held, in order to take advantage of any prospective advance in price. Perhaps you may ask, Can such perfection in cheese be uniformly secured? I answer unhesitatingly, Yes, and quote the old saying: "What man has done, man may do."

I am personally acquainted with a large number of cheese makers, that are just as certain to make good cheese of good milk as a miller is to make good flour from good wheat, or a baker to make good bread from good flour; the process is no more difficult or un-

certain, neither is there any difficulty in preserving milk in good condition; if it is cooled to 60° soon after being drawn from the cow, it will be in good condition when it arrives at the factory, if the cows are healthy and properly treated, fed and watered. The soft, open, porous, bad flavored cheese, have not had sufficient heat applied to drive out the whey from the curd. The dry, hard, crumbly cheese, have been held too long, and took on too much acid; and both these cases are the result of ignorance, which, in these days, when knowledge can be so easily obtained, is absolutely without excuse.

In regard to the second interrogatory, how to make good cheese early in the spring, or hay cheese, perhaps there are more poor cheese made in the month of April than any other month in the year, and usually hay gets slandered for the result. If cows are well fed on early cut hay, and plenty of ground feed, as good cheese can be made, if properly worked, as at any other time. It won't do to lay the blame on hay. Good cheese makers know better, and a person publishes his own ignorance when he makes the assertion. The main cause of failure to make good cheese in April is, because the attempt is made to work too small an amount of milk in a large vat. If the milk is all new, and the weather cold, and the milk not more than four inches deep in the vat, my advice is, don't you try to make a cheese that day, but hold it until the next day, and put as much more milk with it, and it will not be difficult to make a good cheese. It is almost impossible, with only four inches of milk in a vat, with the usual appliances, to retain the heat, and the patience of the cheese maker, long enough to develop the requisite amount of acid. A person's patience usually gives out at sundown, and for the good of the cheese, perhaps you have not held it but half as long as necessary to secure good results. The chief and practical conclusion is, to have a small vat for early cheese. It is much better to carry the milk over one day than to carry curd over, although a fair looking cheese may be made with two kinds of curd; but it is a bad practice, and scarcely ever results in making a first class cheese, by having a few "Young America" hoops. It is but little trouble, and no loss, to press all the curd the day it is made, and thereby avoid ever making a poor cheese.

The conclusion of the whole matter is, that if the milk is good,

the cheese should and can be all good; if the milk is n ot good, there is no use talking.

E. P. Ingalls: Would like to ask Mr. Smith if he would develop as much acid in the spring as he would later in the season.

Hiram Smith: Would develop about the same, unless he wanted to hold the cheese. My practice is to sell at once.

E. P. Ingalls: Would like to ask Mr. Smith how he told when the acid was just right, or when it had developed just enough.

Mr. Smith: Would like pure milk at all times, and then the cheap requisite for proceeding was obtained. Thought it a good plan if the weather was cold enough to do it safely, to combine the milk of two days, so that the acid would develop quicker than too much new milk. Would rather mix the milk of two days than the curd of two days' make. Believe in thorough cooking, and keeping an even heat till the acid was sufficient. Determined the amount of acid by the hot iron tests which are as reliable for telling the amount developed, as the thermometer is for telling the temperature when to apply the rennet. If there is too much acid, the cheese will bloat, leak, etc. Would advise against developing enough to more than barely stick to the iron before the whey was run off, and cold water substituted for warm, to cool the curd in the vat — know but little about curd mills or their use, and believe them unnecessary. Cooled the curd to 80° and put in hoop when the cooled curd would spin half an inch. Would not have it spin more unless it was for June cheese, that was expected to be kept during the summer.

Stephen Faville: While on this question, will you tell us if all kinds of milk require the same amount of acid?

Mr. Smith: That does not come under the head of cheese making, but how to produce good milk, which is the A B C in dairying.

President De Land: How is it that we get more leaky cheese in April than in June.

Mr. Smith: Had found that when he had too much company or was reading too much, and neglected to try the hot iron as often as he should, he set *that* batch down as leaky cheese, and he never told a lie about it either.

B. F. Hoxie: Would like to know something about floating curds, skimming milk, etc.

Mr. Smith: Had heard friend Faville say that he had had float-

ing curds for six weeks, and he was just the man to tell us about them.

Stephen Faville: There is a great deal of bad milk taken to the factory, when the patrons are not to blame. Had seen floating curds for six weeks, when it was hard to tell where the trouble was. Was of the opinion that tainted milk needed more acid than when it was pure.

Chester Hazen: Have had some experience with floating curds.

Faville: Should say you had.

Hazen: Sometimes as a last resort, I draw the whey early, cook through, and then grind the curd. Do not claim that this will make gilt-edged cheese, but will pass in some English markets.

DAIRY COWS AND HOW TO BREED THEM.

BY THOS. H. GLENN,

Agricultural Editor, Western Rural, Chicago.

If there is merit in brevity, what I shall say on the above topic will possess that quality, at least.

While the profits in dairying depend largely upon the quality of its products, and while it should be the ambition of dairymen of this country to make butter and cheese equal to the best product in the world, other things are equally important to the pecuniary interests of those engaged in the business. Pastures may be all that can be desired; all the facilities may be supplied to secure economy at every step, and the highest skill employed in the manufacture of butter and cheese, and yet the margin of profit may not be satisfactory. Back of all this is the necessity of having profitable cows — cows that afford a large and long continued flow of milk. If profits are secured, it is required of dairymen, as of men in all pursuits, to exercise skill and judgment in every department of the business. The investments are the same for land, buildings, etc., whether the cows are good or bad, and it is only prudent to get rid of the latter and supply their places with such as are profitable.

During the discussions at the last meeting of the Northwestern Dairymen's Association, while the subject of "The best breeds of cows for the dairy" was before the house, Mr. Israel Boise said, if we rightly understood him, that three-eighths of the cows in our

Western dairies do not pay for their keeping. Mr. Boise has been engaged in dairying for a long time, and speaks, doubtless, from experience. His estimate is based probably on a somewhat careful estimate of the amount of milk yielded by his cows during the lacteal period, and the average cost of keeping them a year.

Another dairyman of large experience, Mr. Wanzer, of Elgin, said, in a paper read before the Illinois Dairymen's Association a little more than a year ago: "Within ten miles of Elgin there are at least two hundred and fifty dairies that will average thirty cows to the dairy, and I will venture the assertion that it will average four cows to each dairy that don't pay the expense of keeping and care from one year's end to the other. Yes, and I will go further, I believe that it will average two cows to the dairy that fall so far behind paying expenses that it takes the net profit from two paying cows to foot their bills. I base these assertions upon experiments with my own dairy, which has been up to the average in point of profit. If this is true, we have one thousand cows that don't pay the expense of keeping and care, and five hundred that absorb the profits of five hundred more."

More attention has been paid to the improvement of dairy cows in the vicinity of Elgin, than elsewhere in the west, and the per centage of unprofitable stock is less there than in most localities, and this fact explains the difference in the estimates of poor stock which is noticed in the cases mentioned. But the testimony of two dairymen with an experience as extensive as the gentlemen referred to, suffices to show how much room there is for improvement, and serves to suggest inquiry as to how much labor and money are lost by dairymen in keeping unprofitable cows. It is no difficult task for a dairyman to ascertain what members of his herd yield no profit. A few figures will show what the keep of his cows costs him, and what the milk of his whole herd average him for each cow. He can approximate the amount of milk obtained from each cow during the lacteal period by a few experiments, and readily find which are profitable and which are not. It is scarcely necessary to say that when by these tests a cow falls below the standard of reasonable profit, the quicker her owner puts her into good shape for the butcher's block, and supplies her place with a paying animal, the better it is.

The inquiry next arises, How shall we improve our dairy stock?

The best way, because it is the surest, is to raise it from the best cows. The practice prevails very generally among dairymen (there are some exceptions) of slaughtering all the calves and of filling up herds as occasion requires with such cows as can be picked up. It is a practice that has prevailed for a long time at the east as well as the west, but it is a bad one. It is supposed that the cost of raising a cow is greater than that of purchasing one in the market; but if ordinary intelligence and judgment are used in raising calves, that is a mistaken idea. As a rule, the cows bought at random, or from a drove picked up by dealers, are culls of the localities where they are obtained; for a farmer or any one else is not apt to part with a good milch cow, at least, such cases are exceptional. It is an inferior class of cows that dairymen are thus compelled to select from in supplying the deficiencies in their herds. This method of replenishing the dairy with cows is short-sighted and suicidal; it should be abandoned, as should that other vicious policy, so prevalent, of indiscriminately slaughtering the calves. Experienced dairymen say that a heifer calf can be raised and kept until two years, at which time a good grade heifer may have a calf by her side, for less money than is paid for one out of a promiscuous drove of cows.

The objections made to raising calves are, that it takes too much time and costs too much. We are told that the milk required by a calf, up to the time it may be safely turned on grass, would bring more money than the calf would at that time. Now the real value of a heifer calf from a good cow does not consist merely in the price it would bring as veal; that is not a fair test. The future value of the animal for dairy purposes enters into the problem. But a calf need not have new milk from the time it is born until it is old enough to get its living on pasture. The number required to be raised is but few, and it is not difficult to make arrangements at the time of contracting milk at the butter or cheese factory, to obtain skim milk, buttermilk or whey for them, and feeding bran, or some ground feed, also, after they are a month old. Sweet whey and oat meal, warmed together, make an excellent feed for calves.

To insure the best results, it is of the first importance to breed "upward," that is, to select the best milkers and use upon them a thoroughbred male of some of the improved breeds that are celebrated for dairy purposes. The price of a bull of one of these

breeds will very soon be returned in the improvement of the dairy stock. Or one may be purchased or hired by a number of dairymen in a neighborhood; and thus the cost of improving the dairy stock of the country is a mere bagatelle compared with the results secured; for it is not too much to say that a dairyman may, by thus obtaining valuable cows, and good care and feeding, very largely add to his annual income.

DAIRY COWS, AND HOW TO BREED THEM.

BY CHESTER HAZEN, LADOGA.

I have had no time to prepare a paper on this important subject, though I have given a great deal of time and study, in years past, to the breeding of dairy cows.

If we are to make butter, we want milk that will raise cream quickly and thoroughly; if we are to make cheese, we do not care whether the cream rises or not. The cow that gives the most milk on a given amount of food is the one for cheese.

We have been told that the native cow was the best, but I think we have no native cows in this state. If we were to go to Texas, we could find native cows, but I hardly think any of our dairymen would care to milk them.

In breeding for the dairy, I would use nothing but pure bred males, and should be measurably sure of getting good cows. If I wanted a butter dairy, I should use a Jersey; for cheese, the Holstein are highly spoken of, but should prefer the Ayrshire. I am a breeder of Ayrshires, but have none to sell.

I have bred the Jerseys for butter, and am well pleased with the result.

The Ayrshires have been bred for a century for their milking qualities, and I have yet to find the dairy cow for cheese that I prefer to the Ayrshire. I do not think it a good plan for dairymen to kill off their calves and buy to supply their place. If we want good cows we must raise our own calves, and see that they are properly cared for, and kept growing until they are cows.

I consider the Ayrshire beef superior to any other beef I have ever had.

J. M. Smith: Would like to ask Mr. Hazen if it takes a greater

amount of food to produce fine beef in the Ayrshire than in the Short Horn?

Mr. Hazen: I have not tried the experiment, and cannot tell. Should like to hear from Mr. White.

W. C. White, Kenosha: Have had some experience with dairy cows, and have had some good cows that were natives. Had cows last year that averaged 40 lbs. of milk per day. I milked last season twelve 2 year old heifers, four 3 year olds, and eight grades, 6 to 8 years old, making 24 in all, and they averaged in the month of June 33 lbs. per day.

While there are a great many natives that are good cows, you are more sure in breeding from pure bred males. A half-blood will do as well for milk as a pure blood. Never had a cow that did well *unless* I did well by her. Do not think we are particular enough in selecting good cows to breed from. In summer I feed coarse middlings; in cold weather, corn meal and oats. A little oil cake is a good thing.

J. M. Smith: How much do you feed in summer?

Mr. White: Do not know; only am sure to feed enough. Would like to read an address delivered by Charles Horr, of Wellington, Ohio, and would say that I indorse *every word of it.*

HOW CAN THE PROFITS OF DAIRY HUSBANDRY BE INCREASED?

Now I wish, in plain language, to call the attention of dairymen to a few points that they have not hitherto properly considered. The real difference in value between a good cow and a common or poor one is not generally understood, and certainly not fully appreciated.

A record should be kept by each dairyman, with his individual cows, so as to ascertain definitely the value of the produce yielded by each. This is seldom or never done. Cows are bought haphazard, with too little pains, and after they are bought, they are milked till they fail from old age, without regard to whether they are worthy of retention or not. I milked last year seven cows, and weighed the milk from each, enough times to ascertain with sufficient accuracy the amount of milk yielded by each. By an examination of my account, as shown on the books of Horr, Warner & Co., I find that I shall receive for the milk furnished from these seven cows, during the eight factory months, a little over $440;

and, by figuring, I see that my various cows contributed to this result, substantially as follows: best cow, $92; second best, $80; third best, $75; fourth best, $60; fifth best, $50; sixth best, $43; seventh best, $40. The two poorest ones, however, were two-year old heifers. Leaving those out, there was $42 difference between the value of the milk yielded by my best and my poorest cow, and both of them are young. The one giving the least milk looks to be worth the most money. But what is the real difference in their value? The average man, knowing all the facts that I do, would probably say $25, certainly not over $40. But I maintain that the cow that yielded $92 worth of milk is worth at least $125 more than the one that yielded but $50 worth. These cows can doubtless be milked six years longer, and during that time, should the same difference continue — and I see no reason why it should not — I should obtain from the one cow $250 worth of milk more than from the other. And one-half of this sum, it would seem, can reasonably be added to what would be the fair value of the cow, providing she was no better milker than the one with which I have compared her. If we contrast dairies instead of cows, we will find a striking, though perhaps not quite so large a difference, as when the comparison is made with individual cows. I will remark that during the past twelve years, the firm with which I have been connected has received the milk of a large number of dairies, probably three hundred on an average each year. As we have charged the milk-hauling, by the cow, we have known the number of cows kept by each patron. I have taken great pains to ascertain the yearly average, the minimum, and the maximum yield to the cow, of our various dairies. A trifle over 6,200 pounds to the cow is the maximum, and somewhat less than 2,700 the minimum. Ten years ago, the average was about 3,500 pounds to the cow. It is now just about 4,000; possibly a little over. The average value of the milk during the last five years has been about a cent a pound, so that our best dairies have produced over $20.00 worth of milk to the cow, more than the average, and fully $35.00 more than the poorest. If you make the comparison by land instead of by cows, you will find a still greater variation. I know of one dairyman who during the last year, obtained over $1,200 pounds of milk to the acre, counting every acre of his occupied land; he bought some feed, but he produced fully $10,00 worth of milk to the acre, after paying for all feed purchased.

In contrast with this, I can find within ten miles of Wellington fifty dairymen, whose whole farms are devoted to the dairy business, who did not produce over $5,00 worth of milk to the acre, during the same year. Counting the cleared land alone, I should think the average value to the acre of the annual product for the last ten years has been $6.50. To illustrate this point more fully, I will give from our books, the proceeds of the milk of two 200-acre farms, lying within one mile of each other. Both have been wholly occupied with the dairy buisness during the six years covered by my figures, and neither has any natural superiority over the other. From 1872 to 1877 inclusive, the net proceeds of their milk sent to our factory were as follows:

	Mr. W.'s Dairy.	Mr.—'s Dairy.
1872	$2,106 58	$1,200 73
1873	1,646 94	872 95
1874	1,695 17	776 29
1875	1,556 76	867 12
1876	1,510 36	854 16
1877	1,609 04	923 38
Total	$10,124 85	$5,494 63

This statement shows that the one farm during the six years is $4,630.22 ahead of the other, or $771.70 per year, or $3.31 per acre annually. The milk from both dairies during all this time went to the same cheese factory. Mr. —— has had as many years of experience as Mr. W., and is a man of more than average ability and is highly respected as a neighbor and citizen; but is in easy circumstances, and unlike most Americans, not very anxious to get rich, and hence he has not put the energy and effort into his business that his neighbor has. I would add, that I could show much larger contrasts by selecting from our books extreme cases. This great difference of the yield of milk to the cow and to the acre is mainly attributable to the following causes:

1. Difference in milking qualities of dairies.
2. Difference in the milking and the care of cows.
3. Difference in water and pasture.
4. Difference in feeding, not only in winter, but in the fall and spring months.

No farmer should buy a cow that, after careful investigation, he does not believe will bring him at least $50 worth of milk during the season. He had much better give away a cow, if he owns one,

that does not give over $40 worth of milk per year than to keep her during a series of years, even if he has to pay $70 or $100 for a five year old cow that will give $70 worth of milk in a year. Poor cows are dear at any price; really good ones, if young, are never sold too high. Great pains then should be taken in the selection of cows to obtain natural milkers.

Cows should be generally messed from the time they calve until flush of feed, and for the good of the pastures as well as their own, they should not be turned out till the grass has a good start. A moderate mess should be fed as soon in July or August as the cows begin to shrink, either on account of dryness or insufficiency of pasture. As the season advances and the value of the milk increases, both the richness and the quantity of the mess should be increased. Of course, as long as the pastures are sufficiently succulent and plentiful to prevent shrinkage of milk, messing is unnecessary. But this is not generally the case after the middle or last of July, and almost never when the farmer has as many cows as it is profitable for him to keep. I recommend for July and August the feeding of bran alone, and later on a mixture of bran and middlings, or a mixture of bran and ground corn and oats.

I will remark that in figuring the problem whether it pays to mess cows or not, dairymen usually leave out several important factors, among which are the following:

1. Less pasture will be required to keep a dairy that is messed than one that is not; that is, if you could keep twenty-five cows during the fall in good flesh, relying upon your pastures alone for feed, you could surely keep thirty-two equally well, by feeding, say six or eight pounds of bran to the cow per day.

By pursuing the latter course you would get a much larger yield to the cow than if you kept a less number and gave no mess.

2. Your cows will enter the winter in much better heart and flesh, if generously messed, than if not messed at all. Indeed, dairymen have repeatedly told me in the past month, that their cows are worth $10 a head more than they would have been if they had relied upon their pastures alone during the fall. Besides, by keeping a few more cows on your farm, and regularly buying enough feed, together with what your farm produces, to give them a generous diet, you will be constantly enriching your land, and in the long run is a matter of no small importance. I maintain that

you can stable cows the year around, buy all their feed, and produce milk profitably at a dollar a hundred, provided:

1. That you keep none but ffrst-class milkers.

2. That you buy your feed at times of the year when it can be purchased at best advantage.

3. That you select the kinds of feed judiciously.

4. That your cows are handled and milked with the utmost attainable care and skill.

God intended a cow that gives only 3,000 pounds of milk in a season, for the butcher's shambles, and not for the milking yard; and he intended the farmer who will coutinue to keep such a cow, year after year, for a milker of goats, in some benighted land, and not for a milker of cows, in this enlightened country and age.

We raise our calves by teaching them to drink new milk, then we mix half sweet whey, then mix in meal and oil cake, and take away the sweet milk.

Two years ago we raised eleven head, and in the fall were offered $20 apiece, but refused to sell at that price.

We feed our cows largely with corn, cut before there is any frost. We cut in the morning, and bind in the afternoon, and then stook it up. It should then be stacked, as it keeps better. We plant the Yankee corn, drilling one way, and four feet the other. Do not husk, but buy little corn.

When the cows commence to shrimk their milk, we commence to feed them corn, and follow it up until we dry them off. Have fed barley, and like it well in the spring.

Buckwheat bran increases the flow of milk, but decreases the cow, and the quality of the milk is poor.

Mr. ——— Will Mr. White tell us when and where we shall buy a good cow?

Mr. White — Buy one of me.

Moved to adjourn until 2 P. M.

Convention called to order by President De Land.

The committee on nominations, through their chairman, J. A. Smith, made the following report:

For President — Hon. H. F. Dousman, Waterville, Waukesha county.

For Vice Presidents — T. C. Blanchard, Oakland, Jefferson county; Judge Geo. W. Weeden, Sheboygan Falls, Sheboygan county.

Honorary Vice Presidents — Chester Hazen, ex-president Wisconsin Dairymen's Association, Ladoga; S. Faville, ex-president Wisconsin Dairymen's Association, Lake Mills; Hiram Smith, ex-president Wisconsin Dairymen's Association, Sheboygan Falls.

Secretary — D. W. Curtis, Fort Atkinson, Jefferson county.

Treasurer — O. P. Clinton, Waukesha, Waukesha county.

W. D. Hoard moved that the report be received, and the chair be authorized to cast the vote of the society.

Carried.

ADDRESS

BY FRANCIS D. MOULTON, OF NEW YORK.

The great Northwest has compelled attention to many important questions, but to none more grave than those which affect the agricultural development of the country. The interests that you in this convention represent, while they affect you personally, are of more than individual concern, for the full knowledge requisite to the dairy interests of this section is absolutely necessary to the welfare of all.

I have recently attended the Cleveland and Meadville Dairy Conventions, and come to you with this deliberate conclusion, that conventions such as yours, are doing more towards suggestions, and knowledge for the benefit of mankind than any others I know of, because their influence is tending towards cheap food, and liberal education. The questions which you discuss are discussed beyond party lines or individual interests, and the benefaction which is the gift of your determination and conclusions, crosses the threshhold of every home. You not only plough the land, and plant the seed, and reap the harvest in the field, but you turn the furrows of the mind and soul, enriching the one with intelligence and ennobling the other with the fruits of a higher civilization. When you have given to the farmers of the land the knowledge of stock breeding and the intelligence that is involved in feeding and raising cattle;

when you have imparted the wisdom that gives flavor to the grasses, and have indicated how, with the utmost economy, the greatest results in money value may be gotten, you have furnished the means by which the menial labors and drudgery of the household may be lightened, the income from which school houses can be built, and the circumstances under which children can be better born, and without any reflection upon the fathers and mothers of the race, it is quite time that as much care be given to this question as to the breeding of short-horn cattle for milk, and race horses for the turf. When we make the plea in behalf of the dissemination of knowledge for agriculture, we make a plea for home. There is no moral quality essential to the welfare of mankind that is not consonant and mainly dependent upon this knowledge. The ploughman, after God, is the first civilizer. The first tree felled reverberated the psalm that warmed and gladdened his home, and the harvests that he has gathered since have helped to feed mankind. Before your great cities of the west were built, or your prairies peopled, the father of waters waited, and for what? Before civilization dawned here, two rivers only broke the silence that covered the metropolis of the New World, and for what? The ocean rolled listlessly, uncut by ships, and for what? To-day the whole land is ribbed with iron, and for what? In silence the messages of state to state, and empire to empire, go over the wires, because of what? Omniscience waited for the ploughman, and science and civilization have only been the executors of his will, and yet, in the light of present intelligence, how inadequate his knowledge to the results to be achieved. You represent the industry that enriches the soil and does not deplete it, the industry which, if properly developed, leads to the advancement that blesses with its benediction, first, man, and then mankind. I have traveled widely through this country, from boyhood until now, and although the enthusiasm of my manhood, for agriculture, has been stimulated by my intercourse with your people, it has been a plant of slow but steady growth. My heart has ached many a time on account of the privations that I have seen suffered in the country. I inherit a sympathy with want and ignorance from a mother who must hear me now. My first knowledge of the farmer was received through visits made with her for the alleviation of suffering through penury, and I feel if there is a heaven, and I believe there is, it smiles through her on

me, for this my plea in behalf of knowledge for those who need it. It is for you who have in charge the development of the agricultural resources of the country, to say how short or how long shall be the time for the establishment of a higher civilization through the farm. To-day the country is listening with an atten ive ear and an anxious heart to the discussion of financial questions. To-day the news of mercantile and banking disaster is spreading alarm throughout the land. The curse upon us is not of producers who overproduce, but of nonproducers who consume. It is for conventions such as this to furnish the information that shall draw men to the field to make agriculture more honored and profitable than Wall street gambling and mercantile failure. Only yesterday I read in a Chicago journal these words, and they inculcate the lesson you should inculcate. They are as follows, and need no emphasis of comment:

"Business failures are becoming more frequent, east and west, in Europe and America, as the season progresses. It is heart-rending to meet unfortunate men in business, burdened with the sorrows of their losses and trials, and saddening to read the news dispatches of the misfortunes of hitherto great and successful business houses. It must be — the conviction is irresistible — that there is something radically defective in the world's present financial and commercial systems, else this universal depression and ruin in business circles would ere this, have been checked. Our statesmen, our fianciers, our legislators owe it to themselves, to the country, to the commercial interests universal, to lay aside all petty prejudices, all dogmatic theories, all narrow judgments hastily formed, and look the real situation full in the face, and in the spirit of broad common sense and practical reason, endeavor to solve the momentous problem which now challenges the best genius, science and statesmanship of the age. We would seem to be in the midst of a universal, social and commercial upheaval, and it is no time for dogmatic devotion to pet theories; but it is a time for cool-headed intelligence and practical financial genius to set earnestly to work to devise practical methods for averting the dire calamity which seems to be threatening the world's commerce. It is a common peril from which no men or class of men are exempt."

The stability of the country to-day, through its agricultural resources, furnishes the only sound financial basis on which the money

necessary for circulation can be founded, and it can be continued indefinitely if they are fostered through essential knowledge. Call the non-producers from Wall street and from counting rooms to the farm, and the country will not be convulsed with mercantile disasters. Fertilize the fields and the ring of silver will be as grateful as the sound of gold. Go on with your development and the nimble sixpence will outvie and outbuy the sluggish sovereign. Educate the farmer to raise two spears of grass where one grew before, and we may safely have a non-exportable currency, so that if England goes to war and all of Europe feels like fighting, and the London money market wants to buy our gold we can furnish it and not suspend payment. Let landholders, not bondholders, shape the financial policy of the country.

Fortunately the issues we are considering are not sectional. Men may have differed as to methods and systems, but intelligent men have always recognized their necessity. Virginia furnished a Jefferson devoted to agriculture; Massachusetts, a Webster, who ranked the plough above the forum. New York, a Clinton, who, guided by the suggestion of nature itself, baptized commerce with the waters of your lakes. His name will be remembered by the poor to the last generation of the living, and they will break cheap bread as a memorial of him forever. Let me state to you one practical fact; the product of his consideration of the necessities of agriculture. The canal system of the state of New York, even when cursed with a management that oppressed the west and injured the east, saved to the producers and consumers as between the sworn cost of transportation by rail and the expense of transportation by canal, when the tolls were six cents on wheat and four cents on corn, $34,000,000 per annum. The west has given the world a man, stalwart above all in our history, who dared "to front a lie in arms and not to yield." Lincoln, who gave the south freedmen for the tillers of its soil, and the warm south wind brings us their voice in gratitude for the gift:

"For him her old world moulds aside she threw,
And choosing sweet clay from the breast,
Of the unexhausted West,
With stiff unt inted shaped a hero new,
Wise, steadfast in the strength of God, and true;
One whose meek flock the people joyed to be;
Not lured by any cheat of birth,
But by his clear grained human worth,
And brave old wisdom of sincerity."

Your interests are attracting a wider attention to-day than ever before, and justly. Your products exceed $600,000,000 annually, and I am glad to know that its quality at the west is as good as the best produced anywhere. It can be improved for the benefit and enrichment of all, by imparting to all the knowledge and experience given here. The improvement will be rapid unless it is foolishly concluded that your collective and individual duty is discharged and ceases when your conventions adjourn! I protested against this course at Cleveland, and I renewed it at Meadville. It was proposed at Cleveland that 500 reports should be issued concerning what Professor Stewart said of economy in agriculture; of what Baldwin said with regard to stock raising; of what Arnold said with regard to dairying, and of what Reall presented with reference to the extent and importance and necessities of your production. One of your own western men, Mr. Horr, of Wellington, Ohio, first a man, second a farmer, and last of all, a manufacturer and a merchant, read a paper that should be read of all men, and they proposed to circulate 500 copies. I said it was preposterous. And now, instead of 500 copies, over 5,000 will be published, and it ought to be 50,000. I am in favor of economy and prudence. You can become economical in a shanty, living on bread and water. I do n't like bread and water as a steady diet, and I do n't recommend it even to the poor Prudence may degenerate and may become meanness; distrust of your mission will make you timid of expenses. I want the hovel, where people are half starved, to graduate into the farm house and a well appointed home; instead of bread and water, cheese and butter and meat, good as well as cheap. I want a decent home for all to live in! And therefore I ask you to disseminate the knowledge that will give all to all. Meadville responded to the call, and I know Whitewater will echo it throughout the west. I am glad that in your expenditures and enterprise you are not so bigoted and niggardly as at the east, where rich men have outlived their usefulness, and have stood as barriers to your industry and our efforts. And I know therefore, that the plea I make will be generously responded to.

I cannot close without a tribute to the recent National Dairy Fair, held in Chicago, where cheese was exhibited that would not curse its consumers with indigestion, and butter tried that was wholesome instead of being unfit for a dog; and that fair has sug-

gested another which will be continental and world wide in its significance. I refer to the American Dairy Fair, organized at the Cleveland convention, and indorsed at Meadville, to be held in the city of New York, next autumn. Held in the metropolis of the country, it will invite the attention of the commercial representatives of all nations to your great and growing industry, and will open up new markets that will make over production of your product impossible, if you make its quality good, and it is possible that this fair shall lead to the abolition of that inadequate bureau at Washington, which pretends to foster the agricultural resources of the country, by the gift of decayed and worthless seeds, and in its place we shall have in the cabinet of the president a minister of agriculture and commerce, whose functions, in the time to come, will be more important and benificent than the office of secretary of state or minister of war, and who may perhaps save us from the disaster of a second-class man as secretary of the treasury, since his duty will be easy when the full harvest is gathered.

We are yet as little children in this subject of agriculture, and I commend to you in its consideration the wisdom of Solomon. When God said to him, "Ask what I shall give thee?" and Solomon said, "I am but a little child, I know not how to go out or come in; give, therefore, Thy servant an understanding heart to judge Thy people, that I may discern between good and bad." And God said unto him: "Because thou hast asked this thing, and hast not asked for thyself long life, neither hast asked riches for thyself, nor hast asked the life of thine enemies, but hast asked for thyself understanding to discern judgment, behold I have done according to thy word. Lo: I have given to thee a wise and understanding heart, so that there was none like thee before thee; neither after thee shall any arise like unto thee. And I have also given thee that which thou hast not asked, both riches and honor, so that there shall not be any among the kings like unto thee all thy days."

THE DAIRYMAN'S ADVANTAGES FOR IMPROVED FARMING.

BY J. M. SMITH, GREEN BAY.
President Wisconsin Horticultural Society.

The necessity that exists among all branches of agriculture for improvement will probably not be disputed by any one who is sufficiently educated and interested to attend such a convention as this. Neither will it be disputed that this fact is most plainly seen and felt, not by those who need its advantages the most, but upon the contrary, by those who are already the farthest advanced in the business. I have no hesitation in venturing the assertion that neither of my friends, Hiram Smith or Chester Hazen, will claim that they have reached perfection in cheese and butter dairying, although their reputation in these respects stands so high that I should hesitate very much to say that any other man or men in this state exceed them in a practical knowledge of the business.

Neither will they claim that their farms are producing all that they are capable of doing, or that their stock has reached a point beyond which there is no improvement. Such being the case, suppose we consider for a brief space of time the advantages possessed by dairymen over the grain grower for improving his farm. In the first place he has more manure, and has it at home, subject to his own disposal, and can use it at such times and in such ways as seem to him to be for his best advantage. And here let me say before going further, that the farmer who makes the largest amount of manure per acre of his farm, will, other things being equal, be the most prosperous, and in the end the most successful farmer. I believe that this rule may be considered as certain and as sure as were the laws of the ancient Medes and Persians, that could neither be repealed nor changed. This, at the very outset, gives the dairyman a vast advantage over his neighbor who, perhaps, is growing wheat, and selling it at the nearest station, and thus impoverishing his farm year by year, until he finds that he must either make a change or be utterly ruined. But how shall the dairyman so use his large amount of manure that he may reap the greatest advantage from it? Much has been said and written upon this

point, and that too by some of our best agricultural authorities. Some have urged that all barn yard manures should be spread upon grass land in the fall of the year, claiming that by so doing the greatest possible benefit is to be derived from it, and that too by the least labor. Others have as strongly argued that it should be plowed under, without regard to its quality or condition. A third class have, and as it seems to me with much more show of reason, claimed that it should be used as times, circumstances and the wants of our varied crops might seem to dictate, and that no cast iron rule can be laid down that will fit all farms and all circumstances. For the dairy farmer, who must of necessity have a large portion of his land in hay, grass and in crops for green feed, there is no doubt but that he may use a large quantity of it upon his grass land to advantage. But this may be overdone, as the following will illustrate. A friend not long since was telling me of his manuring his pasture land. He had put it on in large amounts, year after year, and the grass had grown as he had never seen it grow elsewhere. But his cattle refused to eat it until late in the season. During the spring and early summer, when it made its first growth, they would go hungry rather than feed upon it. There is a principle here that should not be lost sight of in surface manuring. If cows are compelled to feed upon grass of this rank growth, and to them disagreeable in its taste, its ill effects may reach not only to the milk, but also to the cheese and the butter.

Some years since an effort was made by the French government to utilize the products of the hundreds of miles of sewers in Paris.

They were carried off in acqueducts, and by other means to a distance of some miles from the city, and there used in their crude state for manure.

They were used in large quantities. The crops thus grown were immense; but it was very soon found that they partook largely of peculiar fertilizers with which they had been so bountifully supplied.

The result thus far has, as I understand, been nearly a failure on account of the poor quality of the crops thus grown. Where barnyard manure is thus used in large quantities it would be very likely to have this effect to a greater or less extent, provided it is used in a crude state.

There are two ways of avoiding this danger. One is to pile in heaps and let it decay before using it. While undergoing this pro-

cess the noxious gases escape into the atmosphere, while the heap retains about all that is valuable for the land. Another way is to plow it under and the soil absorbs the offensive portions which are rendered harmless by the chemical process it is known to undergo in the soil; for it is well known that the earth is one of the best deodorizers in the natural world.

Perhaps some one is ready to say, "I have both pasture and meadow land that I wish to improve, but do not wish to plow them for some years to come, and of what avail is my large amount of manure, if it is to be a damage instead of a benefit to it."

Well, my friends, if you do not wish to go to the expense of so much handling, or do not wish to wait for it to become thoroughly decomposed, you may try land plaster, bone dust, or ashes, and the probabilities are that you will produce a marked improvement upon both pasture and meadow, and that very quickly. As regards surface manure, I do not imagine any evil results from its use; except where it is put on in large quantities, but I am anticipating that my dairy friends are to have it in large quantities, hence a few words of caution in this direction.

Gentlemen, I wish in this place, to make a recommendation to you that I deem of vast importance to our farmers; and no other class of them can carry it out as readily as the dairymen. I refer to the compost heap. In speaking of it I am not talking at random, or by guess. Year after year has proved to me its value.

When I was a boy on my father's farm at the east, I was taught its worth by seeing splendid crops growing wherever it was used. Now, I should scarcely know how to carry on my buisness without it. You have every spring a large amount of course manure. For some crops it is too coarse to be valuable, and for others it would in a dry season, be an absolute damage. How shall it be utilized in such a manner as to make the most of it? My plan is substantially as follows. In the spring when we are hauling from the city or elsewhere, and get a load that is extra coarse, instead of putting it upon the land, it goes to the compost heap. The place is selected where it is convenient both to the land upon which it is to be used, and also to water.

At first it is usually thrown into a loose heap until a number of loads are there, and sometimes it remains until we begin to gather weeds. Then a heap is commenced say fifteen to twenty feet square.

Upon it, is thrown all the course manure, all the weeds, the potato tops, the vines, and the refuse of every kind that will add to its value. In a short time it gets to be six or seven feet high. Then another one is begun at its side. Of conrse they will soon commence heating and if let alone, would in a short time become dry and as it is termed fire fanged. This is prevented by throwing sufficient water upon it, to cool it and keep it wet, but not sufficient to drain from it. In case we get on a little too much as we sometimes do, a small hole is dug upon the lower side into which the drainage runs, and from which it is again dipped up and thrown back upon the heap. It should be made the receptacle of everything during the whole season that will add to its value. The contents of the pig pen, the privy, the henroosts, the soapsuds, and the slops from the house. When the team is not otherwise engaged, haul leaves from the forest, wash from the roadside, and muck from the swamps. With your large amounts of coarse manure to begin with, you may in this manner get an immence heap durring the year. Probably it will not freeze much during the winter. Early in the spring, I set men at work at my heap, and work it all over. During the process of decay it has packed closely together, and much of it will be in large solid lumps.

These are all broken up, and the whole mass is made fine and thrown into a loose heap, where it remains until it is wanted for use; which is generally but a very short time. Last spring, my heap, thus made, yielded, if I recollect aright, a little over 200 loads of well rotted, fine manure. I hope to have as much or more next spring. Now, as I am not a chemist, I cannot tell what a chemical analysis of such a heap would show. And it is possible that it might not show it to be rich in plant growing food.

But, gentlemen, I do claim to be a practical cultivator of the soil, and to know something of the practical value of such fertilizers as I am using year after year. I have seen and helped to use it all through my boyhood upon my father's farm, upon all the different crops grown there. I have used it myself for many years, and upon all the different crops grown upon my land, from the lawn about my house, to the voracious pie plant, that devours all kinds of manure with a rapidity that is unknown to most of the farmer's crops. And as a result of these years of experience, I say to you, that I have never used any fertilizer of any kind or variety with

more complete and universal success than my compost heap. Of late years, we use them almost entirely as surface manure, that is, putting it upon the land after plowing and harrowing it in. I attribute much of its value, not so much to the great amount of plant food contained in it, as to the fact that it is in such a condition that the young and tender plants, of whatever kinds they are, can appropriate it to their rise, and, in this manner, get an early, strong and vigorous growth while young, which it would be impossible for them to get from any variety of coarse manure, although it might be much richer in plant food. And, we all know, that a crop well started, is much more than half secured.

In recommending this, as I do, I do not wish to be understood as disparaging or in any way underrating any other kinds of fertilizers. Some of them are very valuable, but cost considerable sums of money, and can only be obtained with the money, while this one can be obtained in large quantities by all of our own dairymen at some cost of care and labor, but with very little or no money. Another advantage of the dairyman is this: His receipts for his products are coming in during the season when he needs fertilizers, and, if he is as wide awake and as observing as he should be, he can tell very quick, after his seeds come up in the spring, what is needed to help along the ground plants and make the yield a large one, instead of a moderate or a poor one. It is often the case that one bushel of plaster on an acre of clover or of corn, after they have started in the spring, will double the crop. And yet, how often do we hear the complaint that the farmer has no money to buy plaster with. If he is depending upon his grain, his sales are usually in the fall or early in the winter, and by the next spring he is out of money, and must wait until his crops are harvested and sold, before he has the means to spare. By that time the season is over, and the next spring the old story of no money is repeated, and so it goes year after year, until his farm is run down, and he is prepared to sell out, or be sold out, and moves west.

The value of gypsum, or land plaster, is so great upon some soils, and some crops, that of clover in particular, that no dairyman should ever think of discarding or condemning it until he has tried it thoroughly for himself. In some cases its effect upon clover is almost marvelous. Upon other soils, and apparently under the same circumstances, it seems to be of no value whatever. As a

general rule, it may be said to be valuable upon any timber lands and openings. The most so upon the latter; and the least valuable upon prairies. I have studied the subject with some care, have spent some time and money in making experiments with it upon different crops, but have come to the very unsatisfactory conclusion, that I know but very little about it. Wood ashes are almost invariably good upon all grass lands, and should be husbanded with care, and never allowed to go to waste. I purchase them at 25 cents per barrel, in the city, and consider them a cheap manure at that price. Upon pasture land I should put 25 bushels of unleached ashes per acre, and double that amount if leached. It is said by some of our best authorities, that lands that have long been in pasture, even though they may have been well kept up with common manure, lose the power to furnish a sufficient amount of bone making food to keep the stock in a healthy condition. In this respect, the oldest of our dairy farms in this state are comparatively new, and probably there is no harm done in this direction. Still I would urge upon dairymen the use of bone dust, as an exceedingly valuable fertilizer, upon grass lands, and also as a preventive of the danger above referred to. The most remarkable results that I have ever seen produced upon a farm by any fertilizer, was by the use of bone dust upon a poor, worn out, mountain farm in my native county. Whenever you purchase it, get only of the finest quality. Much that is offered for sale is but little better than gravel, from the fact that it is not ground sufficiently fine. All plant food must be reduced to a liquid or gaseous form before it can be appropriated by the growing plants as food. Hence the necessity of having bone dust as fine as possible. I have spoken longer upon the subject of manures than I at first intended, but its vast importance must be my excuse. The question of how to keep up and increase the fertility of our land, is one of such importance that it would scarcely be possible to over-estimate it. Without caring for this, your other interests must inevitably fail. You may get the most valuable herd of cows in the land, and what are they? Simply machines for turning the feed upon your fields and in your barns into milk and cream, from which you may manufacture cheese, butter and pork. If your fields will not supply an abundance of rich and good food, which your herd can turn into a good article of milk, the more expensive and valuable they are, the worse

off you are, because you have been to a great expense to get a lot of first rate machines, but have neglected to carry out the measures necessary to supply them with the desired quantity and quality of food they need for the purpose of doing the work you desire to have done. Do not understand me as underrating the value of good stock. But, on the contrary, I say get the best there is to be had, and be content with nothing else. As a general thing, good stock and improving farms are not separated from each other.

When I think of what has been done by the dairymen in this state within the last ten years; how the business has grown from almost nothing to its present proportions, when I remember that only a few years since, Wisconsin butter and cheese, if quoted at all, was only mentioned as something unfit to be eaten by civilized people; when I think of these things, and look at the quotations week after week, from the highest authorities, and see our best grades of butter and cheese quoted a little higher than the highest price for New York state articles of the same kind, I am proud of Wisconsin and her dairymen. Although not one of their number, I am glad to know that I may claim, at least, some of them as my friends. But, great and grand as is the work that has been done, if they look at it and take hold of it aright, it seems to me there is one of the most glorious openings now presented to them, that has ever been known to any class of our people. You have manufactured a first class article, until you have compelled the world to acknowledge it, and say to you, "make all you can, and as long as you keep up the quality we will take it and pay you a fair price for it." Now, suppose that you go immediately to work and put your farms down to, I will not say the best they are capable of doing, for that is something our wisest men have not yet learned; but to the best that our present cultivaters are capable of doing, and what would be the result? The crop of hay in the state averages about one ton per acre, yet it is well known that three to four tons may and have been grown to the acre. That of wheat is about 13 bushels, while 30 to 40 bushels can be grown. The corn crop averages about 35 bushels, while one man upon the hill side, in one of the counties of Northeastern Pennsylvania, raised, last year, 181 bushels upon an acre, and that, too, upon land that is far from being equal in its natural fertility to the average of our Wisconsin farms. An average crop of potatoes is 100 bushels; yet, I have

seen at the rate of 640 bushels grown per acre. I doubt if the crop of mangel wurtzel beets average more than 500 bushels per acre, yet I have had one crop gathered from my own land that yielded at the rate of 2,460 bushels per acre. If we go into small fruits, the same wide difference exists. The crop of strawberries does not average more than 40 bushels per acre, while, in the summer of 1875, there were picked 111½ bushels from one-fourth of an acre of land in my garden. The average yield of butter from our cows will not much exceed 100 lbs. each, per year, and that of cheese can hardly be rated at more than 300 lbs., while it is well known that 300 lbs. of the former and 600 to 700 lbs. of the latter have been and may again be obtained from good stock, when well fed.

Now, gentlemen, I will not say that you can make your farms average such crops as have been named, but the point that I wish to make is this. No class of farmers are so favorably situated for going into a system of improved cultivation as you are. None so favorably situated for at least approximating to these possibilities as yourselves. You have shown your ability to cope with the best and ablest men upon this continent in your particular branches of business. Sheboygan county dairymen are justly proud of their $450,000 worth of cheese in a single season. Suppose they should adopt a system of improvement that would in a few years increase the fertility of their farms until they should come near these large figures. Their present yield of cheese and butter would be but as a drop in the bucket, compared with their receipts under such a system of culture. And if the dairymen of the state would with united hearts and hands adopt, and with an intelligent and persevering energy carry out, such a system for a term of ten years, I believe, as firmly as I believe that the sun will continue to rise and set, that at the end of that time you would have distanced all competitors, and that the dairymen of Wisconsin would stand without rivals or peers upon the American continent. Gentlemen, I do not intend to be wild or extravagant, and do not believe that I am so. I do not intend to deal in theories which you cannot possibly realize. But is not this a worthy prize? Is it not one worth your seeking, and worthy the metal of Wisconsin dairymen? To grasp and to hold it, will require years of labor; not only that, but it must be labor directed by well cultivated and intelligent brains, by

one that can plan and direct every part of the improvements to be made upon the farm, and they will be many.. New drains are to be planned and made. Immense heaps of manure are to be got together, and then they must be used in such a manner as will be the most useful. Other fertilizers are to be purchased and used, at such times and upon such crops as will bring the best returns for the money invested. Immense crops of green food for summer, and roots and other food for winter, must be had. The farm must be made to increase, both in its crops and in its fertility, each year. In short, large crops must be made the rule, and not the exception. The best of stock for your particular purpose must be obtained. It must be well kept and well cared for. It must be fed at such times, and in such quantities, and with such food as will give the best possible returns for the amount fed out. The best possible grades of both butter and cheese must be made, and in the largest amounts possible. The best markets are to be sought out, and the most reliable men in those markets. All these, and many other things, are to be planned and conducted to a successful termination. And do you think that all this can be successfully conducted by a thoughtless, heedless ignoramus? I tell you nay. He must be a man of intelligence, of thought, and of constant care. Gentlemen, you have already done much, still you have not attained to that high position where you can by any means afford to rest upon the laurels already won.

As I close, let me say to you, let that grand old motto, Excelsior, be emblazoned in letters of light upon your banners. If there are laggards and drones in your ranks, as there doubtless are, leave them behind, and press on in your work until you reach and grasp the prize so worthy of your best efforts.

But while doing this, forget not your homes, but make them the sunny spots of earth to those about you; make them the havens of delight for yourself and for your friends. Make them so pleasant and so happy that they will be worthy of yourselves, worthy of your friends, worthy of the high and honorable occupations in which you are engaged.

PIONEER DAIRYING IN WISCONSIN.

CHEESE MAKING IN JEFFERSON COUNTY FORTY YEARS AGO—WHO WAS THE ORIGINATOR OF THE FACTORY SYSTEM?

BY J. G. PICKET, PICKET'S STATION, WINNEBAGO COUNTY.

Perhaps at this time, when the amount of cheese manufactured in Wisconsin amounts to millions of pounds annually, and in Jefferson county alone, to a larger amount than was manufactured annually in all the states west of New York, at the time of the inauguration of the factory system, a few words in regard to pioneer dairying in Jefferson county may not be without interest, especially to the early settlers who are now present, being confident of having, as a boy, assisted in running the first cheese factory, on the co-operative plan, operated in this county, if not in the state.

Mr. X. A. Willard, in his excellent work, Practical Dairy Husbandry, page 215, notes an historical incident in connection with cheese making at an early date in the state of New York, which has made the name of Mr. Jesse Williams known in all countries where American cheese finds a market, or is consumed, as the originator, in the year 1851, of the American, or co-operative system of cheese making.

Without wishing to rob Jesse Williams of the honor which history has given him, as the originator of the factory system, I must, however, protest against the generally accepted fact that, in no other section of the country had the system of associated dairying been successfully carried on previous to Mr. Williams' very successful achievement, in manufacturing simply the milk of his own dairy and that of his father's into cheese.

At the present day, in visiting a modern cheese factory, seeing all the improvements in the process of manufacturing, the labor saving machinery, and the improved method over the old of delivering the milk at the factory, we cannot help but wonder that our mothers succeeded as well as they did in making a quality of cheese which was not only palatable, but often of real excellence, whose greatest fault was merely a lack of uniformity in the season's product.

In the year 1840, my father, Mr. A. Picket, removed from the state of Ohio and settled near Rock Lake, in the town of Lake Mills, in this (Jefferson) county. But a very few pioneers had preceded him, and civilization in this part of the then territory of Wisconsin was in its infancy. The great wave of emigration which had begun peopling the western states farther east had hardly reached here. The Indian was master of the situation, and although occupying a home with an extinguished title, was yet monarch of all he surveyed.

The early pioneers saw at once that, in the boundless expanse of grass growing over the beautiful openings, and lower or marsh grounds, that the material from which butter and cheese could be made was growing in almost tropical luxuriance all over the country; that there was millions in it, but which, for the lack of cows to convert the grass into milk, was consumed by the fires which had for centuries swept over the country.

The territorial capitol was then being built, and a score of workmen were erecting the prospective blocks which, although rude in construction, were to form the nucleus of a beautiful city, the proprietors of which, having an abiding faith that the city might some day equal in magnitude its rival, the ancient city of Aztelan, from which it had so lately stolen the march, and carried to Madison the location of the territorial capital.

A territorial road had been laid out from Milwaukee to Madison, upon which, at long intervals, had been erected stopping places, dignified by the name of hotels.

At Milwaukee a smart village was already built, and still growing, and having, as its founders predicted, all the elements necessary to enable it to out-strip its only rival, located on the left bank of Crawfish river, the half-way house to the capital, the ancient city of Aztelan.

The pioneer saw that all these improvements meant a demand for something to eat; nay, even the luxuries of life — butter and cheese.

It is true, I believe, that butter advances with civilization, but in no case precedes it, while cheese follows; the period dating, perhaps, with the advent of the stage coach. But at the period of which I am now speaking, I am very sure there was no stage coach in Jefferson county, and but very few in the territory.

However, the people had arrived at that point of refinement when they longed for cheese. My father saw the opportunity, and so, in the spring of 1841, set about supplying the demand. He had driven from Ohio ten cows, but he was satisfied that with that number he could not supply the demand in the territory, and I am very confident that he had no competition in the business, but there were no cows to be bought at any price, and had there been any for sale there was no money to pay for them. But the idea suggested itself to my mother, why not co-operate with our neighbors in cheese-making? It was a capital and original idea, and was at once adopted by the head of the family. We had four neighbors by this time which, by the way, constituted about one-third of the inhabitants of the town — D. H. Nash, Mark Kilbourn, H. W. Barnes and Donald Stewart. The four families owned ten cows.

James Payne and Henry Abbey were the joint proprietors of the ancient city of Aztelan, as well as of a fine farm fronting the whole length of the city on the west. The proprietors had become somewhat tired and a good deal discouraged, in fact, so utterly disgusted with their short experience at farming and with real estate business in general, at the conclusion of the capital contest, that they proposed renting their cows, ten in number, to my father. The terms were a return of one-third of the amount of butter and cheese made, and the calves which they should raise; the contract to run two years, and the owners to winter the cows. The offer was accepted, and the arrangement proved satisfactory to the parties.

The plans all being completed, on the first day of June, 1841, my mother, with myself as assistant, made from the milk of 30 cows, owned by six patrons, the first cheese manufactured in Jefferson county, and I verily believe, the first manufactured under the co-operative system in Wisconsin, and exactly ten years before Jesse Williams, in 1851, earned the historical notoriety of organizing the American Co-operative System of Dairying. The little kitchen factory in the log house was operated on precisely the same principles as are the mammoth cheese factories of Jefferson county, having the patronage of a thousand cows, at the present day. The milk was carefully weighed and credited to the patrons daily, and in the fall the cheese was divided or apportioned. No one in those days thought of cutting a cheese under five or six months of age, so when the little factory closed the season's work the patrons drew

their respective shares in cheese instead of cash proceeds, as they would now do, and were happy.

The experiment was, I believe, in the main successful. The problem was solved that good cheese could be made in Wisconsin, and from grass growing wild all over the country.

The implements used in the pioneer factory were all rude and to a modern cheese maker would seem wonderful. Yet the quality was fair, not taking into consideration uniformity, and met with ready sale at a shilling a pound.

The experiment proved so satisfactory that in the following year, 1842, five more cows were added by the arrival of two new families, and the cheese became known from Milwaukee to Madison.

I must not omit to note the primitive way of delivering the milk at the factory. All the cattle belonging to a settlement in those days grazed together in one herd, and at night the cows were all driven to my father's yard and milked by their respective owners, which was weighed in pails by the old-fashioned steelyards.

The foregoing is not written with the expectation of interesting any but the small band of early pioneers of Jefferson county, the faces of a few of whom I see in the great gathering before me to-day.

The history of any branch of industry, as well as of our country, for a period of forty years, marks great and important changes. The gratifying fact, that our state is rapidly coming to the front, not only in the quality, but in the amount of its dairy products, gives occasion for comparison with this branch of farm industry, as conducted at the present time, and during the early settlement of our state. And it is with no less feelings of surprise than of sadness, when, after an absence of more than thirty-five years, I am reminded, upon my present visit to the beautiful city of Whitewater, of the changes which have transpired since, when a boy in 1840, I made frequent pilgrimages to the Whitewater grist-mill, and slept over night on the floor of the miller's house — then the only one in the city.

FEED OF COWS.

By W. S. WESCOTT, MONROE.

There is probably no question upon which dairymen differ so widely as what constitutes the best food for cows, nearly every one having a theory and practice of his own which he believes to be the true one, and this undoubtedly grows out of the fact that the business is comparatively new in this state, and also from a want of interchange of thought, observation and experience, thereby showing something of the benefits resultiug from holding conventions of this kind.

I think there is no question that, considering the cheapness of feed and our facilities for obtaining it, the certainty with which we can grow it on our own farms, we do not feed high enough. We are not educated up to the standard that high feeding pays best. "We cannot eat our cake and keep it too." We must not expect large receipts without large expenditures in the way of labor and feed, else we shall meet discouragement and disappointment. By high feeding, I do not mean that we shall feed all that cows can eat, but feed judiciously of the proper kinds at the proper time, and in a proper place. I visited the dairy sections of western and eastern New York, something over a year ago, early in September, and found them, without a single exception, feeding sound corn. On every farm a piece of probably four or five acres, highly manured, and near the barn, was sown to corn, and cut and feed to the cows, morning and evening, and was considered to be superior to any other feed for September and October, and I would confidently recommend this plan to the diarymen of Wisconsin. This will involve more labor, but external vigilance is the price of success in the dairy business, and no indolent man need engage in dairying with any hope of success, as the door is positively shut against him.

Many dairymen complain that they cannot afford to buy grain, and mill feed, and to a certain extent this is unquestionably true, and the remedy must be found in increasing the fertility of our farms in manuring; in a judicious rotation of crops, make our farms so productive that we can raise the feed for our cows. Something has been said in this convention about competing with the British farmer and driving him from the manufature of cheese. We can never

do this until we adopt a more perfect and thorough system of farming. The British farmer can grow two crops in the same year upon the same piece of ground. We may, by thorough farming and manuring, become able to grow two crops of grass upon the same land, and the last one or aftermath would be very valuable for feed for cows. Clover is also a very valuable crop for the Wisconsin dairyman to raise; it makes excellent feed for cows, hogs and other farm stock. Some person advertised that upon the receipt of one dollar, he would send a recipe for getting rich; a friend sent the dollar and received in return: "Work like the d—l and don't spend a cent." If I were called upon to write three different recipes, by which the Wisconsin farmer should become rich, I would write them all dairying and clover.

The success of the dairy farmer will depend largely upon the care and treatment be bestows upon his cows; and it is perhaps due to neglect and inattention in this particular that many become discouraged, and claim the business does not pay a profit. Cows require constant and unremitting care, not only in feeding, watering, stabling, etc., but in handling, kindly and gently, without dogs, worry or loud talk; require milking regularly, quickly, quietly, thoroughly and well. Without an observance of these rules success will not come, and there is greater loss to the dairymen of Wisconsin to-day, from inattention to the above rules, than from all other causes combined. Doubtless there are many cows kept in our dairies that are poor milkers and ought to be turned for beef; some may overstock and thus keep down the average product per cow; but in the main, the true cause of the present low average product per cow in Wisconsin is to be found in a want of skillful handling, generous feeding, regularity and care in milking. It was shown on yesterday, by Mr. Hoard, most conclusively that, all other things being equal, New York could not compete with Wisconsin in the manufacture of butter and cheese on account of the increased cost of cows' feed, etc., in that state; but it must be borne in mind that they do most successfully compete with us, and it must be by reason of their superior skill in handling, feeding and milking their cows; thus increasing their average product per cow largely above that of our own state, and in many instances, doubling it. I make these assertions with comparative security, since Mr. Hoard has stated, and undoubtedly truly, that Wisconsin dairymen do not know

whether they are making large or small profits; and I think it better for all concerned that these facts should come out now, that they may be corrected, and a better state of things inaugurated. Let us open an account with our cows, feeding them more faithfully and generously, milk them more carefully and regularly; charging them with what we feed them, and giving the credit for what they return; and, on striking a balance, be able at our next annual convention, to show what our profits really are, and show a larger product per cow than heretofore.

FEED OF COWS.

By D. L. FLACK, Elkhorn.

Several weeks ago, I received a programme for the dairy association to be held in Whitewater, Jan. 23d and 24th, and was quite surprised to see my name among the speakers for the occasion. I am but a babe in the business, and should have enjoyed a sitting in the convention for the purpose of being benefited by those of larger experience, but was prevented from attending by circumstances beyond my control, and by request of the secretary will send in a few thoughts gathered from my limited experience. I consider the quality and quantity of food our cows consume, one of the most important points in dairying; and as a matter of economy in quantity, to say nothing of the comfort of our stock. Let us first build warm, roomy, and well ventilated barns. It has been estimated by those of more experience than myself, that one-third the quantity of food is saved in this way. Food is fuel to a large extent, and if a cow is compelled to wage war with every cold storm from November till April, she must necessarily consume more food than when she is well housed. I do not wish you to understand that I am advocating short feed, on the contrary, I am of the opinion that a well kept "scrub" is more profit to its owner than a shivering half-starved Durham or Jersey. And the matter of ventilation is also an important one. I have been asked, Do your cows give any more milk for having that cupola on your barn? Perhaps not, but they do give better milk. The man who sleeps in a six by eight room, permeated by the fumes of rotten vegetables from his cellar, cannot be healthy, and we should look to the health of our cows, inasmuch as we expect a financial benefit from them.

As I said at the outset, I am young in the business, but will give you my mode of feeding throughout the year. In summer, when the grass is young and tender, I consider that sufficient, but for fall supply, I plant several varieties of corn, such as sweet corn, fox-nose and dent; plant in drills, cultivating one way; feeding once or twice a day, as may be needed, to keep up the usual flow of milk. As the season advances, but before frosts appear, I cut up the remaining corn; after frost comes, I feed mangel wurtzel beets once a day, and the cut corn once a day; still later comes hay and ground feed, equal parts of corn and oats, then again buckwheat bran and corn, and occasionally a mixture of wheat bran with corn and oats, five quarts twice a day to each cow. My hay is timothy and clover mixed, and some clear timothy. I have found by observation that cows, like ourselves, like a change of diet, and that to neglect their welfare in any particular, is to neglect our own interests.

DAIRY FARMING AS A RENOVATER OF IMPOVERISHED SOILS.

BY S. G. WEST, ELKHORN.

Sec'y Walworth Co. Agricultural Society.

The subject under consideration is one that I have no doubt has engaged the attention of every member of this association more or less for the last ten years. And though I may not be able to give you any new ideas, I assure you the paper I have to present at this time possesses at least one merit, and that is brevity. Looking from the standpoint of an early settler, I have witnessed all the changes that have transpired since the days when we used to harvest 30 and 40 bushels of wheat from each acre, dotting our fields over with clusters of huge stacks, the straw of which was consigned to the flames, and the grain would keep us busy the most of the year marketing. We have seen these stacks grow *smaller* and *less* ln number until we had no grain to market, and the stern reality stared us in the face that we were like the boy "out of meat." Families to support and educate, improvements to make, taxes to pay, and nothing to do it with, brought us to a realizing sense that we had been selling our farms by the *bushel*, until we had but little

left. Something had to be done. What should it be. Some of the doctors said *plow* deeper, till better, sow clover and other green crops, plow them in; use plaster; all good in certain cases but in our case too slow and too expensive. We cannot fight chinch bugs and all our other enemies, pay our expenses and renovate our farms by raising grain for market. This, to many of us, I am aware, is an unwelcome admission especially to the old settlers that have lived through the golden age of successful grain growing. Yet I need not furnish any elaborate statistics to prove it to a company of men as conversant with realities as these here present to day. The question, then, can we improve our impoverished soils by dairy farming, becomes almost a vital question with us, as we are seeking a way out of the embarrassment that we are in.

Without attempting to give you the result of scientific experiments, I shall call your attention to a few general principles and prominent facts, in the shortest possible time. If there is any system of farming that will help us out of our present embarrassment and at the same time improve our lands, or in other words, if there is any way that we can sell the products of our farms and not have them taken off, certainly that is desirable. But say you, that is not the question at *this* time. Very true. To get at the question then, suppose you are in possession of one of those impoverished farms that I have spoken of, and you wish to renovate it. You will get cows (one or more, depending upon the size of yonr farm), *sell* the produce of your farm to the cows, getting your pay *every day*, and have nothing taken off that will impoverish the land; all will be left on the land for plant food to increase its fertility, thus enabling you to sell *more* and get *more* pay. I need not tell you that a proper application of a top dressing will double the yield of hay upon your meadow; you all know that. I need not tell you that keeping cows will do away with the necessity of buying guano or other costly fertilizers in order to raise large yields of *corn*, *carrots* or *cabbage*.

Did you ever think of it in this way, that the more you *sell* to your *cows*, the more they pay you and the more you have to sell. I could speak of the sure and proper payment received. Of the equal distribution of the labors through the year, thus enabling a a rmer to accomplish more in a year with a given amount of labor than otherwise. These and many other thoughts are suggested as

closely connected to this subject, but I am aware that I am not expected to consider them at this time. But what I may say is this: The business of dairy farming will prove a powerful incentive to you to increase the productive capacity of your farms. I have no doubt you have all noticed as I have, that if a man goes into dairying he goes in *more* and *more*. The barns are enlarged to accommodate more cows; the house is enlarged to — to accomodate more easy *chairs* and *pianos*.

But that branch of the business to which my subject particularly refers is that the waste places of the farm are utilized in order to keep the *productive capacity* up to the demands of the market.

Thus while dairying increases the liabilities that your farm is under, it also increases the assets at a corresponding ratio, and impoverished lands steadily and surely become renovated.

DAIRY FARMING AS A RENOVATER OF IMPOVERISHED SOILS.

BY F. C. CURTIS, ROCKY RUN, WINNEBAGO COUNTY.

In the discussion of the subject set apart to me by your Secretary, I deem it unnecessary to offer any argument showing its importance, but shall assume that all soils, however naturally rich, unless renovated by manure or flowage, which has been under grain cultivation for five or more years, has become impoverished, or at least thrown out of balance and incapable of producing an average crop unless assisted by a favorable season and good cultivation. If this proposition is true as to five years, how reproachful the fact that a large amount of our naturally rich Wisconsin soils has been under cultivation upwards of thirty years, without renovation with manure or seeding to grass. I am well aware of the appologies for this wrongful practice, prominent among which are, pioneering with little capital, but muscle, compelled wasteful practices, and a little later the outside barbarians introduced fashions and customs that compelled one more crop of wheat to supply wants that appeared absolutely necessary. This demand for one more crop of wheat has continued so long that many of our best lands have become impoverished to such a degree that only a fair crop is obtainable in the most propitious seasons.

I wish to call particular attention to the fact that these impoverished soils still produce a fair crop in a favorable season, or when we have seasonable and regular moisture, while a drouth or want of moisture injures the crop much more seriously than upon new or properly cultivated soils. If this be true, and I see no reason for doubt, let us try and discover the reason. If we examine a new or well cultivated soil, we find it loose and pliable; the old worn soil we find compact and crumbly when plowed or cultivated, unless we have just the right degree of moisture, and even then it has not that nice friable appearance of the soil that has been properly cultivated.

Just what this much abused worn soil has lost in grain raising would take a Lieberg or a Johnson to determine, but as this is out of our reach at present, I will endeavor to give my rough mode of reasoning.

I assume that all forms of animal or vegetable life are the product of the earth and air; that upon reaching maturity or the end of its alloted existence, decay or decomposition takes place, faster or slower, according to its exposure to warmth and moisture, and if exposed sufficiently to fire, combustion takes place, and the inorganic portion remains as ashes, while the other part floats into the air. If we should take a sheaf of dry wheat weighing say ten pounds, and burn it, very little of the ten pounds would remain as ashes, which would seem to show that very little of the crop of wheat came from the ground in growing, but came mostly from the atmosphere. In one sense this appears true, but in another, it is not for the reason that the wheat, while growing, drew much of itself from atmospheric food or substance already stored up in the soil, in the shape of partially undecomposed vegetable matter. Our land, as we took it from the hands of nature, was rich in its stores of atmospheric food, which served two purposes, one as a plant food, the other its mechanical effect upon the soil. Our repeated and injudicious cropping has exhausted our soil of this stored up plant food, and destroyed also its mechanical effect in the soil, thereby causing this hard, lumpy condition of the soil heretofore alluded to, and taken from it that friable, loose appearance so desirable in cultivation. It would seem that the atmosphere is rich in plant food, but the plant can get it only by the dews, rains and snows, and I assume that we have greatly injured the powers of our soil to assist the plant in

utilizing this plant food as it decends to it, by the hard, lumpy antifriable condition of the soil, heretofore alluded to. In other words, we have largely exhausted the soil of its atmospheric plant food, and in doing so we have also exhausted its powers to retain those substances that are returned to it by the elements, and destroyed, in a great measure, its power of retaining moisture, hence our worn soils can produce a fair crop only when favored by oft and copious moisture. Comparatively more benefit will be received by repeatedly stirring the soil around a plant on a worn soil than would be derived by the same culture to a plant upon a rich soil, the friability of the rich soil rendering stirring less necessary.

Said a noted attorney to his client, "If you are wrong, get right as soon as you can." This appears to me applicable in farming as well as in law, and I hereby recommend it.

Many a farmer will say, "How can it be done? Poverty, custom and ignorance hold me in the old course, and I feel powerless to mend my condition." When we can get the farmer's attention, and get him to admit that much, and incite him to try and inform himself as to a better mode of farming, there is some hope, but if he holds that the best minds of the past and present, through their agricultural conventions, dairyman's conventions and records of experiments, are useless, then his case is indeed hopeless. A reading farmer is able to avail himself of facts already demonstrated, and in many cases avoids failure and saves valuable time. The remedy for the prodigal, and the necessary and unnecessary waste we have committed in the cultivation of our soils, I deem comparatively easy, but the accomplishment of this desirable result requires a radical change in the management of our soils. There can be no renovation of the soil without manure, or a rotation of crops; one of the requirements of the rotation being grass one-half of the time, and that grass must be at least half clover, in fact, the more clover the better, so far as benefit to the soil is concerned. The stand of clover may be poor if the seeding season is dry and aggravated by the hard, compact condition of the soil, but we must do the best we can. On some soils a marked improvement to clover is plaster, sown broadcast, while on other land it is said but little benefit is derived. On my farm it is very beneficial, so much so that I could easily trace where the plaster was omitted, and I have been assured by a neighbor that he could trace the benefits of the plaster in the

crop following the clover, the omissions plainly showing. I very much doubt that plaster will affect any crop after the clover, only by its adding to the clover crop, and undoubtedly its roots left in, would of course produce larger clover roots, and these clover roots I am depending upon for the quickest and most available means of renovating the soil. They seem to have the power of bringing back from the atmosphere and storing up in its roots much we have lost in that direction, and also of drawing from the depths below new matter for plant food, hence the larger the clover crop the larger the roots and the more plant food we have secured for future crops; we have not only secured great advantages in the direction named, but we have also produced a powerful effect upon the mechanical condition of the soil, as the next plowing and crop will verify.

Perhaps the old style of farmer will inquire what we will do with so much grass and hay. My dear sir, the dairyman will laugh at you for such an inquiry. He will tell you that the more grass, hay, oats and corn he has, the more cows he can keep, and I will add, the more cows he can keep, the more manure he can make, and the more manure he can make and properly apply to the land, the sooner he will restore it to its former and increased fertility. I insist there can be no prospect of a renovation of the soil without it is kept in grass half of the time, and stock, of some kind, to consume it, must be kept upon the farm. I have kept both sheep and cows, and I find that I can realize three dollars from the product of the farm fed to cows, to one dollar fed to sheep. True there is more labor in the care of the cows, but the extra labor produces extra dollars. Those who make ten cent butter, and there are many of them, may doubt my estimate, and if ten cents per pound is all that can be realized for butter, their doubts would be well grounded. The price current of Chicago shows that there are at the present time large quantities of butter in that city that cannot be sold for ten cents per pound. It also shows that good dairy butter brings from 28 to 30, and creamery 30 to 35 cents per pound. Those who make the 10 cent kind don't believe in book farming; those who make the higher priced kind are those who avail themselves of the recorded wisdom of others, who get up dairymen's conventions, go to them, and exchange their views and knowledge upon the subject, hence they are enabled to make the best goods

the nature of the case will admit. Says the Milwaukee *News* of a late date, "Since Wisconsin cheese and butter have been exhibited at the centennial exhibition, they have been given a rank with prime New York butter and cheese, and now command nearly the same price in the eastern states." Let us give due credit to our enterprising citizens who instituted this association, and invited the best known dairymen of our state to exhibit their dairy products, with the happy result so beneficial to our interests.

Some ten years ago I began to turn my attention to dairying as a means of renovating my much abused farm. I reasoned that I could keep a certain number of cows, and that I could keep a hog to each cow to consume the sour milk, and I read Mr. Simon Brown's opinion from an eastern stand point, "that the man that did not make eight cords of manure to each hog, did not live up to his privileges." I hardly tried to carry out this latter advice, but I have steadily improved my crops and the condition of my farm.

There was one thing I could not understand, and that was why I was obliged to sell butter at one little market town at so much less than the market quotations of Chicago. To solve this problem, I visited the state fair at Milwaukee in 1872, where I met Mr. Hoard, who gave me valuable information. I have noticed a statement that a first class article of butter can hardly be made by the small dairyman. This is true to a certain extent, and somewhat discouraging, but it is very true that the small or farm dairies of our state can be much improved and reap a great benefit by the improvement. It may not be inappropriate to say that I represent only the small dairyman, that it is a comparatively short time since I commenced looking for more knowledge upon the subject, and since I have commenced showing the result of my labors at the fairs, etc., I find dealers anxious to purchase at satisfactory prices. The great trouble seems to be that the farmer fails to learn, remember or appreciate a few of the ground rules or requirements that are absolutely necessary to suceess; but as this part of the subject was not set apart to me for discussion, I will close, urging your studious attention to the subject.

As Mr. Curtis was about to retire, the following questions were handed him for replies:

1. How long should milk be allowed to stand before skimming?
2. Should it be allowed to sour before skimming?

3. In what degree of temperature should the milk stand to procure the greatest amount of cream, and the best quality of cream?

4. How much salt, and what kind of salt, should be used to a pound of butter, in order that it be well flavored and keep well?

5. What is the best method of treating the butter after it is churned? Should water be used either in the churn, or after it is taken from the churn? How often should butter be worked, if more than once, how long a time should intervene between the working of it over?

6. Is the farmer to have the charge of butter making, or is the farmer's wife expected to be responsible for the quality of the butter made on his farm? If the farmer's wife is expected in the future to have charge of butter making as she has in the past, ought she not to have a voice in the deliberations of this convention, being invited to present papers or by having some way provided whereby her opinions and experiences can be made known?

MRS. L. E. HAWES.

1. Milk should be allowed to stand from thirty-six to forty-eight hours before skimming.

2. A little souring is admissible, but do not let it get "loppered."

3. Temperature 60°, if much colder you do not get all the cream, or it gets bitter and specky if it stands too long — up to 65° — you will get fair results, but I hold to 60°; please consider all the foregoing letters in each word to weigh a pound each.

4. Three-fourths to one once of good dairy salt, to suit taste of customer; don't depend upon salt to keep butter; good milk temperature and expulsion of buttermilk without overworking, is the key of success. I have used Ashton & Marshall brands of salt, it is good. I do not know but the Onondaga and Saginaw dairy brands of salt are just as good. A large amount of store packed butter is ruined from the use of common barrel salt, and too much of it. Many a butter maker don't seem to mind the expense of three or four ounces of common barrel salt to the pound; so long as it weighs, it is right in his estimation.

5. If it has been churned in some lightning improved fancy churn, and the grain of the butter has been ruined by violent agitation, use it for cooking at your earliest convenience, no after manipulation will make it good butter. The old dasher churn will do good work, but it will drive the boys from the farm to become lawyers

and presidents of colleges, etc., if we are to believe their representations. I use the rectangular churn. If the foregoing rules have been observed, thirty to forty minutes of steady churning will bring the butter; yes, all of it; no dead or unchurned cream, and the work is nearly done. If it is June, and you wish it for long keeping, after drawing off the buttermilk add good pure water, a few turns of the churn is all that is necessary, but mind your water is pure. Some wells, supposed good and clean, that have not been examined for some time, have a mass of uncleanness in the bottom that make it very objectionable, ruinous. Add the salt carefully, without drawing motions of the ladle, rework carefully in about twelve hours, not longer than twenty-four hours under any circumstances, and pack at once. Over working or careless drawing motions of butter worker or ladle, injures the grain of the butter, a pressing motion is desired. Butter standing twenty-four hours before reworking would mainly dissolve the salt it contained, and too much working, however carefully done, would expel the brine, making an undesirable dry butter. I have packed butter in June, for experiment, only once worked when the salt was put in; it kept well; all the difference I discovered was, it appeared a little more moist and briny. We make our butter mostly from September to June, the cows being idle in the hot weather. We are very particular as to temperature, and as we make our butter for some one to eat, and not to keep, we do not consider it necessary to wash it to get out the buttermilk; but, mind you, even then the buttermilk must be got out; without washing, we fancy it has a little more of that nutty flavor, so toothsome to our city customers.

6. Rather mixed, and too deep for me, but I will answer as well as I can. If the farmer is to be permitted in future to do part of the voting, I do not see any impropriety in his sharing the labors of the dairy as well as all conventional honors with the good dairywomen of our state, in all meetings where they desire to take a part or contribute to its interest. But, my good woman, will you do it? I have tried my best to get a most excellent dairywoman to write out her knowledge upon this subject, but without avail; the best I can do is to question her and find out all I can, and then come up here and make believe I know all about it. As to sharing the labors of the dairy, by all means, yes; "give the old man a chance." If he has been to the expense of a rail fence on the south-

east side of the cow to keep off the northwest wind in winter, let him do the milking; if he sticks to the old dash churn, let him stick to it while the churning is in process, but don't try to make use of him to wash the milk pans or drive the flies out of the milk room. You might as well call to your aid a molasses cup, while from your own good presence they would flee like chickens before a hawk. Each one has their sphere; let each do his part; I should like to speak to these questions more at length, but the pressing business of the convention compels me to close; but before doing so, please allow me to thank the lady for giving me an opportunity to say a few hurried words on this important subject, and the convention for their attention and patience in listening to me.

EDUCATION OF DAIRYMEN.

By R. P. McGLINCY, Elgin, Ill.

Dairy editor Elgin, Illinois, Advocate, and Secretary of the Northwestern Dairymen's Association.

The question to which I have been assigned is one of far greater importance than I at first imagined it to be, and one which I do not feel that I can discuss with advantage, or that I can say anything that will prove beneficial to the great mass of dairyman — men who are engaged in producing the milk which is used to manufacture the butter and cheese, for which this great northwest is gaining a world-wide reputation. This question is a delicate one, and when we discuss it in our conventions, I think there are those who will assume that we class the dairymen among the ignorant ones of the earth, but that is an erroneous assertion, and for one I would resent it to the best of my ability. The education of the dairyman as I look at the question, is not that which relates to a book education, for a man may be crammed as full of book knowledge as a cheese press is of curd, and yet be as ignorant of dairying as a Hottentot. In what I have to say I shall consider the education of the dairyman to be that which relates to a thorough and practical knowledge of the various duties he is called upon to perform, and I may add to the dairyman the butter and cheese maker, also, for I have no doubt but that in many instances their poor judgment and bad management has been laid at the door of the dairyman, who had as little to do with the affair as the man in the moon.

But to the question. What should constitute the education of the dairyman — one who is engaged in producing milk? Should we expect him to be a man well read in law, theology, politics, the science of government, and be a thorough geologist, or should we expect to find a simple granger, who possibly could do an example, if not too complicated, and who is capable of figuring interest on a note for a given time. The accomplishments enumeratend might all be dispensed with, and still the dairyman would be an educated man, to a certain extent. Now I take the question to mean a man educated in his profession, so that he can readily follow it for a livelihood without being compelled to call upon Tom, Dick and Harry every few days to know whether he is right or wroug. There is one thing in regard to the dairy business that I do wish to say a word upon, and it might as well, perhaps, be uttered here as elecwhere, and that is that far too many men are in the business who are not "educated to it," and who are destined to bring disgrace to the profession. An educated dairyman should have no little knowledge of cows — the various breeds, their habits, constitutionl organism, diseases, and cures for the same, so far as that lies within his power. In studying their habits he would learn the quantity of food a healthy cow would be likely to require — the particular kinds she would relish, and upon which kinds of food she improved best, both as regards the quantity and quality of milk and the taking on of flesh. He should be educated so as to know that punctuality with a cow is of great importance — punctuality in feeding, watering, milking and stabling. Serious losses are the result yearly, either from a lack of knowledge or gross carelessness, in regard to the value of punctuality. To many this will doubtles seem a small and insignificant matter, but I think it one of great importance, and those who have observed this peculiarity are aware of it, and would just as soon think of being tardy in this as in any other business. Then the dairyman should learn punctuality.

The educated dairyman will be found in various localities, and where found, you will observe that he has everything in its place, where he can lay his hand upon it when wanted. His fences, stabling, granary and everything connected with his farm and stock is in a neat and tidy condition, and he is always at home to visitors; that is, he is always ready to show his cows or buildings, because

being an educated man he keeps all things as they should be kept. I once knew a thrifty farmer who made it a rule to examine his fences once a week, to see that no bars were down, gates swinging on broken hinges, or boards loose. He was an educated man in that by watching his premises and taking a "stitch in time, saved nine" as the saying is. But in contrast with this man, who was a model farmer, let us look at another; and this latter one is very numerous — in fact he is found all over the country. In yonder fence corner you will find his plow, just where he left it when he finished the field; it may be that he has kept its lonely guard in that fence corner since last spring. There in the middle of the field stands the mower, and he will find it there next season when he wants it, perhaps a little the worse for having been exposed to the storms of winter; and so I might go on enumerating the articles left to take care of themselves in that manner. Would you call such a man educated? Do you think the picture overdrawn? Look around you and see if there is not such a one in your neighborhood, and think you, if he should turn his attention to dairying, he would forsake his old habits? He might, but it is very doubtful. And it is just this class of men who bring disgrace upon any profession they may follow.

Recently Hon. Harris Lewis, of New York, is reported to hav said "that a filthy man, with filthy hands, milking a filthy cow in a filthy stable, into a filthy pail, is the perfection of filth," and I think Mr. Lewis is right in his conclusions, and I do not think any of you would consider that dairyman an educated man, although he might be rich in classic lore and able to read the rocks and the stars, yet he lacks being educated in his profession. An editor commenting on Mr. Lewis' statement, carried the "filthy" comparison on further as follows: "It may be the *perfection* of it, as far as these operations go, but it is not the *completion* of filth. The milk must first go through the usual processes, and be strained by a filthy milkmaid or milkman, through a filthy strainer, into a filthy receptacle, sitting in a filthy dairy house, with filthy surroundings and reeking with a filthy atmosphere; then skim it with a filthy skimmer, into a filthy churn, churn it with a filthy dog, in a filthy place, take the butter out with a filthy ladle into a filthy bowl, wash it with filthy water, salt it with filthy salt, pack it in a filthy tub, and store it in a filthy place. Then let it be sold by a filthy dairy-

man to a filthy dealer, who disposes of it to a filthy retailer, who keeps a filthy stall or grocery, dips it out with a filthy paddle, into a filthy sheet of filthy paper or a filthy dish, weighs it on filthy scales, and delivers it by a filthy boy to a filthy patron, and the filthy picture can be completed by a filthy imagination." It does not require education to evolve all that filth. But reverse the picture and then see what education does. Of course all dairymen are not like the last one remarked upon, but these pictures are necessary to bring out the good qualities of the dairyman, and show what education or proper training will do for people.

There is undoubtedly absolute waste in the dairy business, as those engaged in it have not been thoroughly educated or trained, and until they are systematically instructed there will be great waste in this branch of our industry.

If we thus speak of those who produce the milk, what shall be said of the host of incompetent butter and cheese makers? They are positively more injurious to the business than the producer, as through their ignorance greater losses are sustained. A few years ago it used to be customary to indenture boys to capable mechanics for the pupose of having them taught the trade they proposed to follow, and the term of the indenture was rarely for a less period than five years, and often for seven. A good workman well knew that unless a boy put in a good deal of time, he would be a botch, and do more injury than good, hence when a boy was indentured, his employer controlled him for a series of years as though he owned him, and as a rule it was for the boy's good. This may have the appearance of barbarism, but it would be better that than to have every other boy who undertook to learn a trade prove a regular botch workman. Does a law student or a medical student get through by studying a few weeks or months? Then why should a butter or cheese maker be considered a master workman who has only spent a few months in the factory? I have in mind now a cheese maker who never made a pound of butter in his life, but who was anxious to learn, and for that purpose spent two full weeks in a creamery to learn the modus operandi, and at the end of that time set himself up as a first-class workman. Now was he sufficiently educated for the responsible position of butter maker? When we need a doctor or a lawyer, we are very apt to select men of experience, and so it should be with the manufacturers, espe-

cially if they desire to place upon the market a saleable article. A cheese maker should serve a regular appren iceship at the business, and when he has graduated be able to give satisfactory reasons for the modes he may employ about his work. But most of the cheese and butter makers are anxious, apparently, to get through their days' work, and do not care for the consequences. If they are lucky enough to make a lot of cheese which happens to suit the market, they are satisfied, and on the other hand, if they, as they term it, are unlucky, they bl me the producers with the fault. Had I time, Mr. President, I might carry out suggestions in regard to the education of dairymen, but in conclusion will say that no one should be rated as an educated dairyman or manufacturer, unless they can give satisfactory evidence that they are qualified to perform the work they may undertake.

REPORT OF COMMITTEE ON BUTTER.

Your committee, appointed to pass judgment upon the butter entered in competition for the several premiums offered, beg leave to report as follows, viz.:

After as careful an examination as time and circumstances would permit, the Charles Baltz prize, offered by Charles Baltz, wholesale dealer in butter and cheese, 113 South Water street, Chicago, for the finest tub of butter made in Wisconsin, was awarded to F. C. Curtis, Rocky Run.

The Cornish and Curtis prize, offered by Messrs. Cornish & Curtis, Ft. Atkinson, for the best and finest plate of butter, in pound or half pound prints, was awarded to F. C. Curtis, Rocky Run.

The Tivy & Purcell prize, by Messrs. Tivy & Purcell, butter and cheese and general commission merchants, 424 North Second street, St. Louis, Mo., for the best two tubs of butter of not less than 35 pounds each, was awarded to William Marshall, Whitewater, and John Porter, Mazomanie; to each one-half of both premiums, as both lots of butter graded precisely alike in the aggregate.

The A. M. Gilbert prize, offered by A. M. Gilbert & Co., 95 Lake street, Chicago, general western agents for Howe's Improved Scales, for the best tub of butter, was awarded to Mrs. David Whitehead, Whitewater.

The entries were made by number, and judged by samples brought to the committee in a separate room from the exhibits, and the names of exhibitors withheld from the committee until after the awards had been made.

We regret very much that the time was so limited as to prevent our making a more extended report, thus giving our reasons for making the awards as we have, in hopes that much of the benefits to be derived from these exhibits might be drawn from the critical examination and report of a competent committee.

H. M. CHAPMAN, Randolph,
D. S. EWING, Whitewater,
W. F. HOVEY, Whitewater,
Committee.

W. D. Hoard, chairman on resolutions, asked leave to submit the following resolutions and memorial:

"*Resolved*, That the thanks of this association are most sincerely tendered to the people of Whitewater, for the whole-hearted hospitality and aid they have extended to this convention.

"*Resolved*, That the thanks of the Wisconsin Dairymen's Association be tendered to our retiring president, Hon. A. D. DeLand, for the able manner in which he has discharged his duties as presiding officer of this convention, and for the efficient aid he has rendered the dairy interest of the state during the term of his office.

"*Resolved*, That this association desire to express their sense of obligation to our worthy secretary, D. W. Curtis, for his efficient labors.

"*Resolved*, In view of the excellent reputation which has accrued to Wisconsin by the centennial and other public exhibitions of dairy products, this association would recommend that necessary steps be taken to give the dairy products of Wisconsin a proper exhibition at the Paris exhibition.

"*Resolved*, That the thanks of this association are most cordially tendered to Messrs. George S. Hart & Howell, Messrs. A. W. & F. W. Leggett, New York; Messrs. A. M. Gilbert & Co. and Charles Baltz, Chicago, and Messrs. Tivy & Purcell, St. Louis, for their liberal premiums on butter and cheese."

The resolutions were unanimously adopted.

MEMORIAL.

"*To the Honorable, the Legislature of Wisconsin:* Your memorialists, the State Dairymen's Association of Wisconsin, in convention assembled, would respectfully represent that the dairy interest has grown to be one of the most important in the state, both in respect to the amount of its productions and the certainty of its returns; that to its continued success, reliable information is of vital importance; that under the present law, assessors are listing cows as neat stock, under which name it is impossible to arrive at any accurate statistics of the number of cows in the state. Your memorialists would, therefore, pray that the law may be so amended that assesssrs shall be obliged to list cows separately from the other neat stock."

Mr. Hazen moved that the same be adopted, and that the secretary be authorized to sign the names of all the members to the memorial, and present the same to the legislature.

Carried.

TABLE *showing the entries for the Butter Prize, and the award of the judges on a scale of* 40.

	No. Package.	Flavor.	Salt.	Grain.	Color.	Total.	Grand total.
C. P. Goodrich	132	10	10	7	8	35	
		9	9	5	9	32	
		6	8	6	6	26	
							93
James Clough	133	4	9	4	2	19	
		8	9	4	2	23	
		5	5	6	4	20	
							62
F. C. Curtis	134	8	9	8	10	34	
		8	8	7	9	32	
		6	9	6	8	29	
							95
J. Carpenter	135	8	8	6	8	30	
		6	5	6	8	25	
		3	9	3	6	21	
							76
F. O. Crossfield	131	7	8	6	8	29	
		7	8	4	4	23	
		8	9	6	4	27	
							79
W. M. Marshall	600	7	8	7	4	26	
		5	6	5	5	21	
		8	9	8	3	28	
							75

TABLE *showing the entries for the first and second prize of* $15 *in gold, offered by Tivy & Purcell, and the award of the judges on a scale of* 40.

	No. of Pkg.	Flavor.	Salt.	Grain.	Color.	Total.	Grand total.
D. Whitehead	126	6	10	5	3	24	
		8	10	5	4	27	78
		8	10	5	4	27	
D. Whitehead	126	5	10	6	6	27	
		3	7	5	8	23	76
		3	8	6	9	26	
							154
M. C. Jones	127	7	5	7	6	25	
		6	9	7	6	28	83
		7	10	7	6	30	
M. C. Jones	127	7	5	6	7	25	
		8	9	5	4	26	84
		9	9	8	7	33	
							167
Milo Jones	128	8	9	7	4	28	
		5	10	4	3	22	74
		8	5	6	5	24	
Milo Jones	128	8	5	6	4	23	
		7	8	5	2	22	72
		8	9	5	5	27	
							146
E. King	129	7	6	5	4	22	
		9	10	6	3	28	68
		6	5	4	3	18	
E. King	129	6	5	4	3	18	
		8	8	7	6	29	67
		6	7	4	3	20	
							135
J. Porter	400	9	6	6	5	26	
		10	10	9	8	3	90
		6	6	8	7	27	
J. Porter	400	6	6	8	7	27	
		10	10	8	7	35	86
		7	6	6	5	24	
							176
C. R. Beach	480	8	10	8	6	32	
		7	10	8	5	30	82
		8	2	5	5	20	
C. R. Beach	480	7	2	5	6	20	
		10	10	9	8	37	84
		7	8	6	6	27	
							166
M. Marshall	502	6	10	6	9	31	
		5	9	6	9	29	88
		9	9	6	4	28	
M. Marshall	502	9	8	6	5	28	
		7	9	8	6	30	88
		7	8	8	7	30	
							176

TABLE *showing the entries for the Howe Union Scales, and the award of the judges on a scale of* 40.

	No. of Pkg.		Salt.	Grain.	Color.	Total.	Grand Total.
O. C. Olin	130	7	6	6	7	26	....
		7	9	8	6	30	....
		9	10	10	6	35	....
							91
F. O. Crossfield	132	7	9	9	8	33	....
		8	9	10	7	34	....
		8	8	7	8	31	....
							98
C. P. Goodrich	133	7	10	9	6	32	....
		8	9	7	9	33	....
		7	5	6	9	27	....
							92
J. Cower	134	8	5	8	10	31	....
		6	10	3	8	27	....
		10	10	10	10	40	....
							98
B. Benson	135	8	8	9	9	34	....
		5	6	8	8	27	....
		7	5	7	8	27	....
							88
Starin	136	8	9	8	8	33	....
		8	7	8	9	32	....
		9	9	8	9	35	....
							100
James Clough	137	6	7	5	7	25	....
		6	8	4	6	24	....
		7	7	5	6	25	....
							74
F. C. Carter	140	6	6	8	6	26	....
		8	7	8	9	32	....
		8	7	8	8	31	....
							89
H. Merriman	200	9	8	9	9	35	....
		7	8	9	9	33	....
		8	8	8	8	32	....
							100
D. Whitehead	125	8	5	8	8	29	....
		9	10	9	7	35	....
		9	10	9	9	37	....
							101

REPORT OF JUDGES ON CHEESE.

Your committee who were appointed to the not very pleasant task of judging the cheese placed upon exhibition for the several prizes, have done so, samples being brought to us in a room separate from the exhibits, and the owner's name withheld until the awards were made.

A. H. Wheaton, of Auroraville, wins the silver cup.

The following letter came with the cup:

NEW YORK, January 5, 1878.

D. W. CURTIS, Esq., *Secretary Wisconsin Dairymen's Association*, Fort Atkinson, Wisconsin:

DEAR SIR:—We forward you this day, per American Express, the silver cup offered by us as a prize for the manufacture of the finest factory cheese, and to be awarded through your association as per our advices of March 15th. Allow us to suggest that the same be placed, after the award, by the party receiving it, in some place where it will be preserved from injury, and where it will be under the supervision of the officers of your association.

Very respectfully, Yours etc,,
GEO. S. HART & HOWELL.

Wm. Stowe, of Whitewater, wins the $25.00 offered by Messrs. Leggett, of New York. In sending the money, they write the following letter:

NEW YORK, Jan. 2, 1878.

D. W. CURTIS, *Sec'y Wis. Dairymen's Association:*

DEAR SIR: Enclosed find our check for $25.00, prize offered on cheese. Only wish your state to go on improving the make, and trust next season will develop more factories that will give perfection in make, quality, and flavor.

We are, yours truly.
A. W. & F. W. LEGGETT.

Robert Smith, cheese maker for Olin, Crossfield & Co., Fort Atkinson, wins the 600-pound Howe scales, offered by A. M. Gilbert & Co., Chicago,

If time would permit, your committe, would be glad to tell why they consider the cheese winning the prizes the best.

HIRAM SMITH, Sheboygan Falls.
J. H. REED, New York.
J. L. HURD, Watertown.
Committee.

TABLE *showing the entries for the Silver Cup, and the award of one of the judges only, on a scale of* 24.*

	No. of Package.	Flavor.	Quality.	Texture.	Color.	Total.
Charles Parker	107	5	6	2	1	14
A. H. Wheaton	108	8	8	4	3	23
J. G. Picket	111	6	8	3	3	20
C. Hazen	600	7	8	4	3	22
W. Gulloway	102	7	7	4	3	21

TABLE *showing the entries for the Legget prize and the award of one of the judges on a scale of* 24.

	No. of Package.	Flavor.	Quality.	Texture.	Color.	Total.
Geo. Kemp	100	5	6	1	2	14
W. Galloway	101	6	8	3	3	20
Cold Spring Cheese Co.	105	7	8	3	3	21
Cold Spring Cheese Co	106	7	7	3	3	20
Wm. Stowe	109	7	8	4	3	22
C. Hazen	113	7	7	4	3	21

TABLE *showing the entries for the Howe scale prize, and the award of one of the judges on a scale of* 24.

	No of Package.	Flavor.	Quality.	Texture.	Color.	Total.
Olin, Crossfield & Co	103	8	7	4	3	22
J. F. Marshall	104	6	6	3	3	18
Milford Factory	110	6	6	3	3	18
J. G. Picket	112	7	6	3	3	19
C. Hazen	330	7	6	3	3	19

The butter and cheese were in charge of J. B. Vansburgh, of Genoa Junction, who was very efficient in attending to that department, evincing strict impartiality and due courtesy to all.

* Reports of the other judges were mislaid.

NOTE. — The judges adopted the following: Flavor, 8; Quality, 8; Texture, 5; Color, 3; Perfection, 24 — scale.

REPORT OF THE COMMITTEE ON DAIRY GOODS AND MANUFACTURES.

Your committee would report that we have examined the model of cheese vat made by Thomas Brown of Ft. Atkinson. We find it well and substantially made, and in every particular well calculated for the purpose for which it is designed, with a slight alteration in the construction of the pipes for the diffusion of steam. We find on exhibition three styles of milk vats, known as Hyde's Milk Cooler; Brown's Milk Pan and Cooler, and each of which have points of real excellence of principle, are well constructed and will doubtless recommend themselves to general use as soon as they have had a fair trial. We can not, from want of experience in using articles, give preference to either.

The portable creamary, the principle of submerging milk under water, is to us an entirely radical departure from old and long established theories. The exhibition of its workings by those having the apparatus in charge was to us satisfactory, and we hope dairymen will give the principle a fair trial.

Butter Workers. — We find two on exhibition, one by Cornish & Curtis of Fort Atkinson, and the Walker Butter-worker.

The lever worker we are well acquainted with and can personally recommend it to general use. The other, having the roller principle, we are not personally acquainted with but have to-day witnessed its workings, which, together with the recommendations of those who have used the article, prompts us to recommend it to dairymen for trial, and hope to hear favorably from it at our next meeting.

Thomas Brown, of Ft. Atkinson, exhibits a cheese-vat, milk can, cheese-hoop and press screw. We have to compliment Mr. Brown upon his very fine display, every article of which is of good workmanship, and manufactured from the best material.

Cornish & Curtis, of Fort Atkinson, exhibit their Rectangular Churn, which is too long and favorably known to need any commendation by us.

We close this brief report by noting the great improvement which is yearly made in all the implements, machinery and fixtures connected with the manufacture of butter and cheese. No branch

of industry is more favored by the inventive genius of our country in bringing to our use the great helps which go so far to lighten labor, and make more perfect the product of the dairy.

Submitted by,

J. G. PICKETT, Pickett Station,
CHESTER HAZEN, Ladoga,
J. B. INGERSOL, Port Washington,
Committee.

President De Land: We will now adjourn to the parlors of the Congregational Church, where we are to receive a dairy banquet and sociable, and it is expected that every dairyman will attend.

Evening Session.

Two hundred and fift y sat down to the elegant supper given by the ladies of the Congregational Church, and short speeches were made in response to toasts, by Hon. T. D. Weeks, H. F. Dousman, W. D. Hoard, Francis D. Moulton, G. W. Peck, Hiram Smith, and others.

This meeting has been the largest and best ever held by the association, and the banquet and sociable a success in every particlar.

APPENDIX.

PREMIUMS AWARDED AT THE STATE FAIR FOR 1877.

BUTTER AND CHEESE.

"Products of the Dairy" — Butter, Farm-made.

Best 20 pounds made in June, Mrs. Thos. Little, Janesville	$15 00
Second, Mrs. E. W. Fisher, Orfordsville	10 00
Third, C. P. Goodrich, Fort Atkinson	5 00
Best 20 pounds made at any other time, C. P. Goodrich, Ft. Atkinson.	15 00
Second, Mrs. E. L. Walch, Milburn	10 00
Third, A. H. Downing, Fort Atkinson	5 00

Butter Creamery.

Best 20 pounds made in June, James Clough, Edgerton	15 00
Second, C. P. Goodrich, Fort Atkinson	10 00
Best 20 pounds made at any other time, James Clough, Edgerton	15 00
Second, C. P. Goodrich, Fort Atkinson	10 00
Third, O. E. Merrill	5 00

Cheese.

Best 2 cheese made in June, L. Littlefield, Plymouth	15 00
Second, Charles Gibson, Lind	10 00
Third, Chester Hazen, Ladoga	5 00
Best 2 cheese made in August, Hiram Conover, Plymouth	15 00
Second, W. S. Hoxie, Cooksville	10 00
Third, L. Littlefield, Plymouth	5 00

Private Dairy.

Best 2 cheese made at any time, Simon Antisdel, Afton	15 00

BREWING CHEESE.

BY GEORGE WASHINGTON PECK, OF *Peck's Sun*, MILWAUKEE.

Read at the Dairy Banquet.

FELLOW CREAM-ATIONISTS: In calling upon me on this occasion to enlighten you upon a subject that is dear to the hearts of all Americans, you have got the right man in the right place. It makes me proud to come to my old home and unfold truths that have been folded ever since I can remember. It may be said by scoffers, and it has been said to day, in my presence, I didn't know enough to even milk a cow. I deny the allegation, and show me the alligator. If any gentleman present has got a cow here with him, and I can borrow a clothes wringer, I will show you whether I can milk a cow or not. Or if there is a cheese mine here handy, I will demonstrate that I can—*runnet.*

I was brought up on a farm. That is, I come up with the cows. Labor has been to me a sweet boon. There is no farmer present here that has done more real hard sitting around than I have. It was my practice in youth to sit on the fence and see the hired men work. There is no more ennobling occupation than swinging the reaping machine or holding the plow. I never held a plow much because the one we had was gentle. It would stand without being held.

The brewing of cheese and butter have been among the earliest industries. Away back in the history of the world, we find Adam and Eve conveying their milk from the garden of Eden, in a one-horse wagon to the old cold spring cheese factory, to be weighed in the balance. Whatever may be said of Adam and Eve to their discredit in the marketing of the products of their orchard, it has never been charged that they stopped at the pump and put water in their milk cans. Doubtless you all remember how Cain killed his brother Abel because Abel would not let him do the churning. Even then boys quarreled about doing the family churning. They all wanted to do it. We can picture Cain and Abel driving mooley cows up to the house from the pasture in the southeast corner of the garden and Adam standing at the bars with a tin pail and a three-legged milk-stool, smoking a meerschaum pipe, and singing "Hold the Fort for I am Coming Through the Rye," while

Eve sat on the veranda with a sewing machine, altering over her last year's polonaise, and winking at the devil who stood behind the milk house singing, "I want to be an Angel." After Adam got through milking, he came up and he saw Eve blushing and he said, "Madam, cheese it," and she chose it.

But to come down to the present day, we find that cheese has become one of the most important branches of manufacture. It is next in importance to the silver interest. And, fellow cheese makers, you are doing yourselves great injustice that you do not petition congress to pass a bill to remonetize cheese. Cheese was demonetized when congress passed an act providing that the moon was not made of green cheese. There is more cheese raised in this country than there is silver, and it is more valuable. Suppose you had not eaten a mouthful in thirty days, and you should have placed on the table before you ten dollars stamped out of silver bullion on one plate, and nine dollars stamped out of cheese bullion on another plate; which would you take first? Though the face value of the nine cheese dollars would be ten per cent. below the face value of the ten silver dollars, you would take the chances on the cheese. You would use it to better advantage in your business. Hence, I say cheese is more valuable than silver, and it should be made legal tender for all debts, public and private, except pew rent. I may be in advance of other eminent financiers, who have studied the currency question, but I want to see the time come, and I trust the day is not far distant when 412½ grains of cheese shall be equal to a dollar in codfish, and when the merry jingle of slices of cheese shall be heard in every pocket.

Then every cheese factory can make its own coin, money will be plenty, everybody will be happy, and there never will be war any more. It may be asked, how this currency can be redeemed? I would have an incontrovertible bond, made of Limburger cheese, which is stronger and more durable. When this is done, you can tell the rich man from the poor man by the smell of his money. Now-a-days many of us do not even get a smell of money, but in the good days which are coming, the gentle zephyr will waft to us the delicate violet and the able bodied Limburger, and we shall know that money is plenty.

The manufacture of cheese is a business that a poor man can engage in as well as a rich man. I say it without fear of successful

contradiction, and say it boldly, that a poor man with, say two hundred cows, if he thoroughly understands his business, can market more cheese than a rich man who owns three hundred oxen. This is susceptible of demonstration. If my boy showed a desire to become a statesman, I would say to him, "young man, get married, buy a mooley cow, and go to Sheboygan county and start a cheese factory."

Speaking of cows, did it ever occur to you, gentlemen, what a saving it would be to you if you should adopt mooley cows instead of horned cattle? What good do horns do in making cheese. It takes at least three tons of hay and a large quantity of ground feed annually, to keep a pair of horns fat, and of what earthly use are they? Statistics show that there are annually killed forty-five thousand grangers by cattle with horns. You pass laws to muzzle dogs because one in ten thousand goes mad, and yet more people are killed by cattle horns than by dogs. What the country needs is more mooley cows. Now that I am on the subject, it may be asked what is the best breed for the dairy. My opinion is divided between the southdown and cochin-china. Some like one best and some like the other, but as for me, "give me liberty or give me death."

There are many reforms that should be inaugurated in the manufacture of cheese. Why should cheese be made round? I am inclined to the belief that the making of cheese round is a superstition. Who had not rather buy a good square piece of cheese than a wedge-shaped chunk, all rind at one end and as thin as a congressman's excuse for voting back pay at the other? Make your cheese square, and the consumer will rise up and call you another.

Ancther reform that might be inaugurated would be to veneer the cheese with building paper, or clapboard, instead of the time-honored piece of towel. I never saw a cheese cut that I didn't think that the cloth around it had seen service as a bandage on some other patient. But I may have been wrong. Another thing that does not seem to be right is to see so many holes in a cheese. It seems to me that a solid cheese, one made by one of the old masters, with no holes in it, would weigh more. I don't wish to accuse you of cheating, but don't you feel a little ashamed when you see a cheese cut, and the holes are the biggest part of it? The little cells may be handy for the skipper, but the consumer feels the fraud

in his inmost soul. Among the improvements made in the manufacture of cheese, I must not forget that, of late years, the cheese does not resemble a grindstone as much as it did years ago. The time has been when, if the farmer could not find his grindstone, all he had to do was to mortice a hole in the middle of a cheese, and turn it and grind his scythe. Before the invention of nitro-glycerine, it was a good day's work to hew off enough cheese for a meal. Time has worked wonders in cheese.

If I have neglected the subject of butter in these few remarks, it is because my time has been limited. Butter is getting to be an every day occurrence, and it will hold its own if it is given half a chance. With all the improvements in the way of hair invigorators, any person can raise a good head of butter. I beg of you to have nothing to do with this new patent butter, called Ole O. Margarine. From the name it is evidently of Norwegian extraction, and while it may as beautiful in appearance as the original of which it is a counterfeit, statistics show that as a lubricator for buckwheat cakes, it takes rank second to axle grease, and is a delusion and a snare.

In conclusion, let me say, go on in the good work that you have inaugurated. Let the character of your butter and cheese for chastity and purity be beyond comparison, and in time, every cheese maker will be a United States senator, and American cheese will be legal tender the world over.

MAGNITUDE OF THE DAIRY INTEREST.

From the Daily Commercial Bulletin, Chicago.

Our dairy interests have attained proportions to worthily place them among the leading productions of the West, and rank in financial magnitude close on the heels of our heretofore acknowledged staple articles — grain, provisions, and lumber. The capital invested is enormous, and the yearly proceeds from the manufacture of butter, cheese, milk, etc., have been variously estimated in the millions.

A recent estimate of the amount of butter and cheese produced placed the amount at 528,860,000 lbs., valued at $124,000,000. Beside this vast production, the amount of milk sold is placed at about 125,000,000 gallons, or one-third of the entire amount of milk produced.

INCREASED FIELD OF PRODUCTION.

The increase in these productions has been very rapid, and shows prospects of further advancement with the passing of each year. Our fertile fields and pastures afford ample opportunity for a still greater production, with these interests already extending to the far Western wilds. Probably no other section of the United States affords better opportunities and facilities for the manufacturing of butter and cheese at the smallest expense than do our Western States. The climate, unlimited prairie lands, invariably supplied with abundance of grass and water, interspersed with sections of timber land, all being beneficial to an extensive production. In fact, the West is destined in years to become the great butter and cheese producing portion of the United States.

EXPORT MOVEMENT.

One of the really noticeable features of the trade this season has been the urgent European demand for choice butter, which has really exceeded the expectations of the most sanguine dealer. The European marts have evidently been well supplied with common stock, and exporters manifested a disposition to enter upon a new field of enterprise — that is, more extensive shipments of fine western butter. In this they were greatly aided by the systematic method of handling butter in the west, and facilities offered for transportation. Lines of refrigerator cars, connecting with ocean steamers fitted up with refrigerator compartments, have greatly facilitated the trade and proved of great benefit to our western merchants and manufacterers. Until recently the shipment of fine butter generally arrived at foreign points more or less out of condition, but the later experiments have placed consignments in European markets in about the same condition as when forwarded from here; the quality being well preserved, besides retaining original freshness and sweetness. The extra expense of shipping by these refrigerator steamers is so trifling that exporters eagerly avail themselves of the opportunity offered, and the amount forwarded since the trial shipments proved so successful has been exceedingly large. The following table exhibits the exports from New York for seven years, and the present year to date:

Year.	Pounds.
1870	2,079,751
1871	8,568,012
1872	5,044,227
1873	4,074,657
1874	5,832,806
1875	5,292,571
1876	13,827,813
1877 (to Aug. 17)	11,726,666

IMPORTS OF BUTTER AT LIVERPOOL.

The imports of butter at Liverpool from October 1, 1876 to July 12, 1877, were 243,051 packages, against 140,117 packages for the same time in 1875–6.

MOVEMENT OF BUTTER AT CHICAGO.

The following table exhibits the receipts and shipments of butter in Chicago for thirteen years, and to date for the year 1877, according to reports given by the secretary of the Board of Trade:

Years	Receipts. Pounds.	Shipments. Pounds.
1864	8,819,903	5,297,769
1865	7,492,028	5,206,865
1866	9,126,825	8,503,321
1867	3,816,638	2,926,239
1868	5,503,630	3,972,021
1869	10,224,803	5,898,391
1870	11,682,348	6,493,143
1871	13,231,452	11,049,367
1872	14,574,777	11,497,537
1873	22,283,765	12,851,303
1874	28,743,606	16,020,190
1875	21,868,991	19,249,081
1876	33,941,573	34,140,609
1877, (Aug. 18.)	23,841,444	19,883,181

For the regular butter season — May, June, July, and to August 18, 1877, inclusive, the receipts aggregate 15,247,201 pounds, against 11,594,635 pounds the same time 1876 — an increase of 3,652,566 pounds. The shipments for the same period — May to August 18, inclusive — aggregated 13,416,071 pounds, against 11,578,285 pounds for the corresponding time last year — an increase of 1,837,786 pounds.

EXPORTS OF BUTTER AND CHEESE.

The following table exhibits the monthly exports of butter and cheese from the United States from May, 1875, to November, 1877, inclusive, as obtained from the Hon. Edward Young, Chief of the Bureau of Statistics, Washington:

	BUTTER.		CHEESE.	
	Pounds.	Value.	Pounds.	Value.
1875.				
May	447,219	$94,923	6,347,182	$849,288
June	229,303	56,389	15,711,330	2,003,995
Total	676,522	$151,312	22,058,512	$2,853,283
1875.				
July	352,994	$73,267	23,297,790	$2,916,729
August	244,342	56,400	15,971,541	1,990,991
September	468,482	111,613	10,416,706	1,274,566
October	958,040	228,495	8,813,909	1,128,674
November	377,706	99,366	3,182,194	435,842
December	406,170	100,722	2,710,028	367,818
1876.				
January	258,189	64,551	4,097,185	522,789
February	268,109	63,586	3,911,852	541,787
March	273,876	69,471	6,079,992	793,925
April	137,685	37,984	3,816,993	468,925
May	246,095	60,025	3,616,042	450,464
June	653,403	144,016	11,942,092	1,377,573
Total fiscal year	4,644,894	$1,109,496	97,676,264	$12,270,083
1876.				
July	715,311	$140,597	20,120,541	$2,175,236
August	2,210,761	406,754	16,622,429	1,760,390
September	4,672,861	965,855	13,975,589	1,649,096
October	2,108,525	485,130	4,655,994	620,131
November	1,263,550	285,416	6,677,081	866,224
December	1,029,282	232,927	4,664,046	590,638
1877.				
January	993,038	222,707	3,539,780	472,534
February	1,605,581	355,144	3,886,854	561,288
March	2,380,922	507,609	2,048,001	287,102
April	1,424,066	261,212	1,250,384	162,845
May	977,337	174,338	8,219,745	1,084,621
June	2,145,836	386,897	21,704,242	2,470,617
Total fiscal year	21,527,070	$4,424,616	107,364,686	$12,700,722
1877.				
July	2,790,344	$540,174	19,657,235	$2,097,458
August	2,379,357	460,406	17,407,355	1,945,728
September	4,467,633	868,197	12,995,499	1,709,471
October	2,179,264	417,325	7,171,007	907,338
November	1,002,627	180,893	6,531,594	817,932

EXPORT OF BUTTER AND CHEESE.

As compiled from official figures of the Bureau of Statistics, Treasury Department, Washington:

Year.	Butter.		Year.	Cheese.	
	Pounds.	Value.		Pounds.	Value.
1790...	....	$48,587	1790.	144,734	... .
1820...	1,068,024	....	1820..	766,431	$190,287
1830...	899,396	....	1830..	688,241	142,370
1840...	1,177,639	... .	1840..	723,217	210,749
1850...	3,856,175	.....	1850..	13,020,817	1,215,463
1858...	3,082,117	541,863	1858.	8,098,527	731,910
1859...	4,572,065	750,911	1859..	7,103,312	649,302
1860...	7,640,914	1,144,321	1860..	15,515,799	1,565,630
1861...	15,553,381	2,355,985	1861..	32,361,428	3,321,631
1862...	26,691,247	4,164,344	1862..	34,052,687	2,715,892
1863...	35,172,415	6,733,743	1863..	42,045,054	4,216,804
1864...	20,895,435	6,140,031	1864..	47,751,329	5,638,007
1865...	21,388,185	7,234,173	1865..	53,089,468	11,684,927
1866...	3,806,835	1,267,855	1866..	36,411,885	6,036,828
1867...	4,912,355	1,184,367	1867..	52,352,127	7,898,535
1868...	2,071,873	582,745	1868..	51,097,203	7,010,424
1869...	1,324,332	484,094	1869..	39,960,367	6,437,866
1870...	2,019,288	592,229	1870..	57,296,327	8,881,934
1871...	3,965,043	853,096	1871..	63,698,867	8,752,990
1872...	7,746,261	1,498,812	1872..	66,204,025	7,752,918
1873...	4,518,844	952,919	1873..	80,366,540	10,498,010
1874...	4,367,983	1,092,381	1874..	90,611,077	11,898,995
1875...	6,360,827	1,506,996	1875..	101,010,853	13,659,603
1876...	4,644,894	1,109,496	1876..	97,676,264	12,270,083
1877...	21,527,242	4,424,616	1877..	107,364,666	12,700,627

BUTTER AND CHEESE MADE IN WISCONSIN.

During the year 1870, *as taken from the census report, also the amount made in* 1876 *and* 1877.

	1870.	1876.	1877.
	lbs.	*lbs.*	*lbs.*
Butter.....	22,473,036	50,130,000	62,662,500
Cheese	1,591,798	17,000,000	21,250,000

From carefully prepared statistics made by W. D. Hoard, of the Jefferson County Union, Hon. Hiram Smith, H. F. Dousman and others, the above estimates have been made.

DAIRY STATISTICS

OF CHEESE FACTORIES, CREAMERIES AND PRIVATE DAIRIES IN THE STATE AS FAR AS COULD BE ASCERTAINED, FOR THE YEAR ENDING DECEMBER 31, 1877.

COUNTIES AND NAME OF FACTORY OR PROPRIETOR.	P. O. ADDRESS.	NUMBER OF POUNDS.						No. Cows to each factory.
		Cheese, Factory Make.	Cheese, Private Dairy.	Cheese, Limberger	Cheese, Swiss.	Butter, Creamery.	Butter, Private Dairy.	
BUFFALO.*								
William Fisher	Mondovia	18,000	200					
T. W. Bailey	Gilmanton		2,000					
A. Mosher	Gilmanton			2,000				
CALUMET.								
C. P. Skidmore	Stockbridge	20,600					800	
M. S. W. Scott	Brant	9,000						
O. R. Potter	Potters Mills	8,000						
Wirtz Cheese Company	Hilbert	9,000						
Platt Cheese Company	Hilbert	17,800						
COLUMBIA.								
Arlington Cheese Association.	Dixon	50,000						175
Wyocena Cheese Association.	Wyocena	57,018						150
Lodi Cheese Association	Lodi	99,113						350
West Point Cheese Associat'n	West Point	55,102						200
Chas. Baker Cheese Associat'n	Portage							
O. B. Prime & Co	Fall River	116,025						
Caledonia Cheese Company	Portage							200

A. Chapman	Columbus	61,514						
Poynette Cheese Factory	Poynette							200
H. M. Chapman's Creamery								100
J. Whiting†	Port Hope	6,000						40
Randolph Cheese Factory	Randolph							
CLARK.								
G. & J. Heuntzicher, Factory	Greenwood							
DANE.								
C. C. Pease	Bellville	50,684						220
Wm. Fischer	Paoli	22,000						75
Humphrey & Sherwin	Mazomanie	69,550						220
Black Earth Cheese Factory	Black Earth	58,249						200
Dane .....do	Dane	87,241						250
A. S. Noyes' .....do	Waunakee							
W. J. Donald ..... do	Mt. Vernon							
Brooklyn .....do	Brooklyn							
Fischer's Swiss‡ ...do	Mt. Vernon							
Limberger‡ .....do	Primrose							
John Arians .....do	North Bristol							
A. Chipman .....do	Sun Prairie							
E. P. Sherman ....do	Windsor							
T. K. Potter & Co. do	Cambridge	59,050						200
DODGE.								
Stapleton Cheese Co.	Fox Lake	18,000						120
R. F. Ellis	Beaver Dam	32,000						150
Cochrane Cheese Co.	Beaver Dam	100,000						400
F. S. Jacobs	Atwater	75,000						375
Wm. B. McDonald	Lowell	11,570						150

*30,000 lbs. butter markcted at Mondovia; 75,000 lbs. made in the county. †Run only four months. ‡New.

Dairy Statistics — continued.

COUNTIES AND NAME OF FACTORY OR PROPRIETOR.	P. O. ADDRESS.	NUMBER OF POUNDS.						Number cows to each factory.
		Cheese, Factory, Make.	Cheese, Private Dairy.	Cheese, Limberger.	Cheese, Swiss.	Butter, Creamery.	Butter, Private Dairy.	
DODGE — *continued.*								
G. R. Talbot	Juneau	90,000						450
G. R. Talbot	Rolling Prairie	40,000						175
G. R Talbot‡	Clyman							250
John Hoffman	Hustisford			55,000				150
B. Boss	Hustisford			48,000				135
H. Brue	Hustisford			60,000				160
Mr. von Grüningen	Hustisford			50,000				140
E. von Grüningen	Hustisford			55,000				145
J. Graniger	Hustisford			40,000				100
A. Graniger	Hustisford			45,000				130
C. Wellow (3 factories)	Hustisford			120,000				330
J. Seelgldurey	Hustisford			12,000				40
—— Chrunkny	Hustisford			25,000				90
S. Boss	Watertown			45,000				130
Jacob Joss	Woodland				28,000			95
J. Ealing	Woodland			27,000				95
M. S. Barrett's Factory	Burnett							
FOND DU LAC.*								
C. Hazen	Ladoga	145,631						500
C. Hazen, Brandon Factory	Ladoga	38,000					2,000	180
E. S. Jenkins' Factory	Rosendale							

E. Peebles	Peebles	88,650					600	240
D. D. Treleven	Byron	60,000						220
Wm. Berry	Peebles	40,000						160
Fayette Bude	Oakfield							
M. Wookey	Oakfield							
Willis Lang	Waupun	72,000						
Howard Cheese Co	Waupun	58,000						
Williams Cheese Co	Waupun							
Bradley's Cheese Co	Waupun							
Stapleton's Cheese Co	Waupun							
† Ripon Factory	Ripon	15,000						50
J. H. Downing	Waupun	20,000						75
J. Cronks	Waupun	33,000						125
O. B. Bennett	Lamertine	139,889						375
O. G. Parker	North Byron	53,000						175
Fountain City, Wm. Berg	Peebles	80,000						250
Ira Brown	New Cassel	38,000						175
Bristol & Orvis	Oakfield	36,000						125
L. F. Beedee	Oakfield						10,000	35
Simon Arthur	Fond du Lac						14,000	45
GRANT.								
A. E. Morse	Bloomington		8,240				350	17
Delos Abrahams	Bloomington						4,000	23
‡ Morse & Welch Factory	Bloomington							200

* Four new factories are being put up in this county, with a probable average of 200 cows each.
† 1900 cows in cheese factories.
‡ New factory

Dairy Statistics — continued.

NAME OF FACTORY OR PROPRIETOR.	P. O. ADDRESS.	NUMBER OF POUNDS OF CHEESE.				Butter, lbs.	No. Cows to each Factory.
		American.	Limburger.	Swiss.	Swiss and Limburger.		
GREEN.							
C. Hazen	Ladoga	10,000					50
Melvin, Blair & Co.	Brooklyn	60,000					300
Hoesley & Lenhar	New Glarus	180,000					600
G. O. Stearns	Monroe	75,000					250
E. W. Cheesbro	Monroe	12,000					23
Postville Factory	Stewart	125,000					450
W. C. Gorham	Monroe	36,000					100
W. S. Wescott	Monroe	48,000					125
Dayton Factory	Dayton	60,000					300
Chris Karlan	Juda and Nevada	90,748					400
Jack Karlan (4 fac.)	Farmers Grove		240,000				500
Nic Gerber (7 fac.)	New Glarus		400,000				1,100
John Boss (2 fac.)	Monroe		124,000				220
Zumbrunnen & Wittwer (2 fac.)	Monroe		143,000				450
Miller & Frautschy	Monroe		26,500				110
Gottleib Wittwer	Monroe		50,000				260
Jac. Kegetz	Monroe		240,000				500
Jac. Stauffacher	Monroe			20,000			90
J. U. Elmer	Monroe			20,000			90
Anton Stauffacher	Monroe			15,000			60
John Marty	Monroe			15,000			60
Fred Neuenscheunder	Monroe			50,000			150
G. Draschler	Monroe			13,000			60
Frank Haffner	Monroe			13,000			60

Paul Kundert	Monroe			8,000			30
G. Beller	Monroe			70,000			180
G. Karlan	Monroe				8,000		200
Jac. Kundert	Monroe				27,000		90
Geo. Figi	Monroe				16,000		60
Weiss & Babler	Monroe				40,000		250
Norman Cole	Brodhead					3,500	20

RECAPITULATION.

	Pounds.	No. Cows.
American Cheese	680,748	2,538
Limburger	1,223,500	3,140
Swiss	224,000	780
Swiss and Limburger	163,000	500
Grand total	2,291,248	6,958

Dairy Statistics — continued.

NAME OF FACTORY OR PROPRIETOR.	P. O. ADDRESS.	NUMBER OF POUNDS.						No. of cows to each factory.
		Cheese, Factory Make.	Cheese, Private Dairy.	Cheese, Limberger	Cheese, Swiss.	Butter, Creamery.	Butter, Private Dairy.	
JEFFERSON.								
Olin, Crossfield & Co	Oakland							400
Fort Atkinson Factory	do	155,238						
Water Street Factory*	do							
Whitney's Factory*	do							
Wright's Mill Factory*	do							
Cold Spring Cheese Co	Whitewater							
Old Cold Spring Factory	do							
New Cold Spring Factory	do							
Hebron Factory	do							
Palmyra Factory	do							
Oak Hill Factory	do							
M. N. Seward	Harvey	130,320				2,320		425
Seward & Skinner*	Aztalan							300
Riverside Factory	Jefferson	47,500						200
Faville Grove Factory	Lake Mills	162,624						450
E. P. Ingalls	Milford	98,000						300
Wm. Galloway	Whitewater	144,992						413
Thos. Bussey	Busseyville	105,422						186
Z. Wilson	Palmyra	90,000						
Concord Cheese Co	Concord	58,000						160
C. H. Hosington	Farmington							
H. C. Drape	Lake Mills							
Merrick's Factory	Whitewater							

H. A. Hoffman, Creamery *	Jefferson							
S. G. Westphall, Creamery	Fort Atkinson					5,030		38
H. Merriman, Creamery	Fort Atkinson					4,90		20
M. C. Jones, Creamery	Fort Atkinson					10,375		50
Rock Lake Creamery	Lake Mills					28,262		142
Edmund King, Creamery	Whitewater					6,347		
Star Creamery †	Lake Mills					8,245		70
Kroyville Cheese Co *	Kroyville							
Union Cheese Co *	Lake Mills							
Koshkonong Cheese Co *	Koshkonong							
C. H. Phillips	Lake Mills					9,000		45
C. S. Cartwright, Cheese Fact.*	Rome							300
JUNEAU.								
D. Robinson & Co	Mauston	19,996					1,000	86
Wm. Kimbal	Union Center	17,200					600	75
F. O. Galla	Elroy	17,620					500	70
Wm. Hale & Co	Mauston	19,530					900	92
Robert Camp	Mauston					2,500		17
F. O. Galla	Elroy	17,500					600	80
John Sharf	Union Center						900	
Andrew Mills	Elroy						600	
I. Fleno	Elroy						500	
Wm. Robinson	Elroy						600	
KENOSHA.								
E. S. Stanard	Woodnorth	30,500					800	
South Bristol Cheese Factory	Bristol							
J. M. Kellogg's Factory	Woodnorth							
J. M. Wilbur	Wilmont	30,000						
O. C. Stonebreaker	Bristol	21,309				1,790		75
J. B. Vosburgh	Richmond, Ill	94,620				1,060		

* New factory. † Received 214,036 lbs. of milk, with proceeds per 100 lbs. milk, 94 cents. ‡ No lbs. milk for 1 lb. cheese, 9 64-100.

Dairy Statistics — continued.

COUNTIES AND NAME OF FACTORY OR PROPRIETOR.	P. O. ADDRESS.	NUMBER OF POUNDS.						No. Cows to each Factory.
		Cheese, Factory Make.	Cheese, Private Dairy.	Cheese, Limberger	Cheese, Swiss.	Butter, Creamery.	Butter, Private Dairy.	
KENOSHA — continued.								
Maynard & Stevens	Salem	80,000						
Rooth Bros.	Salem	30,000				6,000		
J. M. Kelogg	Woodworth	40,000						
Henry Blackman	Paris	50,000						
C. C. Holt	Kenosha city	20,000						
Simmons & Co.	Kenosha city	80,000						
W. C. White	Kenosha city	60,000						
MILWAUKEE.								
Wauwatosa Cheese Co.	Wauwatosa	45,137						
F. A. Yankkee	Northern Junction			75,000		14,600		140
A. Thomas & Son	Good Hope	14,000				1,750		
MANITOWOC.								
Lilloffe & Ecke*	Kiel	13,696						42
A. Ecke*	Meemee	8,921						47
Daniel Kuentz*	Newtonbury							200
MONROE.								
Cataract Factory	Cataract	12,500					1,050	40

N. W. Creamery	Tomah	21,642					3,938	125
Charles E. Bell	Tomah	12,000						65
Sparta Factory	Sparta	15,000						
Leon Valley	Leon		10,000					50
Hunt's Mills	Medina	15,000						
OUTAGAMIE.								
Louis Perrott	Granville		11,650					28
E. M. Gowell	Granville					2,500		15
H. Brockway	Appleton		7,040					19
H. M. Armstrong	Fredonia		1,200					
Edward Nye	Fredonia		1,100					
OZAUKEE.								
Ingersol & Eckle	Port Washington	40,000		2,500			480,000	160
Butter made in the county								

* New factory.

Dairy Statistics — continued.

SHEBOYGAN COUNTY.

NAMES AND POST-OFFICE ADDRESSES.	No. Cows.	Pounds Milk.	Pounds Cheese.	Value.
J. A. Smith, Sheboygan.....	250	750,710	75,071	$8,092
J. A. Smith, Sheboygan.....	120	327,000	32,955	3,656
J. A. Smith, Sheboygan.....	120	306,990	30,699	3,328
H. Habighurst, Sheboygan ...	200	802,700	80,770	8,885
C. Reich, Sheboygan..	150	588,453	59,128	6,254
G. W. Weeden, Sheboygan...	150	486,817	48,400	5,534
F. Widder, Sheboygan.....	155	464,155	46,416	4,901
J. Sieber, Sheboygan....	105	376,553	37,645	3,565
W. Springborn, Sheboygan...	105	252,492	24,925	2,572
Pierce & Son, Sheboygan Falls	385	1,093,214	108,943	12,239
Mather Bros., Sheboygan Falls	219	821,118	78,745	9,000
Holden Bros., Sheboygan Falls	200	695,515	68,197	7,582
J. G. Peacock, Sheb'gan Falls.	175	573,651	51,620	5,673
A. & A. B. Dye, Sheg'gan Falls	165	506,342	52,785	5,366
D. Kuentz, Sheboygan Falls..	128	482,957	48,262	5,399
Mrs. C. Strong, Sheb'gan Falls	100	371,917	36,745	3,956
A. D. DeLand, Sheb'gan Falls	97	391,544	39,657	4,198
H. Conover, Plymouth.....	450	1,469,661	145,165	16,305
H. Conover, Plymoth.....	275	914,224	88,105	10,232
S. H. Conover, Plymouth.....	300	874,001	86,318	9,964
H. J. Bamford, Plymouth.....	222	825,504	83,482	9,127
S. A. Rickmeier, Plymouth...	150	452,792	46,321	4,894
S. Littlefield, Plymouth	120	403,104	41,236	4,394
W. Koch, Plymouth.....	100	333,000	33,990	3,538
H. Graef, Plymouth.....	74	226,850	21,418	2,240
Gilman Factory, Plymouth...	130	437,052	42,238	4,618
A. Kuentz, Howard's Gr.....	220	735,570	72,905	8,041
W. Siemers, Howard's Gr.....	150	491,126	49,235	5,328
J. Ochs, Howard's Gr.....	150	400,000	39,888	.....
C. Grœne, Johnsonville.....	155	531,750	53,200	5,799
C. Grœne, Johnsonville.	130	396,500	39,650	4,321
J. Kæstner, Johnsonville	130	433,600	43,060	4,596
F. A. Streblow, Johnsonville .	130	386,619	40,050	4,298
J. Slyfield, Hingham.....	210	719,811	70,215	7,689
J. Slyfield, Hingham.....	150	553,473	54,722	5,969
J. Slyfield, Hingham.....	96	285,570	28,976	2,972
E. Montgomery, Greenbush...	135	419,148	45,527	4,691
Marsfield & Son, Greenbush..	115	374,295	39,046	4,060
H. Eiche, Mosel.....	254	841,491	79,556	8,484
C. F. F. Karstædt, Mosel.....	195	601,328	60,662	6,344
G. W. Bradley, Scott	75	131,250	13,150	1,345
M. L. Yeamans, Scott.....	60	131,940	13,050	1,287
Harmon's Factory, Winooski.	380	1,362,068	136,923	14,959
F. Joerns, Winooski.....	160	562,202	58,986	6,157
A. Dye, Onion River..	270	1,021,658	103,284	11,100
M. Lemmin, Edwards.....	226	710,017	70,940	7,694
R. M. Johnson, Rathbun.....	130	263,027	26,677	2,826
J. Wisselink, Gibbsville.....	80	210,357	21,347	2,273
R. A. Swann, Cascade.....	116	.....	28,629	2,862
W. Crosby & Co., Cascade....	400	1,365,938	136,000	.....
L. Hills, Glenbeulah.....	31	43,930	4,460	424
S. Reiniking, Franklin.....	.....	.....	50,000	.....
W. Berkle, Howard's Gr.....	.....	.....	46,000	.....
H. Mahler, Sheboygan Falls ..	.....	.....	44,000	.....

Dairy Statistics — Sheboygan County — continued.

NAMES AND POST-OFFICE ADDRESSES.	No. Cows.	Pounds Milk.	Pounds Cheese.	Value.
John Dessau, Sheboygan Falls			36,000	
J. A. Smith, Glenbeulah			36,000	
C. Altrop, Mosel			30,000	
Wilson Jr. Stock, Sheboygan			55,000	
Wilson Six Corners, Sheboyg'n			25,000	
C. Rockwell, Hingham			10,000	
H. Feldman, Elkhart			8,000	
J. Negler, Russell			6,000	
Total	9,870	31,958,824	3,185,275	$345,582

Footings of cows, milk and value, obtained by giving estimated and partially reported factories, the same proportions as those fully reported.

Average amount of cheese per cow	323 lbs.
Average value of cheese per cow	$35 00
Average price of cheese	$10\frac{85}{100}$ cts
Average pounds milk to 1 pound cheese	$10\frac{1}{30}$ lbs.

S. LITTLEFIELD,

Secretary Sheboygan Falls Dairy Board of Trade.

Dairy Statistics. — continued.

NAME OF FACTORY OR PROPRIETOR.	P. O. ADDRESS.	NUMBER OF POUNDS.						No. Cows to each Factory.
		Cheese, Factory Make.	Cheese, Private Dairy.	Cheese, Limberger	Cheese, Swiss.	Butter, Creamery.	Butter, Private Dairy.	
RICHLAND.								
G. J. Carswell & Son	Lone Rock	.....	38,200	.....	.....	.....	.....	75
H. L. Eating	Lone Rock	120,000	.....	.....	.....	.....	.....	325
A. Shaunce	Bear Valley	30,000	.....	.....	.....	.....	.....	.....
Geo. Turner	Sextonville	40,000	.....	.....	.....	.....	.....	.....
A. & D. Beckwith *	Lone Rock	99,399	.....	.....	.....	1,000	.....	250
Barker's Factory	Bear Valley	35,000	.....	.....	.....	.....	.....	125
ROCK.								
Bent, Cheever & Pierce	Clinton	141,959	.....	.....	.....	.....	.....	650
B. S. Hoxie	Cooksville	50,622	.....	.....	.....	.....	.....	175
Wm. Zimmerman	Edgerton	.....	.....	.....	.....	.....	2,000	16
James Clough	Edgerton	.....	.....	.....	.....	38,475	.....	325
E. Devereux	Evansville	185,300	.....	.....	.....	.....	.....	600
Clover Dale Factory	Lima Center	72,484	.....	.....	.....	2,925	.....	325
Godfrey's Factory *	Lima Center	.....	.....	.....	.....	.....	.....	.....
WAUKESHA.								
Olin & Clinton	Waukesha	80,000	.....	.....	.....	.....	.....	450
T. C. Dousman	Waterville	120,000	.....	.....	.....	.....	.....	.....
B. R. Hinckley	Oconomowoc	113,000	.....	.....	.....	.....	.....	.....
Monterey Factory	Monterey	45,000	.....	.....	.....	.....	.....	.....

Frank Shultis	Waukesha	160,000						500
Thomas Steel	Genesee	68,728						
Richard Milton	Eagle	30,000						90
Frank Shultis	Mukwonago	23,000						125
WAUSHARA.								
A. H. Wheaton	Auroraville	29,167						130
C. P. Colt*	Poysippi							
WAUPACA.								
John Moodie	Weyauwega	12,893						78
S. A. Oaks	Ogdensburg	6,365						30
Charles Gibson	Lind	33,443						175
Wm. Hamilton*	Clintonville							
Thomas W. Rhodes	Weyauwega					1,984		10
Craig & McCord	Royalton	5,270					30,000	85
New London Factory	New London	14,326						50
WALWORTH.								
Pearson Brothers†	Sharon	359,906						1,215
Delavan Cheese Co	Delavan	37,357						200
S. G. Nichols	Geneva Lake					11,000		55
A. Jewell	Spring Prairie					4,000		20
S. Lytle	Elkhorn					3,600		18
D. L. Flack	Elkhorn					5,000		25
J. G. Flack	Elkhorn					5,000		25
J. A. Chase	Elkhorn	45,000						110
Chase, Berner & Casswell	Elkhorn	35,000						90
C. R. Beach	Whitewater					7,800		30
H. A. Conger*	Whitewater							

* New factory. † The largest factory in the state.

Dairy Statistics — continued.

COUNTIES AND NAME OF FACTORY OR PROPRIETOR.	P. O. ADDRESS.	NUMBER OF POUNDS.						No. Cows to each Factory.
		Cheese, Factory Make.	Cheese, Private Dairy.	Cheese, Limberger.	Cheese, Swiss	Butter, Creamery.	Butter, Private Dairy.	
WINNEBAGO.								
John Ryfe	Oshkosh				32,000	1,200		60
Crist. Perrin	Oshkosh			29,000	5,000	400		70
Crist. Boss	Oshkosh			44,000	6,000	600		120
C. Bellinger	Oshkosh			17,000		1,000		60
—— Kettle	Oshkosh			28,000		900		70
George Rogers	Oshkosh		10,000			700		40
Charles Vedder	Eureka	29,170						150
F. Stune	Waukau	22,500						216
D. Grossman	Omro	83,000						275
S. S. Walter	Eureka	36,000				9,000		177
Bishops Cheese Factory	Omro							
J. G. Picket	Pickets Station	55,327						250
F. W. Wheeler	Neenah	35,000						150
Henry Searl's Factory	Pickets Station							
Emery Davis' Factory	Pickets Station							
Peas' Factory		36,000						110
Total								

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DAIRY BOARD OF TRADE.

SHEBGYGAN FALLS, 1877.

President — Judge Geo. W. Weeden, Sheboygan.
Secretary — S. Littlefield, Plymouth.
Treasurer — F. Strong, Sheboygan Falls.

Membership about fifty.

Meetings every Friday, from May 11th to September 28th.

Meetings and sales informal and no correct account of the business transacted there can be given. Principal features, receipt of telegrams on the state of New York and Liverpool markets

Greatest amount of cheese offered on any one day (Aug. 11), 4,160 cheddar and 2,480 "Young America's."

WAUPACA COUNTY DAIRYMEN'S ASSOCIATION.

President — E. W. Brown, Waupaca.
Secretary — Thos. W. Rodes, Waupaca.
Treasurer — W. Mastero, Waupaca.

Meetings every two weeks, at Waupaca.